EUROPEAN COMMISSION
DG Competition

CASE M.8677 - SIEMENS/ALSTOM

(Only the English text is authentic)

MERGER PROCEDURE
REGULATION (EC) 139/2004

Article 8 (3) Regulation (EC) 139/2004

Date: 06/02/2019

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EUROPEAN
COMMISSION

Brussels, 6.2.2019
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COMMISSION DECISION

of 6.2.2019

declaring a concentration to be incompatible with the internal market and the functioning of the EEA Agreement

(Case M.8677 SIEMENS/ALSTOM)

(Text with EEA relevance)

(Only the English text is authentic)

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COMMISSION DECISION

of 6.2.2019

declaring a concentration to be incompatible with the internal market and the functioning of the EEA Agreement

(Case M.8677 SIEMENS/ALSTOM)

(Text with EEA relevance)

(Only the English text is authentic)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to the Agreement on the European Economic Area, and in particular Article 57 thereof,

Having regard to Council Regulation (EC) No 139/2004 of 20.1.2004 on the control of concentrations between undertakings[1], and in particular Article 8(3) thereof,

Having regard to the Commission's Decision of 13 July 2018 to initiate proceedings in this case,

Having given the undertakings concerned the opportunity to make known their views on the objections raised by the Commission,

Having regard to the opinion of the Advisory Committee on Concentrations[2],

Having regard to the final report of the Hearing Officer in this case[3],

Whereas:

1. INTRODUCTION

(1) On 8 June 2018 the European Commission (the "Commission") received notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 (the "Merger Regulation")[4] by which Siemens AG (hereinafter referred to as "Siemens" or the "Notifying Party") will acquire sole control of Alstom SA (hereinafter referred to as "Alstom") by way of a contribution of Siemens' mobility business to Alstom in consideration for newly issued Alstom shares (the "Transaction"). Siemens and Alstom are collectively referred to as the "Parties".

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1 OJ L 24, 29.1.2004, page 1 ("the Merger Regulation"). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ("TFEU") has introduced certain changes, such as the replacement of "Community" by "Union" and "common market" by "internal market". The terminology of the TFEU will be used throughout this Decision.

2 OJ C ...,...200. , page....

3 OJ C ...,...200. , page....

4 OJ C 208, 15.06.2018, page 9.

2. THE PARTIES AND THE OPERATION

(2) Siemens is a German corporation and the ultimate parent of the Siemens Group, with registered seats in Berlin and Munich, headquartered in Munich and listed on the Frankfurt am Main and Xetra stock exchanges. The largest shareholder of Siemens is BlackRock, Inc. with 5.93% of voting rights, followed by the State of Qatar (3.04% of voting rights) and Werner Siemens-Stiftung (3.03% of voting rights).

(3) Siemens is active in a number of industrial areas with its mobility division offering a broad portfolio of rolling stock, rail automation and signalling solutions, rail electrification systems, road traffic technology, IT solutions, as well as other products and services concerning the transportation of people and goods by rail and road.

(4) Alstom is a French corporation headquartered in the Paris region and listed on Euronext Paris Stock Exchange. Alstom is active globally in the rail transport industry, offering a wide range of transport solutions (from high-speed trains to metros, trams and e-buses), personalised services (maintenance and modernisation) as well as offerings dedicated to passengers and infrastructure, digital mobility and signalling solutions. Alstom's shares are held by the Bouygues group (28%) – a diversified industrial group with activities in the construction, property, telecoms and media sectors – institutional investors (62%), individual shareholders (9%) and by Alstom employees (1%).

(5) The Transaction concerns the acquisition of sole control of Alstom by Siemens. It involves the combination of Alstom and Siemens' mobility business, including its rail traction drives business and related activities (hereinafter referred to as the "Merged Entity").

(6) On 26 September 2017, the Parties entered into a Memorandum of Understanding. On 23 March 2018, the Parties entered into a final Business Combination Agreement. The Transaction was approved by shareholders at the Alstom shareholders' meeting of 17 July 2018.

(7) Following the Transaction, the Merged Entity will remain listed on the Euronext Paris Stock Exchange. The group headquarters and that of the rolling stock business will be located in the Paris area, while the mobility solutions business (railway signalling) will be headquartered in Berlin. The corporate name of the Merged Entity will be Siemens Alstom. Siemens will hold no less than 50.67% of the Merged Entity's shares. Bouygues will hold 13.66% while the remaining 35.67% of shares will be free float, held by other investors.

(8) The Transaction therefore constitutes a concentration pursuant to Article 3(1)(b) of the Merger Regulation.

(9) The stated economic rationale for the Transaction is to combine two global railway players with unique customer value and operational potential. The combination of the Parties' experience, complementary product offerings and geographic footprints would enable the Merged Entity to compete effectively at global level in the future and respond to tomorrow's mobility challenges while addressing the increasing competitive pressure from rapidly growing (Asian) competitors, to the benefit of customers and consumers.

3. UNION DIMENSION

(10) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million[5] (Siemens: EUR 83 049 million; Alstom: EUR 7 950 million). Each of them has an EU-wide turnover in excess of EUR 250 million (Siemens: EUR […]; Alstom: EUR […]), but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same Member State. The Transaction therefore has a Union dimension.

4. THE PROCEDURE

(11) On 26 September 2017, the proposed Transaction between Siemens' mobility (rail) business division with Alstom was announced.

(12) Pre-notification contacts started late September 2017. The Parties submitted a first draft of the Form CO on 4 December 2017. A second draft of the Form CO was submitted in both April and May 2018.

(13) On 8 June 2018, the Commission received formal notification of the Transaction pursuant to Article 4 of the Merger Regulation.

(14) Throughout its initial (Phase I) investigation, the Commission reached out to a large number of participants (competitors, customers, and other stakeholders) by requesting information through electronic questionnaires, telephone calls and written requests for information pursuant to Article 11 of the Merger Regulation.

(15) On 28 June 2018, a state-of-play meeting between the Parties and the Commission took place at which the Commission explained the preliminary findings from the market investigation and its preliminary conclusions.

(16) On 13 July 2018, the Commission found that the Transaction raised serious doubts as to its compatibility with the internal market and adopted a decision to initiate proceedings pursuant to Article 6(1)(c) of the Merger Regulation (the "Article 6(1)(c) Decision"). The Article 6(1)(c) Decision raised serious doubts about the Transaction in the following markets:

(1) Rolling stock: high-speed trains, including the narrower market of very high-speed trains, in the European Economic Area ("EEA") and on a worldwide basis; mainline trains, including in the narrower markets of regional and intercity EMU trains, in the EEA and in Belgium, Germany, Denmark and the Netherlands; metros, including the narrower market of automated metros in the EEA; and, people movers, in the EEA;

(2) Mainline signalling:

(a) At EEA-level: mainline signalling projects combining ETCS Automated Train Protection (ATP) wayside systems, interlockings and Operation Control Systems (OCSs); mainline signalling projects combining ETCS ATP wayside systems and interlockings; ETCS ATP wayside system projects; standalone interlocking projects; ETCS On-Board Unit (OBU) projects;

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[5] Turnover calculated in accordance with Article 5 of the Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C 95, 16.4.2008, page 1).

(b) At national level: ETCS ATP wayside systems and interlockings projects combined, in Belgium, Romania, Spain and the United Kingdom ("UK"); ETCS ATP wayside systems projects, in Austria, Belgium, Croatia, Denmark, Germany, Greece, Hungary, the Netherlands, Romania, Slovenia, Spain and the UK; standalone interlocking projects in Belgium, Greece, Norway, Portugal, Romania, Spain and the UK; legacy OBU projects, in Belgium; OCS projects in the UK, Denmark, Norway and Spain;

(3) Urban signalling; CBTC signalling for metro systems, in the EEA; France, Netherlands, the UK; Amsterdam, Lille, London, Lyon and Paris; large conventional metro projects, in the EEA, France and Paris; small conventional metro projects, in France and Paris; light rail projects, in Germany, Netherlands, Belgium, Sweden, Aarhus, Antwerp, Brussels, Rotterdam, Stockholm and Wuppertal;

(4) Signalling products: interlocking equipment, in the UK,; track circuits for urban use in France; and

(5) Rail electrification: rail electrification projects, in Greece, Romania and the UK.

(17) On 16 July 2018 the Commission, at the request of the Notifying Party, extended the legal deadline of the procedure by 20 working days pursuant to Article 10(3)(2), of the Merger Regulation.

(18) On 26 July 2018, a state-of-play meeting took place between the Commission and the Parties.

(19) On 6 August 2018, the Parties submitted their written comments on the Article 6(1)(c) Decision ("the Parties' response to the Article 6(1)(c) Decision").

(20) On 8 August 2018, the Commission adopted a decision pursuant to Article 11(3) of the Merger Regulation suspending the merger review time limit for initiating proceedings and for decisions due to the failure of the Parties to provide certain requested documents. The suspension lasted from 7 August 2018 until 4 September 2018, when the requested documents were provided.

(21) During the in-depth (Phase II) investigation, the Commission sent numerous requests for information to the Parties, their competitors, customers and suppliers as well as to other stakeholders. The Commission collected a substantial amount of information from the Parties, including tender and bidding data and documents, as well as from third parties.

(22) The Commission also held four technical meetings with the Parties between September and November 2018 to discuss the following areas: (i) rolling stock (high-speed, mainline and urban) (ii) mainline signalling, and (iii) urban signalling.

(23) The Commission also granted the status of interested third person to 24 entities, comprising competitors, customers, trade unions and trade associations.

(24) On 29 October 2018, the Commission issued a Statement of Objections. The markets in respect of which the Statement of Objections raised serious concerns were the following:

(1) Rolling stock: high-speed trains, including the narrower market of very high-speed trains, in the EEA and on a worldwide basis (excluding China, Japan and

South Korea); regional trains, in the EEA; and steel wheel automated metros, in the EEA;

(2) Mainline signalling: ETCS OBU projects, in the EEA; legacy OBU projects, in Belgium; standalone interlocking projects, in the EEA and in Belgium, Croatia, Denmark, Greece, Hungary, Norway, Portugal, Romania, Spain, and the UK; ETCS ATP wayside overlay projects, in the EEA and in Belgium, Netherlands, Spain, UK, Austria, Germany, Slovenia, Bulgaria, Croatia, Czech Republic, Denmark, France, Greece, Hungary, Italy, Norway, Poland, Romania, Slovakia, Luxembourg, Estonia, Latvia, Lithuania, Finland, Sweden, and Portugal; ETCS ATP wayside re-signalling projects, in the EEA and in the Netherlands, Romania, Spain, Belgium, Croatia, Denmark, Greece, Hungary, Norway, UK, Austria, Germany, Slovenia, France, Italy, Poland, Slovakia, Bulgaria, Czech Republic, Luxembourg, Estonia, Latvia, Lithuania, Finland, Sweden, and Portugal; interlocking equipment, in the UK; and standalone OCS projects, in the UK;

(3) Urban signalling: metro CBTC projects, in the EEA; OCTYS projects, in Paris; and SACEM projects, in Paris; and

(4) Rail electrification, in Greece and Romania: rail electrification overall; contact lines; contact lines – OHCL; contact lines OHCL Mainline & high-speed; traction power supply; and traction power supply –AC.

(25) Access to file was given to the Parties via CD-ROM on 29 October 2018 and 7 November 2018 and via encrypted emails on 31 October 2018, 13 November 2018, 14 November 2018, 22 November 2018, 26 November 2018, 30 November 2018, 7 December 2018, 14 December 2018, 21 December 2018, 4 January 2019, 21 January 2019, 25 January 2019 and 31 January 2019.

(26) On 14 November 2018, the Parties replied to the Statement of Objections ("the Parties' response to the Statement of Objections"). In addition, 14 third parties in Phase II submitted comments on the Statement of Objections.

(27) On 29 November 2018, a state-of-play meeting took place between the Commission and the Parties.

(28) On 23 January 2019, the Commission issued a Letter of Facts on (i) market shares and bidding data for high and very high-speed rolling stock and for mainline signalling, (ii) high and very high-speed rolling stock and (iii) mainline signalling (the "Letter of Facts"). The Parties replied to the Letter of Facts on 28 January 2019.

(29) In their response, the Parties argue that the Letter of Facts does not enable them to effectively make their views known on the supplementary facts on which the Commission intends to base its final decision.

(30) First, the Parties claim that the Commission has not provided it "*sufficient time to digest the additional facts*" and to provide observations in an effective and meaningful manner, especially when "*most*" of the evidence was available to the Commission already prior to adopting the Statement of Objections. Second, the Parties indicate their "*doubt*" as to whether their observations as presented in their response to the Letter of Facts can be "*meaningfully taken into account*" considering the advanced stages of the proceedings, including the fact that the Commission had submitted its draft final decision to the national competition authorities in view of the Advisory Committee meeting before the Parties submitted their observations on the Letter of Facts. Third, the Parties submit that the Commission has failed to provide sufficient context for them to understand how the additional facts as presented in the

Letter of Facts will be relied on by the Commission. The Parties claim, therefore, to be unable to verify the accuracy and relevance of the information contained in the Letter of Fact and effectively make their views known for the purposes of exercising its rights of defense.[6]

(31) The Commission considers that the Parties' arguments, as presented in their response to the Letter of Facts, and summarised in recitals (29)-(30), are unfounded.

(32) First, as regards the time granted by the Commission, the Parties were granted from 23 January 2019 until 28 January 2019 (including the extension of time to respond, as requested by the Parties on 25 January 2019) to submit their observations on the additional facts laid down in the Letter of Facts, which covers exclusively documents and information either submitted to the Commission by the Parties themselves during the course of the investigation (in particular, updated bidding data submitted after the Commission issued its Statement of Objection, internal documents and responses to the Commission's requests for information), third party documents (including responses to the Commission's requests for information and minutes of conference calls between the Commission case team and third parties) to which the Parties had already been given access to in the course of the access to file, or documents which are publicly accessible online (for instance, legislation, press articles, reports by EU institutions or national governmental authorities). Therefore, the Parties were given sufficient time to take cognisance, provide their observations in their response and effectively make their views known.

(33) Second, as regards the Parties' doubts on whether the Commission would take into account their observations in response to the Letter of Facts, these have been fully and meaningfully taken into account by the Commission. The Commission also shared the Letter of Facts and the Parties' observations in response to the Letter of Facts with the national competition authorities ahead of the Advisory Committee meeting. The Commission also, at the start of the Advisory Committee meeting, summarised the Parties' observations and explained its analysis and conclusions in relation to the arguments presented by the Parties in their response to the Letter of Facts. The Commission has therefore ensured that the national competition authorities and the Advisory Committee had all the facts at hand before issuing its opinion.

(34) Third, as regards the alleged lack of sufficient context, the Letter of Facts includes, for each additional fact as laid down in the Letter of Facts, an explanation of the context in which each of those facts would potentially be relied on by the Commission in its final decision.

(35) During the Phase II investigation, the Notifying Party informally presented various options for proposed remedies. On 12 December 2018, the Notifying Party formally submitted commitments.

(36) On 17 December 2018, the Commission launched a market test on the commitments submitted on 12 December 2018.

(37) On 9 January 2019, a first modified version of the commitments was submitted by the Notifying Party.

(38) On 25 January 2019, a second modified version of those commitments was submitted by the Notifying Party.

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6 Parties' response to the Letter of Facts, paragraphs 1-7.

(39) The meeting with the Advisory Committee took place on 31 January 2019.

(40) The Final Report of the Hearing Officer was issued on 1 February 2019.

(41) This decision only addresses the markets in respect of which the Commission maintains its objections even in light of the Parties' response to the Statement of Objections. These markets are as follows:

(1) The market for high-speed trains, including the narrower market of very high-speed trains, in the EEA and on a worldwide basis (excluding China, Japan and South Korea), and

(2) The following mainline signalling markets: ETCS OBU projects, in the EEA; legacy OBU projects, in Belgium; standalone interlocking projects, in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK; ETCS ATP wayside overlay projects, in the EEA; ETCS ATP wayside re-signalling projects, in the EEA, and interlocking equipment, in the UK.

(42) The Commission does not maintain its objections raised in the Statement of Objections in respect of the markets other than those indicated in recital (24) for the reasons set out below, as communicated to the Parties during the proceedings:

(1) As regards rolling stock, the Commission does not maintain its objections for regional trains and steel wheel automated metros in the EEA in view of the Parties' response to the Statement of Objections and the evidence gathered during the second phase market investigation;

(2) As regards standalone interlocking projects, the Commission does not maintain its objections in the EEA as a whole, Norway and Denmark in view of the Notitying Party's response to the Statement of Objections and the evidence gathered during the Phase II investigation;

(3) As regards to ETCS ATP wayside overlay projects, the Commission does not maintain its objections in the following national markets: Belgium, Netherlands, Spain, UK, Austria, Germany, Slovenia, Bulgaria, Croatia, Czech Republic, Denmark, France, Greece, Hungary, Italy, Norway, Poland, Romania, Slovakia, Luxembourg, Estonia, Latvia, Lithuania, Finland, Sweden, and Portugal, given that it has concluded that the market is EEA-wide only;

(4) As regards ETCS ATP wayside re-signalling projects, the Commission does not maintain its objections in the following national markets: the Netherlands, Romania, Spain, Belgium, Croatia, Denmark, Greece, Hungary, Norway, UK, Austria, Germany, Slovenia, France, Italy, Poland, Slovakia, Bulgaria, Czech Republic, Luxembourg, Estonia, Latvia, Lithuania, Finland, Sweden, and Portugal, given that it has concluded that the market is EEA-wide only;

(5) As regards standalone OCS projects in the UK, the Commission does not maintain its objections in view of the Parties' response to the Statement of Objections and the evidence gathered during the second phase market investigation;

(6) As regards conglomerate concerns regarding the supply of ETCS OBUs for rolling stock, the Commission does not maintain its objections in view of the Parties' response to the Statement of Objections and the evidence gathered during the second phase market investigation;

(7) As regards urban signalling, the Commission does not maintain its objections for metro CBTC projects in the EEA as well as OCTYS and SACEM projects

in Paris in view of the commitments offered by the Notifying Party, which are capable of eliminating the Commission's concerns; and

(8) As regards rail electrification, the Commission does not maintain its objections for rail electrification projects in Greece and Romania in view of the Parties' response to the Statement of Objections and the evidence gathered during the second phase market investigation.

(43) In any event, with the exception of ETCS ATP wayside overlay projects and ETCS ATP wayside re-signalling projects (recital (42) paragraphs 3 and 4), the Commission leaves open the question whether the Transaction gives rise to a significant impediment of effective competition in the markets mentioned in recital (42). This is because the assessment relating to these markets would not affect the compatibility of the Transaction with the internal market having regard to the maintained objections and to the inadequacy of the commitments in relation to the markets identified in recital (24). As regards ETCS ATP wayside overlay projects and ETCS ATP wayside re-signalling projects (recital (42) paragraphs 3 and 4), the Commission's final view, as discussed in Section 6, is that these markets are EEA-wide only and the significant impediment of effective competition arises at the EEA level. This implies that objections relating to ETCS ATP wayside overlay projects and ETCS ATP wayside re-signalling projects in the context of national markets cannot be maintained.

5. HIGH AND VERY HIGH-SPEED ROLLING STOCK

5.1. Introduction

(44) Both Siemens and Alstom have a broad product portfolio covering essentially all types of rolling stock.

(45) Siemens divides its products in high-speed and intercity trains, commuter and regional trains, passenger coaches, metros, trams and light rail, automated people movers, and locomotives.[7] Alstom makes a distinction between mainline and urban trains. Among mainline trains, it includes its high-speed train, regional train and passenger and freight locomotive products.[8] It counts among urban trains its metro, tramway, tram-train and light rail vehicle ("LRV") and suburban train products.[9]

(46) The Parties' activities in the EEA overlap in high-speed, mainline (regional trains) and urban trains (trams/LRV, metro, people movers (usually used to or within airports)), as well as locomotives and passenger coaches. The Parties' activities overlap or create vertical links also in rolling stock components, spare parts and maintenance services. In the wider mobility market, the Parties are also active in the electric bus market with e-bus vehicles (Alstom) and e-bus charging solutions (Siemens and Alstom).

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7 See https://www.siemens.com/global/en/home/products/mobility/rail-solutions/rolling-stock.html

8 See http://www.alstom.com/products-services/product-catalogue/rail-systems/trains/rail-systems/main-line-trains/

9 See http://www.alstom.com/products-services/product-catalogue/urban-rolling-stock/

5.2. Market definition

5.2.1. Product market definition

5.2.1.1. The Notifying Party's views

(47) The Notifying Party considers that the relevant market should comprise single-deck trains capable of speeds equal to and above 250 km/h.

(A) Market segmentation according to maximum speed

(48) The Notifying Party considers that all high-speed trains constitute a single market, and should not be segmented on the basis of speed (high-speed and very high-speed).

(49) First, the Notifying Party considers that the appropriate speed threshold for "high-speed" trains can be defined as 250 km/h because (i) it is the threshold used by the Parties internally; (ii) it is also used in Directive 2008/57/EC of 17 July on the interoperability of the rail systems within the Community; (iii) trains running at those speeds are subject to specific technical requirements under the applicable technical specifications for interoperability ("TSIs"); and (iv) suppliers have separate platforms[10] for those trains.

(50) Second, the Notifying Party submits that all trains with speeds of 250 km/h and above should be considered high-speed, including rolling stock with a top speed reaching but not exceeding 250 km/h. This is justified, according to the Notifying Party, in light of specific TSI requirements applying from 250 km/h. Furthermore, the Parties note that suppliers market their 250 km/h platforms as high-speed trains.[11]

(51) Third, the Parties do not consider that very high-speed trains form a separate market. It considers that all high-speed trains constitute a single market regardless of their maximum operating speed because (i) there are no material regulatory requirement specific to certain speeds above 250 km/h; (ii) there is no industry-wide standard or speed threshold distinguishing "very high-speed" trains; (iii) there are no material technical barriers to developing very high-speed trains for manufacturers which already have a high-speed platform; (iv) speed requirements vary from customer to customer; and (v) trains capable of running at speeds above 300 km/h may compete in tenders for trains running on conventional tracks. In particular, it claims that most suppliers market their high-speed trains via a single platform, which covers both high and very high-speed requirements, and that suppliers that maintain different platforms have reasons for keeping separate lower high-speed platforms that are unrelated to the cost of adapting these platforms to very high-speeds.[12]

(B) Market segmentation according to the number of floors (single- vs. double-deck trainsets)

(52) In its Form CO, the Notifying Party explained that, although suppliers typically have different platforms for single and double-decker trains, customers rarely specify the number of floors in tender specifications and instead have capacity and comfort requirements. In this regard, although double-deckers offer more capacity, their comfort level is perceived to be lower due to the necessary use of staircases and longer boarding/off-boarding times. Therefore, the Notifying Party considered that

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10 A "platform" is a common modular train solution that can be customised to meet customers' tender specifications while removing the needs to design and manufacture entirely new products for each projects.

11 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 91-94.

12 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 95-100.

the relevant market comprised all high-speed rolling stock, regardless of the number of floors, because single- and double-deck trainsets compete against one another.[13]

(53) In the Parties' response to the Statement of Objections, the Parties defended the opposite view, arguing that single- and double-deckers constitute separate product markets. According to the Parties' response to the Statement of Objections, separate markets were warranted in light of (i) certain customers rejecting double-deck trains, (ii) the fact that Alstom is the sole supplier of double-deck trains and (iii) the "niche" nature of the double-deck high-speed train market.[14]

5.2.1.2. The Commission's decisional practice

(54) In previous cases, the Commission found that high-speed trains, defined as trains designed to travel long distances at speeds of more than 250 km/h on conventional tracks, constitute a separate product market. The Commission also noted that in many instances, dedicated tracks are used which allow for very high-speed travel (usually between 270 km/h and 300 km/h), but has not determined whether very high-speed trains should be distinguished from high-speed trains for the purposes of defining the relevant market.[15]

5.2.1.3. Results of the market investigation and the Commission's assessment

(A) Distinction between intercity and high-speed trains

(55) As explained in recital (54), the definition of the relevant market, as set in the Commission's prior decisions, covers "*trains designed to travel long distances at speeds of more than 250 km/h on conventional tracks*".[16] Under this definition, trains designed to travel at speeds up to and including 250 km/h should not be considered high-speed trains for purposes of the competitive assessment. In prior decisions, trains with a maximum speed of 250 km/h would therefore have fallen in the "intercity" rolling stock category, which comprised mainline trains capable of travel between 160 and 250 km/h.

(56) However, from a regulatory standpoint, rolling stock that reach a maximum design speed higher or equal to 250 km/h must meet specific TSI specifications, including items such as the type of end coupling, axle bearing condition monitoring, and emergency braking.[17] Accordingly, several high-speed train manufacturers have confirmed that the cut-off point distinguishing intercity from high-speed trains is (and includes) 250 km/h.[18]

(57) Therefore, on the basis of regulatory and technical differences, trains that reach a maximum design speed equal to or higher than 250 km/h should be considered high-speed trains.

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13 Form CO, Chapter B.2 – High Speed, paragraphs 30-31.

14 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 38-40.

15 Commission Decision in Case M.2139 – Bombardier/Adtranz (2001), recital 8; Commission Decision in Case M.5754 – Alstom Holdings/Areva T&D (2010), recital 23.

16 Commission Decision in Case M.2139 – Bombardier/Adtranz (2001), recital 8; Commission Decision in Case M.5754 – Alstom Holdings/Areva T&D (2010), recital 23.

17 These specifications are set out in Regulation 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock – locomotives and passenger rolling stock' subsystem of the rail system in the European Union (OJ L 356, 12.12.2014, pages 228-393).

18 See […] response to the Commission's request for information RFI 39, question 1.a (ID7576); [...]'s response to the Commission's request for information RFI 40, question 1.a (ID3367); [...]'s response to the Commission's request for information RFI 41, question 1.a (ID5796).

(58) This definition is also reflected in industry studies. The International Union of Railways ("UIC") thus "*considers a commercial speed of 250 km/h to be the principal criterion for the definition of* [high-speed rail]".[19]

(59) As a result, the high-speed rolling stock market includes trains capable of a maximum speed equal to or higher than 250 km/h. The Commission notes that all high-speed trains in operations in the EEA are self-propelled, as no locomotives are TSI-certified for high-speed operations.[20]

(B) Distinction between high and very high-speed trains

(60) The Commission's prior decisions have not adopted definitive conclusions in relation to a possible sub-segmentation of the relevant market distinguishing very high-speed trains. As explained in recital (50) the Notifying Party argues that distinguishing a separate market for very high-speed trains would not be warranted. However, several factors justify distinguishing rolling stock capable of speeds equal to or above 300 km/h.

(61) First, a large portion of respondents to the Phase I market investigation consider that very high-speed trains should be considered as a separate market due to (i) their operational speed capacity, which allows for travel at 300 km/h or above, (ii) the requirement that dedicated lines be used to operate them, and (iii) the fact that specific technical requirements and price differences exist compared to other types of trains.

(62) From the demand-side, major very high-speed lines operators such as […] and […] consider that very high-speed rolling stock constitute a separate relevant market in light of different conditions of exploitation making other rolling stock inapt for operations on tracks dedicated to very high-speeds. […] indicates that tracks allowing for very high-speed travel have specific characteristics (curvature radius, tilt, catenary construction, signalling, etc.) such that they only allow for the operation of very high-speed rolling stock.[21]

(63) Other customers, including […], […], […] and […] consider that very high-speed rolling stock need not be distinguished from high-speed rolling stock. Operators located […] consider that this distinction is not […]* because other type of rolling stock can operate on Italian very high-speed tracks. […], which is in the process of procuring very high-speed rolling stock, considers that the market encompasses both high and very high-speed trains, but acknowledges that specific challenges must be overcome to operate very high-speed trains.[22]

(64) Nevertheless, explanations put forward by […], […], […] and […] do not support the conclusion that high and very high-speed rolling stock are substitutable. On the contrary, most customers operating trains on dedicated tracks for very high-speed travel have indicated that, when determining the terms of tenders for procuring rolling stock, they specifically require trains capable of very high-speeds, such that

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* Should read: "warra,ted"

19 UIC (2018), "High-speed Rail, Fas Track to Sustainable Mobility", page 5 (https://uic.org/IMG/pdf/uic_high_speed_2018_ph08_web.pdf).

20 Form CO, Chapter B.5, paragraph 37.

21 […]'s response to Q2 – High-speed trains - Questionnaire to customers, question 5.1.1 (ID2766).

22 […], […] and […]'s responses to Q2 – High-speed trains - Questionnaire to customers, question 5.1 (respectively ID2359, ID2870 and ID2052).

trains not capable of very high-speeds would not constitute acceptable bids.[23] All customers operating rolling stock on very high-speed infrastructures specifically request trainsets capable of maximum speeds in the 300-360 km/h range.[24]

(65) This specific demand for very high-speed rolling stock results from a deliberate choice to invest in infrastructures that allow speeds that cannot be reached on conventional tracks. Specific technical requirements thus apply to infrastructure allowing for very high-speeds,[25] which entail higher costs than other type of rail. In a 2018 report on the European high-speed rail network (the "2018 ECA Report"), the European Court of Auditors has assessed that "[t]*he cost of a line increases proportionally with the design speed, and infrastructure capable of handling very high-speed operations (300 km/h or more) is particularly costly*".[26]

(66) Very high-speed lines are large public infrastructures, for which construction relies on major policy decisions and involve substantial public spending.[27] For example, the British Government foresaw investing more than GBP 16 billion in order to build HS2's very high-speed rail network.[28] Such projects specifically aim at reducing journey times for rail travel in response to the growth in demand for journeys on long-distance rail service.[29] They do so in order to achieve the long term economic benefits associated with improved and faster connectivity. As explained by the British Government, "[i]*f we are to build a new railway, there is a choice between a conventional railway and a new high speed line* [here allowing for operations at a maximum (very high) speed of 360 km/h]. *A new high speed line would cost 9% more than a conventional railway and, in certain respects, would have higher environmental costs, but the difference in price and the relatively higher environmental impact is more than outweighed by the economic benefits to be gained*

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23 […], […], […], […] and […]'s responses to Q2 – High-speed trains - Questionnaire to customers, question 5.3 (respectively ID2766, ID2438, ID2359, ID2503 and ID2870).

24 […], […] , […], […], […], […] and […]s responses to Q2 – High-speed trains - Questionnaire to customers, question 5.3.1.2 (respectively ID2766, ID2438, ID2359, ID2052, ID2332, ID2503 and ID2870).

25 See Commission Regulation (EU) No 1299/2014 of 18 November 2014 on the technical specifications for interoperability relating to the 'infrastructure' subsystem of the rail system in the European Union (OJ L 356, 12.12.2014), which sets out specific requirements applicable to rail infrastructure supporting different speeds including, specifically between 250 and 300 km/h and above 300 km/h (see also Annex II of Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community (Recast) *(*OJ L 191, 18.7.2008) defining the "*infrastructure*" subsystem as "*track, points, engineering structures (bridges, tunnels, etc.), associated station infrastructure (platforms, zones of access, including the needs of persons with reduced mobility, etc.), safety and protective equipment*"); [...]'s response to the Commission's request for information RFI 39, question 5 (ID7576).

26 2018 Special Report of the European Court of Auditors n° 19 entitled: *A European high-speed rail network: not a reality but an ineffective patchwork*, p. 8, at https://www.eca.europa.eu/Lists/ECADocuments/SR18_19/SR_HIGH_SPEED_RAIL_EN.pdf.

27 See, for example, the European Commission's 2011 Roadmap to a Single European Transport Area – Towards a Competitive and Resource-Efficient Transport System, available at: https://ec.europa.eu/transport/sites/transport/files/themes/strategies/doc/2011_white_paper/white-paper-illustrated-brochure_en.pdf, setting out support for tripling the length of the European high-speed rail network by 2030.

28 UK Government's policy paper entitled "The Strategic Case for HS2", October 2013, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/260525/strategic-case.pdf, p. 12.

29 UK Government's research and analysis paper entitled "The Economic Case for HS2", October 2013, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/365065/S_A_1_Economic_case_0.pdf, p. 31 and 32.

from radically reducing journey times and improving connectivity between our main cities".[30]

(67) Investments in very high-speed dedicated tracks are therefore incurred specifically in order to achieve service speeds that only very high-speed trains can achieve. This explains why, in the Phase I market investigation, all operators active on very high-speed rail networks have confirmed that they require very high-speed trains when procuring rolling stock. Therefore, from the demand-side, customers operating trains for services on very high-speed rail networks have a specific demand for very high-speed rolling stock.

(68) From the supply-side, most competitors ([…], […] and […]) consider that high and very high-speed rolling stock belong to separate relevant markets due to different performance and technical requirements.[31] [...] indicates that it uses the same platform (the "[…]") for all projects above 250 km/h.[32] However, it has only sold this platform for very high-speed operations and never for travel below 300 km/h in the EEA or in the rest of the world.[33]

(69) Second, contrary to the Notifying Party's assertion, 300 km/h is the operating speed commonly understood in the industry to distinguish high-speed from very high-speed rolling stock. That understanding is reflected in UNIFE's 2016 World Rail Market Study, which explains that "[t]*he operational speed limit separating very high speed trains from high speed trains is set at 300 kph. Trains operating at speed equal to or beyond this limit are considered very high speed (VHS)*".[34] Similarly, a UIC 2018 report on High Speed Rail defines "*high speed rail*" as starting at 250 km/h and also emphasises the specific technical characteristics applying to trains operating from 300 km/h (braking, acceleration), noting that "[t]*here are not many rolling stock manufacturers producing trainsets that can run at 300 km/h or more*".[35]

(70) Alstom's corporate communication also reflects the understanding that very high-speed trains travel at speeds starting from 300 km/h, repeatedly describing "*Alstom and Very High-speed*" by claiming that "*Alstom manufactured 50% of the trains that nowadays travel across the whole world at over 300 kph*".[36] Although the Parties

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30 UK Government's policy paper entitled "The Strategic Case for HS2", October 2013, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/260525/strategic-case.pdf, page 21.

31 Q1 – High-speed trains – Questionnaire to competitors, question QB.A.A.2.1.1.

32 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question QB.A.A.2.1.1 (ID4346).

33 For the reasons explained in Section 5.2.2, references to the rest of the world exclude China, Japan and South Korea.

34 UNIFE (2016), "World rail market study – forecast 2016-2021", Form CO, Annex B.1 – C.II (3), page 15.

35 UIC, 2018, *High-speed Rail – Fast Track to Sustainable Mobility*, pages 47, 52 and 68, available at https://uic.org/IMG/pdf/uic_high_speed_2018_ph08_web.pdf.

36 See Alstom press releases describing Alstom's very high-speed rolling stock as trains travelling at speeds over 300 km/h such as, for example, 8 June 2010 press release entitled: *Alstom expands its Very High-speed portfolio adding a new train platform*, available at https://www.alstom.com/press-releases-news/2010/6/Alstom-expands-its-Very-High-Speed-portfolio-adding-a-new-train-platform-20100608; 30 November 2011 press release entitled: *With 1,100 trains sold worldwide and the AGV due to enter service in the near future, Alstom builds on its leading position in high-speed and very high-speed rail transport*, available at https://www.alstom.com/press-releases-news/2011/11/press-releases-new-Pendolino; 30 November 2011 press release entitled: *Alstom builds on its leading position in high-speed and very high-speed rail transport*, available at https://www.alstom.com/press-releases-news/2011/11/alstom-builds-on-its-leading-position-high-speed-and-very-high-speed-rail-transport.

argue that such press releases merely constitute "*aspirational market statements*",[37] the statements contained therein do illustrate Alstom's public description of its own activities and how the company defines very high-speeds.

(71) Finally, this approach is also reflected in other independent evaluations of the market. Thus, in the 2018 ECA Report, "*very high-speed services*" are defined as those "*operating at 300 km/h or more*".[38]

(72) Third, respondents to the market investigation have also confirmed that 300 km/h constitutes the threshold that distinguishes "high" from "very high" speeds.

(73) Although, as the Notifying Party argues, suppliers like Bombardier or CAF market a platform which they can manufacture for various speed requirements, other suppliers, like Siemens, Alstom and Talgo, have different platforms for high and very high-speeds. The manner in which rolling stock manufacturers choose to organise their product lines cannot, therefore, be determinative for the purpose of defining the relevant market.

(74) Furthermore, rolling stock sales in the EEA and the rest of the world (excluding China, Japan and South Korea) in at least the past 10 years have either been sales of trains travelling at a maximum speed of 250 km/h or sales of trains reaching 300 km/h or more.[39] Although, in theory, all trains with a maximum speed ranging from 250 km/h to 299 km/h are considered to fall into the "high-speed" category, in practice there have been no trainsets sold with maximum speeds above 250 and below 300 km/h. This suggests that there is no continuous chain of substitutes between high and very high-speed rolling stock. On the contrary, the absence of any sales of trains with a maximum speed above 250 and below 300 km/h shows that high and very high-speed rolling stock belong to separate product markets.

(75) Fourth, there exists an express specific demand for very high-speed rolling stock. That demand is expressed in tender specifications requiring trains capable of being operated at 300 km/h or above. Accordingly, and contrary to the Notifying Party's argument, high-speed trains cannot compete with very high-speed trains. The majority of competitors who expressed an opinion thus consider that suppliers cannot competitively bid for a high-speed tender (i.e., for rolling stock running solely on conventional tracks) by offering a very high-speed train and vice-versa.[40]

(76) Although there are examples of very high-speed platforms having been sold to operate on high-speed lines, these sales were made in anticipation of the completion of the installation of very high-speed infrastructures allowing for very high-speed operations. […].[41] It follows that, in the case of procurement decisions aimed at operating rolling stock to be reconfigured to very high-speeds in anticipation of the availability of the appropriate rail infrastructure, rolling stock incapable of reaching 300 km/h does not exercise a competitive constraint on very high-speed rolling stock.

(77) Fifth, the results of the market investigation show that, in order to achieve speeds equal to or above 300 km/h, trains require higher performance and technical developments, and abide by stricter safety requirements.

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37 Parties' response to the Letter of Facts, paragraph 37.

38 2018 Special Report of the European Court of Auditors n° 19, footnote 27.

39 Notifying Party's CPL.

40 Q1 – High-speed trains – Questionnaire to competitors, questions QB.A.A.2.3.1 and B.A.A.2.3.2.

41 Form CO, Chapter B.2, paragraph 27.

(78) Indeed, trains capable of running at speeds equal or higher than 300 km/h have to meet specific regulatory requirements.[42] The Parties argue that TSIs do not give *prominence* to the 300 km/h threshold.[43] This is correct, in the sense that the applicable regulations define specific requirements for various speed levels. Nonetheless, the Parties do list several TSIs that contain specific rules applicable from 300 km/h and above.[44] These rules contain specific performance levels to be met by trains travelling at or above 300 km/h, for example in relation to the design of traction systems or emergency braking. Although the relevant regulations do not expressly indicate the 300 km/h thresholds as more "prominent" than others, given that it appears within lists defining different values corresponding to various speed levels, those regulations set out certain requirements applying specifically to rolling stock travelling at 300 km/h.

(79) Furthermore, as explained by [...] in the course of the Phase II market investigation, 300 km/h-specific regulatory requirements do entail particularly demanding technical features. Thus, for example, in relation to the design of traction systems, [...] indicated that, as a result of specific regulatory requirements, there was a "*huge reduction of the adhesion coefficient to be considered in the design of the traction system and architecture for speeds of 300 km/h or higher*".[45] Similarly, [...] explained that "*the requirements for brakes at these speeds over 300 km/h require much higher performance in terms of thermal behaviour of the materials both for the pads and the discs. The most advanced technology needs to be used to enable stopping the train from such very high speeds*".[46] The Parties have not contradicted these representations of the challenges posed by the applicable rules. Therefore, the existence of specific requirements applicable to rolling stock travelling at 300 km/h or more lends support to the results of the market investigation.

(80) Sixth, the majority of competitors indicate that existing high-speed platforms cannot be easily adapted to run at very high-speeds. They consider that such adaptation would require significant time and cost, although estimates vary between respondents. All competitors also consider that such adaptation would require wide ranging technical modifications and obtaining a new regulatory authorisation.[47]

(81) In practice, no supplier has ever attempted such adaptation as they do not consider that such upgrade would be economically viable. As [...] explains, "*adapting a HS train to run at very high-speeds is not feasible in terms of time and costs as the complexity of that adaptation is such that it implies the development of a new train*".[48]

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42 See [...]'s response to the Commission's request for information RFI 39, question 5.b (ID7576) and Regulation 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union (OJ L 356, 12.12.2014, pages 228-393).

43 Parties' response to the Statement of Objections, Chapter B.2, paragraph 20.

44 See Regulation 1302/2014 of 18 November 2014 concerning a technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union (OJ L 356, 12.12.2014), pages 228-393 in relation to traction system design (4.2.6.2.1) and emergency braking (4.2.4.5.2).

45 [...]'s response to the Commission's request for information RFI 39, question 5.b (ID7576).

46 Idem.

47 Q1 – High-speed trains – Questionnaire to competitors, questions QB.A.A.2.3.1 and B.A.A.2.3.2.

48 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question QB.A.A.3.1.1 (ID2515).

(82) In contrast, the Notifying Party claims that such an upgrade would not involve particular technological difficulty. As evidence, the Parties explain that Siemens supplied the […].[49] However, the Velaro is Siemens' very high-speed platform and therefore does not constitute an "upgrade" of a trainset previously incapable of reaching very high-speeds. On the contrary, the fact that a rail operator found it more economic to operate a very high-speed platform at lower speeds in order to be later reconfigured to reach very high-speed confirms the results of the market investigation which suggest that upgrading a high-speed platform to very high-speeds is not viable.

(83) […].The Pendolino was initially developed in the 1970s as a platform able to tilt into curves in order to reach higher speeds than non-tilting trains. It has since been sold as a high-speed platform, capable of reaching a maximum speed of 250 km/h.

(84) […].[50][…].

(85) […].[51][…].[52]

(86) […].[53][…].[54][…].[55]

(87) […].[56][…].[57][…].

(88) As a result, both supply and demand-side considerations, confirmed sales and technical requirements show that high-speed rolling stock is not substitutable for very high-speed rolling stock. Prior examples of substitution have involved very high-speed rolling stock used for operations at speeds below 300 km/h, however with a view to be operated to very high-speeds upon the construction of adequate infrastructure.

(89) However, the Commission considers that it is not necessary to conclude on the precise delineation of the relevant product market for the assessment of the effects of the Transaction as it raises competition issues under both conceivable definitions.[58] The Transaction's competitive effects will therefore be examined on the overall market for high and very high-speed trains and on the separate market for very high-speed trains.

(C) Lack of distinction in relation to traction system or architecture

(90) The results of the market investigation confirm that no market segmentations on the basis of traction system or architecture is warranted.

(91) With respect to traction systems, the market investigation has confirmed that there exist two main concepts, called "distributed traction" (which refers to traction

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49 Parties' response to the Statement of Objections, Chapter B.2, paragraph 27.

50 […].

51 Parties' 10 December 2018 presentation entitled "Pendolino Remedy – Technical Meeting", pages 3 and 29 (ID8807).

52 Id., page 13 (ID8807).

53 Id., page 19 (ID8807).

54 Id., page 18 (ID8807).

55 Id., page 25 (ID8807).

56 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 27-28.

57 […].

58 The sub-segmentation for high-speed trains is not be examined because the Transaction does not raise competition issues in relation to that possible product market, as explained in further details in recitals (397) to (405).

equipment distributed in several parts of the trainset) and "concentrated traction" (which refers to traction equipment located in a power cars at each end of the trainset). However, the Notifying Party does not suggest that the relevant market should be segmented on that basis.

(92) Similarly, competitors have recognised that traction systems constitute a differentiating factor when competing in tenders.[59] However, competitors have indicated that both types of traction compete against one another in tenders and the main suppliers rely on one system or the other.[60]

(93) With respect to architecture, there exist two main types of architecture, called "articulated" and "non-articulated" (or "conventional"). An articulated architecture allows for shorter and lighter trainsets, offering better comfort and reduced energy consumption, whereas non-articulated trainsets allow for more operation flexibility (because cars can be separated) and increased capacity. However, the Notifying Party does not suggest that the relevant market should be segmented on that basis.

(94) The results of the market investigation confirm the Notifying Party's position and do not support further segmentation of the relevant market. Competitors consider that the Parties' product offering compete closely, despite having different architectures.[61] Customers concur, confirming that, despite different traction and architecture choices, the main suppliers' "*product offerings can be considered to be broadly comparable across the market in terms of achievable performance*".[62]

(95) As a result, no segmentation on the basis of the type of traction or train architecture is warranted for the purpose of defining the relevant market.

(D) Lack of distinction in relation to the number of floors

(96) Alstom is the sole supplier of double-deck very high-speed rolling stock, a product initially developed for SNCF.[63] According to the Parties' response to the Statement of Objections, double-deckers constitute a separate, "niche" market, because they are sometimes explicitly or implicitly rejected or required in tender specifications as in the 2013 TCDD tender (which required a single-deck trainset), the ongoing HS2 tender (which implicitly prevents offering a double-decker) and the 2016 SNCF Innovation Partnership tender (which implicitly required a double-deck trainset).

(97) Alstom's product range includes both single- and double-deckers and Alstom competes in tenders with both solutions. From a technical point of view, Alstom's double-deck platform increases each car's seating capacity in a platform using concentrated traction and an articulated architecture. The double-deck structure thus allows Alstom's platform to compensate capacity limitations inherent in articulated trainsets with concentrated traction, as indicated in recital (92) above.

(98) There are few examples of explicit or implicit restrictions in relation to double-deckers. However, in most calls for tenders, there is no specific demand for single- or

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59 For instance, distribution traction allows for lower energy consumption, more capacity and better acceleration, whereas concentration traction is a less expensive solution and allows for better passenger comfort. See e.g. [...]'s response to the Commission's request for information RFI 41, question 3 (ID5796).

60 [...]'s response to the Commission's request for information RFI 41, questions 4 and 5 (ID5796), [...]'s response to the Commission's request for information RFI 40, questions 5 and 6 (ID3367), [...]'s response to the Commission's request for information RFI 39, questions 7 and 8 (ID7576).

61 Q1 – High-speed Trains – Questionnaire to competitors, questions C.8.1, C.8.1.1, C.8.2 and C.8.2.1.

62 […]s response to Q2 – High-speed Trains – Questionnaire to customers, question 21.1 (ID2870).

63 Form CO, Chapter B.2, paragraph 31.

double-deckers. The Notifying Party explained in its Form CO that "*customers will rarely include specific criterion for single or double-deckers in their tenders but will instead have capacity and comfort requirements*".[64] The Notifying Party underlined that the differences between single- and double-deckers are not fundamental and mainly relate to seating capacity and passenger comfort.[65]

(99) In the 2008-2018 period, […]. Siemens' internal documents also show […][66][…].

(100) In response to the Letter of Facts, the Parties claim that […].[67][…]. Moreover, the Parties' claim directly contradicts the statement in the Form CO that "*customers will rarely include specific criterion for single or double-deckers in their tenders but will instead have capacity and comfort requirements*".[68]

(101) The Parties' response to the Letter of Facts also supports the indication, in the Form CO, that double-deckers do compete with single-deckers, and exercise particularly significant competitive pressure in tenders with important capacity requirements. […].[69]

(102) The existence of a close competitive relationship, and therefore substitution, between Alstom's double-deck platform and Talgo's single-deck platform is also supported by Alstom's internal documents. […][70][…].

(103) The Parties further recognise in the response to the Letter of Facts that the 2016 Renfe's capacity requirements and technical features "[…]".[71] Therefore, the Parties' response to the Letter of Facts shows that single- and double-decker platforms are substitutable and compete particularly closely in tenders with high capacity requirements. This confirms the view in the Form CO that technical differences between single- and double-deckers are limited and do not have a bearing on the degree of substitutability.

(104) As a result of the above analysis, no segmentation on the basis of the number of floors is warranted for the purpose of defining the relevant market.

5.2.1.4. Conclusion

(105) For the reasons set out in Section 5.2.1 and in light of the results of the investigation, the Commission considers that trains capable of speeds equal to and above 250 km/h ("high and very high-speed trains") should be considered as a separate product market, distinct from intercity trains which are incapable of delivering the same service speed.

(106) In light of the considerations laid out above in recitals (60) to (81), the Commission also considers that the market could be further sub-segmented on the basis of speed, thus distinguishing trains capable of speeds equal to or above 300 km/h ("very high-speed trains") as a narrower relevant market. However, the question whether the market for high and very high-speed trains should be further segmented on this basis can be left open for the purposes of this Decision as the Transaction raises competition concerns on both conceivable market definitions. The Commission will

64 Form CO, Chapter B.2, paragraph 30.
65 Idem.
66 […].
67 Parties' response to the Letter of Facts, paragraph 45 and footnote 49.
68 Form CO, Chapter B.2, paragraph 30.
69 Parties' response to the Letter of Facts, paragraph 45.
70 […].
71 Parties' response to the Letter of Facts, paragraph 42. See also Form CO, Chapter B.2, paragraph 69.

therefore carry out its competitive assessment on the overall market for high and very high-speed trains and on the narrower market for very high-speed trains.

5.2.2. Geographic market definition

5.2.2.1. The Notifying Party's views

(107) In respect of the geographic market for high-speed rolling stock, the Notifying Party considers that the market should be considered worldwide. The Parties describe the market as (i) being characterised by large and infrequent orders which attract a group of suppliers active globally, (ii) with most future demand emanating from countries outside of the EEA (noting that 56% of all high-speed lines under construction are in the rest of the world).[72]

(108) However, the Notifying Party considers that the relevant market should exclude China, Japan and Korea, due to the following insuperable barriers to entry into those territories:[73]

(1) Chinese customers require local partnerships with Chinese companies as a prerequisite for their tenders. Chinese law, however, does not allow foreign undertakings to be in control of such joint ventures. According to the Notifying Party, "*absent control, partnering with local players is not commercially attractive for foreign suppliers*".[74] In addition, a State-delivered licence is required to participate in rolling stock tenders. […]. To the best of the Parties' knowledge, Bombardier is currently the licensed foreign supplier operating in the Chinese market through a joint venture with CRRC in which it is a non-controlling stakeholder;

(1) In Japan, the situation is similar. The Notifying Party notes that foreign suppliers are excluded from the Japanese market and represent approximately 0.25% of the overall Japanese rolling stock market. According to the Notifying Party, "[t]*he existence of firmly established domestic suppliers, which have provided the Japanese Shinkansen in consortia for decades, and political resistance including from the incumbent rail operators, justify excluding Japan from the worldwide market*";[75]

(2) In Korea, the Notifying Party observes the "*limited involvement from foreign suppliers*", with imports representing a small part of the Korean rolling stock market. Furthermore, according to the Notifying Party, "[d]*espite initial high speed trains being introduced by Alstom, the existence of a firmly established domestic supplier, Hyundai Rotem, and political resistance including from the incumbent rail operator justify excluding Korea from the worldwide market and political resistance to foreign suppliers justify excluding South Korea from the worldwide market*".[76]

(109) […].[77]

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72 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 20.
73 Form CO, Chapter B.2, paragraphs 36 et seq.
74 Form CO, Chapter B.2, paragraph 37.
75 Form CO, Chapter B.2, paragraph 37.
76 Form CO, Chapter B.2, paragraph 37.
77 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 22.

5.2.2.2. The Commission's decisional practice

(110) In previous decisions, the Commission did not conclude on the geographic scope of the market for high-speed trains. In *Bombardier/ADtranz*, despite the existence of a trend towards wider than national markets, the Commission did not reach a final view on the market's geographic scope given the significant costs incurred by rolling stock suppliers due to the lack of harmonisation.[78]

(111) In *Alstom Holdings/Areva T&D*, the Commission noted that the main rolling stock suppliers' EEA-wide offering, EU rules and inter-Member States rail projects supported the view that the market may be EEA-wide. Nonetheless, according to the results of the market investigation conducted in that case, the market may be worldwide, due to the fact that major suppliers operate on that basis and compete for infrequent large orders. However, the Commission did not reach a final conclusion on market definition.[79]

5.2.2.3. Results of the market investigation and the Commission's assessment

(A) EEA-wide dimension

(112) The majority of respondents to the market investigation consider that the relevant markets for high and very high-speed trains is EEA-wide, in light of (i) different and more stringent technical requirements distinguishing the EEA from the rest of the world, (ii) the participation of a different set of competitors when bidding in calls for tenders within the EEA compared to the rest of the world and (iii) price differences due to additional costs associated with EEA-specific standards.

(113) First, in relation to market size and technical standards, the vast majority of customers consider that the relevant market is EEA-wide due to specific technical requirements.[80] Among suppliers, [...], […] and […] consider that the market is worldwide[81] but recognise nevertheless that high and very high-speed rolling stock operated solely outside of the EEA cannot be operated within the EEA absent major adaptation (requiring significant redesign costs and time).[82] Contrary to the Notifying Party's argument, EEA-specific technical requirements do constitute a barrier to entry. […] thus indicated that adapting […] high-speed platforms to the EEA would require significant costs and time in design changes and TSI certification,[83] and that it is overall very difficult to adapt a high-speed platform operated outside of the EEA to customers located within the EEA.[84]

(114) Second, the majority of competitors report that they face a different set of competitors when bidding for high and very high-speed contracts within the EEA and in the rest of the world. They indicate that all major global high-speed rolling stock suppliers (most of which are EEA-based companies) are present in the EEA, except for Asian suppliers which are absent from the EEA.[85] The Parties

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78 Commission Decision in Case M.2139 – Bombardier/Adtranz (2001), recital 24.

79 Commission Decision in Case M.5754 – Alstom Holdings/Areva T&D (2010), recitals 38-39.

80 Q2 – High-speed trains – Questionnaire to customers, question 9.

81 Q1 – High-speed trains – Questionnaire to competitors, question B.A.A.1.

82 Q1 – High-speed trains – Questionnaire to competitors, questions QB.B.A.1 and B.B.A.2.

83 […]'s response to Q1 – High-speed trains – Questionnaire to competitors, questions B.B.A.7 and B.B.A.8.1 (ID2830).

84 Idem, question B.B.A.9.2.

85 Q1 – High-speed trains – Questionnaire to competitors, question QB.B.A.4. Although Hitachi-Ansaldo is active in Europe, it cannot be characterised as an "Asian supplier" as AnsaldoBreda was fully integrated as Hitachi Rail Italy, a manufacturer with production located in Italy.

acknowledge that the absence of Asian suppliers from the EEA can be explained by these players' focus on their home markets and lack of interest in the EEA-market due to existing significant competition.[86]

(115) Several respondents have also indicated that national rail operators in certain EEA Member States tend to procure high-speed rolling stock from domestic suppliers, which negatively impacts non-domestic suppliers' probability of winning tenders. Nevertheless, the results of the market investigation show that EEA-based suppliers do compete on an EEA-basis despite national specificities.[87]

(116) Third, all competitors who expressed an opinion explained that prices for the same type of high-speed rolling stock differ significantly between customers located in the EEA and those located in the rest of the world, due to additional costs associated with EEA-specific standards.[88]

(117) Fourth, the majority of respondents confirm that TSIs have contributed to harmonising authorisation requirements within the EEA, although most respondents also note the persistence of different national authorisation standards.[89]

(118) In light of these elements, the relevant markets for high and very high-speed rolling stock can be defined as at least EEA-wide.

(B) Switzerland

(119) The Notifying Party argues that even if the Commission were to define an EEA-wide market, Switzerland should be included due to (i) the similarity in competitors bidding for contracts, (ii) geographic vicinity and interconnections, and (iii) the existence of similar technical rules.[90]

(120) First, as a preliminary point, it is unclear whether any railways or trains operating in Switzerland can be qualified as "high-speed" under the definition retained in the present Decision. […], explained that "[…]".[91] […].[92]

(121) Similarly, the Swiss Federal Railways ("SBB") explains that "[d]*ue to Switzerland's closely meshed network and the topography of the country it is simply not economical to implement the European standard with speeds of over 230 km/h on the Swiss network and this will not be a topic for discussion in the near future. The high-speed standard for Switzerland lies between 160 and 200 km/h*".[93]

(122) SBB nevertheless purchased 250 km/h-capable rolling stock in several instances in the past and can therefore qualify as a "high-speed" rolling stock customer.

(123) Second, speed limitations notwithstanding, other rolling stock suppliers consider that the relevant geographic market for high-speed rolling stock should encompass the EEA and Switzerland. Thus, [...] considers that "*Switzerland is following the same*

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86 Parties' response to the Statement of Objections, Chapter B.2, paragraph 54.

87 Q1 – High-speed trains – Questionnaire to competitors, questions QB.B.A.1.1, QB.B.A.4.1 and QB.B.A.5.1.

88 Q1 – High-speed trains – Questionnaire to competitors, question QB.B.A.3.

89 Q1 – High-speed trains – Questionnaire to competitors, question QB.B.A.5; Q2 – High-speed trains - Questionnaire to customers, question 14.

90 Notifying Party's response to the Commission's request for information RFI 55, question 3.

91 [...]'s e-mail response of 27 June 2018, *[...]* (ID4171).

92 [...]'s response to the Commission's request for information RFI 38, question 2 (ID4372).

93 See https://company.sbb.ch/en/the-company/projects/national-projects/hsr.html

norms as all other countries in Europe. For example, high-speed rolling stock authorizations are organised at the EEA level and Switzerland".[94]

(124) Third, with respect to tender participation, the Notifying Party correctly indicates that a number of the main European high-speed rolling stock suppliers, including the Parties along Talgo and Stadler, competed for the 2014 SBB tender. Therefore, no barriers to entry impeded the ability of EEA-based competitors to enter the Swiss market.

(125) Fourth, Switzerland is interconnected to the Union and it is involved in EU railway policies and rulemaking. It is part of a group of representatives of the Heads of State or Government established to assist the European Council in implementing trans-European networks in transport and energy. In 1992, the Union and Switzerland entered into an agreement to construct railway infrastructure connected to the EU network.[95] Finally, the Commission has recognised that Switzerland applies rules equivalent to those in the EU in the areas of railway interoperability and railway safety and has allowed Switzerland to participate in the EU Agency for Railways ("ERA").[96]

(126) In light of (i) the results of the market investigation, (ii) Switzerland's adoption of equivalent rules and participation in the EU railway regulatory framework and (iii) the absence of barriers to entry for EEA-based suppliers, the impact of the Transaction on the EEA market will include Switzerland.

(C) The rest of the world

(127) Respondents to the Phase I market investigation have confirmed that the market for high and very high-speed rolling stock is characterised by infrequent and large orders. Sales data provided by the Notifying Party shows that, […],[97] EEA-based suppliers and Bombardier are active in the rest of the world as well, which confirms the Notifying Party's argument that all major suppliers operate on a worldwide basis.

(128) In addition, as noted by the Parties, demand outside of the EEA is expected to grow significantly in the next 5 to 8 years. As explained in recitals (281) to (290) below, due to the development of high and very high-speed rail infrastructures outside of the EEA, […]. As other regions develop their infrastructures, the Notifying Party notes that certain non-EEA countries appear to adopt EU regulatory standards in their own calls for tenders, demanding TSI-compliant rolling stock.

(129) When considering the worldwide market, the market investigation has confirmed the Notifying Party's view that insurmountable barriers impede the entry of foreign suppliers in China, Japan and South Korea:[98]

(1) in China, barriers to entry include (i) rules under which only Chinese majority-owned companies, holding the full ownership of intellectual property ("IP") rights required for the project's execution, are allowed to bid for rolling stock

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94 [...]'s response to the Commission's request for information RFI 58, question 12 (ID6072).

95 Agreement between the EC and the Swiss Confederation on the carriage of goods by road and rail (OJ L 373, 21.12.1992, pages 30-46).

96 See: http://europa.eu/rapid/press-release_MEX-17-4667_en.htm.

97 Although Hyundai-Rotem and Kawasaki expressed an interest in the 2016 Amtrak call for tenders in the US, neither company submitted a bid. All bidding activity by Asian suppliers has been limited to Asia, except for CRRC's bid in the 2013 TCDD call for tenders.

98 See, e.g., Form CO, Chapter B.2, paragraphs 37 et seq. and [...]'s response to the Commission's request for information RFI 39, question 10 (ID7576).

contracts; (ii) the direct award of contracts to domestic suppliers; (iii) the requirement that companies be licensed to bid for contracts, under no pre-defined critera, effectively resulting in licenses only granted to Chinese-controlled company; (iv) public procurement rules requiring local production;

(2) in Japan, barriers to entry include (i) a clause allowing Japan to circumvent the WTO's Agreement on Government Procurement (which Japan joined in 1994) in the rail sector for reasons of "operational safety", which has been used to prevent foreign firms from bidding in procurement contracts and avoid the publication of open tenders; (ii) limited open procurement; (iii) discriminatory and complex procurement rules *de facto* benefiting local companies;

(3) in South Korea, barriers to entry include (i) tendering procedures tailor-made for the domestic industry and lacking transparency for foreign suppliers; (ii) government backing of Hyundai-Rotem; (iii) requirements in relation to licensing and technology transfers; (iv) the express exclusion of EU suppliers from tenders until 2015.

(130) As a result, with the exception of Bombardier's participation in a CRRC-controlled joint venture in China and Hitachi-Ansaldo in Japan, no EEA-based supplier has sold high-speed trains in China, Japan or South Korea at least over the past 10 years. In particular, suppliers have confirmed being unable to sell rolling stock independently in China, explaining that all procurement is reserved to CRRC.

(131) Competitors have indicated that certain of these barriers may, in time, be relaxed in Japan, as a result of the 17 June 2018 EU-Japan Economic Partnership Agreement, and in South Korea, as a result of the end of the express ban on EEA-based suppliers since 2016. Nonetheless, suppliers unanimously consider that the market situation is not expected to change in the foreseeable future.[99]

(132) No country other than China, Japan and South Korea has been identified in the market investigation as presenting insurmountable barriers to entry.

5.2.2.4. Conclusion

(133) For the reasons set out in Section 5.2.2 and in light of the results of the investigation, the Commission considers that the relevant geographic markets for both high and very high-speed trains are at least EEA-wide and include Switzerland. In light of the worldwide activities of non-Asian suppliers, the Commission cannot exclude that the relevant markets are broader and cover the rest of the world, excluding China,[100] South Korea and Japan. In any event, the Transaction will cause a significant impediment to effective competition regardless of the precise geographic market definition.

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99 See, e.g., [...]'s response to the Commission's request for information RFI 38, question 7 (ID4372).

100 In the present Decision, China includes Hong Kong, a Special Administrative Region of the People's Republic of China. As indicated in the Notifying Party's CPL, in relation to the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link, despite initially requiring very high-speed rolling stock meeting both EU standards and regulations established by the Chinese National Railway Administration, Hong Kong's Mass Transit Railway (MTR) decided to request an existing and proven product / platform from China (albeit non-compliant with EU standards) thus only allowing Chinese suppliers to bid for the contract.

5.3. Competitive assessment

5.3.1. Framework for the competitive assessment

5.3.1.1. General principles

(134) Under Article 2(2) and (3) of the Merger Regulation, the Commission must assess whether a proposed concentration would significantly impede effective competition in the internal market or in a substantial part of it, in particular through the creation or strengthening of a dominant position.

(135) In this respect, a merger may entail horizontal and/or non-horizontal effects. Non-horizontal effects are those deriving from a concentration where the undertakings concerned are active in different relevant markets.

(136) As regards the assessment of horizontal overlaps, the Commission guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings[101] (the "Horizontal Merger Guidelines") distinguish between two main ways in which mergers between actual or potential competitors on the same relevant market may significantly impede effective competition, namely non-coordinated and coordinated effects. Non-coordinated effects may significantly impede effective competition by eliminating important competitive constraints on one or more firms, which consequently would have increased market power, without resorting to coordinated behaviour. In that regard, the Horizontal Merger Guidelines consider not only the direct loss of competition between the merging firms, but also the reduction in competitive pressure on non-merging firms in the same market that could be brought about by the merger.

(137) The Horizontal Merger Guidelines list a number of factors which may influence whether or not significant non-coordinated effects are likely to result from a merger, such as the large market shares of the merging firms, the fact that the merging firms are close competitors, the limited possibilities for customers to switch suppliers, or the fact that the merger would eliminate an important competitive force. Not all of these factors indicated in the Horizontal Merger Guidelines as relevant to the analysis of non-coordinated effects need to be present to make significant non-coordinated effects likely. In addition, the list of factors is not exhaustive.

(138) The extent of closeness of competition between the merging parties is one of the factors relevant for the analysis of the likelihood of significant non-coordinated effects of a merger.[102] The Horizontal Merger Guidelines clearly provide for closeness of competition to be interpreted as a matter of degree in the assessment. According to the Horizontal Merger Guidelines, "*the higher the degree of substitutability between the merging firms' products, the more likely it is that the merging firms will raise prices significantly*".[103]

(139) The same concept is set out in paragraph 17 of the Horizontal Merger Guidelines, according to which a merger may raise competition concerns based on "*the extent to which the products of the merging parties are close substitutes*". Both wordings set

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101 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (OJ C 31, 05.02.2004, pages 5-18), in particular paragraphs 4 and 22.

102 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, paragraphs 26 and 28-30.

103 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, paragraph 28.

out a relationship between the degree of substitutability of the products of the merging parties and the likelihood and seriousness of competition concerns raised by the proposed merger.

5.3.1.2. Calculation of market shares and analysis of bidding data

(140) In prior cases involving industries where orders are infrequent, the Commission has considered that market shares should be analysed over several years.[104] At the same time, as stated in paragraph 15 of the Horizontal Merger Guidelines, "*changes in historic market shares may provide useful information about the competitive process and the likely future importance of the various competitors, for instance by indicating whether firms have been gaining or losing market shares*".

(141) In the present case, the Parties and their competitors' market shares have been examined over a 10 to 11 years (2008-2018) period.[105] This both limits the distorting impact of infrequent tendering for projects and enables the analysis of historical changes or permanence of competitive positions over a meaningful period of time.

(142) The Notifying Party argues that historical market shares are not determinative for the competitive assessment because calculating market shares on the basis of sales over the 2008-2018 period overstates the Parties' position and ignores recent developments more predictive of post-merger market dynamics. Among these recent developments, the Parties claim that their market share in high and very high-speed trains has diminished and that their competitors' position, most notably Stadler's, has increased.[106] The Parties also observe that tender participation has increased in the past few years.[107] The Parties therefore argue that the time period of the assessment of market shares should be shorter and focus on the last 5 years in order to reflect the more recent development of competition in high and very high-speed rolling stock.

(143) The Commission therefore conducts its assessment on the basis of market shares calculated over the 2008-2018 and 2013-2018 periods, respectively.

(144) The Parties' and their competitors' positions, as well as the extent of rivalry between different suppliers and the loss of competition caused by the Transaction are also assessed using bidding data provided by the Notifying Party.[108]

(145) The Notifying Party provided a Consolidated Project List ("CPL") that consists of a comprehensive list of tender procedures that took place, to the best of the Parties' knowledge, over the period 2007-2018.[109] The CPL includes both tenders in which either Siemens or Alstom participated, as well as the tenders in which neither participated. It provides details of the different tenders, lists other bidders and winners. In the case of awards to consortia, it allocates the related order intakes to the different consortia members.

(146) The Commission performed its bidding analysis on the basis of so-called "contestable" (competitive) tenders. The information regarding the contestability

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104 See Commission decision in Case M.7278 – GE/Alstom (2015), Annex 1 - The Commission's Economic Analysis of Bidding Data, recital 189, page 55.

105 The review of the present Transaction spanned over the year 2018. In order to conduct its assessment using the most up-to-date data, reflecting the most recent market dynamics, the Commission used market share and bidding data covering 2018 in addition to the prior 10 years.

106 Parties' response to the Article 6(1)(c) Decision, High Speed Rolling Stock, paragraphs 103-109.

107 Parties' response to the Article 6(1)(c) Decision, High Speed Rolling Stock, paragraphs 110-123.

108 For the details of the Commission's analysis of bidding data, see Annex 1 to the Decision.

109 Data relating to year 2007 are however not consistently available across all markets.

status of each tender was provided by the Notifying Party. The Notifying Party defined a tender as contestable if, to the best of its knowledge, the procedure was open to competition.[110] Other awards were designated as "non-contestable" and, unless indicated otherwise, were not used for the bidding analysis.[111]

(147) Market shares have been calculated on the basis of total "order intake", which represents the entire value of the rolling stock order to the supplier at the time the order is placed. As explained by the Notifying Party, order intakes are commonly used by the industry to calculate market shares.[112] They include orders from non-contestable tenders, as further explained in recitals (207) to (229).

(148) The bidding analysis presented in this Decision is based on the latest version of the CPL provided by the Parties. For rolling stock the data was received on 16 November 2018, in response to the Statement of Objections. For mainline signalling this data was received on 29 November 2018, in response to Request for Information RFI 174 (Q8).

(149) The Commission's analysis has also taken into account more recent developments not reflected in the CPL or related bidding statistics. Notably, […]. When relevant, recent development not reflected in the CPL and bidding statistics are reported in the Decision and assessed qualitatively.

5.3.2. The Notifying Party's views

(150) The Parties argue that their market shares are not indicative of market power because powerful competitors will remain post-Transaction. They consider that they face at least 8 competitors globally, including Bombardier, CAF, CRRC, Hitachi-Ansaldo, Hyundai Rotem, Kawasaki, Stadler and Talgo.[113] In the EEA, the Parties argue that they face at least 5 strong high-speed players (Bombardier, CAF, Hitachi-Ansaldo, Stadler and Talgo).[114]

(151) According to the Parties, the Transaction's impact will be further mitigated in light of (i) harmonised regulatory requirements facilitating entry in the EEA, (ii) increased participation in tenders, (iii) the fact that the Parties are not close competitors, (iv) CRRC's potential entry, (v) countervailing buyer power exercised by sophisticated buyers, and (vi) the fact that tenders are infrequent which incentivises competitors to participate.

(152) In the potential separate market for very high-speed rolling stock, the Parties argue that they face competition from 4 established very high-speed suppliers (Bombardier,

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110 The Commission notes that while most of the tenders thus identified as "contestable" in the CPL feature more than one bidder, in certain markets there is a number of contestable tenders where the only known participant was the winner. The Parties explained that, for certain tenders, while according to their knowledge the procedure was formally open to competition, either only one competitor placed a firm bid or the identity of the other bidders is unknown to them. Finally, the term "contestable" as used in the CPL relates to tenders formally open to competition even in cases of tenders for orders that certain customers have historically reserved to a single supplier (e.g., SNCF's very high-speed rolling stock orders from Alstom or Deutsche Bahn's high-speed rolling stock orders from Siemens).

111 Non-contestable tenders under the CPL are usually for repeat orders of rolling stock already supplied by a certain manufacturer in execution of a prior contract. In other cases, the Notifying Party provided the specific reasons explaining why certain tenders or projects should be considered "non-contestable". Reasons include tender specifications designed to be answerable only by a particular supplier (e.g., […]).

112 Form CO, Annex B.1 – E(1), Data Methodology, page 1.

113 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 25-64.

114 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 65-66.

CAF, Hitachi-Ansaldo and Talgo) and the likely entry of Stadler and Asian players with very high-speed trains in operation in their home countries.[115]

5.3.3. Results of the market investigation and the Commission's assessment

5.3.3.1. The Parties' activities and market shares

(A) The Parties' market shares

(A.i) Alstom's activities

(153) Both Siemens and Alstom offer a variety of high and very high-speed rolling stock. Siemens offers single-deck trains with distributed traction[116] and Alstom offers both double-deck trains with concentrated traction[117] and single-deck trains with either concentrated or distributed traction.[118]

(154) Alstom's high-speed offering is structured around four platforms within its Avelia family. These platforms include single-deck and double-deck trainsets, as summarised in the following table:

Table 1: Alstom's (Very) High-Speed Platforms

Platform	Max Speed	Number of Floors	Relevant Tech. Items	Country Operated (EEA)
[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]

Source: Form CO, Chapter B.2, Table 1.

(155) Alstom's high-speed platform, the Pendolino, has been sold and operates in the EEA (Finland (Karelian), Italy (NTV), Poland (PKP, Switzerland (SBB) and in the UK). […].[119][…].

(156) Alstom's very high-speed platforms have been sold and operate in the EEA (France (SNCF – Euroduplex) and Italy (NTV – AGV)) and the rest of the world (Morocco (ONCF – TGV Duplex) and the US (Amtrak – Liberty)).

(157) Alstom has developed a new generation of high-speed trains called "*TGV du Futur*" or "*TGV 2020*". This development's objectives include […].[120] In July 2015, SNCF launched a tender for the production of the "*TGV 2020*" which Alstom won in May 2016.[121] Alstom explained that […][122] The contract between Alstom and SNCF is […]

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115 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 86-89.

116 "Distributed traction" means that the traction components are distributed across the trainset, under the floors of the passenger cars.

117 "Concentrated traction" means that traction power is concentrated in power cars at each end of the trainset and the intermediate passenger cars do not contribute to traction.

118 As explained above in recital (90), the results of the market investigation do not suggest that a segmentation by type of traction would be relevant for the purpose of market definition.

119 […].

120 Alstom's presentation entitled "Rolling Stock Technical Meetings – Alstom Innovation", dated 6-7 September 2018, slide 6 (ID4875).

121 Parties' response to Commission's request for information RFI 6, question 17(a).

(158) On 26 July 2018, SNCF announced that it placed an order for 100 "*TGV du Futur*". The initial order amounts to EUR 2.7 billion for 50 trainsets and options for an additional 50. The trains will be delivered between 2023 and 2031.[123] This is the largest order of high-speed trains in the EEA since at least 2007.

(A.ii) Siemens' activities

(159) Siemens' offering consists in two platforms, as summarised in Table 2:

Table 2: Siemens' (Very) High-Speed Platforms

Platform	Max Speed	Number of Floors	Relevant Tech. Items	Country Operated (EEA)
[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]

Source: Form CO, Chapter B.2, Table 2.

(160) […].[124]

(161) […].[125][…].[126]

(162) Siemens' high-speed platform, the ICE, has been sold and operates in Germany (Deutsche Bahn). Its very high-speed platform, the Velaro, has been sold and operates in the EEA (Germany (Deutsche Bahn) and the UK, France, Belgium, Netherlands (Eurostar)) and in the rest of the world (Russia and Turkey (TCDD)).

(163) […].[127][…].[128]

(164) […].[129]

(A.iii) Market shares

a) Market shares: 2008-2018 period

(165) The Parties are the leading suppliers of high-speed trains, both worldwide and within the EEA. The Parties' combined position in the overall high-speed market and the very high-speed market are indicated in the following table:

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122 Parties' response to Commission's request for information RFI 10, question 27; […], on the 2016 Renfe tender win-loss analysis, noting that "[…]".

123 Parties' response to Commission's request for information RFI 55, questions 6(a), 6(b).

124 Form CO, Chapter B.2, paragraph 14.

125 Notifying Party's response to Commission's request for information RFI 132, question 1.

126 Notifying Party's response to Commission's request for information RFI 132, question 2.

127 Siemens' presentation entitled "Rolling Stock Technical Meetings – Siemens' key developments", dated 6-7 September 2018, slide 3.

128 Siemens' presentation entitled "Rolling Stock Technical Meetings – Siemens' key developments", dated 6-7 September 2018, slide 2.

129 Siemens' presentation entitled "Rolling Stock Technical Meetings – Siemens' key developments", dated 6-7 September 2018, slide 2.

Table 3: Market Shares – 2008-2018 Order Intake (by value)

Competitor	EEA & CH 2008-2018			Worldwide (excl. China, Japan, Korea) 2008-2018		
	High-speed (between 250 and 299 km/h)	**Very high-speed (from 300 km/h)**	**High and very high-speed**	**High-speed (between 250 and 299 km/h)**	**Very high-speed (from 300 km/h)**	**High and very high-speed**
Alstom	[10-20]%	[50-60]%	[30-40]%	[10-20]%	[50-60]%	[30-40]%
Siemens	[40-50]%	[10-20]%	[30-40]%	[40-50]%	[10-20]%	[20-30]%
Combined	**[60-70]%**	**[70-80]%**	**[70-80]%**	**[60-70]%**	**[60-70]%**	**[60-70]%**
Bombardier	[10-20]%	[5-10]%	[10-20]%	[10-20]%	[5-10]%	[10-20]%
Hit.-Ansaldo	[0-5]%	[10-20]%	[5-10]%	[0-5]%	[5-10]%	[5-10]%
Stadler	[10-20]%	[0-5]%	[5-10]%	[10-20]%	[0-5]%	[0-5]%
Talgo	[0-5]%	[5-10]%	[0-5]%	[0-5]%	[10-20]%	[5-10]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CRRC	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party's CPL.

(166) Under paragraph 17 of the Horizontal Merger Guidelines, the merging parties' very large market shares constitute evidence consistent with the existence of a dominant market position. Competition concerns are all the more likely that the Transaction will reinforce a concentrated market structure. Thus, the post-merger HHI in all segmentations will be considerably higher than 2,000 (from […] to […] depending on the segmentations examined), with a delta greatly above 250 (from […] to […] depending on the segmentations examined).

(167) Furthermore, the market share of the Parties' competitors in high and very high-speed rolling stock must be nuanced.

(168) Stadler developed and sold a 250 km/h-capable product in response to an SBB requirement but does not compete in very high-speed tenders:

(a) Stadler bid for the 2015 Flytoget Oslo airport express tender, awarded to CAF. Both Flytoget and CAF indicate that the Flytoget trains are capable of running at a maximum speed of 245 km/h.[130] […];

(b) Stadler also bid for a 2015 NTV tender which was awarded to Alstom. This tender was for rolling stock with a maximum speed of 250 km/h.

(169) Stadler's only award has been obtained from the Swiss national operator. Stadler has no track-record of manufacturing and selling any train capable of speed above 250 km/h. […] submits that […].[131] Therefore, in light of (i) Stadler's extremely limited activities in 250 km/h-capable trains, (ii) its lack of any product or platform capable of higher speeds and (iii) Stadler's commercial positioning, the Commission considers that Stadler exercises limited competitive constrains in high-speed rolling

130 See https://flytoget.no/en/about/our-story/ and https://www.caf net/en/productos-servicios/proyectos/proyecto-detalle.php?p=276.

131 [...]'s e-mail response of 27 June 2018, *RE: [EXTERNAL] M.8677 - Siemens/Alstom | High-speed ROS questionnaire to [...]* (ID4171).

stock and would be incapable of replacing the loss of competition resulting from the Transaction.

(170) In very high-speed rolling stock, Bombardier and Hitachi-Ansaldo have only won one supply contract jointly (in consortium) over the 2008-2018 period in the EEA (the 2010 Trenitalia tender). In the rest of the world, Bombardier and Hitachi-Ansaldo are not active on a standalone basis. Bombardier's market share results from its participation in Talgo's winning bid for the 2011 SRO tender (Saudi Arabia) and Hitachi-Ansaldo's market share from winning a 2012 Taiwanese tender for rolling stock based on the Japanese technology (Shinkansen) together with Kawasaki and Nippon Sharyo.

(171) Finally, CRRC has never won a high-speed or very high-speed tender in the EEA. CRRC's position on the worldwide very high-speed rolling stock market remains marginal. Its market share results from a single sale, resulting from a 2017 Indonesian Railway contract. As explained in more detail in recital (271), despite this contract, CRRC cannot be considered to exercise a significant competitive constraint on the worldwide market. The Indonesian order was not obtained through competitive tendering, but rather as a result of government-level negotiations between China and Indonesia and was part of a project involving financing, building of rail infrastructure and rolling supplies by Chinese State-controlled entities. Ultimately, the selection of Chinese suppliers was mainly driven by financing conditions for the whole project.[132] As a result, CRRC remains untested in competitive tenders against the world's main suppliers outside of China.

(172) In light of the limited constraints exercised by other suppliers, the Parties' combined market shares accurately reflect (if not underestimate) their competitive positions over the 2008-2018 period.

b) The Notifying Party's views

(173) The Parties consider that market shares do not constitute sufficient evidence of a dominant position in high-speed rolling stock.[133] They further argue, to the extent that they need to be taken into account, the Parties' market shares overstate their competitive position, for five reasons.

(174) First, they argue that calculating market shares over the full 2008-2018 period dismisses important recent changes on the market, with more aggressive competition in the past five years.[134] They further consider that the market share of a supplier can be affected significantly by a single win, such that calculating market shares over a long period downplays the importance of recent wins by competitors.

(175) Second, the Parties argue that market shares are "*distorted*" by the inclusion of non-contestable orders, as non-contestable orders are a poor indicator of suppliers' probability of gaining market shares in the future.[135]

(176) Third, the Parties considers that the assessment should only take into account the portion of their market shares resulting from competition against one another, in calls

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132 Notifying Party's CPL, noted explaining why the 2017 Indonesian Railway award was not contestable. See also, for example, https://www.straitstimes.com/asia/se-asia/indonesia-defends-bidding-process-for-high-speed-rail-project-after-japan-angered-at.

133 Parties' response to Statement of Objections, Chapter B.2, paragraphs 171-174.

134 Parties' response to the Statement of Objections, Chapter B.2, paragraph 167.

* Should read: “recognise”.

135 Parties' response to the Statement of Objections, Chapter B.2, paragraph 176.

for tenders in which both Parties submitted competing bids. According to the Parties, restricting the competitive assessment to these tenders would have been justified because they correspond to the opportunities which could, in principle, be affected by the Transaction.[136]

(177) Fourth, the Parties considers that the 2018 TGV 2020 award to Alstom should not be taken into account to calculate market shares or for the competitive assessment. Whilst the Parties […]* that this order was the result of a contestable tender, they consider that […].[137]

(178) Fifth, in their response to the Letter of Facts, the Parties argue that the Commission's market share assessment should take into account the fact that "*the Parties' position in the EEA and Switzerland is driven in the majority by winning projects in Germany and France, respectively*".[138]

c) The Commission's assessment

(179) As a preliminary point, in accordance with the Commission's Horizontal Merger Guidelines,[139] market shares are used as the starting point of the present competitive assessment. Contrary to the Notifying Party's argument, market shares do have value in assessing competitive positions in bidding markets. The Court's case-law thus recognises that the mere fact that a merger takes place on a bidding market, "*does not mean that market shares are of virtually no value in assessing the strength of the various manufacturers* […]*, especially where those shares remain relatively stable or reveal that one undertaking is tending to strengthen its position*".[140]

(180) Moreover, the present assessment does not rely exclusively on market shares and is complemented with an examination of the bidding data and of the Parties' internal documents, as reviewed in Section 5.3.3.2.

(181) The assessment set out in Section (A.iii) also includes analyses over different time periods and therefore takes full account of the nature of competitive dynamics in the markets involved. Section (i) below examines the Parties' argument in relation to the time period retained for the calculation of market shares and Section (ii) examines factors that, according to the Parties' arguments, lead to overstating their competitive position. Section (iii) examines the Parties' argument in relation to the importance of sales in Germany and France in their position.

(i) Market shares: 2008-2012 and 2013-2018 periods; order frequency

(182) The Parties consider that market shares calculated over the 2008-2018 period do not accurately reflect market dynamics, for two main reasons.

(183) First, the Parties argue that calculating market shares over a 10 years period overstates their position. According to the Parties, the resulting shares dilute recent developments more pertinent for assessing post-merger market dynamics, such as the increasing competitive pressure from Stadler.[141]

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136 Parties' response to the Statement of Objections, Chapter B.2, paragraph 176.

137 Parties' response to the Statement of Objections, Chapter B.2, paragraph 176.

138 Parties' response to the Letter of Facts, paragraph 21.

139 Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, paragraph 14.

140 Judgement of 14 December 2005 in case T-210/01 General Electric v Commission, EU:T:2005:456, paragraphs 149 and 150.

141 Parties' response to Statement of Objections, Chapter B.2, paragraph 6.

(184) As a matter of methodology, the Commission maintains that market shares and bidding analysis based on the 2008-2018 period, in combination with other relevant factors such as the analysis of the internal documents, should form the basis for the assessment. This is because, as the Notifying Party recognises, the relevant markets are characterised by large and infrequent tenders. There have been a limited number of high and very high-speed rolling stock projects in the world (excluding China, Japan and South Korea) since 2008: 19 calls for contestable tenders overall (of which 11 for very high-speed), and only 11 in the EEA plus Switzerland (of which 6 for very high-speed).[142]

(185) As in prior cases involving markets characterised by lumpy demand, market shares should be analysed over several years.[143] Calculating market shares based on a more limited length of time restricts the underlying number of tenders to very few, with the consequent risk of providing a very distorted view of each player's competitive position. In the present case, calculating market shares over the 2013-2018 period instead of the 2008-2018 period significantly reduces the number of worldwide tenders covered, from 19 to 9 tenders in high and very high-speed rolling stock and from 11 to 5 tenders in very high-speed rolling stock alone. In this context, because market share calculated over a short period of time are based on a very small sample of tenders, any individual win or loss inevitably results in a very significant impact, which does not however accurately reflect appropriately the competitive dynamics.

(186) At the same time, as stated in paragraph 15 of the Horizontal Merger Guidelines, "*changes in historic market shares may provide useful information about the competitive process and the likely future importance of the various competitors, for instance by indicating whether firms have been gaining or losing market shares*". Therefore, the assessment should verify whether the relevant markets were affected by structural changes that may otherwise be diluted when examining a longer period of time.

(187) The following table sets out the Parties' and their competitors' market shares for the 2013-2018 period, as suggested by the Parties:

142 See Table 1 of Annex 1 for a full overview of the contestable high-speed and very high-speed tenders worldwide, excluding China, Japan and South Korea (2008-2018).

143 See Commission decision in Case M.7278 – GE/Alstom (2015), Annex 1 - The Commission's Economic Analysis of Bidding Data, recital 189, page 55.

Table 4: Market Shares (high-speed including 250 km/h) – 2013-2018 Order Intake (by value)

Competitor	EEA & CH 2013-2018			Worldwide (excl. China, Japan, Korea) 2013-2018		
	High-speed (between 250 and 299 km/h)	**Very high-speed (from 300 km/h)**	**High and very high-speed**	**High-speed (between 250 and 299 km/h)**	**Very high-speed (from 300 km/h)**	**High and very high-speed**
Alstom	[20-30]%	[70-80]%	[50-60]%	[20-30]%	[60-70]%	[50-60]%
Siemens	[20-30]%	[5-10]%	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Combined	**[50-60]%**	**[80-90]%**	**[70-80]%**	**[50-60]%**	**[80-90]%**	**[70-80]%**
Bombardier	[10-20]%	[0-5]%	[0-5]%	[10-20]%	[0-5]%	[0-5]%
Hit.-Ansaldo	[5-10]%	[0-5]%	[0-5]%	[5-10]%	[0-5]%	[0-5]%
Stadler	[20-30]%	[0-5]%	[10-20]%	[20-30]%	[0-5]%	[5-10]%
Talgo	[0-5]%	[10-20]%	[5-10]%	[0-5]%	[10-20]%	[5-10]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CRRC	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[5-10]%	[0-5]%

Source: Notifying Party's CPL.

(188) Calculating market shares on the basis of the 2013-2018 period does not change the competitive assessment. The Parties' combined market share remains in excess of 50% in all segmentations and post-merger HHIs remain considerably higher than 2,000 (from […] to […] depending on the segmentations examined), with a delta greatly above 250 (from […] to […] depending on the segmentations examined).

(189) Table 5 compares market shares over the first and second half of the 2008-2018 period, in the EEA:

Table 5: Market Shares – EEA & Switzerland – 2008-2012 and 2013-2018 Order Intake (by value)

Competitor	2008-2012			2013-2018		
	High-speed (between 250 and 299 km/h)	**Very high-speed (from 300 km/h)**	**High and very high-speed**	**High-speed (between 250 and 299 km/h)**	**Very high-speed (from 300 km/h)**	**High and very high-speed**
Alstom	[10-20]%	[30-40]%	[20-30]%	[20-30]%	[70-80]%	[50-60]%
Siemens	[60-70]%	[20-30]%	[40-50]%	[20-30]%	[5-10]%	[10-20]%
Combined	**[70-80]%**	**[60-70]%**	**[60-70]%**	**[50-60]%**	**[80-90]%**	**[70-80]%**
Bombardier	[20-30]%	[10-20]%	[20-30]%	[10-20]%	[0-5]%	[0-5]%
Hit.-Ansaldo	[0-5]%	[20-30]%	[10-20]%	[5-10]%	[0-5]%	[0-5]%
Stadler	[0-5]%	[0-5]%	[0-5]%	[20-30]%	[0-5]%	[10-20]%
Talgo	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[10-20]%	[5-10]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CRRC	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party's CPL.

(190) The main structural change in the EEA-wide market over the 2008-2018 period has been Stadler's entry in high-speed rolling stock with the award of the 2014 SBB order. Although Stadler's entry has been at the expense of the Parties, in particular Alstom which had previously been awarded a contract by SBB for the supply of

Pendolinos, the Parties' combined market share remains above 50% in the 2013-2018 period.

(191) In very high-speed rolling stock, despite Talgo's win of the 2016 Renfe tender, the Parties have significantly reinforced their positions over the 2013-2018 period as a result of an award from SNCF to Alstom and additional Eurostar orders to Siemens[144] and have a combined market share of [80-90]%.

(192) Table 6 compares market shares over the first and second half of the 2008-2018 period, on a worldwide basis:

Table 6: Market Shares – Worldwide (excl. China, Japan and South Korea) – 2008-2012 and 2013-2018 Order Intake (by value)

Competitor	2008-2012			2013-2018		
	High-speed (between 250 and 299 km/h)	**Very high-speed (from 300 km/h)**	**High and very high-speed**	**High-speed (between 250 and 299 km/h)**	**Very high-speed (from 300 km/h)**	**High and very high-speed**
Alstom	[10-20]%	[30-40]%	[20-30]%	[20-30]%	[60-70]%	[50-60]%
Siemens	[60-70]%	[10-20]%	[30-40]%	[20-30]%	[10-20]%	[10-20]%
Combined	**[70-80]%**	**[50-60]%**	**[60-70]%**	**[50-60]%**	**[80-90]%**	**[70-80]%**
Bombardier	[20-30]%	[10-20]%	[10-20]%	[10-20]%	[0-5]%	[0-5]%
Hit.-Ansaldo	[0-5]%	[10-20]%	[5-10]%	[5-10]%	[0-5]%	[0-5]%
Stadler	[0-5]%	[0-5]%	[0-5]%	[20-30]%	[0-5]%	[5-10]%
Talgo	[0-5]%	[10-20]%	[5-10]%	[0-5]%	[10-20]%	[5-10]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CRRC	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[5-10]%	[0-5]%
Kawasaki	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Nippon-Sharyo	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party's CPL.

(193) In the high-speed segment, worldwide market shares show similar structural changes, with the entry of mainly Stadler in high-speed rolling stock due to the 2014 SBB award. In very high-speed rolling stock, the Parties' position was significantly reinforced in the 2013-2018 period (reaching [80-90]%) due to major awards not only in the EEA, but also in the rest of the world, namely in Turkey (Siemens won TCDD tenders in 2013 and 2018) and in the US (Alstom won the 2016 Amtrak tender).

(194) As a result, the Parties' combined market shares in the overall market and the very high-speed market are even higher based on the 2013-2018 period than they are when considering the 2008-2018 or the 2008-2012 periods.

144 In 2015, Eurostar exercised an option of its 2010 contracts with Siemens to order 7 more Velaros (see https://www.mobility.siemens.com/mobility/global/SiteCollectionDocuments/en/rail-solutions/high-speed-and-intercity-trains/velaro/velaro-e320-en.pdf).

(195) The Parties' market share increase over the 2013-2018 period, in particular with respect to very high-speed rolling stock, is further evidence indicative of the Parties' combined market power. According to the Court's case-law, "[e]*ven on a bidding market, the fact of a manufacturer maintaining, or even increasing, its market share over a number of years in succession is an indication of market strength. A time must come when the difference between one manufacturer's market share and that of its competitors can no longer be dismissed as a function of the limited number of competitions that constitute demand on the market. Consequently, the upwards trend represented by the recent increase in* [the acquirer's] *market share is a particularly convincing element of the Commission's analysis and there are no grounds for holding that the Commission made a manifest error of assessment*".[145]

(196) Second, the Parties argue that competitors' positions can change significantly with only a single win. This is because "*demand in the high-speed market is highly concentrated, with only a few high-value projects determining the outcome of the historical market share assessment*".[146]

(197) This is particularly true with respect to the Parties' competitors. For example, Stadler gained a [20-30]% worldwide market share in high-speed rolling stock over the 2013-2018 period with the sole win of the 2014 SBB tender, although it was previously absent from the market. Similarly, although it did not sell any very high-speed train in the EEA over the 2008-2012 period, Talgo gained a [10-20]% EEA market share with the sole win of the 2016 Renfe tender. The opposite is also true of Bombardier and Hitachi-Ansaldo, which had a combined worldwide market share of [30-40]% in very high-speed rolling stock in 2008-2012 but have not won any contract and therefore do not have any market share over the 2013-2018 period.

(198) The variability of competitors market shares contrasts with the stability of the Parties' own leading positions over time. The Parties' stable leadership of the high and very high-speed rolling stock markets is due to two factors.

(199) First, each of Siemens and Alstom are the incumbent monopoly suppliers of high and very high-speed trains to their respective national operators, Deutsche Bahn and SNCF. Each Party has developed tailor-made trains for their national operators since the inception of high-speed rail in Germany and France (the ICE and the TGV) and therefore enjoy a privileged commercial relationship. Thus, Deutsche Bahn, for which Siemens developed the ICE, is unlikely to change suppliers for its high-speed fleet. In very high-speed, Deutsche Bahn appears willing to procuring rolling stock from other suppliers and invited Alstom to bid in its 2008 tender which was however ultimately awarded to Siemens. The competitive interaction between the Parties in relation to this tender is explained in more details in recital (450).

(200) For its part, SNCF has only awarded very high-speed supply contracts to Alstom. The most recent developments of the "*TGV du Futur*" confirm that SNCF appears unwilling to deviate from the type of solution historically supplied by Alstom. As the Notifying Party explained […].[147][…].[148]

(201) The Parties' respective monopoly positions vis-à-vis Deutsche Bahn and SNCF has had a significant impact on their respective market shares because Germany and

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145 Judgement of 14 December 2005 in case T-210/01 General Electric v Commission, EU:T:2005:456, paragraph 151.

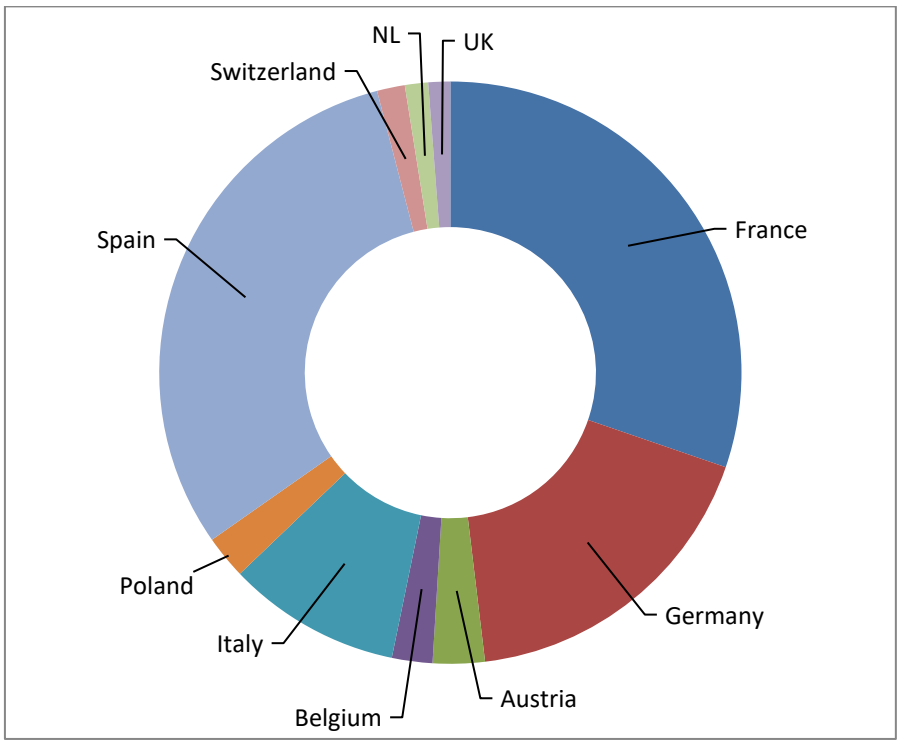
146 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 107.

147 Notifying Party's response to the Commission's request for information RFI 17, paragraph 10.2.

148 Idem.

France are among the most important high-speed rolling stock customers in the EEA, Deutsche Bahn and SNCF operating two of the three largest high-speed railways, as illustrated in Figure 1.

Figure 1: Km of high-speed (≥250 km/h) lines in operation (as of 12 June 2018) – EEA and Switzerland



Source: https://uic.org/IMG/pdf/20180612a_high_speed_lines_in_the_world.pdf

(202) Consequently, the Parties benefit from more regular cyclic orders from Deutsche Bahn and SNCF than their competitors obtain from their own customers.

(203) Furthermore, the Parties respectively hold the largest contracts awarded in the EEA over at least the past 10 years: Deutsche Bahn's 2011 ICE framework agreement with Siemens and SNCF's 2018 *TGV du Futur* order.

(204) The second factor supporting the stability of the Parties' leading positions is their continued success when bidding in contestable calls for tenders outside of their home countries. In the EEA and Switzerland, with the exception of CAF's award of the 2015 Flytoget high-speed rolling stock tender (which ultimately decided to use a trainset travelling at lower speeds), the Parties are the sole suppliers with sales of high and very high-speed rolling stock outside of their domestic markets.

(205) In particular, the Parties have won almost all tenders by non-national operators in the EEA and Switzerland. Except for […], Siemens and Alstom have won all contracts awarded by customers other than national rail operators, namely NTV (2008 and 2015), Eurostar (2010) and, more recently, […].

(206) In the rest of the world, the Parties have sold high and very high-speed rolling stock in Morocco, Russia, Turkey and US between 2008 and 2018. Other than the Parties, Talgo is the sole operator with high and very high-speed rolling stock sales in contestable tenders outside of the EEA during the same period (in Uzbekistan and Saudi Arabia).

(207) As a result, although a single win is liable to have a significant impact on the position of other suppliers, the Parties have received regular orders sustaining remarkably high stable market shares over a long period of time.

(ii) The Parties' combined market share does not overstate their competitive position

(208) In response to the Statement of Objections, the Parties argue that the market shares presented by the Commission in the Statement of Objections overstate the Parties' competitive position and should instead be re-calculated by (i) excluding "order intakes" resulting from non-contestable tenders, (ii) excluding tenders in which the Parties did not face each other and (iii) excluding SNCF's 2018 EUR […] order of *TGV du Futur* trainsets to Alstom. Furthermore, the Parties advocate for restricting the calculations to the EEA and the past few years (2013-2018) only.[149]

(209) In response to the Letter of Facts, the Parties further argue that, to the extent that the Commission relies on market shares that include both contestable and non-contestable tenders, its assessment should also take into account projects in China, Japan and South Korea.[150]

(210) The Parties' approach is flawed and leads to artificial results, as explained in detail in recitals (211) and seq.

(211) First, by overly restricting the sample of tenders based on which market shares are calculated, the resulting market shares are likely to no longer correctly reflect the nature of competitive interactions and consequentially the competitive dynamics. In bidding markets, market shares based on a very small number of tenders do not allow drawing any meaningful conclusions of each player's real strength in the market.

(212) The Parties argue in favour of restricting market share calculations in terms of duration (2013-2018) and geographic coverage (EEA only, in contradiction with its own proposed global market definition). In addition, the Parties would also eliminate both non-contestable tenders from their calculations and one of Alstom's own most recent award (albeit obtained in a contestable tender). This approach cannot lead to any meaningful results because the Parties would base their assessment on a scant sample of four tenders, namely the 2014-2015 SBB, NTV and Flytoget high-speed rolling stock tenders and the sole 2016 Renfe very high-speed rolling stock tender.

(213) In response to the Letter of Facts, the Parties acknowledged that "*the size of the sub-samples for very high speed market share assessment become very small, particularly when focusing on the period 2013-2018, in which there were only two contestable tenders awarded. For this reason, market shares are unlikely to provide a reliable insight into competition in the hypothetical for very high speed trains*".[151] This is also true for the overall market for high and very high-speed rolling stock in the 2013-2018 period, which covers a small number of tenders (four). Therefore, the same considerations apply to the overall market for high and very high-speed rolling stock and market shares calculated on the basis of a small sample of four tenders are also unlikely to provide reliable information on competitive dynamics.

(214) Furthermore, there are indications that at least some of the very few contestable tenders that occurred during the period 2013-2018 were not as focal to Siemens' strategy as the ones that occurred during 2008-2012. Alstom's internal documents relating to the 2014 SBB Swiss tender mention that […].[152]

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149 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 175 et seq.

150 Parties' response to the Letter of Facts, paragraph 22.

151 Parties' response to the Letter of Facts, paragraph 16.

152 […].

(215) In response to the Letter of Facts, the Parties argue that […].[153][…].

(216) Second, as regards the merit of restricting the calculation of market shares to the contestable tenders only, the Commission considers the following.

(217) The bidding data provided by the Notifying Party characterises a number of tenders as "non-contestable" either because they constitute repeat orders based on past contracts, or because they were not awarded through an open, competitive tendering process. The Parties' own order intakes from "non-contestable" tenders all correspond to repeat orders. Examples of awards outside of open tenders include CRRC's 2017 Indonesian Railways award (as explained in recital (272) below) and Hitachi-Ansaldo's 2017 Trenitalia order of refurbished Fyra trains (as explained in recital (252) below).

(218) Contrary to the Parties' argument, non-contestable orders do contribute to a supplier's competitive position. They contribute to establishing a supplier's track-record of manufacturing and delivering certain types of trains and therefore constitute references which suppliers can leverage in other calls for tenders. Furthermore, they contribute to supporting large investment in R&D, engineering, development and manufacturing capacity which are important contributors to a supplier's strength when bidding for tenders.

(219) Therefore, non-contestable awards do reflect a position in relation to a long-standing customer relationship, often initially obtained in a competitive process. The existence and advantages resulting from long-standing customer relationships are relevant to the competitive assessment.

(220) Accordingly, calculating market shares on the basis of total order intakes is informative because it allows taking into account factors that are relevant to the competitive assessment which would otherwise be overlooked.

(221) At the same time, the Commission agrees that market shares calculated on the basis of contestable tenders only are also informative because they allow focussing the assessment on tenders where there was effective competitive interaction between rolling stock suppliers, that is, the tenders that are more likely to be affected by a potential loss of competition between the Parties.

(222) However, the market shares for 2008-2018[154] calculated solely on the basis of contestable tenders would not change the outcome of the assessment. The Parties hold shares in excess of [50-60]% in all conceivable market segments, as shown in the following table:

153 Parties' response to the Letter of Facts, paragraph 51.

154 The time horizon that the Commission considers to correctly depict each player's the competitive position.

Table 7: Market Shares – 2008-2018 Order Intake (by value) – Contestable tenders only

Competitor	EEA & CH 2008-2018			Worldwide (excl. China, Japan, Korea) 2008-2018		
	High-speed (between 250 and 299 km/h)	**Very high-speed (from 300 km/h)**	**High and very high-speed**	**High-speed (between 250 and 299 km/h)**	**Very high-speed (from 300 km/h)**	**High and very high-speed**
Alstom	[10-20]%	[50-60]%	[30-40]%	[10-20]%	[40-50]%	[30-40]%
Siemens	[50-60]%	[10-20]%	[30-40]%	[50-60]%	[10-20]%	[30-40]%
Combined	**[60-70]%**	**[60-70]%**	**[60-70]%**	**[60-70]%**	**[60-70]%**	**[60-70]%**
Bombardier	[20-30]%	[10-20]%	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Hit.-Ansaldo	[0-5]%	[10-20]%	[5-10]%	[0-5]%	[10-20]%	[5-10]%
Stadler	[10-20]%	[0-5]%	[5-10]%	[10-20]%	[0-5]%	[5-10]%
Talgo	[0-5]%	[5-10]%	[0-5]%	[0-5]%	[10-20]%	[5-10]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CRRC	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

Source: Notifying Party's CPL.

(223) Overall, since a given supplier's order intake (even from non-contestable tenders) may influence its position when bidding for contracts, the market shares and bidding analysis are both highly relevant to the competitive assessment.

(224) As a result, the present assessment is based on both an examination of the Parties' and their competitors' positions in relation to their entire order intake and an analysis of the competitive constraints exercised in the sole context of open, contestable tenders. Competitive interactions at play in contestable tenders only are examined in further detail in the bidding analysis performed in Section 5.3.3.2 as well as in more detail in Annex 1.

(225) Third, there is no justification for excluding tenders in which the Parties did not meet from market share calculations. The basis for correct market share calculations is the total size of the relevant market (calculated in terms of sales revenues in this case) and each firm’s market share must be calculated based on all tenders, not the subset of tenders in which the Parties’ have met. In bidding markets, also market shares based on contestable tenders only are typically assessed (see Annex 1 and

(226) Table 7), in order to present the Parties' position when restricting the analysis to (contestable) tenders in which some competition has taken place.

(227) If the point raised by the Parties is simply that not all of their combined market share is generated by sales from tenders in which the Parties have met, the Commission notes the following. First, the majority ([…]%) of the Parties' combined market share in fact does come from wins in tenders in which the Parties have met.[155] Second, as explained at recital (218) et seq., also sales from non-contestable tenders contribute to a supplier's competitive position.

(228) In any event, restricting the analysis of the Parties' market shares to the tenders in which they have met could be unfavourable to the Parties because it may result in higher market shares in the subset of tenders in which both Parties participated as opposed to the larger set of tenders in which only one or neither of the Parties participated.

(229) In any event, the frequency and intensity of the Parties' direct interactions when participating in tenders are examined in the bidding analysis (Section 5.3.3.2).

(230) Fourth, there is no reason to ignore the 2018 "*TGV du Futur*" award to Alstom when calculating the Parties market shares. Rather, the Parties' claim in this regard is at odds with their argument that the competitive assessment should focus on recent evolutions of the high and very high-speed markets. Furthermore, the Parties recognise that this order was the result of a contestable tender (the 2016 "*TGV 2020*" call for tenders by SNCF). While the project was ultimately awarded to Alstom, contrary to the Parties' claim, […].[156] Therefore, Alstom's 2018 award resulting from its winning bid in SNCF's 2016 "*TGV 2020*" tender is informative of its competitive position and should be taken into account to calculate market shares.

(231) Fifth, the Parties' suggestion that market share calculations should include sales in China, Japan and South Korea contradicts the Notifying Party's position in the Form CO,[157] confirmed by the Commission's assessment, that the worldwide market for high and very high-speed rolling stock should exclude these countries. As indicated in paragraphs (129) to (132), insurmountable barriers impede the entry of foreign suppliers in China, Japan and South Korea. Accordingly, the position of national suppliers within these countries (respectively, CRRC in China, Hyundai-Rotem in South Korea and Hitachi, Kawasaki and other companies involved in the supply of the high and very high-speed rolling stock in Japan) is the result of activity isolated from the competitive pressure of foreign companies. The respective market shares of national incumbents in China, Japan and South Korea therefore cannot be informative of their competitive position on the relevant market.

(iii) The Parties' market share in relation to Germany and France

(232) The Parties considers that the Commission's assessment should take into account the fact that their market share is driven by wins in their home countries. The Parties calculate that, once their sales in Germany and France are excluded from market share calculations, their position appears lower than market shares otherwise indicate.[158]

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155 See RBB's presentation entitled "Meeting with the Chief Economist Team" of 19 November 2018, slide 23 (ID7001). […].

156 […].

157 Form CO, Chapter B.2, paragraph 37.

158 Parties' response to the Letter of Facts, paragraphs 18 and seq.

(233) First, as a preliminary point, the Parties' market shares used by the Commission are based on the Parties' wins within and outside their home countries, as this is the standard practice for market shares calculations. Evidently, due to the importance of the high and very high-speed rail networks of Germany and France, described in recitals (199) et seq., Siemens and Alstom have benefitted from large orders from Deutsche Bahn (including Deutsche Bahn's very high-speed rolling stock procurement, for which Siemens and Alstom competed head to head) and SNCF, over the 2008-2018 period.

(234) Second, the Parties' sales in Germany and France cannot be ignored in the competitive assessment as they contribute significantly to their competitive position. Their sales to Deutsche Bahn and SNCF, which are major customers of high and very high-speed rolling stock, contribute to establishing the Parties' track-record and therefore constitute references which Siemens and Alstom can leverage in other calls for tenders. Furthermore, they contribute to supporting large investment in R&D, engineering, development and manufacturing capacity, which are important contributors to a supplier's strength when bidding for tenders. Consequently, market share calculations appropriately include the Parties' sales in Germany and France, as these sales are relevant to the competitive assessment.

(235) Third, the Parties' argument amounts to claiming that their market share mainly results from their position as the incumbent suppliers of high and very high-speed trains in Germany and France respectively. However, this situation is not unique and other suppliers have had major wins in their respective home countries: the Italian supplier AnsaldoBreda (which was later acquired by Hitachi) won a 2010 tender for very high-speed rolling stock in Italy (for Trenitalia), the Swiss supplier Stadler won a 2014 tender for high-speed rolling stock in Switzerland (for SBB) and the Spanish supplier Talgo won a 2016 tender for very high-speed rolling stock in Spain (for Renfe).

(236) These sales represent a large portion of each of these suppliers' market share, both in the EEA (and Switzerland) and on a worldwide basis. In the EEA and Switzerland, Stadler's, Hitachi-Ansaldo's and Talgo's *entire* market share in the overall market for high and very high-speed rolling stock and on the narrower market for very high-speed rolling stock is due to their wins in their respective home countries. Therefore, for the sake of the argument, if all wins by national incumbents in their home countries (not just the Parties' wins) were excluded from market share calculations, the Parties would account for the vast majority of sales in the EEA and Switzerland. This conclusion results from the fact that, in contrast with other suppliers, the Parties have had significant sales outside of their home countries. Excluding tenders won by national incumbents in the EEA and Switzerland,[159] almost all the remaining contestable tenders over the 2013-2018 period have been won by the Parties:

(1) In high-speed rolling stock: Alstom won a 2011 tender in Poland (PKP) and a 2015 tender in Italy (NTV), losing only once, in the 2015 Norway (Flytoget) tender which it lost to CAF;

(2) In very high-speed rolling stock: Alstom won a 2008 tender in Italy (NTV) and a […], whereas Siemens won the 2010 Eurostar tender. Other than incumbents winning tenders in their home countries, no other supplier has had any success in the EEA and Switzerland.

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[159] Namely Siemens in Germany, Alstom in France, Hitachi-Ansaldo in Italy, Stadler in Switzerland and Talgo in Spain.

(237) Similarly, competitors have had much less success than the Parties in the rest of the world (excluding China, Japan and South Korea):

(1) In high-speed rolling stock: Siemens won a 2011 tender in Russia (RZD) and Talgo won tenders in 2009 and 2015 in Uzbekistan (Uzbekistan Railways) […];

(2) In very high-speed rolling stock: Alstom won a 2010 tender in Morocco (ONCF) and a 2016 tender in the USA (Amtrak), Siemens won tenders in 2013 and 2018 in Turkey (TCDD) and a Talgo/Bombardier consortium won a 2011 tender in Saudi Arabia (SRO).

(238) In conclusion, for the reasons stated in recitals (232) to (237), the Commission considers that there is no ground for excluding the Parties' sales in Germany and France from the competitive assessment. In any event, the Parties have had significantly more success than their competitors in tenders organized outside of their home countries. Taking into account the importance of the Parties' sales in their home countries therefore does not alter the significance of their market shares and the competitive assessment.

(239) In light of the arguments set out in Section (A), the market share calculations conducted for the present assessment accurately reflect the Parties' competitive positions.

(B) The Parties' important positions in innovation

(240) Innovation plays a key role in rolling stock markets, which are characterised by the constant development and commercialisation of new products.

(241) In the course of the market investigation, the majority of competitors recognised that high and very high-speed rolling stock markets are highly innovative.[160] By contrast, the Parties explained that R&D in high and very high-speed rolling stock is "*primarily about the application of available technologies and incremental product improvements*" and that "[b]*asic research accounts for a very small proportion of the industry's R&D*" and that "[…]".[161] The Parties further explained that R&D investment levels are below […]% that is "*well below those typically observed in innovation-driven industries such as IT or pharmaceuticals*".[162]

(242) Although, as the Notifying Party correctly argues, the rail industry is not driven by basic research, the Transaction's structural effects will be further reinforced by the consolidation of the Parties' positions as innovators.

(243) First, the Parties are currently leading innovators in high and very high-speed rolling stock markets,[163] having introduced pioneering technology including, recently, technologies such as such Siemens' Permanent Magnet Motors and aerodynamic optimisation, and Alstom's tilting technology.[164] The combination of their R&D capabilities will enable the merged entity to consolidate their leadership in

160 Q1 – High Speed Trains – Questionnaire to competitors, question C.C.1.

161 Parties' response to the Article 6(1)(c) Decision, High Speed Rolling Stock, paragraph 167.

162 Parties' response to the Article 6(1)(c) Decision, High Speed Rolling Stock, paragraph 167.

163 Q1 – High speed trains – Questionnaire to competitors, question C.C.3 and C.C.4; Q2 – High speed trains – Questionnaire to customers, question 46.

164 Q1 – High Speed Trains – Questionnaire to competitors, question C.C.2.

innovation post-Transaction, holding one of the largest patent portfolio in rolling stock in terms of number.[165]

(244) Second, figures provided by the Parties on R&D investment levels are overall consistent with information provided by market participants and publicly available information. The market investigation also corroborated the Parties' view that innovation mainly consists of product improvements, which are customer and tender specific. Several competitors and suppliers also confirmed that innovation in rolling stock markets is mainly conducted at component level.[166]

(245) Nonetheless, in addition to non-component-specific innovations, the Parties' expertise consists in integrating various (innovative) components onto a platform that fits customer demand. Larger suppliers of high and very high-speed rolling stock have an advantage in that regard, due to their more extensive experience as integrators. The driving role of demand for innovation has also been acknowledged in a survey on the competiveness of the European rail industry commissioned by the Directorate General Enterprise and Industry of the Commission, which noted that "[i]*nnovation in the EU RSI* [rail supply industry] *is a mixture of supply and demand driven innovation. In each tender the operator defines the requirements and the industry competes to offer the best product with the most efficient technology. In order to accommodate the needs of the operator, the system integrators define products and technologies.…Innovation in the RSI, stimulated by the need to win new contracts, is highly dependent on the demand of railway products*".[167]

(246) Moreover, the majority of competitors contacted during the Phase II investigation, except […],[168] confirmed the existence of a link between the size of the installed-base and a supplier's ability to innovate.[169] They explained that, given the importance of data obtained from the installed-base for innovation, the size of the installed-base has an effect on the ability to innovate. Competitors indicated that a larger volume of data provides more relevant information as well as better results, and consequently enhance the ability to innovate. This enables rolling stock suppliers with larger installed base to develop better targeted, and potentially cheaper, innovations. As […] explained, "[i]*n general, the larger the installed base, the larger the ability to innovate as more data points collected lead to a statistically more*

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165 [...] and [...] conducted patent analyses based on patent numbers. In [...]'s analysis, Siemens appears as having the largest patent portfolio in Europe, followed by Alstom and Bombardier (see [...]'s response to the Commission request for information, RFI 71, question 4 [Annex 1] (ID5790)). In [...]'s analysis, Siemens appears as the rolling stock supplier whom has filed the highest number of patents over the last 20 years at worldwide level, followed by Bombardier, Hitachi and Alstom ([...]'s response to the Commission request for information, RFI 74, question 4 (ID5271)).

166 [...]'s response to the Commission request for information RFI 68, question 6 (ID5209); [...]'s response to Commission request for information RFI 71, question 7 (ID5789); [...]'s response to the Commission request for information RFI 74, question 6 (ID5271); […]'s response to the Commission request for information RFI 103, question 15 (ID4719); […] response to the Commission request for information RFI 121, question 16 (ID5388)

167 Sector Overview and Competitiveness Survey of the Railway Supply Industry within the Framework Contract of Sectoral Competitiveness Studies – ENTR 06/054, p. 73.

168 [...]'s response to the Commission request for information RFI 71, questions 11 and 13 (ID5789).

169 [...]'s response to the Commission request for information RFI 68, questions 10 and 12 (ID5209); […]'s response to the Commission request for information, RFI 68, question 11 (ID6084); […]'s response to the Commission request for information RFI 73, question 11 (ID3779); [...]'s response to the Commission request for information RFI 70, question 11 (ID4929); [...]'s response to the Commission request for information RFI 74, question 11 (ID5271).

concise results".[170] [...] also indicated that "*the cumulative operational experience is another factor that gives a competitive advantage when it comes to knowing what and how to innovate of companies with products in operation phase*".[171] This is also confirmed by internal documents describing […].[172]

(247) Data generated by the installed-base generally belongs to customers (rail operators) and remains inaccessible to competitors.[173] The majority of customers indicated that they generally grant access to data to the rolling stock supplier for maintenance purposes during the warranty period which covers several years.[174] In their response to the Article 6(1)(c) Decision, the Parties submitted, in relation to predictive maintenance, that customers give access to data to rolling stock suppliers on an non-exclusive basis.[175] However, the majority of customers which expressed an opinion indicated that access to data is not usually granted to third party rolling stock suppliers.[176] […] added that the dataset generated by the installed base "*is unique and incapable of being replicated by third parties*".[177] Rolling stock suppliers can therefore only rely on data from their own installed base to innovate.

(C) The Parties' competitors

(248) Despite the Notifying Party's claim that there is "*vigorous*" competition within the EEA, not a single competitor has sold high or very high-speed trains to EEA customers other than operators located in their home countries (despite CAF's win in the 2015 Flytoget tender). In addition, due to joint bidding strategies and portfolio limitations, the number of actual competitors facing the Merged Entity after the Transaction is limited.

(C.i) Bombardier and Hitachi-Ansaldo

(249) Bombardier and Hitachi-Ansaldo are often active as a consortium in very high-speed rolling stock. The companies jointly developed the Zefiro, a very high-speed train operated in Italy. The Zefiro was manufactured by Hitachi-Ansaldo, while Bombardier's role focused on engineering.[178]

(250) The Parties consider that Bombardier is a "*major player*" in the high-speed rolling stock market because (i) it was involved in the development of many high-speed trains in operation in the EEA, (ii) it delivered thousands of high-speed trains in China via its joint venture with CRRC, (iii) it developed the Zefiro platform and (iv) it has bid in multiple high and very high-speed tenders.[179] Similarly, they consider

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170 [...]'s response to the Commission request for information RFI 70, question 11 (ID4929).

171 [...]'s response to the Commission request for information RFI 74, question 10 (ID5271).

172 […].

173 Q17 – High Speed Trains – Questionnaire to customers (Phase II), question 39; Q18 – Mainline Trains – Questionnaire to customers (Phase II), question 37; Q19 – Metros – Questionnaire to customers (Phase II), question 50.

174 Q17 – High Speed Trains – Questionnaire to customers (Phase II), question 40.1.1; Q18 – Mainline Trains – Questionnaire to customers (Phase II), question 38.1.1; Q19 – Metros – Questionnaire to customers (Phase II), question 51.1.1.

175 Notifying Party's response to the Commission request for information RFI 50, question 34, paragraph 34.1.

176 Q17 – High Speed Trains – Questionnaire to customers (Phase II), question 40.2; Q18 – Mainline Trains – Questionnaire to customers (Phase II), question 38.2; Q19 – Metros – Questionnaire to customers (Phase II), question 51.2.

177 [...]'s submission entitled "[…]", dated 23 October 2018, paragraph 4.5 (ID6120).

178 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question B.A.A.2.4.1.1 (ID4346).

179 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 76-83.

that Hitachi-Ansaldo should be viewed as a standalone competitor, in light of (i) its longstanding experience in developing high-speed trains, (ii) its supply of intercity trains in the UK, (iii) its interest in several very high-speed tenders in the EEA.

(251) However, Bombardier has not sold high or very high-speed rolling stock on a standalone basis since at least 2008 in the worldwide market (excluding China, Japan and South Korea) and its involvement in the development of high-speed trains has systematically resulted from collaborations with other players.[180] In the EEA, all sales by Bombardier on the basis of the Zefiro platform have been in consortium with Hitachi-Ansaldo. Bombardier may have bid on a standalone basis from time to time but with no success. In 2018, in the ongoing HS2 tender, despite having been pre-qualified on a standalone basis, Bombardier again decided to form a consortium with Hitachi-Ansaldo at the bidding stage.

(252) Similarly, in the rest of world, Bombardier has had no standalone sale in high or very high-speed rolling stock, having only been awarded a very high-speed rolling stock contract in consortium with Talgo (SRO (Saudi Arabia), 2011).

(253) Hitachi, which took over AnsaldoBreda in 2015, had limited sales of the "Fyra V250", a former AnsaldoBreda high-speed platform, in Italy (Trenitalia) in 2017. This sale was obtained outside of a competitive tender.[181] Other than this sale, all of Hitachi-Ansaldo's business in high and very high-speed rolling stock has resulted from joint developments and sales, either with Bombardier in the EEA (Trenitalia (Italy), 2010) or with other Japanese companies involved in the development of the Shinkansen "bullet train" (THRSC (Taiwan), 2012).

(254) The Parties observe that Hitachi-Ansaldo initially developed the AT 400 "British Bullet Train" train, designed for speeds up to 360 km/h for the HS2 tender and was thus shortlisted to bid by HS2 on a standalone basis in November 2017.[182] However, since that date, Hitachi-Ansaldo decided to form a consortium with Bombardier to bid in the HS2 tender.

(255) Therefore, the competitive constraint exercised by Bombardier and Hitachi-Ansaldo must be assessed in light of the fact that neither of these companies is active in high and very high-speed rolling stock on a standalone basis.

(C.ii) CAF

(256) CAF is a Spanish company active in high-speed rolling stock. Within the EEA, CAF's high-speed trains have only been sold and operated in Spain. In the rest of the world, CAF also sold high-speed trains in Turkey (in 2005). More recently CAF sold

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180 This includes CRH1 trainsets in China which is manufactured by Bombardier Sifang (Qingdao) Transportation Ltd. ("BST"), a joint venture with CRRC (see https://rail.bombardier.com/en/newsroom/press-releases.html/bombardier/news/2018/bt-20181205_bombardier-s-chinese-joint-venture-celebrates-its-20/en).

181 As explained in the Notifying Party's CPL, […] (see Direct Award as published in the OJ on 11 August 2017: http://ted.europa.eu/udl?uri=TED:NOTICE:317894-2017:TEXT:EN:HTML&tabId=0). The Fyra trains were sold to Trenitalia for EUR 25 million. Trenitalia's bargain purchase resulted from the fact that the trains were initially intended for operators NS (Netherlands) and SNCB/NMBS (Belgium), for the high-speed Amsterdam-Brussels service. Following technical issues affecting the rolling stock, the contract was cancelled and of the Amsterdam-Brussels high-speed service was permanently halted as a consequence the trains were returned to Ansaldo in 2014. In 2017, 17 trainsets were sold to Trenitalia, after refurbishment by Hitachi-Ansaldo before entering into service (see http://www railwaygazette.com/news/high-speed/single-view/view/trenitalia-agrees-to-acquirev250-trainsets.html).

182 Parties' response to the Letter of Fact, paragraph 53.

trains to Flytoget, which operates the Oslo airport express service in Norway (2015). However, as confirmed by CAF and Flytoget, this rolling stock is only capable of a maximum speed of 245 km/h and cannot therefore be considered as "high-speed" under the definition adopted in this Decision.[183]

(257) The Parties consider CAF as an established player in high-speed rolling stock and claims that it is advantaged by "[…]".[184] They note that CAF sold high-speed rolling stock in Turkey 13 years ago and, since then, has participated in several calls for tenders.[185]

(258) However, despite CAF's alleged cost-advantage, the company has not sold high or very high-speed trains since 2005. Although CAF did win the small Flytoget tender in Norway, it ultimately sold rolling stock with a maximum speed below 250 km/h.[186]

(259) Furthermore, CAF was initially disqualified to bid in HS2's ongoing tender. HS2's decision to requalify CAF was taken after Bombardier and Hitachi-Ansaldo decided to bid jointly. However, […] understands that HS2's decision to allow CAF to bid is primarily aimed at resolving legal action initiated by CAF against HS2. […] further notes being unaware of any CAF very high-speed business globally and that it understands that CAF "*is viewed within the industry as (at best) a second tiers player in high-speed*".[187]

(260) Therefore, CAF's ability to exercise a competitive constraint must be assessed in light of the fact that the company is not active on the high or very high-speed rolling stock market.

(C.iii) Stadler

(261) Stadler, a Swiss rolling stock supplier, has developed its Smile platform which is capable of a maximum speed of 250 km/h. That platform has been sold to the Swiss national railway operator, SBB.

(262) The Parties note Stadler's recent entry in high-speed rolling stock and considers that the company is "*financially and technically well placed to become a 'very high-speed' player*".[188]

(263) However, Stadler's activity in high-speed trains has been limited. It has only sold high-speed trains in Switzerland and participated unsuccessfully in the 2015 NTV and Flytoget calls for tenders for 250 km/h-capable trains. Stadler is involved in an ongoing high-speed rolling stock tender organised by […].

(264) In addition, Stadler remains inactive in very high-speed rolling stock and does not plan to develop its activities in this market due to the perceived lack of commercial opportunities. [...] indicated that "[…]".[189]

(265) Although the Parties argue that Stadler's explanation was "*likely strategically driven in the context of the Proposed Transaction*",[190] Stadler's behaviour conforms with its

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183 See https://flytoget.no/en/about/our-story/ and https://www.caf net/en/productos-servicios/proyectos/proyecto-detalle.php?p=276.

184 Parties' response to the Statement of Objections, Chapter B.2, paragraph 86.

185 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 87-90.

186 Nevertheless, given that the tender's specifications required a 250 km/h train, CAF's participation and win will be taken into account in the present decision's bidding analysis for high-speed trains.

187 […]

188 Parties' response to Statement of Objections, Chapter B.2, paragraph 102.

189 [...]'s e-mail response of 27 June 2018, *[...]* (ID4171).

statement, as the company has not sought pre-qualification nor participated in any call for tenders in very high-speed rolling stock.

(266) Therefore, any competitive constraint exercised by Stadler is limited to high-speed rolling stock and is unlikely to develop in very high-speed rolling stock.

(C.iv) Talgo

(267) Talgo is a Spanish company active in high and very high-speed rolling stock. In the EEA, Talgo has only sold very high-speed rolling stock (its "Avril" platform) in Spain, having won the 2016 Renfe tender. In the rest of the world, Talgo's very high-speed trains have been sold and are in operation in Saudi Arabia (2011 SRO). Talgo has also sold a high-speed train to the Uzbekistan Railways (2009 and 2015).

(268) According to the Parties, Talgo is implementing an "*internationalization strategy*", seeking to obtain supply contracts outside of its home country.[191] In this context, it is worth noting that Talgo's successful bid for the Uzbekistan Railways calls for tenders was uncontested as no other supplier submitted a competing bid for this contract. Talgo's successful bid (with Bombardier) for the 2011 SRO contract allowed Talgo to develop a train adapted to desert operations, which require specific corrosion-resistance to resist travel in sandy environments. […].[192]

(269) Within the EEA, Talgo's bidding activity outside of Spain has remained limited since 2008, […]. Nevertheless, Talgo has been pre-qualified to bid in the ongoing HS2 tender.

(270) Talgo is therefore a credible competitor in Spain, but remains largely untested in very high-speed rolling stock tenders within the EEA. Its activities in the rest of the world nonetheless support the notion that, unlike other suppliers, Talgo has a recent track-record of selling high and very high-speed trains to foreign operators.

(C.v) Other suppliers

(271) In addition to EEA-based suppliers, the Notifying Party considers that CRRC, Hyundai Rotem and Kawasaki exercise competitive pressure on a worldwide basis.

(272) CRRC, a Chinese State-owned rolling stock manufacturer supplied the world's largest fleet of high and very high-speed train, entirely operated in China. CRRC's development occurred under shelter of rules that prevent competition from foreign competitors in China, as explained in recital (129) above.

(273) In the rest of the world, CRRC's sales have been limited to the award of a contract for the Indonesian Railway. That contract was part of a larger project involving financing and building a very high-speed rail infrastructure in Indonesia. No trains have yet been delivered at the date of this Decision. Furthermore, the Notifying Party considers that this contract was not open to competition. As the Notifying party explained, […].[193]

(274) In the EEA, […].[194]

(275) It follows that CRRC has not sold any high or very high-speed rolling stock in normal competitive conditions so far, nor has it been deemed fit to do so.

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190 Parties' response to Statement of Objections, Chapter B.2, paragraph 98.

191 Parties' response to Statement of Objections, Chapter B.2, paragraph 106.

192 […].

193 Notifying Party's CPL.

194 Parties' response to Commission's request for information RFI 10, question 13 and Annex Q 13.3.

(276) Nevertheless, the Parties consider that CRRC's expansion outside of China is likely to exercise a constraint on the Merged Entity, because (i) CRRC aims at exporting its rolling stock, (ii) has developed its technology on the basis of European technology transfers, (iii) has developed a TSI-compliant platform.

(277) The Parties' arguments in relation to the prospective expansion of CRRC will be examined in Section 5.3.3.3. At this stage, it suffices to note that, although CRRC has declared, in its marketing material, that it "*designed*" a platform "*in accordance with the European Railway Standard TSI*",[195] CRRC holds no TSI certification in relation to any high or very high-speed platform. In the course of the investigation, […].[196]

(278) Hyundai-Rotem is a South Korean supplier of high and very high-speed trains. It has only sold rolling stock in South Korea. It has not participated in any high or very high-speed tender outside of South Korea in at least the past 10 years. Although the Parties believe that Hyundai-Rotem was involved in the 2018 TCDD call for tenders, they confirmed that the company ultimately did not submit an offer.[197]

(279) Kawasaki is a Japanese very high-speed train supplier, part of the Shinkansen ("bullet train") consortium. Several models of the Shinkansen have been sold and operate in Japan.

(280) Kawasaki and other members of the Shinkansen consortium also sold very high-speed rolling stock to the Taiwan High-Speed Rail Corporation, which marked the first export of the Shinkansen technology outside of Japan. According to the Notifying Party, Kawasaki may also be involved in the supply of very high-speed rolling stock to India, although public information report delays in the construction of India's high-speed rail infrastructure.[198]

(281) Kawasaki has never participated in any high or very high-speed calls for tenders outside of Asia.

(D) Upcoming tenders and growing global demand

(282) In order to minimise the impact of the Transaction on the smaller conceivable geographic market definition, the EEA, the Parties argue that the importance of European demand is declining as demand for high and very high-speed trains increases in the rest of the world. Because the majority (56%) of high-speed lines under construction are outside of the EEA, the Parties consider that "*the majority of the addressable high-speed market will shift to other countries over the next years*".[199]

(283) In the EEA, the Parties expect that […] upcoming tenders will be organised in the foreseeable future (up until 2025), as listed in the following table.

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195 See CRRC 30 August 2018 press release entitled "*Cool Debut of New Power Concentrated EMU Developed by CRRC! Its speed can reach 300 km/h!*" (http://www.crrcgc.cc/en/g7389/s10408/t295952.aspx).

196 CRRC's response to Q1 – High-speed trains – Questionnaire to competitors, questions C.7.1 and C.B.1 et seq. B.A.A.2.4.1.1 (ID2830).

197 Parties' response to Statement of Objections, Chapter B.2, paragraph 130.

198 See, for example, https://economictimes.indiatimes.com/industry/transportation/railways/indias-200-miles-per-hour-bullet-train-has-starting-trouble/articleshow/66254543.cms.

199 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 20.

Table 8: Upcoming high and very high-speed tenders – EEA[200]

Country	Customer	Forecasted order value (EUR M)	Max speed	Incumbent	Expected award date
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: Parties' response to the Article 6(1)(c) Decision, Annex R.B.2.2.; supplemented by Parties' Response to RFI 79, Annex Q6.1.[201]

(284) The total forecast value of orders in the EEA thus amounts to EUR […] for the period 2018-2025. This is smaller than the total demand of the previous 8 years (2011-2018), which amounted to EUR […].[202] However, that figure includes orders from SNCF and Deutsche Bahn, which historically have only purchased high and very high-speed rolling stock from Alstom and Siemens.

(285) Excluding demand from SNCF and Deutsche Bahn, the total forecasted order value in the EEA for the period 2018-2025 amounts to […].[203] Therefore, contrary to the Parties' argument, EEA demand emanating from customers other than SNCF and Deutsche Bahn is significantly increasing.

(286) In the rest of the world, the Parties' also expect […] upcoming tenders in the foreseeable future (up until 2025), as listed in the following table.

200 In addition to the following list, the Parties stated that they expected a […] and a 2018 order from Deutsch Bahn for high-speed trains. On the basis of publicly available information, Deutsche Bahn placed an order for ICE 4 high-speed trains to Siemens (https://www.siemens.com/press/en/feature/2015/mobility/2015-12-ice4.php); […].

201 Information contained in the Parties' response to the Commission request for information RFI 79 should contain the most up to date assessment. To the extent that it differs from information submitted previously, the most recent information is included. To the extent that the Parties provide different forecasted order intake estimates, the lowest estimate is indicated.

202 Including the 2014 SBB tender in addition to EEA-based customers.

203 Including the 2014 SBB tender in addition to EEA-based customers.

Table 9: Upcoming high and very high-speed tenders – Rest of the world

Country	Customer	Forecasted order value (EUR M)	Max speed	Incumbent	Expected award date
[…]	[…]	[…]	[…]	[…]	[…][204]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: Parties' response to the Article 6(1)(c) Decision, Annex R.B.2.2.

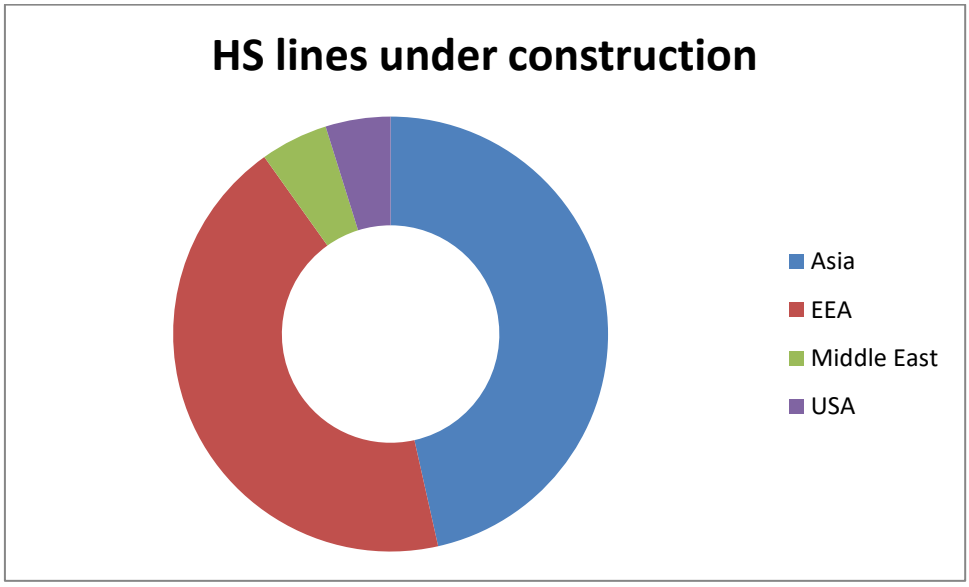
(287) The total forecast order value in the rest of the world amounts to EUR […].

(288) It follows that the level of forecast demand in the EEA by 2025 is […]. Contrary to the Parties' argument, the growth of the high and very high-speed market that is addressable by the Parties' competitors is material and significant both inside and outside of the EEA.

(289) These figures are consistent with the scope and geographic footprint of high-speed lines under construction in the world. The following figure shows that high-speed lines under construction are mainly and equally located in the EEA (44%) and in Asia (46%, inclunding Turkey), the rest being located in the USA and the Middle East.

204 On the basis of publicly available information, this order does not appear to have been placed at the date of this Decision.

Figure 2: High-speed lines under construction (distance, km) – Worldwide (excl. China, Japan and South Korea)



Source: https://uic.org/IMG/pdf/20180612a_high_speed_lines_in_the_world.pdf

(290) These figures are in line with the comparable forecasted level of demand for high and very high-speed rolling stock in the EEA and the rest of the world.

(291) Therefore, anticipated tenders account for significant demand both within and outside of the EEA. In the EEA, future tenders are mainly expected to be organised by operators other than SNCF and Deutsche Bahn and represent an increase of the size of the market addressable by competitors compared to the previous decade.

(E) Participation in tenders

(E.i) The Notifying Party's arguments

(292) The Notifying Party argues that participation in high and very high-speed tenders significantly increased in recent years and considers that, based on participation observed in recent tenders, there is a trend towards greater participation going forward such that the Parties expect to face at least four bidders in future tenders.

(293) The Parties consider that participation trends should be deducted from comparing participation in the 2008-2012 period to the 2013-2018 period. Furthermore, […]* that the 2018 SNCF "*TGV du Futur*" order "*skews the analysis*" and should therefore not be considered when examining participation trends.[205]

(294) In addition, the Parties argue that the existence of only two effective bidders suffice to ensure a competitive outcome.[206]

(E.ii) Overall participation and win rates (2008-2018)

(295) Prospective suppliers are selective in their decisions to bid in tenders for high and very high-speed rolling stock in light of the high cost of bidding, expected competition and the need to match customers' specifications in order to have a reasonable chance of winning.

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* Should read: "they argue".

205 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 212.

206 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 208.

(296) The following table shows that in the overwhelming majority of cases the number of participants did not exceed two in calls for tenders over the 2008-2018 period on a worldwide basis on the overall market for high and very high-speed rolling stock.

Table 10: Number of participants in high and very high-speed rolling stock tenders – 2008-2018

Number of Bidders	EEA (incl. Switzerland) 2008-2018		Worldwide (excl. China, Korea, Japan) 2008-2018	
	Number of tender procedures	Proportion of total	Number of tender procedures	Proportion of total
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
Average number of bidders	[…]		[…]	

Source: Notifying Party's CPL.

(297) The same is true on the narrower very high-speed rolling stock market, as shown in the following table.

Table 11: Number of participants in very high-speed rolling stock tenders – 2008-2018

Number of Bidders	EEA (incl. Switzerland) 2008-2018		Worldwide (excl. China, Korea, Japan) 2008-2018	
	Number of tender procedures	Proportion of total	Number of tender procedures	Proportion of total
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
Average number of bidders	[…]		[…]	

Source: Notifying Party's CPL.

(298) The figures in Table 11 are based on the Notifying Party's data. In its CPL, the Notifying Party counts only […] bidder for the 2018 SNCF "*TGV du Futur*" tender and […] bidders in the 2016 Renfe tender. As indicated in recital (230) above, Alstom's internal documents […].[207][…]. In relation to the 2016 Renfe tender, in their response to the Statement of Objections, the Parties indicated that, contrary to the data provided in its CPL, Bombardier ultimately did not submit a bid once the

[207] Parties' response to Commission's request for information RFI 10, question 27; Form CO, Annex Alstom 5(4), […].

tender was relaunched following an appeal by Bombardier against the initial bid specification.[208] Therefore, there were […] participants in this tender. Finally, […].

(299) These adjustments however do not affect the conclusion that can be drawn from the data, which is that, over the 2008-2018 period, even taking into account the participation in the […]:

(1) On the overall market for high and very-high speed rolling stock […]% of calls for tenders in the EEA […]% on a worldwide basis attracted two bidders or less;

(2) On the narrower market for very high-speed rolling stock […]% of calls for tenders in the EEA […]% on a worldwide basis attracted two bidders or less.

(300) Moreover, in the market investigation, the vast majority (71%) of customers mention that they have pre-qualified four or more suppliers on average. Therefore, despite the willingness of customers to invite at least four or more suppliers to participate in tenders, customers have most often two or less available choices in practice.

(301) In this context, data on participation and wins in high and very-high speed tenders show that the Parties are very significant players. On an individual basis, each of Siemens and Alstom participated and won more high and very-high speed tenders than any other supplier before the Transaction.

(302) First, the following table reports the overall participation and winning rates[209] in the overall high and very high-speed market.

Table 12: Participation and win rates – High and very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		**Worldwide excl. China, Japan and Korea**	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

208 Parties' response to the Statement of Objections, Chapter B.2, footnote 110 under paragraph 47.

209 Winning rates are defined as the share of competitive tenders won by each supplier based on the number (as opposed to value) of projects won. In the case of wins by consortia the Commission has attributed one win to each of the two consortia members, thus leading to total winning rates possibly slightly above 100%.

(303) On the overall market for high and very high-speed rolling stock, Alstom and Siemens are, respectively, the market's leader and number two player both in terms of participation and winning rate. This holds true both at the EEA level and on a worldwide basis.

(304) Second, with the appropriate caveats related to the very low sample size, the following table reports the overall participation and win rates in the narrower very high-speed market.

Table 13: Participation and win rates – Very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		**Worldwide excl. China, Japan and Korea**	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(305) The Parties' significant position is even more prominent on the narrower market for very high-speed rolling stock. Again, Alstom and Siemens are, respectively, the market's leader and number two player in terms of participation, both EEA-wide and worldwide. They hold the same winning rate, both in the EEA and on a worldwide basis.

(306) These figures illustrate the significant lag between the Parties on the one hand and their competitors on the other in terms of both participation and wins, regardless of market segmentations or geographic scope. Although these observations are true on both conceivable market definitions, they are particularly marked on the narrower market for very high-speed rolling stock. In tenders for very high-speed trains, no supplier enjoys more than half of each of the Parties' individual winning rate, both in the EEA and at the worldwide level.

(307) […].[210]

(308) Furthermore, certain competitors' low win rates indicate that they barely exercise any competitive pressure on the market. On the overall market for high and very high-speed rolling stock, CAF, Hitachi-Ansaldo and Stadler have very low winning rates, especially at the worldwide level.

(309) As concerns CAF and Stadler, this is due to their limited activities and/or success in very high-speed tenders. Although CAF participated in tenders for very high-speed rolling stock, it has had no success throughout the examined period. CAF's activities

210 […].

are limited to a small order from Flytoget in Norway, which it won in 2015, only to ultimately sell rolling stock with a maximum speed below 250 km/h. Stadler remains inactive in very high-speed rolling stock and is solely active in high-speed rolling stock following its 2014 win of an SBB tender.

(310) Hitachi-Ansaldo's winning rate results from a 2010 Trenitalia tender for very high-speed rolling stock. Although the company has had other sales, both in high-speed rolling stock (sales of the former AnsaldoBreda's Fyra trains to Trenitalia) and in very high-speed rolling stock (sales of Shinkasen-based trains to THRSC (Taiwan)), they resulted from orders obtained outside of a competitive tender, as explained in recital (253).

(311) As a result, competitive conditions appear to be somewhat different when considering the overall high and very high-speed rolling stock market or the narrower market for very high-speed trains only. Less competitors are active and/or successful in very high-speed tenders such that the Parties' competitive importance in that narrower relevant market is all the more significant and less likely to be contested.

(E.iii) Participation trends

(312) The Parties assert that there is a trend towards greater participation in high and very high-speed rolling stock tenders that can be expected to continue after the Transaction, leading to an increase in the average number of bidders in the foreseeable future.[211] However, no such trend can be derived, either from the bidding data in past tenders or from observations in ongoing tenders.

a) Assessment in relation to past tenders

(313) In order to demonstrate the existence of a trend towards greater participation in past calls for tenders, the Notifying Party relies on participation statistics for both high and very high-speed trains. These data show […] tenders with […] bidder over time: […] noting that, while the Notifying Party lists […] for this tender, it also acknowledged that Bombardier ultimately did not submit a bid as explained in recital (298)).

(314) However, whilst the Parties are active in both high and very high-speed rolling stock, their competitor, which participated in some of the tenders identified, are not active in both categories:

(a) Stadler is not active in very high-speed rolling stock. Stadler indicated having no plans to enter the very high-speed rolling stock market and does not bid for very high-speed rolling stock contracts;

(b) CAF only supplies high-speed rolling stock. Although CAF is bidding in very high-speed rolling stock tenders, it has not been awarded any contract and therefore cannot provide competitive references to prospective customers for very high-speed rolling stock.

(315) The participation of different players and/or their credibility when bidding for contracts is therefore disparate. For example, Stadler's recent participation and success in high-speed rolling stock tenders has no bearing on participation trends in very high-speed rolling stock. Therefore, an accurate review of participation trends

[211] Parties' response to Article 6(1)(c) Decision, paragraph 112; Parties' response to the Statement of Objections, Chapter B.2, paragraphs 198 et seq.

requires accounting for the difference in competitors' ability to bid for particular tenders, which can be adequately reflected when reviewing high-speed rolling stock and very high-speed rolling stock tenders separately.

(316) In high-speed rolling stock, over the 2008-2018 period, there have been […] bidders per tender on average in the EEA (incl. Switzerland) and […] worldwide. […]. In […] instances […] two suppliers submitted a bid. In the remaining […] cases, there have been only one bidder ([…]).

(317) No trend can be deducted from this data. The Notifying Party argues that participation in calls for tenders over the 2008-2012 period should be compared to participation in calls for tenders over the 2013-2018 period. […]. The average number of bidders was […] in 2008-2012 and […] in 2013-2018. However, no meaningful conclusion can be drawn from comparing these figures because the number of tenders in each respective period of time is too limited to infer any lasting trend.

(318) This limitation notwithstanding, the Notifying Party correctly argues that new bidders have recently emerged in high-speed rolling stock, in particular Stadler and CAF, which had previously never bid and nevertheless respectively won the 2014 SBB tender and the 2015 Flytoget tender. The Parties also submitted evidence showing that […].[212][…], which suggests that the emergence of CAF and Stadler as bidders in high-speed rolling stock tenders is durable.

(319) In very high-speed rolling stock, over the 2008-2018 period, the average number of bidders per tender has been […] in the EEA (incl. Switzerland) and […] worldwide. There have been only […] tenders in which more than two bidders competed: the […]. In […] instances […] only one supplier submitted a bid. In the majority of cases, there have been two bidders ([…]).

(320) No trend can be deducted from this data. Similarly as for high-speed rolling stock, the Notifying Party argues that participation in calls for tenders over the 2008-2012 period should be compared to participation in calls for tenders over the 2013-2018 period. However, the number of worldwide contestable calls for tenders over shorter periods of time in very high-speed rolling stock is also limited: […] (including the […]).[213] The average number of bidders was […] in 2008-2012 and […] in 2013-2018. Comparing these figures cannot lead to meaningful conclusions because the numbers of tenders is too limited to infer any lasting trend.

(321) In any event, the notion that "*recent developments confirm increased competition*"[214] in very high-speed rolling stock tenders is incorrect. […]. Thus, the 2016 Renfe tender effectively attracted […] bidders; nonetheless so did […]. All […] other very high-speed tenders throughout the 2008-2018 period ([…]) attracted no more than two to three bidders.

b) Assessment in relation to future tenders

(322) The Parties predict that participation rates will increase in the future. They expect the average number of bidders to increase up to […] (according to Siemens) or to […] (according to Alstom).[215] These predictions are at odds with the much lower average number of bidders in the 2008-2018 period for high-speed, which has been […]. The

212 Parties' response to the Statement of Objections, Chapter B.2, paragraph 225.
213 […]. Agreed non-confidential minutes of call with […], 20 December 2018, p. 1 (ID8326).
214 Parties' response to the Statement of Objections, Chapter B.2, paragraph 228.
215 Parties' response to the Statement of Objections, Chapter B.2, paragraph 238.

Parties admitted that "*it is not always possible to provide corroborating documents*", noting that "*such forward-looking exercises are, by nature speculative*".[216] Nonetheless, in order to support their predictions, the Parties rely on public presentations by Talgo and Hitachi, which contain no tender-specific information about the companies' future bidding strategies other than vague intentions to grow their high-speed business.[217]

(323) The existing evidence on future participation rates, in addition to past participation rates, relate to ongoing tendering procedures organised by SJ and HS2:

(a) The Swedish operator SJ is procuring high-speed rolling stock through a tender […];

(b) HS2 is the entity in charge of running the HS2 project, including in particular the procurement of rolling stock, on the basis of a delegated authority from the UK's Secretary of State for Transport.[218] HS2 pre-qualified five prospective bidders (Alstom, the Bombardier/Hitachi-Ansaldo consortium, CAF, Siemens and Talgo) in order to preserve competition, anticipating that the number of final bidders will likely be less than five due to (i) the possible formation of additional consortia, (ii) the present Transaction and (iii) withdrawals from the tendering process which, according to […], […]* "*very common*" in the UK railway market.[219]

(324) The circumstances of these tenders confirm that Stadler remains inactive in very high-speed rolling stock tenders. Therefore, if anything, the emergence of Stadler as an active bidder in high-speed rolling stock tenders does not have any bearing on future participation in very high-speed rolling stock tenders.

(325) Furthermore, as explained by […]. The likelihood of a withdrawal before the final stage of the tendering process has thus been confirmed by both […] and […].[220] In addition, the Transaction will inevitably reduce the number of bids to four at the most.[221] Therefore the circumstances of the HS2 tender do not suggest the existence of a durable trend towards greater participation in very high-speed rolling stock tenders.

(326) It follows that a significant increase in participation in future high and very high-speed rolling stock tenders is unlikely.

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* Should read: “are”.

216 Parties' response to the Commission request for information RFI 55, question 4.

217 see https://www.talgo.com/upload/informes-investors/Talgo_FY2017_Results_Presentation_vF_ENG.pdf, page 16: "*Talgo is currently working on opportunities expected to be awarded throughout the next 24 months with a total value amounting 8.5 €b, among which: VHS/HS lead the pipeline mainly driven by identified tenders in Europe and MENA, highlighting the UK HS2 process (supply of up to 54 VHS trains) in which Talgo was recently shortlisted; Europe as the geographical are with higher number of opportunities targeted in the short-medium term*"; http://www.hitachi.com/New/cnews/month/2018/06/180608/20180608_05_rs_presentation_en.pdf, page 21: "*we will look to invest in our existing high-speed products and increase market shares outside of Japan (e.g. India, Texas USA)*"

218 HS2 advises the Secretary of State, which adopts the final procurement decision.

219 Agreed non-confidential version of minutes of call with […], 16 October 2018, p. 2 (ID6014).

220 Agreed non-confidential version of minutes of call with […] of 16 October 2018, p. 2 (ID6014); […]

221 HS2 does not allow a single entity to submit more than one bid in a competition. Consequently, if the Transaction closes before the HS2 tender is awarded, the Merged Entity will have to withdraw one of the bids submitted by Siemens and Alstom. […].

5.3.3.2. Closeness of competition

(327) In line with paragraphs 28 to 30 of the Horizontal Merger Guidelines, the present assessment will examine whether the Transaction eliminates close competitors.

(328) Under the Horizontal Merger Guidelines, and in line with Commission practice and economic theory, the fact that the merging parties are close competitors is sufficient to establish competitive harm. They do not necessarily have to be the closest or "*uniquely close*"[222] competitors. This is all the more true in cases where the merger creates or strengthens a new market leader with large or very large market shares.[223] The Commission will also examine the degree of competitive constraints that the remaining competitors will exercise on the Merged Entity post-Transaction.

(329) The following Sections show that the Parties compete closely on the basis of their product offering and geographic footprint (A). Bidding analysis further demonstrates the Parties' close competitive relationship: suppliers exert competitive pressure on each other at the bidding stage (B) and the analysis of past bidding data confirms the Parties' closeness and the likely significant post-merger reduction in effective alternatives available to customers both in terms of participation in tenders (C) and win rates (D). Finally, the Parties' internal documents confirm that they compete closely (E).

(A) Qualitative assessment of closeness of competition

(A.i) The Notifying Party's arguments

(330) The Parties consider that Siemens and Alstom do not compete closely, on the basis of their product offering. In particular, the Parties consider that Siemens and Alstom are not "*uniquely close competitors*".[224] To support this view, the Parties argue that (i) the Parties' offerings are not close, irrespective of customisation[225] and that (ii) the results of the Phase I market investigation as to closeness of competition are inconclusive.[226]

(331) In respect of their product offering, the Parties argue that their respective platforms differ substantially in terms of number of decks, tilting mechanism, traction system and architecture. The Parties considers that Alstom's double-deck platform is significantly different and competes more closely with Talgo's platforms than Siemens' Velaro platform. Similarly, they assert that Alstom's single-deck platforms are not close competitors to Siemens' platforms either, with the possible exception of Alstom's AGV platform, which however the Commission considers non-competitive.

(332) In respect of the results of the market investigation, the Parties consider that respondents supported their views in relation to differences between the Parties' platforms in terms of decks, traction and architecture. The Parties also contest that respondents considered them to be the closest competitors in high and very high-speed rolling stock.

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222 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 124.
223 Commission Decision in Case M.7278 – GE/Alstom (2015), recital 235.
224 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 124.
225 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 138-147.
226 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 124-131.

(A.ii) The results of the market investigation and the Commission's assessment

a) Parameters of competition

(333) When bidding in rolling stock tenders, suppliers compete on multiple parameters. Evidently, an important parameter relates to the trainsets offered to customers. Customers issue technical specifications applying to the rolling stock they wish to procure that suppliers must match in order to be awarded supply contracts.

(334) Other parameters also apply and relate to the conditions of manufacturing and delivery of trains, a supplier's expertise, know-how and financial viability, supply-chain management, engineering and R&D capacity in case of specific developments and other factors. These parameters apply in both high and very high-speed rolling stock tenders.

(335) As explained by […], "[o]*ther than the rolling stock itself, these factors would include, but not necessarily be limited to, the supplying organization's financial strength, staff, and post-award organization and also the supplier's track-record in relation to similar rolling stock and maintenance services*".[227] Similarly, […] indicated that its rolling stock procurement process aimed at "*buy*[…]* *trains from established suppliers with a track-record of selling trains for cross-border operations in Europe, with an existing proven platform, expertise and available manufacturing capacity*".[228]

(336) It follows that tender procedures for the procurement of rolling stock aim at fostering competition not just for the supply of trainsets, but also on the basis of the supplying entity's ability to fulfil the requirements of a rolling stock project including, but not limited to, a supplier's competitiveness in rolling stock manufacturing, assembly and delivery, as well as its experience and viability. As […] indicated, "*its bid evaluation does not rely just on the intellectual property/product being offered but also on how it is planned to be delivered (e.g., localization/manufacturing and supply chain capability) and which company delivers it (e.g., financial viability)*".[229]

(337) Consequently, the assessment of closeness of competition between the Parties cannot be limited to a comparison of the observable characteristics of their existing platforms, but must also take into account other overall factors (such as track-record, expertise, portfolio, manufacturing locations, ability to customise, etc.) that are relevant for customers when awarding tenders.

(338) It follows that the assessment of closeness of competition between the Parties should rely on an analysis of the closeness of their product portfolios as well as, more broadly, on the closeness of the Parties' overall positions as alternative suppliers of high and very high-speed rolling stock.

b) Results of the market investigation in relation to closeness of competition

(339) In the course of the Phase I market investigation, competitors and customers were probed on closeness of competition in high-speed rolling stock and very high-speed rolling stock separately.

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* Should read: "*buy*[ing]".

227 Agreed non-confidential minutes of call with […], 30 November 2018, p. 1-2 (ID7403).

228 Agreed non-confidential minutes of call with […], 20 December 2018, p. 1 (ID8326).

229 Agreed non-confidential minutes of call with […], 28 November 2018, p. 2 (ID7401).

(340) In high-speed rolling stock, the majority of competitors consider that the Parties respectively constitute each other's closest competitors.[230] In order to obtain the customers' perspective, different metrics have been tested in the course of the market investigation to assess closeness of competition.

(341) Customers have been asked to identify the Parties' respective competitors in terms of product range and technical capabilities. The results show that Alstom and Siemens are perceived by customers as each other's closest competitors in at least either one of these factors. Thus, in high-speed rolling stock, Siemens and Talgo were most often cited as Alstom's closest competitors in terms of product range and Alstom was most often cited as Siemens' closest competitor in terms of technical capabilities.[231]

(342) Customers were also requested to grade all alternative suppliers' in terms of best to worse alternatives to each of Siemens and Alstom on a scale from 1 to 10. In total, along with Stadler, Siemens and Alstom were graded as each other's best alternative in high-speed rolling stock.[232]

(343) Customers also reported the extent to which having each of Siemens and Alstom bid in tenders enabled them to obtain better supply conditions from other suppliers. In their responses, customers indicated that Alstom bids enabled them to obtain better conditions mostly from Siemens and vice-versa.[233]

(344) In very high-speed rolling stock, the market investigation led to even stronger results.

(345) First, competitors unanimously consider that the Parties are each other's closest competitors in the very high-speed rolling stock market.[234]

(346) Second, customers also clearly consider that the Parties are close competitors. In terms of technical capabilities, Siemens was most often cited by customers as Alstom's closest competitor and Alstom and Bombardier/Hitachi-Ansaldo were most often cited as Siemens' closest competitors.[235]

(347) When asked to grade all alternative suppliers' in terms of best to worse alternatives to each of Siemens and Alstom on a scale from 1 to 10 in very high-speed rolling stock, Siemens and Alstom have been graded as each other's best alternatives.[236]

(348) Finally, customers indicated that, like for high-speed rolling stock, Alstom bids enabled them to obtain better conditions mostly from Siemens and vice-versa in very high-speed rolling stock tenders.[237] The one difference noted between the two segments was Stadler's absence from the very high-speed rolling stock market.[238]

(349) It follows that the Parties compete closely on the overall market for high and very high-speed rolling stock as well as on the narrower market for very high-speed rolling stock, where they are perceived by customers to constitute very close competitors.

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230 Q1 – High-speed trains – Questionnaire to competitors, questions C8.

231 Q2 – High-speed trains – Questionnaire to customers, question 20 (Bombardier/Hitachi-Ansaldo is cited more often than Siemens as Alstom's closest competitor in terms of technical capabilities. No clear closest competitor to Siemens has been identified in terms of product offering.).

232 Q2 – High-speed trains – Questionnaire to customers, question 24.

233 Q2 – High-speed trains – Questionnaire to customers, questions 22 and 23.

234 Q1 – High-speed trains – Questionnaire to competitors, questions C9.

235 Q2 – High-speed trains – Questionnaire to customers, question 21 (in terms of product range, no clear closest competitors to Alstom or Siemens have been identified).

236 Q2 – High-speed trains – Questionnaire to customers, question 25.

237 Q2 – High-speed trains – Questionnaire to customers, questions 22 and 23.

238 Q2 – High-speed trains – Questionnaire to customers, questions 22.9 and 23.9.

c) Qualitative evidence on closeness of competition

(350) The market investigation has confirmed that high and very high-speed rolling stock are highly customer-specific products that address detailed technical specifications. Suppliers do not compete on the basis of "*flagship*" products, but rather on the basis of how closely their products can fit a customer's demand and their ability to customise their respective platforms to match customers' specifications.

(351) First, both Parties develop and maintain a diverse platform portfolio in order to address customer demand. As the Notifying Party explained, "[i]*n order to cut down both development time and production costs, suppliers have largely moved to the creation of common modular platforms from which derivative (final) products can be efficiently produced. This shift has removed the need to design and manufacture new products for each project*".[239] Suppliers therefore offer solutions to customers based on the platform within their portfolio closest to tender specifications and most efficiently customisable.

(352) Alstom maintains the largest portfolio on the market, with […] platforms with diverse technical characteristics to address market demand, including […] high-speed platform (the Pendolino) and […] very high-speed platforms (the Euroduplex/Avelia DD, the Avelia Liberty and the AGV).[240] Similarly, each item in Siemens' portfolio was conceived to fit customer demand: Siemens has a bespoke high-speed product for Deutsche Bahn, the ICE 4, and a standardised very high-speed platform, the Velaro. […].

(353) In this context, depending on the tenders, Alstom has submitted bids either offering […] for high-speed rolling stock tenders.[241] In very high-speed rolling stock, Alstom has submitted bids against […]. In certain tenders, the Parties have offered several solutions: thus, Alstom submitted bids offering […].[242]

(354) The Parties different platform/product offered in overlapping tenders are listed in the following Table:

239 Form CO, Chapter B.1, paragraph 3.
240 Parties' response to the Commission's request for information RFI 10, question 31.
241 Parties' response to the Statement of Objections, Chapter B.2, paragraph 314.
242 Parties' response to the Statement of Objections, Chapter B.2, footnotes 489 and 514.

Table 14: Worlwide high and very high-speed tenders in which Parties overlapped – 2008-2018

Year	Country	Customer	Maximum speed required	Alstom solution(s)	Siemens solution(s)	Winning solution
2008	Germany	Deutsche Bahn	330 km/h	[…]	Velaro	Velaro
2008	Italy	NTV	300 km/h	[…]	[…]	[…]
2010	UK	Eurostar	320 km/h	[…]	Velaro	Velaro
2011	Germany	Deutsche Bahn	230-250 km/h	[…]	ICE 4	ICE 4
2013	Turkey	TCDD	320 km/h	[…]	Velaro	Velaro
2014	Switzerland	SBB	250 km/h	[…]	[…]	Stadler EC250
2016	Spain	Renfe	350 km/h	[…]	[…]	Talgo Avril
2018	Spain	ILSA	300 km/h	[…]	[…]	[…]

Source: Parties' response to the SO, Chapter B.2, paragraph 314, footnote 514 and paragraph 305

(355) Against this background, the Notifying Party submits a platform-by-platform comparison highlighting the technical differences - in terms of number of decks, traction and architecture - between the Parties' platforms to demonstrate that they are not closely substitutable. However, that approach assumes that these factors lead customers to differentiate the Parties' respective product offerings such that they would not constitute close substitutes.

(356) The results of the market investigation contradict the Notifying Party's view in this respect: competitors have confirmed that the Parties' product offerings compete closely despite having different architectures.[243] Customers concurred, ranking the Parties' product offerings (in terms of range, competitiveness, quality and innovation) as the best alternative to one another in particular in very high-speed rolling stock.[244]

(357) On the supply-side, suppliers form bids based on platforms most closely matching tender specifications. In this respect, the Parties rely on extensive expertise, as reflected in their long-standing worldwide leading positions.

(358) In very-high speed rolling stock specifically, the fact that Alstom has chosen to pit its double- and/or single-deck platforms against Siemens' Velaro shows that, despite differentiated features, these platforms compete closely. If that were not the Parties' assessment, they would not have submitted bids in the relevant tenders. Furthermore, overall, the Parties have met each other more often than any other competitors in high and very high-speed tenders, as examined in more detail in recitals (390) to (396).

(359) […][245] shows that Alstom, by virtue of its diversified product portfolio, is able to compete closely with Siemens even when its initial product offering no longer appears adapted given tender specifications.

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243 Q1 – High-speed Trains – Questionnaire to competitors, questions C.8.1, C.8.1.1, C.8.2 and C.8.2.1.

244 Q2 – High-speed Trains – Questionnaire to customers, question 24-25.

245 As explained by the Parties in relation to the 2008 Deutsche Bahn and 2010 Eurostar tenders (Parties' response to the Statement of Objections, Chapter B.2, paragraph 301).

(360) Second, the Parties argue that Alstom's AGV platform and Siemens' Velaro platforms are the closest competing products within the Parties' portfolios.[246] They argue that, if the Commission no longer regards the AGV to be competitive, any loss of competition would be unrelated to the Transaction.

(361) However, the competitive relationship between Siemens and Alstom has evolved in time. At the time […].[247] In subsequent tenders, the AGV was unsuccessful against the Velaro. This has contributed to Alstom's […].[248]

(362) Past interactions show that head-to-head competition between Siemens and Alstom has not been limited to competition between their "off the shelf" platforms, but also encompassed innovation and customisation efforts aimed at surpassing each other in calls for tenders for specific solutions. As explained in recitals (333) et seq., the Parties' competitive interactions are more extensive than mere platform rivalry. […] does not lead to the Parties no longer (closely) competing against one another and does not demonstrate any lack of merger-specificity of the Transaction's effects.

(363) Third, as a result of close competition between the Parties, Siemens and Alstom have an unmatched geographic footprint. Both Siemens and Alstom are active outside of Germany and France, with sales to customers in […]. Outside of the EEA, the Parties are active in […].

(364) The Parties' EEA competitors, for their part, have little to no activity outside of their home countries. The only exception is Talgo, with sales in Uzbekistan, a contract for which no other supplier submitted an offer, and in Saudi-Arabia. Although CAF did win the 2015 Flytoget tender for high-speed rolling stock in Norway, this contract resulted in the supply of a 245 km/h-capable train only. As a result, for the most part, the Parties' competitors have not had any high or very high-speed rolling stock sales outside of their home countries.

(365) Evidently, the Parties' more extended footprint is also the result of the Parties' more frequent bidding. However, the fact that the Parties are the most frequent bidders and most frequent competitors in high and very high-speed rolling stock on a worldwide basis also demonstrates their close competitive relationship.

(366) In the rest of the world (excluding China, Japan and South Korea), other manufacturers also have very limited sales outside of their home countries: China's CRRC obtained one contract in Indonesia and Japan's Toshiba/Kawasaki one contract in Taiwan. Hyundai Rotem and Nippon Sharyo are solely active in their home countries (respectively, South Korea and Japan).

(367) However, to this date, the Parties' competitive interaction with CRRC has been limited to […].

(368) For the reasons set out above and in light of the results of the investigation, the Commission considers that the Parties are close competitors.

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246 Parties' response to the Statement of Objections, Chapter B.2, paragraph 312.

247 […]" under "[…].

248 See Alstom internal document, 22 October 2015 email from Jean-Marc Tessier to Andreas Knitter, ID2159-25582.

(B) Suppliers exert competitive pressure on each other at the bidding stage

(B.i) The Notifying Party's arguments

(369) The Notifying Party argues that, despite high historical market shares, the Merged Entity will lack market power because it will continue to compete with a large number of well-established bidders, including European and non-European suppliers. The Notifying Party makes that argument assuming that alternative suppliers exercise a competitive constraint even in instances where they do not effectively bid against the Parties.

(370) According to the Parties, suppliers that are simply pre-qualified to bid in tenders but do not submit a bid, or even merely seek pre-qualification, but fail to obtain it nevertheless constrain suppliers that do submit bids.[249] They hold the view that the ex-ante uncertainty as to the identity of competitors still in the running to submit a bid has led the Parties to overestimate the number of bidders in the tenders in which they have been involved, thus suggesting that there is more competitive constraint than reflected in the number of actual bidders.[250]

(B.ii) Relevant characteristics of bidding markets

(371) As the Commission explained in Case M.7278 – GE/Alstom,[251] in markets characterised by tendering, the general mechanism through which a merger can influence competitive outcomes is similar to what occurs in mergers in ordinary differentiated product industries, where firms also compete on price. That is, a merger internalises the competitive pressure that two firms exercised on each other prior to the merger and can lead each of the remaining firms to bid less aggressively post-merger. The precise mechanism through which a merger can influence bids and the indicia of potential unilateral effects, depend on how the tendering process is set up and on the information available to bidders.

(372) There is no presumption in bidding markets that very few bidders (even as low as two bidders) are sufficient to generate a competitive outcome. This extreme result would theoretically only hold if suppliers sell identical products, have identical costs, have sufficient capacity to serve the entire market and have reliable information on the cost of the rival bidders. However, this result no longer holds if firms offer differentiated products, and therefore earn a margin over cost. As in the present case, bidding markets where firms offer differentiated products are not characterised by the stylised perfectly competitive outcome and can generate non-coordinated effects if two competing firms merge.

(373) In bidding markets, prices are individually negotiated with each customer and, therefore, suppliers can typically engage in extensive price discrimination across customers. This means that a bid submitted to a customer in a specific tender does not have to be offered on similar terms to other customers in other tenders. The existence of individualised pricing means that the price effects of a merger may be targeted at a particular subset of customers, for example those that are more likely to substitute between the merging parties absent the merger. This follows from the fact that even though a price increase across all customers may not be profitable (given

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249 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 82.

250 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 201 et seq.

251 Commission decision in Case M.7278 – GE/Alstom (2015), Annex I - The Commission's Economic Analysis of Bidding Data, recitals 7 et seq.

that too many customers would be able to substitute away from the merging parties), a price increase for a specific subset of customers may be so.

(374) As the Notifying Party explains, in rolling stock tenders, prospective suppliers form and submit bids in a context where there is uncertainty over competing bids. In such settings, the pricing incentives of competing firms resemble those at work in ordinary markets with differentiated products. If there is uncertainty on the required price level of the winning bid, each firm faces a trade-off between the probability of winning the tender and the margin earned in case of winning the tender. A higher bid would reduce the probability of winning the tender but would also increase the margin if the bid is successful. This trade-off is equivalent to the standard trade-off between quantity sold and price in an ordinary differentiated goods market, the difference being that in the case of a tender it is the probability of winning rather than actual quantities sold which enters the trade-off. Each bidder therefore chooses its optimal bid in order to optimise the trade-off between expected sales and price and thereby maximises its expected profits. Pricing incentives and the related incentives to exploit market power in bidding markets are therefore analogous to those at work in standard pricing of differentiated products.

(375) The incentives to increase bids in bidding markets characterised by uncertainty over competing bids following a horizontal merger are very similar to those at work in ordinary markets with differentiated products. The primary difference is that the diversion of sales between competing firms should be understood in terms of expected sales (the probability of winning the tender) rather than actual sales. The incentives of the merging firms to increase prices are thus determined by the closeness of competition between them, understood as the level of diversion between the merging firms before the Transaction (evaluated in terms of winning probabilities), and by the level of pre-merger margins.

(376) Finally, the Commission explained that, in situations characterised by uncertainty on the quality of rival offerings and on the customer evaluation for each of the products offered, the competitive constraint faced by each bidder is determined by the ex-ante probability that rival bidders may make more attractive offers and thus win the tender. When multiple bidders participate by paying a non-negligible cost (i.e. when they participated beyond the pre-qualification phase), this means that, at the time of bid submissions, those bidders believed that they had a positive probability of winning. Therefore, facing more than one rival bidder typically increases the ex-ante probability that the buyer will prefer a rival offer, and therefore increases the competitive constraint on any given bidder. Therefore, it is not only the runner-up that represented a competitive constraint on the winning bidder, and a decrease in the number of remaining bidders due to the merger may result in a reduction of the competitive constraint faced by the Merged Entity.

(B.iii) Bidding in rolling stock tenders

(377) The tendering process for rolling stock, including in tenders for high and very high-speed trains, is carried out in four phases:[252]

(a) An initial market engagement phase, during which customers collect information about manufacturers and available products and solutions;

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[252] Notifying Party response to the Commission's request for information RFI 10, Annex Q 80.1, updated "High level summary of rolling stock purchasing processes in Europe", dated 22 March 2018, page 2 (ID1099-33).

(b) A pre-qualification phase, which typically follows the publication of a request for qualification ("RFQ") and consists in customers providing an overview of the tender (a Pre-qualification Pack, "PQP") and issuing a pre-qualification questionnaire to assess prospective suppliers' track record and credentials. At the end of the process, customers select suppliers qualified to bid. Customers usually do not make the short-list of qualified suppliers public;

(c) A bidding phase, which is marked by the issuance of a request for proposals ("RFP"), which describes the project's specifications, assessment criteria, grading scheme and formal conditions for submitting bids. Prospective suppliers prepare and submit bids on this basis. Tenders may have more than one bidding round, often involving the submission of best and final offers ("BAFOs");

(d) A post-bidding phase, which involves the customers' evaluation of bids and award, as well as final exchanges with the supplier.

(378) A supplier's involvement in the early stages of a tender is not necessarily indicative of competitive pressure. In particular, and contrary to the Parties' argument,[253] suppliers that pre-qualify to bid in a tender but do not effectively bid do not exercise a meaningful competitive constraint, for several reasons.

(379) First, the cost of participating in the pre-qualification phase is not significant. The Parties' average total costs of bidding in tenders over the past 10 years was as follows:[254]

(a) the average cost incurred by Alstom in high-speed tenders has been EUR […] and EUR […] in very high-speed rolling stock;

(b) the average cost incurred by Siemens in high-speed tenders has been EUR […] and EUR […] in very high-speed rolling stock.

(380) However, the Parties estimate the […]% of their total bidding cost is incurred in the bidding phase, and only […]% in the pre-qualification phase.[255] Therefore merely seeking and obtaining a pre-qualification to bid in a tender does not signal a supplier's belief that it has a high probability of winning. On the contrary, the data shows that customers pre-qualify about twice the number of prospective suppliers than actually submit bids. Withdrawals from tendering before the bidding phase are therefore frequent.

(381) Second, the purpose of the pre-qualification phase from the perspective of a customer is to identify suppliers credible enough to be invited to bid.[256] However, a customer's decision to qualify suppliers does not guarantee the degree of competition which it will effectively enjoy because suppliers then decide whether or not to participate in the actual bidding phase of the tender. Prospective suppliers who pre-qualify thus sometimes drop out of a tender before bidding. For example, out of the multiple suppliers that passed the pre-qualification phase for the 2010 Eurostar very high-speed tender,[257] […]; out of the […] suppliers that took part in the pre-qualification phase for the 2015 Flytoget high-speed tender, only […] candidates submitted

253 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 13.

254 Calculations on the basis of the Parties' response to the Commission request for information RFI 55, Annex Q1.

255 Notifying Party's response to the Commission request for information RFI 125, question 28(a).

256 Q2 – High-speed trains – Questionnaire to customers, question 27.

257 […]'s response to Q2 – High-speed trains – Questionnaire to customers, question 11.2 (ID2503).

bids;[258] out of […] prospective suppliers initially interested in the 2016 Amtrak tender, only […] submitted bids.[259]

(382) On average, EEA-based customers have pre-qualified between […] prospective suppliers in high and very high-speed rolling stock tender[260] but the average number of bidders in high and very high-speed tenders since 2007 in the EEA has been […].

(383) A supplier's decision to bid in a tender is a function of its perceived chance of winning. A customer's pre-qualification decision has no bearing on this assessment because the identity of short-listed suppliers is generally not communicated to prospective bidders (HS2 being an exception in this regard).[261]

(384) Contrary to the Notifying Party's argument, uncertainty as to the number of suppliers which will ultimately place a bid in the bidding phase does not necessarily purvey increased competitive pressure. Prospective bidders may err in predicting the submission of more or less bids that they will ultimately compete against. If competitors underestimate the extent of competition, their perceived chances of winning would be affected positively. There is no reason to believe that the Parties generally assume more or less bidders than effectively bid in tenders such that the uncertainty on the precise number of bidders cannot be assumed to influence their expected constraints one way or the other. In any event, it can be observed that the Parties' ex-ante predictions in relation to the identity and number of bidders appear correct in the majority of instances.[262]

(385) As explained under Section (B.ii), in situations of uncertainty over the quality of rival offerings and on the customer evaluation for each of the products offered, the competitive constraint faced by each bidder is less determined by the number of bidders, than by the ex-ante probability that rival bidders may make more attractive offers and thus win the tender. In the context of high and very high-speed rolling stock tenders, this means that to assess the closeness of competition between suppliers, the fact that a supplier passed the qualification stage of a tender matters less than its probability of winning the tender.

(386) In order to make this assessment, Alstom […].[263] Siemens, for its part, expresses its predictions in terms of […].[264][…].

(387) Moreover, as shown in the bidding data analysed in detail in Sections (C) and (D), the Parties […]. As the Commission observed in *GE/Alstom*, that "*bidders with low winning probabilities have a limited ability to affect the outcome of a bidding process. Their low probability of winning would be indicative of their weak position*

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258 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 13.

259 Form CO, Chapter B.2, paragraph 39 […].

260 Q2 – High-speed trains – Questionnaire to customers, question 27.3.

261 Q2 – High-speed trains – Questionnaire to customers, question 27.4.

262 In response to the Statement of Objections, the Parties submitted an overview of Siemens' and Alstom's ex-ante predictions regarding the number of bidders in tenders in which the Parties participated (Parties' response to Statement of Objections, Chapter B.2, figures 13 and 14 under paragraph 204). Figure 13 is inaccurate in reporting that Siemens expected […] bidders in the 2011 Deutsche Bahn tender, as Siemens only (accurately) expected […] bidders, as reported in Annex RSO B.269. Overall, given this correction, on the basis of the information provided by the Parties, Siemens predicted the number of bidders correctly in […]. In relation to Alstom, the reports correct predictions in […].

263 For example, Alstom's internal document, "Renfe 10 Very High Speed Trains, BOR, BOID 324 358 Business Opportunity Review", 5 November 2014, filename: 00PD000000cvSjiMAE#BOID 324385 10 HST RENFE_BOR_V1, p. 14.

264 […].

and their inability to constrain stronger competitors".[265] Consequently, even in situations of uncertainty as to the participation of other bidders, the meagre past winning record of competitors is unlikely to support a significant constraint on the Merged Entity.

(388) […]. In other words, the fact that a competitor with a very small perceived chance of winning may participate in a tender does not constrain the Parties' competitive positioning, nor has any influence on the degree of effective competition enjoyed by customers.

(389) It follows that no material competitive constraint can be inferred from mere declared intentions to participate in tender or even pre-qualifying to bid. […]. Simply put, the mere existence of alternative suppliers does not generate any competitive constraint. The degree of competitive constraints effectively exercised on the Parties needs to be assessed on the basis of an analysis of past bidding data regarding suppliers' participation in tender and their respective interactions and winning rates.

(C) Competitive interactions and the merger's impact on participation

(C.i) Participation against the Parties: 2008-2018

(390) […].

(391) […].

Table 15: Participation rate in high and very high-speed rolling stock tenders – 2008-2018

	EEA (incl. Switzerland)		**Worldwide (excl. China, Korea, Japan)**	
	Overall high and very high-speed ([…] projects)	**Very high-speed ([…]projects)**	**Overall high and very high -speed ([…] projects)**	**Very high-speed ([…] projects)**
Both Parties bid	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(392) The Parties' are therefore the most active bidders and the market leaders in terms of success in tenders, both on the overall market for high and very-high speed rolling stock and on the narrower market for very high-speed rolling stock. Furthermore, they frequently compete head-to-head in these markets.

(393) […].

Figure 3: Bidders facing Alstom – High and very high-speed tenders (worldwide, excl. China, Japan and Korea) – 2008-2018

[…]

Source: Notifying Party's CPL

Figure 4: Bidders facing Alstom – High and very high-speed tenders (EEA and CH) – 2008-2018

[…]

Source: Notifying Party's CPL

(394) The same is true when looking at the narrower very high-speed market […].

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265 Commission decision in Case M.7278 – GE/Alstom (2015), Annex I - The Commission's Economic Analysis of Bidding Data, recital 307, page 93.

Figure 5: Bidders facing Alstom – Very high-speed tenders (worldwide, excl. China, Japan and Korea) – 2008-2018

[…]

Source: Notifying Party's CPL

Figure 6: Bidders facing Alstom – Very high-speed tenders (EEA and CH) – 2008-2018

[…]

Source: Notifying Party's CPL

(395) The same analysis in respect of competitors facing Siemens also shows […].

Figure 7: Bidders facing Siemens – High and very high-speed tenders (worldwide, excl. China, Japan and Korea) – 2008-2018

[…]

Source: Notifying Party's CPL

Figure 8: Bidders facing Siemens – High and very high-speed tenders (EEA and CH) – 2008-2018

[…]

Source: Notifying Party's CPL

(396) Siemens also most frequently […].

Figure 9: Bidders facing Siemens – Very high-speed tenders (worldwide, excl. China, Japan and Korea) – 2008-2018

[…]

Source: Notifying Party's CPL

Figure 10: Bidders facing Siemens – Very high-speed tenders (EEA and CH) – 2008-2018

[…]

Source: Notifying Party's CPL

(C.ii) The Transaction's impact on participation

(397) The merger's impact on participation in future tenders can be assessed in terms of the Parties' participation against one another and their interaction with competitors. The analysis of the bidding data shows that there were […] participants in […]% of all tenders for high-speed trains and […]% of all very high-speed tenders in the EEA and […]% at the worldwide level, as shown in Table 10 and Table 11.

(398) The Parties' interaction in high and very high-speed rolling stock tenders is summarised in Table 16:

Table 16: Frequency of Parties' participation against one another – 2008-2018

	High-speed Tenders	Very High-speed Tenders
Worldwide	[…]	[…]
EEA	[…]	[…]

Source: Notifying Party's CPL

(399) It follows that the Parties' interaction focuses primarily on very high-speed tenders. In contrast, the Parties faced each other only […] in the eight contestable high-speed tenders at the worldwide level.

(400) The Parties' less frequent interaction in high-speed rolling stock tenders results from the fact that […]. Consequently, the frequency of the Parties' interaction is significantly lower in high-speed rolling stock tenders than in very high-speed rolling

stock tenders. This indicates that the Parties are particularly close competitors as regards very high-speed rolling stock.

(401) The importance of competitors' participation in tenders where Siemens and Alstom compete against one another can also be measured, as shown in Table 17.

Table 17: Competitor participation in EEA tenders where the Parties' bid against one another – 2008-2018

	High-speed Tenders	Very high-speed Tenders
No other bidders	[…]	[…]
Parties + 1 bidders	[…]	[…]
Parties + 2 bidders	[…]	[…]
Parties + 3 bidders	[…]	[…]

Source: Notifying Party's CPL

(402) Bidding data shows that:

(1) in high-speed rolling stock: […];

(2) in very high-speed rolling stock: […].

(403) […]. However, bidding data in relation to that tender does not have a significant impact on the assessment, […]. This suggests a concentrated market structure and, at best, a reduction from 4 to 3 players for those tenders that are the most likely to suffer from a loss of competition between the Parties, in particular in relation to very high-speed trains.

(404) In sum, the analysis of the Parties' participation shows that (i) the Parties are each other's most frequent competitors, (ii) that they compete against one another in a significant number of tenders, particularly in very high-speed rolling stock, and (iii) the tenders in which the Parties compete […] in which the Transaction will have a very significant impact on alternatives available to customers.

(405) This evidence shows that the Parties are close competitors. The intensity of the Parties' competitive relationship is mainly observable in tenders […]. On the wider relevant market encompassing both high-speed and very high-speed rolling stock, this means that […]. This suggests that, […], the loss of competition resulting from the Transaction will mainly stem from its impact in very high-speed rolling stock tenders.

(406) Furthermore, unlike for high-speed rolling stock, where Stadler and CAF have emerged as competing bidders, there is no new entry as regards tenders for very high-speed rolling stock. Participation in very high-speed rolling stock tenders will, therefore, likely be durably adversely affected by the Transaction.

(D) Success rates in past tenders

(407) Under paragraph 29 of the Horizontal Merger Guidelines, the assessment of rivalry between the Parties can rely, among other indicators, of whether "*historically the submitted bids by one of the merging parties have been constrained by the presence of the other merging party*". As discussed in Section (C), bidding analysis shows that Siemens and Alstom are close competitors, in particular as regards very high-speed trains.

(408) In addition, according to paragraph 31 of the Horizontal Merger Guidelines "[c]*ustomers of the merging parties may have difficulties switching to other suppliers because there are few alternative suppliers.* […] *The merger may affect these customers' ability to protect themselves against price increases*". In bidding markets, there is no presumption that few bidders (even as low as two or three bidders) are sufficient to generate a competitive outcome. Furthermore, already before the Transaction, the majority of tenders for high or very high-speed trains have […] or less bidders. Thus, in light of the Parties' significant participation rates and interaction in tenders for very high-speed rolling stock, tenders organised post-merger may not even attract […] bidders. Even if they do attract other bidders, economic theory predicts that where firms offer differentiated products, bidding markets will not be characterised by a perfectly competitive outcome, and can generate non-coordinated effects if two competing firms merge.[266] Bidding analysis detailed in Section (D.ii) shows that Talgo, CAF, the Bombardier/Hitachi-Ansaldo consortium and Stadler are more distant competitors. Future very high-speed rolling stock tenders will therefore be characterised by significantly lessened competition since other suppliers are more distant competitors and will therefore insufficiently constrain the Merged Entity post-Transaction.

(409) When conducting this type of analysis, as the Commission explained in *GE/Alstom*, a firm that participates often but never wins is less credible as a competitive alternative and thus exercises less significant constraint than a firm that participates and wins: "*participation in tenders is particularly credible if it also results in wins. The participation analysis therefore needs to be seen in conjunction with the analysis of win rates* […], *and of win rates when the merging parties have faced each other*".[267] Similarly, the Commission observed that "*bidders with low winning probabilities have a limited ability to affect the outcome of a bidding process. Their low probability of winning would be indicative of their weak position and their inability to constrain stronger competitors. Differences in winning probabilities are also an indicator of the relative competitive strength of each bidder*".[268]

(410) The analysis of win rates therefore provides evidence of both the importance of the competitive constraints that the Parties exert on one another and the constraint exercised by remaining competitors, as shown in the following Section (D.i). Bidding data can also be used to determine to which firm any given bidder loses to when it participates in a tender. The share of losses accounted by each rival supplier is informative about the impact that a particular rival supplier may have on the probability of winning of the bidder in question and thus of the specific impact of the Transaction on competition, as analysed in the following Section (D.ii).

(D.i) The Parties are close competitors in terms of participation and wins/losses in high-speed and very high-speed tenders

(411) The analysis of the Parties' close competitive relationship is further confirmed by the share of their losses to other competitors. The share of each of Alstom's and Siemens' losses accounted for by each of their rivals indicates the impact that different competitors have on the Parties' probability of winning tenders.

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266 Commission Decision in Case M.7278 – GE/Alstom (2015), recital 239.

267 Commission decision in Case M.7278 – GE/Alstom (2015), Annex I - The Commission's Economic Analysis of Bidding Data, recital 240, page 69 (see also recital 224, page 65).

268 Commission decision in Case M.7278 – GE/Alstom (2015), Annex I - The Commission's Economic Analysis of Bidding Data, recital 307, page 93.

(412) Table 18 reports competitors' participations and win rates[269] in tenders in which Alstom participated, for the overall high and very high-speed rolling stock market.

Table 18: Participation and win rates vs. Alstom – High and very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		Worldwide excl. China, Japan and Korea	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]%	[…]%	[…]%	[…]%
Alstom	[…]%	[…]%	[…]%	[…]%
Bombardier	[…]%	[…]%	[…]%	[…]%
CAF	[…]%	[…]%	[…]%	[…]%
Hitachi / Ansaldo	[…]%	[…]%	[…]%	[…]%
Stadler	[…]%	[…]%	[…]%	[…]%
Talgo	[…]%	[…]%	[…]%	[…]%
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(413) With the appropriate caveats related to the very low sample size,

[269] Winning rates are defined as the share of competitive tenders won by each supplier based on the number (as opposed to value) of projects won. In the case of wins by consortia the Commission has attributed one win to each of the two consortia members, thus leading to total winning rates possibly slightly above 100%.

(414) Table 19 presents the same statistics for the narrower very high-speed rolling stock market.

Table 19: Participation and win rates vs. Alstom – Very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		Worldwide excl. China, Japan and Korea	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]%	[…]%	[…]%	[…]%
Alstom	[…]%	[…]%	[…]%	[…]%
Bombardier	[…]%	[…]%	[…]%	[…]%
CAF	[…]%	[…]%	[…]%	[…]%
Hitachi / Ansaldo	[…]%	[…]%	[…]%	[…]%
Talgo	[…]%	[…]%	[…]%	[…]%
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(415) This data shows that, regardless of market segmentation, Alstom faces Siemens […]. In the EEA and at the worldwide level, Alstom loses tenders to Siemens […]. Siemens' participation in tenders against Alstom is therefore likely to significantly affect Alstom's chances of winning. This suggests that Siemens exercises a higher competitive constraint on Alstom for both EEA and worldwide customers than any other competitors.

(416) Bidding data with respect to Bombardier also needs to be nuanced. Although Bombardier appears as Alstom's […] closest competitor after Siemens in terms of participation and win rates, the constraint that it imposes on Alstom in practice is lower than its win rate suggests because Bombardier has never won a high or very high-speed tender on a standalone basis. In practice, over the past 10 years, Bombardier has only won high-speed tenders due to its participation in the 2011 Deutsche Bahn tender in consortium with Siemens. Similarly, Bombardier's sole successes in very high-speed have been the result of consortia with Hitachi-Ansaldo (Zefiro platform sold to Trenitalia in 2010) and Talgo (SRO, 2011). Bombardier therefore depends on cooperation with other suppliers to compete on the relevant market.

(417) Similar conclusions can be adopted on the basis of the various suppliers' participation and win rates in tenders in which Siemens participated.

(418) With the appropriate caveats related to the low sample size,

(419) Table 20 reports competitors' participations and win rates in tenders in which Siemens participated, for the overall high and very high-speed market.

Table 20: Participation and win rates vs. Siemens – High and very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		Worldwide excl. China, Japan and Korea	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]%	[…]%	[…]%	[…]%
Alstom	[…]%	[…]%	[…]%	[…]%
Bombardier	[…]%	[…]%	[…]%	[…]%
CAF	[…]%	[…]%	[…]%	[…]%
Hitachi / Ansaldo	[…]%	[…]%	[…]%	[…]%
Stadler	[…]%	[…]%	[…]%	[…]%
Talgo	[…]%	[…]%	[…]%	[…]%
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(420) Again, with caveats due to the very low sample size, Table 21 presents the same statistics for very high-speed rolling stock only.

Table 21: Participation and win rates vs. Siemens – Very high-speed – EEA and worldwide, 2008-2018

	EEA and Switzerland		Worldwide excl. China, Japan and Korea	
	Participation 2008-2018	**Win rate 2008-2018**	**Participation 2008-2018**	**Win rate 2008-2018**
Siemens	[…]%	[…]%	[…]%	[…]%
Alstom	[…]%	[…]%	[…]%	[…]%
Bombardier	[…]%	[…]%	[…]%	[…]%
CAF	[…]%	[…]%	[…]%	[…]%
Hitachi / Ansaldo	[…]%	[…]%	[…]%	[…]%
Talgo	[…]%	[…]%	[…]%	[…]%
Number of tenders	[…]	[…]	[…]	[…]

Source: Notifying Party's CPL

(421) The data first shows that Siemens has been awarded the majority of high and very high-speed rolling stock tenders in which it participated since 2008. In the EEA and at the worldwide level, Siemens loses in equal measure to […].

(422) These results show that Alstom is part of a limited group of rival suppliers able to have an impact on Siemens' probability to win high and very high-speed rolling stock tenders. On the basis of Alstom' share of Siemens' losses, […]. However, out of this group, Alstom most frequently challenged Siemens, having systematically competed against the company in the EEA. In the rest of the world, Alstom […].

(423) The result of this analysis shows that, for high and very high-speed rolling stock taken together, (i) the Parties constitute each other's main competitive constraint, (ii

[…] and […] exercise more limited competitive constraints on the Parties, in very high-speed and high-speed rolling stock respectively, (iv) […] exercise similarly distant competitive constraints on Alstom and virtually none on Siemens, and (v) other competitors, including […], do not exercise any significant competitive constraint on the Parties.

(424) On the narrower market for very high-speed rolling stock, (i) the Parties constitute each other's main competitive constraint, (ii) in light of both participation and win rates, […] exercises a more distant competitive constraint on both Parties, (iii) […] exercises more distant competitive constraint on Alstom and none on Siemens, and (iii) […].

(425) […].[270] […].

(426) This evidence further confirms that the Transaction will lead to a significant loss of competition and is likely to generate significant horizontal unilateral effects.

(D.iii) Recent bidding results confirm historical bidding data

(427) In their response to the Statement of Objections, the Parties dispute the results of the bidding analysis. They argue that historical bidding data fail to reflect recent market dynamics characterised by the fact that […], that competitors have been bidding more frequently since 2011 and that the Parties' win rate in very high-speed rolling stock tenders has […] in the period 2008-2012 ([…]) to […] in the period 2013-2018 ([…])[271]. They also claim that Siemens has not won any high or very high-speed tender in the EEA over the period 2013-2018.

(428) These arguments are incapable to alter the Commission's conclusions, for several reasons.

(429) First, the Parties' analysis is solely based on tenders in the EEA. When examining win rates, the Parties ignore tenders in the rest of the world (in contradiction with its own view that the Parties do compete on a global basis). However, on the worldwide market, the Parties have been competing and winning tenders against one another since 2011.

(430) In very high-speed rolling stock, the Parties have participated in […]. Outside of the EEA, all very high-speed rolling stock tenders have been won by the Parties, namely Siemens in two tenders organised by the Turkish operator TCDD (in 2013 and 2018) and Alstom in a tender organised by the US operator Amtrak (in 2016). […]

(431) […].

(432) Third, the Commission reiterates that no conclusion can be drawn from comparing results of bidding analyses for the period 2008-2012 with the period 2013-2018 due to the limited number of tenders.

(433) Tenders in high and very high-speed rolling stock are very infrequent and there have only been 6 such tenders in the EEA and Switzerland during 2013-2018 (of which only […] were for very high-speed rolling stock, […]). In such cases, the Commission considers that data over a longer period are more reliable for describing each player's competitive strength.

(434) In any event, the Commission notes that the Notifying Party's assertion in relation to the evolution of the Parties' win rates is also incorrect:

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270 […].

271 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 258 et seq.

(a) in the period 2008-2012, the Parties won […] very high-speed rolling stock projects in the EEA;

(b) in the period 2013-2018, […].

(435) Therefore, the Parties' winning rate in the periods 2008-2012 and 2013-2018 is not significantly different, as the Parties have won […] very high-speed tender organised in the EEA in both periods.

(436) For completeness, the Parties' win rates has increased in the rest of the world, where the Parties have won […] very high-speed rolling stock tenders in the period 2008-2012 and […] tenders in the period 2013-2018.

(437) Finally, as regards the Parties' claim that Siemens has not won any high or very high-speed tender in the EEA over the period 2013-2018, the Commission notes the following.

(438) First, while it is factually correct that Siemens has not won a contestable tender in the EEA and Switzerland during 2013-2018, the Commission considers that this is not a reliable indication that the competitive strength by Siemens has decreased materially over the last few years. As explained in recital (433), the number of tenders that occurred over the 2013-2018 period in the EEA is very low. Already looking beyond the EEA, in the rest of the world, Siemens has won […] very high-speed tenders ([…]). […] was won by Alstom.

(439) Second, and more importantly, the tenders that occurred during the period 2013-2018 were unlikely to be as appealing for Siemens as some of the important tenders that occurred during 2008-2012. […]. […], Alstom's internal documents indicate […].[272]

(440) It follows that the Parties remain the leading EEA and worldwide suppliers of high and very high-speed rolling stock, by a distance, and are close competitors, as confirmed by recent tender outcomes.

(E) Internal documents

(E.i) The Parties submitted a partial set of tender-specific documents

(441) The Commission requested the Parties to submit internal documents comprising, *inter alia*, documents produced by each company in the course of tendering in order to assess business opportunities offered to them in tenders, to evaluate the competitive environment and strategy, and to seek internal approval for action, including bids, to be undertaken at the different steps of a tender (so-called "limits of authority" or "LoAs").[273] The Commission's request covered these documents for the period 2008-2017.[274] In response, the Parties have provided a set of documents which only cover a limited part of the tenders at issue. Nevertheless, the limited set of documents on file illustrates the close competitive relationship between Siemens and Alstom.

(442) The following table lists the Parties' respective LoA documents that were submitted to the Commission:

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272 […].

273 The main steps of a tender are sometimes referred to as "milestones".

274 RFI 37 of 13 July 2018.

Table 22: LoAs provided by Siemens and Alstom in relation to high and very high-speed rolling stock tenders

Tenders	Siemens LoAs	Alstom LoAs
2008 Deutsche Bahn	✓	No submission
2008 NTV	No submission	No submission
2009 Uzbekistan Railways	No submission	No submission
2010 Eurostar	✓	No submission
2010 Trenitalia	✓	✓
2010 ONCF	No submission	No submission
2011 Deutsche Bahn	✓	No submission
2011 PKP	✓	✓
2011 SRO	✓	No submission
2011 RZD	✓	No submission
2013 TCDD	✓	No submission
2014 SBB	✓	✓
2015 NTV	No submission	✓
2015 Flytoget	No submission	✓
2015 Uzbekistan Railways	No submission	No submission
2016 Renfe	✓	✓
2016 Amtrak	No submission	No submission
2018 SNCF	No submission	No submission
2018 TCDD	✓	No submission

Source: list based on the data submitted by the Parties

(443) The list in Table 22 covers worldwide high and very high-speed tenders (excluding China, Japan and South Korea) in the period 2008-2018. The Parties produce LoAs even in the context of calls for tenders in which they ultimately opt not to bid. In those instances, the relevant documents indicate the reasons for not bidding, […].

(444) Out of the […] tenders in which the Parties faced one another, the Parties have submitted a very incomplete set of documents: in one instance ([…]) they have not submitted any LoAs; in five instances ([…]) they submitted LoAs generated by only one Party; in only one instance, […], which they both lost to Talgo, they submitted a complete set of LoAs from both Parties. Nevertheless, the Commission was able to complement Siemens' submission in relation to the 2014 SBB tender by retrieving an internal document of Alstom relating to the same tender, which the Parties lost to Stadler.

(E.ii) The documents submitted confirm that the Parties are close competitors

(445) Although the Parties' internal documents only partly cover the tenders in which they competed in the past 10 years, they provide evidence that the Parties compete very closely. They also contain evidence that other suppliers appear more distant competitors.

(446) First, certain documents contain Siemens' internal ex-ante assessments of each prospective bidder's winning probability. […]:

Table 23: Siemens' internal Ex-ante evaluation of suppliers' probability of winning

Competitors	Probability of success					
	2010 Eurostar	2010 Trenitalia	2011 Deutsche Bahn	2014 SBB	2016 Renfe	2018 TCDD
Siemens	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%
Alstom	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%
Talgo	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%
Bombardier/Hitachi	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%
CAF	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%
Stadler	[…]%	[…]%	[…]%	[…]%	[…]%	[…]%

Sources: LoAs from the Parties[275]; Parties' response to the SO, Chapter B.2, paragraph 339

(447) It follows that, […].

(448) In contrast, other competitors generally appear […].

(449) Second, […].

(450) In sum, Siemens' […].

(451) […].[276] […].[277]

(452) Siemens' internal analysis shows that the competitive relationship between the Parties in very high-speed rolling stock focused […].

(453) […], the company's internal assessment of Alstom's strategic interest in the tender estimates that the tender constituted […].[278] Siemens' internal assessment thus concludes that […].[279]

(454) […].[280] Siemens ultimately won the tender in a process […].

(455) […][281]

(456) […].[282]

(457) Finally, the Commission notes that Alstom's innovation into the *TGV du Futur*, […][283] […].[284] […].[285]

(458) Third, several documents also illustrate the Parties' more distant competitive relationship with other competitors. […]. Thus, for example, Alstom's internal documents indicate that CAF […];[286] […].[287]

275 […].
276 […].
277 […].
278 […].
279 […].
280 […].
281 […].
282 […].
283 […].
284 […].
285 […].

(459) The Parties contest this analysis and submit other internal documents […][288]. […].

(460) […].

(F) Conclusion on closeness of competition

(461) On the basis of the above, the Commission considers that Siemens and Alstom are close competitors, in particular, for very high-speed rolling stock. In combination with the Parties' very high market shares, this reinforces the likelihood that the Transaction will generate significant horizontal unilateral effects in both the overall market encompassing both high-speed and very high-speed rolling stock (given that the Parties closely compete with each other on the very high-speed segment of this market) and in the potentially narrower market for very high-speed trains.

5.3.3.3. Barriers to entry and new entry

(462) The Notifying Party argues that entry into the EEA is facilitated by the fact that (i) applicable procurement procedures do not exclude non-European suppliers, (ii) EU procurement rules prohibit localisation requirements, and (iii) Technical Specifications for interoperability ("TSIs") ensure a level of interoperability across the European rail network. Furthermore, the Notifying Party considers that CRRC's potential entry in the EEA is likely and should be taken into account to mitigate the effects of the Transaction.

(A) Barriers to entry

(463) Several barriers to entry as regards high-speed and very high-speed rolling stock have been identified in the course of the market investigation. Among the barriers identified, a number apply generally to any activity in high or very high-speed rolling stock, regardless of location. These include the costs to develop rolling stock and the requirement to hold an adequate track-record. Other barriers to entry are specific to the EEA market and include the European authorisation scheme for rolling stock, the need to have an EEA-specific track-record, informal localisation requirements and the privileged relationship between a number of EEA-based suppliers and national operators in their home countries.

(A.i) Generally applicable barriers to entry

(464) First, rolling stock manufacturers unanimously confirmed that the development of high and very high-speed rolling stock requires significant investment, technical capabilities and time.[289] According to [...], "*financial requirements are becoming difficult to fulfil for middle-size companies. This might be one of the reasons why many sector companies are merging in order to deal with this, leaving a less competitive panorama*".[290]

(465) In particular, from the perspective of a new entrant, the investment required for the development of high-speed and, in particular, very high-speed trains is constrained by the limited scope to recoup costs due to the infrequent number of tenders for such

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286 […].

287 […].

288 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 346.

289 Q1 – High-speed trains – Questionnaire to competitors, questions C2.3.1.

290 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question C2.3.1 (ID2526).

rolling stock. This explains why a number of rolling stock manufacturers have not entered the very high-speed market. As [...] explains, "*[…]*".[291]

(466) Second, when organising a tender for the procurement of high and very high-speed rolling stock customers require that prospective bidders demonstrate that they have a track-record of previous supplies ("customer references"). References provide customers with a confirmation that a given supplier has experience in executing similar projects and will thus be able to meet customers' requirements in similar projects.

(467) Competitors explain that they are required to put forward references of prior supplies of trains in effective operation at the time of the bid.[292] This requirement intervenes at the pre-qualification phase, i.e. at the time when prospective bidders are requested to provide information that allows customers to assess each supplier's capability to offer the demanded products/services.[293] […]. As [...] explains, "*if* [a] *manufacturer lacks commercial references, it would not be qualified to bid in the tender. This means that, despite the resources and time invested in developing a new HS or VHS train model, manufacturers would not be ready to take part in certain tenders if they do not have the required commercial references*".[294]

(468) All customers have confirmed that references are used to assess prospective suppliers' capabilities[295] and that the references required are specific. Thus, in tenders for very high-speed rolling stock, customers require references for very high-speed trains and dismiss references for other types of rolling stock. In tenders for high-speed trains, customers are less specific and also consider references of very high-speed rolling stock sales.[296]

(469) The Parties' internal documents confirm this analysis. […].[297] References are thus leveraged by suppliers to show their standing and credibility in other tenders.

(A.ii) EEA-specific barriers to entry

(470) First, the main barrier referred to in the market investigation related to authorisation under EEA and Member States technical and safety rules. High and very high-speed rolling stock cannot be placed in service in the EEA unless suppliers obtain regulatory authorisations at EU and Member State level. The authorisation process is

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291 [...]'s e-mail response of 27 June 2018, RE: [EXTERNAL] M.8677 - Siemens/Alstom | High-speed ROS questionnaire to [...] (ID4171).

292 Q1 – High-speed trains – Questionnaire to competitors, question C.2.4.1.

293 Q2 – High-speed trains - Questionnaire to customers, question 27.1.

294 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question C.2.4.1 (ID2515).

295 Q17 – High-speed trains – Questionnaire to customers (Phase II), question 19.

296 Q17 – High-speed trains – Questionnaire to customers (Phase II), questions 12 and 13.

297 […].

primarily governed by the Interoperability Directive,[298] TSIs[299] and the Safety Directive.[300] The certification and authorisation regime is three fold:

(a) once manufacturers request authorisation for new rolling stock, a Notified Body ("NoBo")[301] assesses the rolling stock's (or "subsystem" under the terminology used by the Interoperability Directive[302]) conformity with the technical rules included in the TSIs. TSIs set out the main technical and operational specifications to satisfy the essential requirements regarding safety, reliability and availability of the railway system, health, environmental protection, technical compatibility, and accessibility set out in the Interoperability Directive. Once TSI conformity is verified, NoBos establish an "EC certificate of verification";

(b) in addition to TSI conformity, rolling stock must comply with national technical rules, which are included in National Reference Documents ("NRDs"). Designated Bodies ("DeBo") appointed by Member States assess the conformity of rolling stock with the applicable NRDs. Once NRD conformity is verified, DeBos establish a "National certificate of verification";

(c) in parallel with the verifications, the safety of rolling stock must be assessed by an independent assessment body ("ASBO"). ASBOs conduct a safety risk assessment and issue a report setting out safety recommendations which manufacturers must then implement in order to obtain a "Safety Acceptance declaration".

(471) It should be noted that given the extension of the scope of TSIs and the harmonisation of requirements, the number of national rules in the EEA is expected to decrease.[303] For instance, the European Union Agency for Railways ("ERA") issued an interim report on the cleaning up of national rules showing that the number of different national rules applicable to new vehicles in 17 Members States were significantly reduced.

(472) Nevertheless, the vast majority of respondents to the market investigation, including all high and very high-speed rolling stock competitors, have confirmed that the European certification and authorisation regime constitutes a barrier to entry.[304] Even though certain steps in the authorisation process may be undertaken after placing a

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298 Directive 2008/57/EC of 17 July on the interoperability of the rail systems within the Community, ("Interoperability Directive") [2008] OJL 191/1 (recast by Directive 2016/797/EU of 16 May 2016 on the interoperability of the rail system within the European Union [2016] OJL 138/44).

299 TSIs are developed by the EU Agency for Railways under the Interoperability Directive, the Commission Delegated Decision (EU) 2017/1474 of 8 June 2017 supplementing Directive (EU) 2016/797 of the European Parliament and of the Council with regard to specific objectives for the drafting, adoption and review of technical specifications for interoperability and the Agency's 2017 mandate.

300 Directive 2004/49/EC of 29 April 2004 on safety on the Community's railways, (Safety Directive) [2004] OJL 220/16 (recast by Directive 2016/798/EU of 11 May 2016 *on railway safety* [2016] OJL 138/102).

301 NoBos are independent certification organisations appointed by Member States in accordance with Article 28 of the Interoperability Directive that have officially been tasked with carrying out the conformity assessment.

302 Interoperability Directive, recital 26.

303 For completeness, the Interoperability Directive 2008/57/EC and the Safety Directive 2004/49/EC have been amended by Directive (EU) 2016/797 and Directive (EU) 2016/798 giving a reinforced role to the European Union Agency for Railways to limit national rules.

304 Q1 – High-speed trains – Questionnaire to competitors, question C.2.1; Q2 – High-speed trains - Questionnaire to customers, question 19.1.

bid, the large majority of competitors have confirmed that bidding on the basis of TSI and NRD compliant rolling stock is a significant advantage in tender procedures.[305] As explained in recitals (113) to (115) above, EEA-specific standards induce both a limitation on importing trains and higher costs. These considerations also explain that Union and national regulatory authorisation constitute a significant barrier to entry.

(473) The Parties correctly explain that customers typically do not expect suppliers to bid with an already certified solution.[306] This is because platforms need to be customised to a certain extent to meet a customer's specifications and the specific solution cannot therefore obtain certification at the bidding stage, but rather at any later stage before putting the final solution into service. Furthermore, the Notifying Party indicates that TSI and national rules evolve over time and suppliers typically adapt an existing platform to a new TSI only if justified by an award.

(474) However, for a large portion of rolling stock customers, even if the specific train model being purchased is not fully certified under TSI and national safety rules at the time of the tender, the fact that a prospective supplier's other (or previous) models are certified/authorised to operate in the EEA provides a competitive advantage.[307]

(475) Second, prospective bidders are required to provide sufficient references in terms of prior sales in the EEA. 85% of customers have indicated that they have never pre-qualified a company with no prior sales of high and very high-speed trains in the EEA to bid in their tenders.[308] Furthermore, most customers indicate that, in EEA tenders, references from outside of the EEA are not taken into account to assess a bidder's credibility.[309] This is due to the EEA's specific technical requirements. As […] explains, "*the differences in requirements across continents are considered too large, so that references from other economic areas are not taken into account. The experience of a supplier with the approval authorities in EEA or the approval Management is also a crucial point, as the requirements of the authorities in the EEA are particularly strict*".[310]

(476) This requirement therefore constitutes an even less surmountable barrier to entry for manufacturers with no prior sales in the EEA, as explained in more detail in Section (B) in relation to CRRC.

(477) In this context, the majority of customers that expressed an opinion confirmed that suppliers that have sold more trains (in volume), that have the most trains in operation in the EEA and that have sold more trains to different customers in the EEA have an inherent competitive advantage. This is because they are judged to be more competent, reliable and, therefore, more credible bidders.[311]

(478) EEA references are required by both large, established national operators, as well as new operators. […] thus explained that "[a] *high sales figure is* […] *a proof for the maturity of a product. In addition, it can be assumed that the supplier has optimized*

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305 Q1 – High-speed trains – Questionnaire to competitors, question C.14; Q17 – High-speed trains - Questionnaire to customers (Phase II) questions 23-23.1.

306 Parties' response to the Statement of Objections, Chapter B.2, paragraph 151.

307 See […] responses to Q17 – High-speed trains - Questionnaire to customers, question 26 (ID5722 and ID4664).

308 Q17 – High-speed trains – Questionnaire to customers (Phase II), question 19.

309 Q2 – High-speed trains - Questionnaire to customers, question 37.

310 Q17 – High-speed trains – Questionnaire to customers (Phase II), question 18.

311 Q17 – High-speed trains – Questionnaire to customers (Phase II), questions 15-17.

the production processes and project management and has eliminated important project risks. […] [S]*ales to a large number of different customers demonstrate that a supplier knows the requirements of different markets very well or is well networked in different markets and that its price is very competitive*".[312] […].[313]

(479) Third, despite EU procurement rules prohibiting customers from disqualifying bidders that do not have local production assets, respondents have indicated that certain customers informally favour bidders that do or plan to invest in local facilities. According to them, having a local presence, even if not a formal requirement, can constitute an important aspect of a bid or a competitive advantage for the bidder.

(480) This is supported by the Parties' internal documents in relation to certain tenders, […].[314]

(481) Fourth, a number of rolling stock manufacturers are owned or have close ties to certain Member States and national train operators. In the course of the market investigation, competitors and customers have noted Alstom's partial ownership by the French State and numerous relationships with SNCF. Similarly, Siemens' privileged relationship with Deutsche Bahn has been noted by several respondents. The privileged relationship of other suppliers has also been noted in relation to Spain (Renfe vis-à-vis Talgo), Italy (Trenitalia vis-à-vis AnsaldoBreda, now Hitachi-Ansaldo) and Switzerland (SBB vis-à-vis Stadler). National political support might thus have deterred the entry of established rolling stock manufacturers in the high and very high-speed market in the countries where such relationship exists.

(482) The Parties consider that no such "*special relationships*" exist and that, even if they did, this would not influence the conditions of competition going forward. The Parties observe that there an increasing number of bidders participate in tenders organised by national train operators that supposedly have a "*special relationship*" with national suppliers, which would show that competitors are not discouraged by any hypothetical special relationship.[315] In any event, the Parties argue that the Merged Entity will draw no competitive advantage in the foreseeable future from alleged special relationships because […].[316]

(483) The results of the market investigation indicate that political support for the procurement of high-speed and very high-speed trains to national suppliers are perceived to constitute a significant barrier to entry. [...] explained that "[…]".[317] Furthermore, […] explains that "[…]".[318]

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312 […] 's response to Q17 – High-speed trains – Questionnaire to customers (Phase II), questions 15-17 (ID5722).

313 […].

314 […].

315 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 155.

316 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 156; Parties' response to the Statement of Objections, Chapter B.2, paragraph 162.

317 Agreed non-confidential minutes of a meeting with [...], 5 September 2018 (ID5736).

318 [...]'s e-mail response of 27 June 2018, *RE: [EXTERNAL] M.8677 - Siemens/Alstom | High-speed ROS questionnaire to [...]* (ID4171). See, also, e.g., [...]'s response to the Commission request for information RFI 59, question 10 (ID4393): "*there are some countries in the EEA, such as France or Austria, as well as other European countries, such as Switzerland, where customers have long-standing relationships with national ROS manufacturers that have strong positions promoted by tenders designed to benefit national companies*".

(484) As regards the Parties' argument in respect of the perceived increasing number of bidders in tenders organised by national train operators that supposedly have a "*special relationship*" with national suppliers, the following observations apply:

(a) there have been […] bidders on average in 5 tenders organised by SNCF, Deutsche Bahn, Renfe and Trenitalia since 2008. […];

(b) although the […],[319] they still were respectively awarded to Stadler and Talgo.

(485) With respect to future tenders, the Parties' assertion that […].

(486) Furthermore, the Parties' privileged position vis-à-vis their respective home country's operators translates into a competitive advantage that supports their position with other customers. Alstom's and Siemens' continuous stream of orders from SNCF and Deutsche Bahn provides them with an unparalleled track-record which they can leverage when tendering, both within the EEA and in the rest of the world.[320]

(487) It therefore results from Section (A) that the overall high and very high-speed rolling stock market, as well as the narrower market for very high-speed rolling stock, are characterised by high barriers to entry.

(B) Potential entry by Asian suppliers in the EEA

(B.i) The Notifying Party's arguments

(488) The Parties assert that the potential entry of Asian suppliers should be assessed over a 5 to 10 years period given the dynamics of the high and very-speed rolling stock market.[321] It considers that barriers to entry are surmountable. In particular, it argues that (i) there is no reason to believe that technical standards in China, Japan or Korea are lower than in the EEA; (ii) EEA technical requirements apply outside of the EEA, with non-EEA based customers requiring compliance with EU TSI standards; (iii) customers accept worldwide track-records to assess the credibility of prospective bidders; (iv) customers do not require suppliers to bid with an already certified solution; (v) local presence is not a determining factor for competition in a tender.

(489) In particular, the Notifying Party argues that the entry of CRRC, the Chinese rolling stock manufacturer, in the EEA will mitigate the effects of the Transaction. In particular, the Notifying Party argues that, after developing its own high and very high-speed trains using European technology, CRRC is now exerting competitive pressure globally by concluding technological cooperation agreements in the EEA and the US. It argues that CRRC is advantaged by its low cost base, is increasingly bidding in high-speed tenders and is targeting the EEA in particular for expansion as shown by its candidacy to bid for the HS2 project.

(490) In addition, the Parties claim that Hyundai Rotem is also a likely new entrant because (i) its trains are also based on European technology and (ii) Hyundai Rotem sold DMUs and metros to EEA-based customers.[322] They also list Kawasaki as a likely new entrant.[323]

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319 […].

320 In this respect, the Parties have indicated that EEA standards are applied or emulated in the rest of the world, see Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 71. EEA references are therefore relevant for sales outside of the EEA.

321 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 68.

322 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 83.

323 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 132-136.

(491) Finally, the Parties consider that Asian rolling stock suppliers are in the same position as Hitachi prior to successfully entering the EEA market.[324]

(B.ii) On the relevant time period to assess timeliness of entry

(492) Under paragraph 74 of the Horizontal Merger Guidelines, the Commission examines whether entry would be sufficiently swift and sustained to deter or defeat the exercise of market power. What constitutes an appropriate time period depends on the characteristics and dynamics of the market, as well as on the specific capabilities of potential entrants. However, entry is normally only considered timely if it occurs within two years.

(493) The Parties argue that the appropriate time period in the high-speed market should be 5-10 years because tenders are infrequent. The Parties consider that this would be justified because the Commission uses a 10 years period to assess market shares.

(494) For a third party to be considered a potential competitor, market entry would need to take place sufficiently fast so that the threat of potential entry is a constraint on the Parties' and other market participants' behaviour. The high and very high-speed rolling stock market is characterised by infrequent but large tenders for the procurement of trainsets, whose lifecycle ranges up to 30-40 years. This means that, absent meaningful competitive constraints in upcoming tenders, the loss of competition resulting from the Transaction would have immediate and lasting effects on customers.

(495) In this context, the Commission observes that Alstom has been claiming that Chinese entrants should be expected in the EEA for almost a decade. In Case M.5754 - Alstom/Areva, the Commission noted that "[a]*s regards the market for rolling stock, the parties state that some newcomers are expected to enter into the EEA market. This concerns, in particular, Chinese players such as* [the predecessors of CRRC: China North Locomotive and Rolling Stock Corporation and China South Locomotive and Rolling Stock Corporation]. […] *Concerning high-speed trains, it should be pointed out that bidding processes are very infrequent and involve high volumes/value. Therefore, a new entrant could obtain a significant market share by winning a single tender in the EEA*".[325] Almost a decade has past since this decision, without any material entry in the EEA by Chinese players in high and very high-speed rolling stock.

(496) Timeliness of entry can be assessed in light of the timing of upcoming tenders. As indicated in recital (283), forecast demand in the EEA is accounted for by prospective tenders, a large portion of which are expected to take place by the year 2020. […]. The farther predictions are based in time, the more uncertainty about their precise timing. Intended projects may also be delayed or abandoned.

(497) Given the market's characteristics and dynamics, absent very likely and large-scale entry within the next […] years, the potential available competition would not exercise a sufficient constraint on the Merged Entity in the most likely upcoming worldwide tenders. As shown in Section (B.iii), the entry of CRRC or other Asian suppliers on a sufficient scale to constrain the merging Parties is extremely unlikely within this timeframe. This is particularly true in relation to the EEA, due to specific barriers to entry.

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324 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 163-164.

325 Commission Decision in Case M.5754 – Alstom/Areva, 26 March 2010, paragraph 125.

(498) Furthermore, the Parties' proposed timeframe for entry, which extends to up to 10 years, suggests a long-term assessment, going beyond all foreseeable future tenders in the EEA and the rest of the world. It therefore relates to a point in time where the prospects of entry are extremely uncertain. Furthermore, there is no more concrete evidence supporting the likelihood of entry or expansion of CRRC or other Asian suppliers in the next 10 years compared to the next 5 years. Therefore, even if a 10 years timeframe was considered, new market entry could not be deemed sufficiently likely to exercise a significant competitive constraint on the merged entity.

(499) It follows that the timeframe for the assessment of potential entry proposed by the Parties can neither constitute the appropriate point of reference, nor allow foreseeing any potential entry.

(B.iii) Results of the market investigation and the Commission's assessment

(500) Under paragraph 68 of the Horizontal Merger Guidelines, for market entry to be considered a sufficient competitive constraint on the merging parties, it must be shown to be likely, timely and sufficient to deter or defeat any potential anti-competitive effects of the merger. However, in this case, the barriers to entry described in Section (A) are particularly steep for CRRC, Hyundai-Rotem and Kawasaki, which the Parties argue are likely entrants. Their entry on a sufficient scale and timely fashion is extremely unlikely in light of (a) the Parties' own internal assessment, (b) CRRC's lack of credibility as a prospective bidder in the EEA, (c) CRRC's own position and strategy outside of China and (d) Hyundai-Rotem's and Kawasaki's absence from the EEA.

a) The Parties' internal documents confirm that CRRC exercises no competitive constraint

(501) The Notifying Party's internal assessment of CRRC confirms that it is unlikely to create a timely and sufficient competitive constraint post-Transaction.

(502) The Parties' internal documents contain multiple reports of CRRC's stated intentions to expand its activities outside of China and concerns that CRRC may expand its global footprint. Internal documents put forward by the Parties contain observations about China's or CRRC's "*ambition*", note CRRC's rapid growth in China and its purported intention to "*target*" entry in Europe[326]. The Parties' internal documents also report […][327].

(503) […].

(504) […].

(505) […].[328]

(506) In response to the Statement of Objections, the Parties consider that this analysis underlines […].[329] […].

(507) This is particularly true in respect of the EEA, where high and very high-speed rolling stock procurement occurs for operations on pre-existing infrastructure, most

326 Parties' response to the Statement of Objections, Chapter B.2, paragraph 124.
327 […].
328 […].
329 Parties' response to the Statement of Objections, Chapter B.2, paragraph 123.

often under public procurement rules. […].[330] As stated in recitals (274) and seq., CRRC […].[331]

(508) Siemens thus recognises internally […].[332]

(509) The reasons for CRRC's difficulties in attempting to enter the EEA market are further detailed […].[333]

(510) Furthermore, Siemens estimated […].[334] […].[335] Siemens thus recognises internally that […].

(511) The Parties argue that, […], many more internal documents warn of CRRC's ambitions outside of China, noting its […].[336] […].

(512) It follows that the Parties' […].

b) CRRC is not a credible prospective bidder in the EEA

(513) CRRC does not have a TSI or NRD compliant high-speed or very high-speed platform, nor has it requested certification in the EEA for any of its products. In the rest of the world, CRRC's sales have remained limited and it does not have a single high-speed train in operation outside of China to this date.[337] In particular, a large number of high-speed projects involving Chinese interest have been cancelled around the world.[338] Ongoing projects in which CRRC is reportedly involved have stalled.[339]

(514) Although, as the Notifying Party points out, […]. As shown in recitals (501) and seq., the Notifying Party's own internal assessment […]. Overall, in accordance with the Notifying Party's internal assessment, […].

(515) The majority of respondents to the market investigation therefore consider that CRRC is not currently a credible bidder in high and very high-speed rolling stock tenders. Rolling stock manufacturers (including CRRC itself) unanimously consider that it will take CRRC more than 5 years to become a credible bidder in the EEA. Obtaining certification alone is a lengthy multi-year process.

(516) The Parties observe that customers are more optimistic and believe that CRRC could become credible within 3 to 5 years. However, customers have confirmed that, over the past 10 years, none have even engaged in discussions with CRRC for the supply

330 […].
331 […].
332 […].
333 […].
334 […].
335 […].
336 Parties' response to the Statement of Objections, Chapter B.2, paragraph 125.
337 Construction of the Indonesian very high-speed network is still underway and will not be completed before 2021, according to public sources (https://jakartaglobe.id/news/jakarta-bandung-high-speed-rail-open-2021-constructor/).
338 High-speed projects in Mexico, Myanmar, Libya, Venezuela and the US have been cancelled. Their combined value has been estimated to USD 47.5 billion (https://www.ft.com/content/9a4aab54-624d-11e7-8814-0ac7eb84e5f1).
339 This refers to the 2016 Moscow-Kazan line project and the 2017 Jakarta-Bandung line project (see, Form CO, Chapter B.2, paragraph 79).

of high or very high-speed trains, let alone pre-qualified the company to bid.[340] […].[341] […][342] […].

(517) The Parties nevertheless assert that CRRC exerts a potential competitive constraint because it has significant sales in China. However, customers have stated that they do not take account of sales outside of the EEA when assessing the credibility of a prospective bidder in a high or very high-speed rolling stock tender.

(518) This was illustrated […].[343]

(519) Finally, contrary to the Parties' assertion, CRRC's situation is not comparable to that of Hitachi. Hitachi did not enter the high-speed and very high-speed rolling stock market in the EEA on its own, but only via its 2015 acquisition of AnsaldoBreda, an Italian company already active in this market. AnsaldoBreda already held or Hitachi-Ansaldo was later awarded high and very high-speed rolling stock contracts in Italy for train models (Zefiro and Fyra trains) developed not by Hitachi, but by Ansaldo-Breda (including in cooperation with Bombardier in the case of the Zefiro). If anything, Hitachi's example illustrates that, despite its involvement in the Shinkansen technology in Japan, Hitachi was unable to enter the EEA very high-speed market before it acquired a local company and platforms with a prior local track-record.

c) CRRC acknowledges that it is not a credible bidder outside of China

(520) First, […].

(521) […].[344]

(522) Second, CRRC's inability to credibly participate in competitive tenders outside of China on a standalone basis is further illustrated by […].

(523) […].[345]

(524) […].[346] […].[347]

(525) […].[348] […].[349]

(526) […].

(527) […].

d) Hyundai-Rotem and Kawasaki are inactive in the EEA and exercise no competitive constraints

(528) The Parties assert that Hyundai-Rotem is a likely new entrant in the EEA because (i) it is familiar with European standards, (ii) it is present in the EEA mainline and metro markets, and (iii) it has created a joint-venture with a Turkish company (Tuvasas) called EURotem that hopes to manufacture the next generation of Turkish high-speed trains.

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340 Q17 – High-speed trains - Questionnaire to customers (Phase II), questions 4-9.
341 Q17 – High-speed trains - Questionnaire to customers (Phase II), question 7.
342 Q2 – High-speed trains - Questionnaire to customers (Phase I), question 38.
343 Parties' response to Commission's request for information RFI 10, question 13 and Annex Q 13.3.
344 CRRC's response to Q1 – High-speed trains – Questionnaire to competitors (ID2830); confirmed in CRRC's response to the Commission request for information RFI 95 (ID5996).
345 Notifying Party's response to the Commission request for information RFI 152, Annex Q2.1, pages 5-6.
346 Notifying Party's response to the Commission request for information RFI 152, question 1.
347 Notifying Party's response to the Commission request for information RFI 152, question 1, footnote 5.
348 Parties' response to the Statement of Objections, Chapter B.2, paragraph 126.
349 Parties' response to the Statement of Objections, Chapter B.2, paragraph 126 and Annex RSO B.2.44.

(529) However, Hyundai-Rotem has never participated in a high or very high-speed tender in the EEA. In the course of the market investigation, customers with actual tendering experience that expressed an opinion unanimously indicated that Hyundai-Rotem cannot credibly bid for either high or very high-speed trains. Customers also confirmed that Hyundai-Rotem never bid for a high or very high-speed tender in the EEA.[350]

(530) […] indicated that it did engage in discussions with Hyundai-Rotem for the supply of very high-speed trains,[351] but Hyundai-Rotem did not apply for pre-qualification. Another customer indicates that it did pre-qualify Hyundai-Rotem in a very high-speed procurement tender a decade ago but that the company did not submit a bid.[352]

(531) The Parties base Hyundai-Rotem's alleged "familiarity" with European standards on the fact that Korea's first operating high-speed trains were manufactured by Alstom and that Hyundai-Rotem's was developed under an Alstom licence.[353] However, this refers to the early development of high-speed rail in South Korea, from the mid-1990 to the early 2000s. Since then, and as early as 2002, Hyundai Rotem has developed its platforms on the basis of Korean technology.[354] There is therefore no basis for the Parties' assertion that Hyundai-Rotem would hold particular knowledge of applicable EEA standards.

(532) Furthermore, EURotem was created in 2006 and built DMUs and EMUs for the Turkish State Railways. The notion that it would have "*hopes to make inroads to* […] *the European market*" appears in an online publication that does not quote EURotem's representatives, contrary to what the Parties suggest.[355]

(533) Nonetheless, if Hyundai Rotem wished to enter the EEA (very) high-speed market, it would face the same barriers as CRRC, given its lack of any EEA-based reference, TSI-compliant platform or even experience with the European high-speed tendering process. However, to this date, Hyundai-Rotem has chosen not to participate in high or very high-speed tenders in the EEA. Hyundai-Rotem is therefore no more likely to enter the EEA than CRRC.

(534) The same considerations equally apply to Kawasaki, a Japanese rolling stock manufacturer, which the Parties also list as a potential entrant in their response to the Statement of Objections. Furthermore, Kawasaki can be considered no more likely to export the Japanese Shinkansen technology-based trains to the EEA than Hitachi. As explained in recital (519), Hitachi only became active as a high and very high-speed rolling stock supplier in the EEA and internationally after its take-over of the Italian company Ansaldo-Breda, which involved the acquisition of platforms developed by Ansaldo that the merged Hitachi-Ansaldo was subsequently able to sell in Italy.

(535) For the reasons set out in Section 5.3.3.3 (B) and in light of the results of the investigation, the Commission considers that CRRC, Hyundai-Rotem and Kawasaki

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350 Q2 – High-speed trains - Questionnaire to customers, questions 10-11; Q17 – High-speed trains - Questionnaire to customers (Phase II), questions 6.

351 Q17 – High-speed trains - Questionnaire to customers (Phase II), question 7.

352 Q17 – High-speed trains - Questionnaire to customers (Phase II), question 8.

353 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 83.

354 International Railway Journal, May 2008, volume 48, issue 5, "Korea develops high-speed ambition", page 35-37, available at http://www nxtbook.com/nxtbooks/sb/irj0508/index.php?startid=35#/38.

355 See Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraph 84 and Pulse, "Hyundai Rotem promotes high-speed train technology in Turkey", 5 September 2018, available at: https://pulsenews.co kr/view.php?year=2018&no=295202.

lack the track-record and technical ability to compete against the Merged Entity in high and very high-speed rolling stock. CRRC's track-record outside of China remains extremely limited and restrained to a single award won not through competitive bidding, but as a result of government-level negotiations. […]. Hyundai-Rotem's lack of any attempt to participate in tenders outside of South Korea similarly illustrates its lack of credibility in non-domestic tenders. The same conclusion applies to Kawasaki.

(536) These conclusions also apply even more significantly to entry in the EEA in light of the existence of significant and specific barriers to entry. These barriers are illustrated by CRRC's recent failure to pre-qualify to bid for the HS2 tender. The Commission therefore concludes that market entry by CRRC, Hyundai-Rotem or Kawasaki does not appear likely, timely or sufficient to deter or defeat any potential anti-competitive effects of the Transaction in both the overall market encompassing high-speed and very high-speed rolling stock, as well as in the potentially narrower market for very high-speed rolling stock.

5.3.3.4. Buyer power

(A) The Notifying Party's arguments

(537) The Notifying Party argues that European customers of high and very high-speed rolling stock have significant procurement experience and are increasingly cost-conscious. According to the Notifying Party, customers leverage their buyer power through tender procedures that enable them to safeguard competition and obtain the most competitive outcome in terms of price, quality and technology.

(538) In addition, the Notifying Party argues that the exercise of buyer power has led to downward pricing pressure in the EEA. It argues that price pressures originated mainly from the Parties' competitors in past tenders and is therefore likely to continue.

(539) The Parties also assert that customers have exercised buyer power in the past, switching suppliers, citing the case of Eurostar (which switched from Alstom to Siemens in 2010) and HS2 (which invited CAF to bid, despite initially rejecting its application to qualify, following the formation of a consortium between Bombardier and Hitachi-Ansaldo). […]. Finally, the Parties argue that the merger will not necessarily decrease the number of bidders in future tenders because as a result of the elimination of one independent bid in the tenders in which both Siemens and Alstom would have participated, competitors' probability of winning will increase and these competitors could increase their participation.[356]

(B) Results of the market investigation and the Commission's assessment

(540) Under paragraph 64 of the Horizontal Merger Guidelines, countervailing buyer power is the bargaining strength that a buyer has vis-à-vis the seller in commercial negotiations due to its size, its commercial significance to the seller and its ability to switch to alternative suppliers. Several elements concur to refute the existence of countervailing buyer power in the present case.

[356] Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 157-166.

(B.i) The market investigation does not support the existence of countervailing buyer power

(541) The results of the market investigation do not support the view that customers have sufficient buyer power to counter a price increase by the Merged Entity. In the Phase I market investigation, half of rolling stock manufacturers that expressed a view indicated that customers exercise medium to weak buyer power, whereas only half estimated that it is strong.[357] The majority of customers however considered that they do not have strong bargaining power when procuring high and very high-speed rolling stock.[358] Furthermore, in the Phase II market investigation, customers were asked how they expected their bargaining power to be affected by the Transaction. Half of respondents considered that the Transaction would reduce their bargaining power.[359]

(542) In addition, customers appear to rarely switch suppliers. The only example provided in the market investigation related to the 2010 Eurostar tender,[360] an example also cited by the Notifying Party. However, in 2010 Eurostar switched its procurement from Alstom to Siemens. Therefore, the only example of actual switching shows a customer using one Party to the Transaction as the alternative to the other. Instead of demonstrating the existence of countervailing buyer power, this shows that customers will lose the main competitive alternative existing on the market pre-Transaction.

(B.ii) Special relationships between certain customers and suppliers further prevent the exercise of countervailing buyer power

a) The Notifying Party's arguments

(543) The Parties contest the existence of any special relationship between certain suppliers and their home countries' national rail operators. They argue that, if such relationships existed, the relevant countries should be excluded from market share calculations.[361]

b) The Commission's assessment

(544) As indicated in recital (484), all tenders organised by Deutsche Bahn, SNCF, Trenitalia, Renfe and SBB since 2008 have been awarded to each of the corresponding national supplier (respectively, Siemens, Alstom, Hitachi-Ansaldo, Talgo and Stadler). Although, as the Parties point out, competitors also bid in tenders for these operators,[362] none have been successful. This shows that despite being presented with options, national operators have *not* switched to alternative suppliers.

(545) Special relationships between national rail operators and domestic suppliers in France (SNCF vis-à-vis Alstom), Germany (Deutsche Bahn vis-à-vis Siemens), Spain (Renfe vis-à-vis Talgo), Italy (Trenitalia vis-à-vis AnsaldoBreda, now Hitachi-

357 Q1 – High-speed trains – Questionnaire to competitors, question C.C.12.

358 Q2 – High-speed trains - Questionnaire to customers, question 52.

359 Q17 – High-speed trains - Questionnaire to customers (Phase II), questions 20 and 20.1 (2 out of 6 respondents expected their bargaining strength to be negatively affected, whereas the others stated that it would be neutral. However, among the latter group, one customer provided an explanation according to which it expected its bargaining power to be reduced).

360 Q17 – High-speed trains – Questionnaire to customers (Phase II), questions 21 and 21.1.

361 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 189 et seq.

362 Parties' response to the Article 6(1)(c) Decision, High-speed Rolling Stock, paragraphs 154.

Ansaldo) and Switzerland (SBB vis-à-vis Stadler) appear due partly to historical reasons and partly to political support.

(546) Historically, SNCF and Deutsche Bahn procure trains that have been developed and designed specifically for them. As the Notifying Party explained in the Form CO, Alstom's Euroduplex TGV and Siemens' Velaro […].[363] […][364] […].

(547) These tailored developments limit the ability of those customers to exercise buyer power since, by virtue of having co-developed high and high-speed rolling stock with the Parties, they have limited options to effectively change suppliers. As [...] explains, this is particularly true in the very high-speed rolling stock market: "[r]*ailway companies do not have countervailing power vis-à-vis Alstom and Siemens, particularly in the VHS trains segment. Customers of VHS trains are national railway companies, such as the SNCF in France, Deutsche Bahn in Germany, Renfe in Spain or Trenitalia in Italy; and private railway companies, such as Eurostar or NTV. However, these companies do not have buying power vis-à-vis Siemens and Alstom, in particular, given the close relationship between national railway operators and national champions and the existence of partnership agreements (such as the innovation partnership entered into by SNCF and Alstom in 2016). In fact, the SNCF has only acquired VHS trains from Alstom, Deutsch Bahn from Siemens and Trenitalia from Ansaldo (in a consortium with Bombardier). Furthermore, Eurostar, which is run by a co-operation between French, UK and Belgian national railway companies, only invited Alstom and Siemens to bid for the supply of its new VHS trains*".[365]

(548) The Parties argue that, if such relationships existed, the relevant countries should be excluded from market share calculations.[366] However, doing so would not be justified. Despite their longstanding supply relationships with Siemens and Alstom, Deutsche Bahn and SNCF have effectively opened their procurement to competition in certain instances. In 2008, Siemens' internal documents […].[367] […]. Similarly, in 2015-2016, SNCF opened the creation of an innovation partnership for the design of the "*TGV 2020*" to competition. Although Siemens decided to not submit a bid, […].[368] Alstom won the tender. Those instances show that the existence of privileged relationships does not preclude attempts at competitive procurement, but that so far these attempts have failed in France and Germany.

(549) In addition, the existence of a political support to national suppliers limiting national rail operators' freedom to choose non-domestic rolling stock manufacturers, is evidenced in the Parties' internal documents in relation to tenders organised In Italy, Switzerland and Spain respectively by Trenitalia, SBB and Renfe:

(a) Trenitalia: […][369] […].[370] […].[371] […].[372] This assessment was further repeated in other Alstom LoAs.[373] The same assessment is further alluded to in Siemens' […].[374] […];

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363 Form CO, Chapter B.2, paragraph 62.
364 Form CO, Chapter B.2, Table 23.
365 [...]'s response to Q1 – High-speed trains – Questionnaire to competitors, question C.C.12.1 (ID2515).
366 Parties' response to the Statement of Objections, Chapter B.2, paragraphs 189 et seq.
367 Siemens' internal document, […].
368 Parties' response to Commission's request for information RFI 10, question 27; Form CO, […].
369 Alstom internal document, […]
370 Alstom internal document, […]
371 Alstom internal document, […].

(b) SBB: Alstom's internal […] depicts its competition with Stadler […]. Because, according to Alstom's ex-post analysis, […],[375] other factors of competition, including […], played an all the more significant part in the procedure. Stadler was awarded the order;

(c) Renfe: Siemens' […][376] […].[377] […], describing […].[378] […], as the Renfe order was awarded to Talgo.

(550) These relationships do not preclude competition. For example, prior to selecting Stadler, SBB procured high-speed rolling stock from Alstom. Similarly, Renfe has procured high and very high-speed rolling stock from Talgo as well as Alstom, Siemens and a CAF-Alstom consortium. However, […] the existence of political support or longstanding historical supply relationships does translate in a competitive advantage over other potential suppliers such that national rail operators appear reluctant to change suppliers.

(551) It follows that, whether due to historical and/or political factors, as shown in tender results and […], domestic rolling stock suppliers in France, Germany, Italy, Spain and Switzerland enjoy a special relationship with national rail operators that effectively limits the latter's ability to exercise buyer power.

(B.iii) Customers' bargaining power will be limited in light of tender participation

(552) The exercise of buyer power requires that customers have sufficient alternative options other than the Parties and can credibly switch or threaten to switch suppliers after the Transaction.

(553) First, out of 11 tenders in the period 2008-2018 in the EEA and Switzerland:

(a) […] tenders ([…]) had only one bidder ([…]) and thus could not possibly allow for the exercise of any buyer power;

(b) […] tenders ([…]) had only two bidders, allowing only for extremely limited alternatives for the customer. In […] of these tenders, […].

(554) This is consistent with the Parties' greater participation in tenders than any other supplier. Furthermore, the Parties met and competed head to head in a large portion of tenders for high and very high-speed rolling stock in the EEA since 2008, meeting in […]% of all tenders (including […]% of all very high-speed tenders). Based on past data, the Transaction would therefore eliminate the customer's sole alternative supplier in a non-negligible number of cases, thereby significantly reducing any ability to exercise buyer power.

(555) Overall, there have been […] bidders on average in high and very high-speed rolling stock tenders in the EEA and […] at the worldwide level in the 2008-2018 period. Either one or both Parties participated in the vast majority of these tenders, namely […]% of tenders on the overall market for high and very high-speed tenders in the EEA and […]% worldwide, and the totality of very high-speed tenders in the world. This means that, on average, options available to customers will significantly reduce

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372 Alstom internal document, […].
373 […].
374 Siemens internal document, […].
375 Alstom internal document, […].
376 Siemens internal document, […].
377 Siemens internal document, […].
378 Alstom internal document, […].

in upcoming tenders, the merger either lowering the number of bidders, or reinforcing the position of the Merged Entity. As a result, customers will be unable to counter the Merged Entity's increased market power.

(556) Second, even rolling stock manufacturers that consider that customers do exercise strong buyer power prior to the Transaction have not confirmed the Notifying Party's assertion that this has translated into downward pricing pressure. Instead, competitors have mentioned that customers are able to impose unfavourable payment conditions. In relation to prices, the vast majority of manufacturers consider that the price of high and very high-speed rolling stock has remained stable in the past 10 years.[379] It is only when considering the full lifetime cost of rolling stock, i.e. including the cost of maintenance services and spare parts that a number of competitors consider that prices have decreased over the past 10 years due to lower maintenance costs.[380]

(557) The Parties argue that the price per seat of high and very high-speed rolling stock has […]% over the past five years. This observation, which the Parties submitted in response to the Statement of Objections without providing references to underlying data or documents,[381] does not support their assertion that customers will enjoy sufficient buying power *after* the Transaction. By reinforcing the Parties' position and restricting the number of bidders, the Transaction will reduce customers' bargaining position. Even assuming that prices decreased before the Transaction, the merger's impact is likely to negatively affect prices compared to the situation absent the Transaction.

(558) Third, suppliers participate in tenders in which they believe they have a realistic chance of success. Contrary to the Parties' assertion, their rival's assessment of their own probability of winning tenders will not be improved by the Transaction. In the course of the market investigation, competitors have unanimously indicated that the Transaction would impact them negatively,[382] and lead to higher prices and reduced innovation due to the strengthening of the Parties' position. In particular, competitors are concerned that, due to the Merged Entity's increased bargaining power vis-à-vis customers, their own market access (especially for smaller companies) will be more difficult.[383]

(559) Regarding the Parties' argument that the number of options for customers in a given tender will not decrease after the Transaction because, after the elimination of one independent bid amongst Siemens or Alstom, rivals will have an incentive to increase their participation, the Commission considers the following. As a first remark, in the tenders in which Siemens and Alstom participated, the fact that certain competitors did not participate indicates that these companies had a lower expected profit compared to Siemens and Alstom. This suggests that rivals had a less competitive option for the customer in these tenders. As a result, even if such competitors were to step up after the transaction, their offers are likely to be of lower quality or higher cost (or both) compared to the bid lost due to the merger. As a second remark, the Commission notes that competitors have lower historic participation rates (let alone winning rates) compared to Siemens and Alstom.

379 Q1 – High-speed trains – Questionnaire to competitors, questions C.4 and C.4.1.

380 Q1 – High-speed trains – Questionnaire to competitors, questions C.5 and C.5.1.

381 Parties' response to the Statement of Objections, Chapter B.2, paragraph 241, figure 26: the source of the figures is stated to be "*Siemens and Alstom*" and therefore cannot be verified.

382 Q1 – High-speed trains – Questionnaire to competitors, question D.1.

383 Q1 – High-speed trains – Questionnaire to competitors, question D.2.1.

Therefore, even if some of these rivals were to increase their participation after the transaction, they are unlikely to materially offset the reduction in participation generated by the elimination of one independent bid amongst Siemens or Alstom.

(560) Therefore, some potentially increased participation by more distant competitors after the transaction is unlikely to offset the loss of independent competition between the two most important and closest high and very high-speed competitors.

5.4. Conclusion

(561) For the reasons set out in Section 5.3, and in light of the evidence made available during the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to the overall market for high-speed and very high-speed rolling stock, including the narrower market of very high-speed rolling stock in the EEA and on a worldwide basis (excluding China, Japan and South Korea).

6. MAINLINE SIGNALLING

6.1. Introduction

(562) Rail signalling systems provide safety controls on rail networks. At their most basic level, these systems avoid collisions by preventing two trains from meeting on the same section of track. Rail signalling systems comprise both trackside and on-board elements.

(563) The rail signalling industry is characterised by the following key elements:

(1) On the supply side, it is a concentrated industry with a limited number of players (Siemens and Alstom being the largest suppliers in Europe, followed by smaller suppliers like Thales, Bombardier, Ansaldo STS[384] and CAF)[385] and high barriers to entry;

(2) On the customer side, on-board signalling equipment is purchased by rolling stock manufacturers or train operators (depending on whether intended for installation on new trains or on existing train fleets), while the track-side signalling equipment is purchased by infrastructure managers (for mainline signalling). Deregulation of the rail markets has resulted in additional small (or smaller than traditional players) private operators in certain Member States.

(3) The signalling industry has developed in the context of a history of national signalling systems (referred to as conventional or legacy systems). New signalling technologies have been developed at European level to harmonise the various national systems, in particular the European Railway Traffic management System ("ERTMS") for mainline and freight which aims to provide interoperability in Europe.[386] ERTMS has been promoted by the industry and supported by the Commission and is based on standards. The

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384 51% of the share capital of Ansaldo STS is held by Hitachi Rail Italy Investment. In Section 6 of this decision, Ansaldo is referred to as "Ansaldo STS" or "Ansaldo".

385 There is a consolidation trend in the signalling industry: (i) in 2012, Siemens acquired the signalling business of Invensys, a market leader in this sector; (i) in 2014, Alstom entered into a definitive agreement to acquire GE's signalling business, and (iii) in 2015, Hitachi acquired 40% share in Ansaldo STS and increased its shareholding to 51% in March 2016.

386 ERTMS consists of European Train Control System ("ETCS") and GSM-R (the radio interface). For the purpose of the assessment of the Transaction, the terms ERTMS and ETCS will nevertheless be used interchangeably.

adoption of ERTMS has been slower than planned and the installed base in the EEA consists mostly of conventional signalling technology.

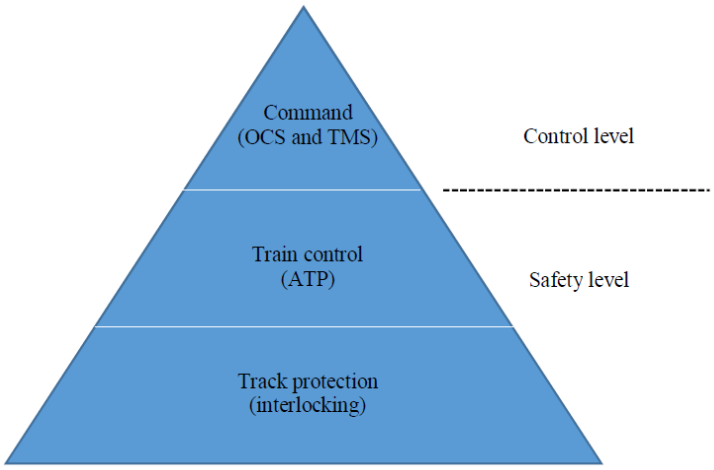
(4) Interoperability among the various signalling elements and with the rolling stock running on the network has to be ensured.

(564) As further explained in Section 6.2, signalling equipment can be divided into mainline signalling which equips the national railway networks and urban signalling which equips the local railway networks such as metro and light rail.

6.1.1. Mainline signalling

(565) Mainline signalling, refers to signalling systems that provide safety and controls on mainline railway networks (including dedicated high-speed lines). The following diagram provides an overview of the different elements of a mainline signalling system.

Figure 11: Elements of mainline signalling systems



Source: Form CO, Chapter C1, Figure 1.

(566) The various elements of mainline signalling systems, or sub-systems, consist of interlockings, Automatic Train Protection ("ATP") systems and Operation and Control Systems ("OCS"). Interlockings and ATP systems constitute the safety level of mainline signalling, while OCS represents the control level. The various subsystems, their functioning, and the required certification and authorisations are explained in the following recitals.

(567) **Interlockings**: These are the core safety component of mainline signalling systems. Interlocking systems are wayside systems that protect and set routes for the safe movement of trains by controlling and preventing access to sections of the track to avoid collisions, including side-impact, rear, and head-on collisions.[387]

(568) Interlockings in mainline signalling systems typically work on a principle of splitting a track up into sections or "blocks". These blocks can be as short as 200m to 800m in stations and as long as several kilometres on open tracks. Interlockings ensure that no more than one train enters a block at any one time. Interlockings must interface with

387 Form CO, Chapter C.1, paragraph 13.

adjacent or intersecting interlockings, and with other signalling systems such as ATP and OCS systems.[388]

(569) Modern interlockings are a combination of hardware and software and are electronic, computer-based. Interlockings work by (i) receiving information from wayside sensors (track circuits and/or axle counters) about whether a specific block is vacant or occupied by a train; (ii) calculating safe routes for trains based on that information; (iii) controlling machines that move the rail at junctions to allow trains to transfer from one track to another; and (iv) issuing movement authorities to trains to allow them to travel, i.e. instructing through signals the train drivers how to proceed, e.g. to continue, to reduce speed, or to stop. Many networks still have a large number of older interlockings installed. The most common of these older interlockings are relay interlockings.[389]

(570) **ATP systems**: The failure of train drivers to respond to commands by signals and excessive speeds have traditionally been significant causes of railway accidents. Train protection systems were developed to reduce that risk, namely that train drivers would fail to respond to signalling commands and ignoring track restrictions such as gradients or speed. ATP systems are designed to protect each individual train by ensuring that the train obeys the movement authority granted by the interlocking and the appropriate line speed of a track section. ATP systems include both on-board units ("OBUs") (comprising on-board computers) and wayside systems (comprising wayside transponders ("balises") and encoders, for example lineside electronic units ("LEUs") and radio block centres ("RBCs")).[390]

(571) A mainline ATP system comprises wayside equipment that receives the signalling commands from the interlocking and transmits this information either:

- to a balise or transponder, which then transmits this information to the train ("intermittent ATP system"). The balise is a piece of equipment that sits between or alongside the tracks and transmits signalling information to an antenna attached to the train; or
- to a wayside encoder (LEU or RBC) transmitting information, via cable or radio, to the train ("continuous ATP system").[391]

(572) The train also carries an OBU that receives the signalling information from the antenna and implements the safety procedures, such as sending warnings to the driver, or stopping or slowing the train. Different levels of ATP systems provide different levels of protection. A basic ATP system may cause an alarm to sound in the train cabin where the driver failed to obey a signal, a more advanced ATP system can intervene where a train driver fails to modify the train's behaviour by applying the emergency brake, and an even more advanced ATP system can control the speed of a train by applying the brakes of a train in response to a signal from the interlocking or based on maximum track speed information programmed into the system.[392]

(573) **OCS**: These are IT solutions designed for the overall management of railway networks and operate at a higher level than the other subsystems that form part of a

388 Form CO, Chapter C.1, paragraph 14.
389 Form CO, Chapter C.1, paragraphs 15-16.
390 Form CO, Chapter C.1, paragraph 29.
391 Form CO, Chapter C.1, paragraph 30.
392 Form CO, Chapter C.1, paragraph 31.

signalling project, such as interlockings and ATP systems. OCS have monitoring components for signalling sub-systems and command components controlling signalling sub-systems. The core OCS functionalities respond to safety requirements, i.e. OCS operate networks of interlockings and integrate the information generated by interlockings and their field elements and ATP systems. Thereby, OCS can be connected to different ATP systems and a diversity of connected interlockings in a national or regional infrastructure according to the signalling rules and the operational context defined by the railway infrastructure manager. These functions may be referred to as operational or control-level functions. Additional functionalities, without safety requirements, that are used for the overall management of the railway to increase network efficiency are often also included in OCS. These may include automatic conflict detection and conflict resolution support, timetable management, decision support, and dispatching. These functions are often referred to as dispositive, or management-level functions.[393]

(574) The operational (or control-level) functionalities of OCS operate networks of interlocking, and the OCS is connected to the installed interlockings by means of interfaces. These may be proprietary to the suppliers of the OCS and/or the interlockings or, in the alternative, they may be standardised. The interlockings-OCS interface manages a list of controls and indications, relevant for OCS. Similarly, an interface may also be required between the OCS and the ATP systems (e.g. ETCS Level 2 has its own operator workplaces, connected to the RBCs, which usually need to be integrated into an existing OCS, or run in parallel to the OCS).[394]

(575) **Certification and authorisation**: Each subsystem requires certification and authorisation, which is typically needed for the signalling components included in the system and for the signalling subsystem in its entirety, including the functionality of the subsystem and the interfaces between the various signalling systems or components in the network. The term 'authorisation' is used to describe the whole process, covering both (i) the certification by an independent body, both at EU level (for systems subject to the European interoperability directive, namely ERTMS systems) and at Member State level (for all signalling systems and components), that the signalling system complies with the relevant required technical standards, and (ii) the authorisation at Member State level by the National Safety Authority (NSA) to place the component or system in service. Authorisation occurs at the national level only after the certification has been completed.[395]

(576) Interoperability among the various signalling subsystems and interoperability with the rolling stock have to be ensured. Mainline signalling projects typically require installation of systems compatible with the signalling system on the wider network. Most countries have national operational rules and technical requirements for mainline signalling with which any project in that country must comply.[396]

(577) The mainline signalling industry is characterised by a standardisation process, in particular at European level. Measures have been taken to improve the interoperability and safety of national networks and to encourage the development of an integrated rail system leading to a single European rail area, as outlined in the

393 Form CO, Chapter C.1, paragraphs 75-77.
394 Form CO, Chapter C.1, paragraphs 80-81, 85.
395 Form CO, Chapter C.1, paragraphs 693-722.
396 Form CO, Chapter C.1, paragraph 3.

2011 transport white paper.[397] With the adoption and implementation of the Fourth Railway Package the period of structural changes in the railway sector should be concluded. The technical pillar of the Fourth Railway Package, which reviewed and optimised the regulatory framework on interoperability and safety and strengthened the role of the ERA, has been already adopted.[398] However non-standardised national Class B systems will remain on parts of the network for many years, and class B equipment for rolling stock will remain necessary.

(578) This European standardisation effort has primarily been at the ATP system level via the "control command and signalling" (CCS TSI) defining the ERTMS baseline and standards for interaction between ERTMS on board and track side equipment. Further a more recent and ongoing initiative with the EULYNX standard is described in recitals (589) and (590), but this is at a very early stage of development.

(579) As a result of the diverse development of national standards for ATP systems, there are more than 50 ATP systems across Europe, including multiple systems within some individual Member States. Each legacy system is standalone and cannot interoperate with other legacy systems. A train must have an ATP OBU that is compatible with each wayside ATP system it will encounter. For example, a train running from Genoa to Rotterdam would have to be equipped with at least three legacy ATP on-board systems, to enable it to receive information from legacy wayside ATP systems in Italy, Germany and the Netherlands. In Europe, only Switzerland has switched off its legacy ATP system in favour of ETCS. The requirement that a train must have an OBU compatible with each country it enters raises operating and maintenance costs for cross border traffic: the installation of additional OBUs is costly and takes up space in the train cabin, and switching operating standards at national borders (or within a country to the extent there are multiple national systems) adds to travel time and requires train drivers to be familiar with the respective national signalling rules and "signalling language".[399]

(580) ERTMS has been developed to address the interoperability issues caused by legacy systems and enhance cross-border railway traffic, lower costs and promote competition between signalling suppliers. ERTMS includes standardisation of ETCS (applied throughout Europe), with a stable "baseline" of the specification that is the base for the European Deployment Plan of ERTMS.

(581) ERTMS originated with a 1989 working group of European transport ministers who suggested developing an interoperable ATP system for Europe. In order to develop and implement an interoperable system, it was necessary to create technical specifications supporting interoperability. The ERTMS specifications were ultimately developed by the Union signalling industry ("UNISIG"), a group of European signalling companies (at the time, Alstom, Bombardier, CSEE, Invensys, Siemens and Thales) under the leadership of the Union and the ERA as the system authority and in close cooperation with railway stakeholders and the GSM-R industry. Directives 96/48/EC and 2001/16/EC define the overall approach towards ERTMS. ERTMS is composed of the ETCS, which is an ATP with on-board and

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397 White paper – Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, 28 March 2011, COM(2011)0144 final.

398 Report from the Commission to the European Parliament and the Council. Fifth report on monitoring development of the rail market {SWD(2016) 427 final}, 8 December 2016, COM(2016)780 final.

399 Form CO, Chapter C.1, paragraphs 36-37.

wayside systems and, for ETCS Level 2, GSM-R, a dedicated radio communication system.[400]

(582) The main benefits of ERTMS include interoperability between different national rail networks (for example an ETCS OBU on a French train can interoperate with the wayside ETCS equipment in Belgium), supporting interoperability between the equipment of different suppliers (for example an ETCS OBU from Bombardier can interoperate with wayside equipment installed by Alstom); and providing a common safety platform for taking steps towards further benefits (such as ATO, autonomous driving, moving block, satellite positioning, and harmonised braking behaviour of trains).[401]

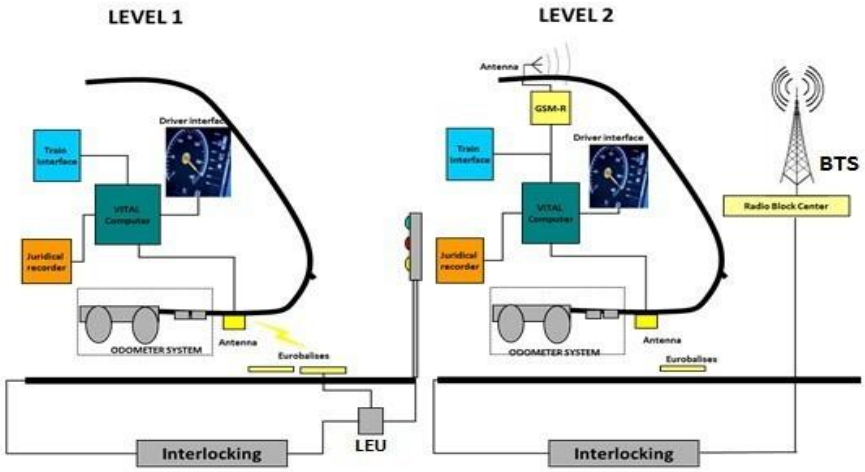
(583) The technical specification for interoperability (a Commission Regulation) relating to the "control command and signalling" (CCS TSI) defines the ERTMS specification. ETCS systems must respect these specifications in order to meet the essential requirements and to ensure the interoperability of the Union's rail systems. National technical rules, in part driven by legacy signalling requirements, can produce national specificities in the deployment of ERTMS.[402]

(584) ETCS systems have different levels and different so-called "Baselines":

(1) ETCS level: ETCS levels are defined based on how the wayside is equipped and based on how the information is transmitted to the train.

(2) ETCS Baseline: ETCS is largely software-based. Versions of the ETCS specifications are referred to as "Baselines". To ensure interoperability, the specifications are standardised functions, interfaces and performance requirements for the signalling system.[403]

Figure 12: Overview of ETCS (Level 1 and Level 2)



Source: DG MOVE

(585) ETCS Level 1 includes a LEU that encodes or "translates" the signalling information received from the interlocking for standardised transmission to the Eurobalise, and then to the train. This signal aspect is then read by the ETCS OBU, referred to as a

400 Form CO, Chapter C.1, paragraphs 39-40.
401 Form CO, Chapter C.1, paragraphs 40-41.
402 Form CO, Chapter C.1, paragraph 42.
403 Form CO, Chapter C.1, paragraphs 43-44.

European Vital Computer ("EVC"), and is displayed on the driver's cab. ETCS Level 1 also requires some other equipment on the train (such as a radar, EVC, Juridical Recording Unit ("JRU"), which is the equivalent of an aircraft's "black box"). Level 1 also includes a safe output to the braking system to ensure the train obeys the signalling information.[404]

(586) ETCS Level 2 uses GSM-R, the developed standard for radio based communication for trains in Europe, to provide continuous transmission of signalling information to a train equipped with on-board ERTMS equipment. Encoding of interlocking information takes place via the RBC. The shift to radio based communication means that there is no need for either visible wayside signals or LEUs. As a result, the wayside infrastructure can be reduced when ETCS Level 2 signalling is installed. One benefit of this is that it is possible to increase the capacity on a line at lower cost: the line can be divided into shorter blocks (which may allow for shorter distances between trains) without needing to install signal lights at each block. ETCS Level 2 requires some additional equipment on the train, e.g. a GSM-R mobile radio device, including an antenna. Eurobalises are still used in Level 2 systems, but only for positioning information.[405]

(587) There are proposals to introduce a third ETCS level. ETCS Level 3, like ETCS Level 2, would be based on a radio solution. The main difference is that, in ETCS Level 3, train integrity would be evaluated by a train-borne system, rather than wayside sensors, further reducing wayside equipment and simplifying interlockings. The train's position, as in ETCS Levels 1 and 2, would be determined based on information received from Eurobalises and combined with accurate train-borne odometry. As in ETCS Level 2, the train's position would be reported back to the RBC continuously. This constant updating of train integrity, position and speed would allow following trains to run closer to the one in front by adjustment of the movement authority information displayed to the driver. ETCS Level 3 is currently under development. Some infrastructure managers are testing ETCS Level 3 in pilot lines, but there is no clear timeline for the roll-out of ETCS Level 3. ETCS Level 3 may be specified the next time the ERTMS standards are updated, in 2022, and any roll-out of the technology in Member States will be after that date.[406]

(588) At the end of 2017 around 4 500 km of core network corridor[407] lines were operational with ERTMS and some 7 000 vehicles were equipped or contracted with ETCS in the EU, a substantial part of which has been supported by EU funding. The current ERTMS European Deployment Plan (EDP) has the following deployment goals: 51 000 km of core network corridors and 66 700 km of the wider core network for 2030, and 123 000 km of comprehensive network for 2050.[408] Figure 3 shows the value of ERTMS contracts in the 2012-2017 period.

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404 Form CO, Chapter C.1, paragraph 46.

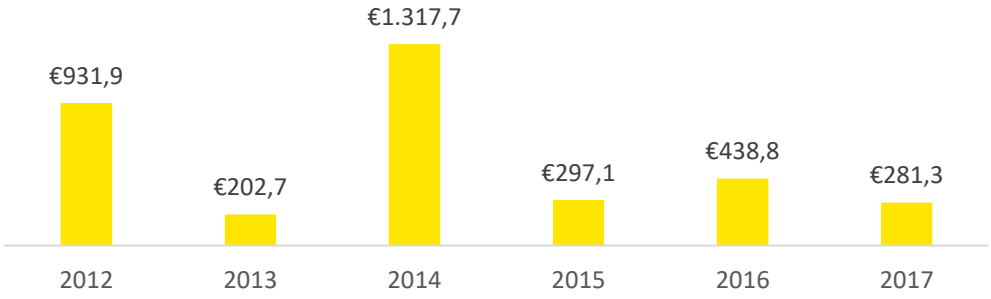
405 Form CO, Chapter C.1, paragraphs 54-55.

406 Form CO, Chapter C.1, paragraphs 58-59.

407 As defined in Article 2(14) of Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010 (OJ L 348, 20.12.2013, page 129).

408 Form CO, Chapter C.1, paragraph 71; Commission Implementing Regulation (EU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European Deployment plan.

Figure 13: ERTMS Europe market size, contract value (EUR million)



Source: DG MOVE

(589) EULYNX is a European initiative by 12 infrastructure managers to standardise interfaces between components of an interlocking and between interlockings and other signalling subsystems, for example ATP.[409]

(590) The project aims to create a system architecture for interlockings, including standardised interfaces, with the ultimate goal of reducing lifecycle costs up to 50%, by the so-called "Reference Implementations", which allow for standardisation and digitalisation of interlocking interfaces and the possibility of implementation of different subsystems by different suppliers.[410]

(591) All mainline signalling suppliers, including the Parties, are investing in R&D activities. In addition, Shift2Rail is the first European initiative to deliver focused Research and Innovation and market-driven solutions by accelerating the integration of new and advanced technologies into innovative rail product solutions, meeting key objectives of the EU 2020 Strategy and EU Transport Policy.[411] Some of the innovation-related activities in ETCS relate to the development of new baselines and releases of ETCS technology, as set out in Section 6.3.2.2(B.iii).

(592) […].[412]

(593) […].[413]

6.1.2. Urban signalling

(594) Urban, also known as mass transit, signalling systems ("urban signalling") provide safety controls for metro and light rail networks. They prevent collisions between trains and increasingly respond to other challenges faced by network operators such as network congestion, security, and capacity constraints. As such, urban signalling systems are increasingly designed not only to ensure safety, but also to allow operators to improve the utilisation of their networks by allowing more trains to move more quickly and efficiently.[414]

(595) Urban signalling is principally a project-based business. Projects typically include project specific engineering, development and project management, manufacturing and/or procurement of equipment, installation and testing, and sometimes

409 Bane NOR (NO), CFL (LU), DB Netze (DE), Infrabel (BE), Liikennevirasto (FI), Network Rail (UK), ProRail (NL), RFI (IT), SBB (CH), SNCF (FR), Slovenske Zeleznice (SI), Trafikveket (SE).

410 https://eulynx.eu/index.php/documents/documents-overview/presentationsgiven/164-20171213-irse-nl/file

411 Form CO, Chapter C.1, paragraphs 732-733.

412 Form CO, Chapter C.1, paragraphs 734-762.

413 Form CO, Chapter C.1, paragraphs 763-782.

414 Form CO, Chapter C.2, paragraph 4.

maintenance services. Projects typically comprise a signalling system including multiple subsystems[415] as well as on-board and trackside units.[416]

(596) Urban signalling systems tend to involve a complete system tendered together rather than subsystems tendered separately. This reflects the fact that in urban projects, (a) the customer is the same for both on-board and trackside elements; and (b) urban Signalling projects are typically procured for a line or group of lines in their entirety including all the necessary elements for that line.[417]

(597) In urban transport, there is no interoperability requirement between networks in different cities. Within a city network, trains typically run on self-contained lines, meaning that signalling systems also do not usually need to interoperate between lines. By contrast, tenders for the extension of a specific line on a given network need to be compatible with the existing line. A non-incumbent supplier on this line would need either (i) to invest in an interface to interoperate with the signalling system existing on the line, or (ii) re-signal the entire line to compete for a line extension.[418]

(598) Urban signalling projects are based on conventional technology or CBTC.

(599) Conventional urban signalling systems were developed and employed based on a fixed block system. Similar to mainline signalling systems, the track is divided into segments called "blocks". Sensors (either track circuits or axle counters) are then placed on the track to determine whether any part of a train is occupying a block. Until such a block is free again, the next train cannot enter the block. This creates a fixed safety buffer between the train that is occupying the block and the following train.[419]

(600) Figure 14 illustrates how conventional technology works in metro. The sensors will detect whether a train is on any section of a block. The next train's on-board unit will only be told to advance (known as being given a "movement authority") when the upcoming block is completely vacant. This is because the system only recognises that the block is occupied but does not identify where the train is within the block. The following train will therefore be unable to enter an entire block until the whole of the previous train has exited the block.[420]

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415 Subsystems include: automatic train control/protection elements (known more precisely as ATC/ATP/ATO); track protection (principally including interlockings); and operational and control systems (OCS). Train protection involves both on-board and trackside elements.

416 Form CO, Chapter C.2, paragraph 5.

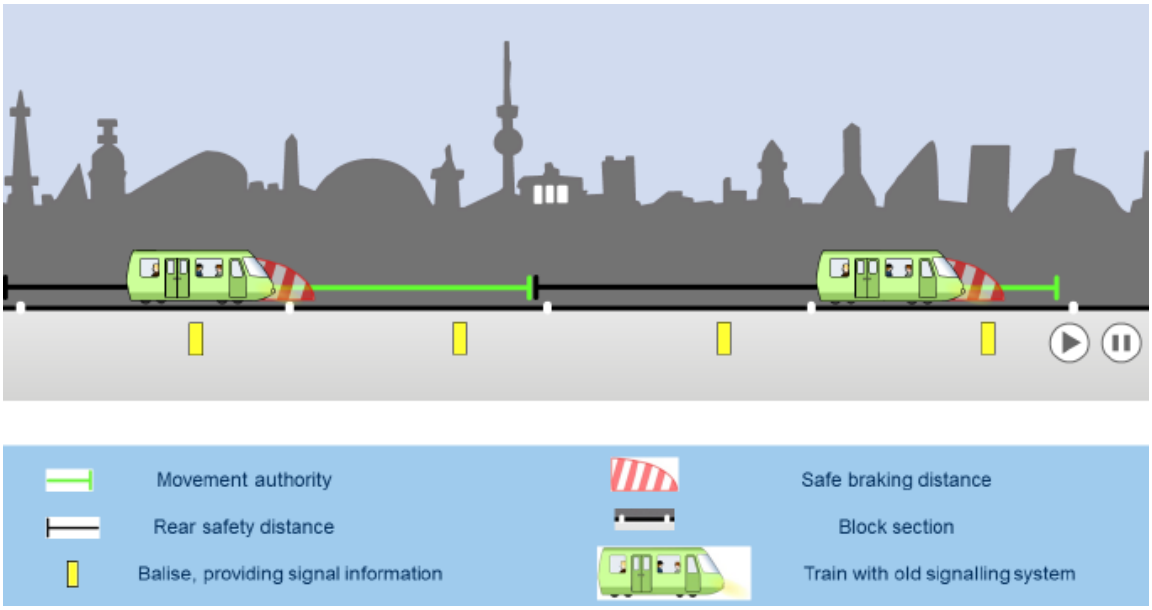
417 Form CO, Chapter C.2, paragraph 5.

418 Form CO, Chapter C.2, paragraph 5.

419 Form CO, Chapter C.2, paragraph 5.

420 Form CO, Chapter C.2, paragraph 5.

Figure 14: Urban signalling (Metro) – Conventional technology



Source: Form CO, Chapter C.2, Figure 1.

(601) CBTC systems are based on so-called "moving" blocks that interact with the train speed and surroundings. These systems rely on constant radio-based communication between the train and the track to identify with more precision where a train is located at a given moment in time.[421]

(602) The Institute of Electrical and Electronics Engineers ("IEEE") defines a CBTC system as a "continuous, automatic train control system utilising high-resolution train location determination, independent of track circuits; continuous, high-capacity, bidirectional train-to-wayside data communications; and train-borne and wayside processors capable of implementing automatic train protection (ATP) functions, as well as optional automatic train operation (ATO) and automatic train supervision (ATS) functions"[422]. IEEE publishes a CBTC "recommended practice" that lays out a number of key or minimum functionalities for the design and functional allocation of CBTC systems, without prescribing particular technical or engineering criteria. According to the recommendation, the main principles of a CBTC system include, among others, (i) a high resolution train location determination; (ii) communication of this train location; (iii) determination of the movement authority for each CBTC-equipped train, based on train location and inputs from external interlockings; and (iv) communication of the movement authority to the specific train.[423]

(603) As shown in Figure 15, the fixed block system is replaced by a system that calculates blocks based on the actual positions of the trains and the required braking distance (plus a buffer) (the so-called "moving block" system).[424]

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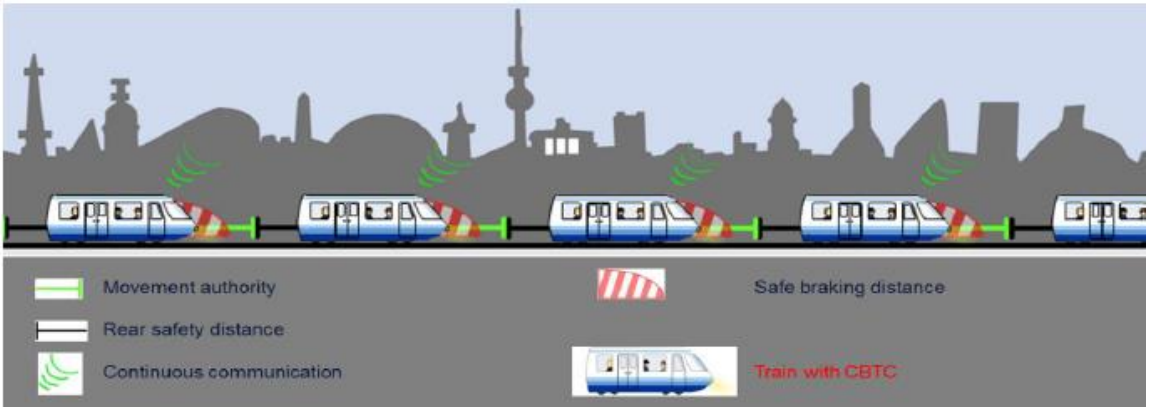
421 Form CO, Chapter C.2, paragraph 5.

422 Form CO, Chapter C.2, paragraph 5; IEEE 1474.1-2004, "IEEE Standard for Communications-Based Train Control (***CBTC***) Performance and Functional Requirements" at: https://www.techstreet.com/ieee/standards/ieee-1474-1-2004?gateway_code=ieee&vendor_id=3552&product_id=1214446

423 Form CO, Chapter C.2, paragraph 5; IEEE Recommended Practice for Communications-Based Train Control (CBTC) System Design and Functional Allocations 2008, Form CO, Annex C.2 – A.

424 Form CO, Chapter C.2, paragraph 5.

Figure 15: Urban signalling (Metro) – CBTC technology



Source: Form CO, Chapter C.2, Figure 2.

6.2. Mainline signalling projects - Relevant markets

(604) Both Siemens and Alstom have a broad product portfolio covering essentially all types of mainline signalling.

(605) The Parties' activities in the EEA overlap in mainline signalling projects and products, specifically interlockings, wayside ATP (both legacy and ETCS), OBUs (both legacy and ETCS), OCS, and various products (namely track circuits, axle counters, point machines, and level crossings).

(606) In the following section, the Commission analyses the product and geographic market definition for mainline signalling projects, namely: (i) standalone interlocking projects; (ii) ETCS ATP wayside overlay projects[425] (standalone ETCS ATP wayside); (iii) ETCS ATP wayside re-signalling projects[426] including ETCS ATP wayside and interlockings; (iv) ETCS OBU projects; (v) and legacy OBU projects.

6.2.1. Product market definition

6.2.1.1. Segmentation between mainline signalling and urban signalling

(A) The Notifying Party's views

(607) The Notifying Party submits that mainline signalling should be distinguished from urban signalling because of different customers, different interoperability requirements, different technical requirements, and differences in tendering.

(608) First, signalling equipment is purchased by different customers: mainline signalling projects are tendered by national railway infrastructure managers while urban signalling projects are tendered by local or regional operators of metro and/or light rail networks.

(609) Second, mainline signalling projects require installation of systems compatible with the signalling system on the wider network. Most countries have national operational rules and technical requirements for mainline signalling with which any project in that country must comply. By contrast, urban signalling projects typically concern closed loop systems (either the entire urban network or an independent part thereof

425 Overlay projects designate projects that are put on top of existing mainline signalling systems. In an ETCS wayside ATP overlay project, an ETCS wayside ATP system is laid on top of existing interlockings. The ETCS supplier must, therefore, develop an interface between the ETCS wayside ATP system and the existing interlockings.

426 Re-signalling projects designate installation of new mainline signalling systems. In an ETCS wayside ATP re-signalling project, the ETCS wayside ATP system and new interlockings are installed together.

such as a single line or a group of lines). Compatibility with the existing network and compliance with national operating standards renders the design and installation of mainline signalling systems more challenging than for urban signalling systems.

(610) Third, the technical specifications and complexity of mainline and urban signalling projects differ. Specific technical standards are being developed for mainline signalling systems, including ERTMS and EULYNX, which are not used in urban projects. The complexity in mainline signalling is linked to the compatibility and interoperability requirements and the complexity of the national railway network. In urban signalling the complexity is linked to capacity requirements (e.g. trains/hour) and automation levels.

(611) Fourth, urban signalling projects are usually tendered as complete signalling systems, while mainline signalling projects are more frequently separated into multiple tenders. In particular, on-board and wayside systems are tendered separately and procured by separate customers and subsystems, such as ATP wayside and interlockings, are frequently tendered on a standalone basis.[427]

(B) The Commission's decisional practice

(612) In previous cases, the Commission considered whether the market for railway signalling could be further subdivided according to the rail network type.[428]

(613) In *Siemens/Invensys Rail*, the Commission found that the technology required for railway signalling projects for mainline was more sophisticated than the technology for urban transit and that, therefore, the projects for mainline were more expensive.[429] The exact market delineation of the relevant product market(s) was ultimately left open as the notified operation did not raise serious doubts as to its compatibility with the internal market under any plausible market definition.[430]

(C) Results of the market investigation and the Commission's assessment

(614) The results of the market investigation broadly confirm the Notifying Party's views with regard to the segmentation based on rail network type.

(615) The majority of respondents indicated that mainline signalling and urban signalling should be distinguished from one another. Respondents considered, similarly to the Notifying Party, that this distinction is based on the following factors:[431]

(1) The technologies used in mainline and urban signalling differ even if they share most of the same components and subsystems such as interlocking, wayside equipment, OBUs etc.[432]. For example, ERTMS systems are used in mainline signalling while CBTC is used in urban signalling.

(2) Urban and mainline systems use different norms.[433] Mainline signalling uses the ERTMS and other legacy national standards, which are not used in urban

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427 Form CO, Chapter C.1, paragraph 3.

428 Commission Decision in Case M.4337 – Thales/Alcatel Divisions Transport et Systèmes (2006), recitals 14 and 19; Commission Decision in Case M.4508 – Alstom UK/Balfour Beatty/JV (2007), recital 12; Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recital 11.

429 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recital 11.

430 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recitals 19 and 23.

431 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1, Q9 – Mainline Signalling – Questionnaire to customers, question 4.

432 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1 (ID2512).

433 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1 (ID2512).

signalling. Both fields use CENELEC standards for safety certification;[434] however, these standards simply set criteria for the required safety levels and the type of safety cases that need to be certified for compliance with the standard but do not prescribe any particular technology.[435] The IEEE standard 1174 applies to urban signalling, namely to CBTC.[436]

(3) Mainline and urban systems have different interoperability requirements: mainline systems need to be interoperable with the entire railway network of a country while urban lines are usually self-contained and have no, or only a few junctures.[437]

(4) Due to the different interoperability requirements, mainline systems are much more standardised than urban systems. For example, the IEEE standard is only a high level description of the three main components of a CBTC system leaving ample room for different proprietary technologies.[438]

(5) Customers are different. In mainline signalling, the customers are the national rail infrastructure managers (and rolling stock operators and suppliers for OBUs) while in urban signalling systems the customers are the city transport operators.

(6) Both mainline and urban systems can be technologically complex but in different ways. In mainline signalling, the main challenges are the interoperability with the entire network and the management of complex junctures.[439] By contrast, in urban signalling the principal complexity results from automation (e.g. driverless metros) and increasing the throughput of the system (e.g. smaller headways between metro cars)[440] without compromising on safety.

(616) In summary, the two types of signalling systems serve different needs, are based on different technologies and standards, require different technical solutions and are sold to different customers. These differences rule out demand side substitutability as urban customers cannot or need not use mainline signalling solutions in urban transport and mainline customers cannot or need not use urban solutions in mainline transport.[441] Further, even though most suppliers are present in both fields, the differences between the two fields are substantial and thus exclude supply-side substitution.

(617) Therefore, the Commission's concludes that there is a distinction between mainline signalling and urban signalling.

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434 Form CO, Chapter C.1, paragraph 19; Form CO, Chapter C.2, Annex RFI 15 Q 26.

435 Form CO, Chapter C.2, Annex RFI 15 Q 26.

436 Form CO, Chapter C.2, Annex C.2 – A.

437 [...]'s and [...] responses to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1 (ID4348 and ID2418).

438 Form CO, Chapter C.2, Annex C.2, paragraph 4.

439 [...] response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1 (ID2418).

440 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.1.1 (ID2398).

441 One potential intersection is suburban lines that are not closed loop. In these cases the signalling solution needs to be interoperable with the entire network but due to the density of traffic CBTC can also be deployed. However, even in this case, the two types of systems are used together as opposed to substitutes.

6.2.1.2. Segmentation between mainline signalling *projects* and mainline signalling *products and services*

(A) The Notifying party's views

(618) The Notifying Party distinguishes between mainline signalling projects, products, and services.[442]

(619) The Notifying Party considers that signalling projects should be distinguished from signalling products because the large majority of mainline signalling systems in the EEA are purchased on a project basis rather than on a product basis. Projects include the system adaptation, engineering, project management, and other services required to install, validate and put the system into operation. Products, on the other hand, are sold without supporting services such as engineering and project management.[443]

(620) In relation to signalling services, the Notifying Party explains that signalling services are typically only supplied by the Parties as part of a warranty agreement included in a signalling project. Neither Party provides services for third party signalling systems and as a result are not active in the merchant market for signalling services.[444] The Notifying Party does not, therefore, consider it necessary to discuss the services market further in the Form CO.

(B) The Commission's decisional practice

(621) In previous cases, the Commission made a distinction between signalling projects and signalling products.[445]

(622) The Commission considered that railway signalling projects are comprehensive solutions involving: project-specific engineering, development and project management, procurement of the necessary equipment, installation, testing and, in most cases, maintenance; while railway signalling products are signalling components used in railway signalling projects.[446] The exact market delineation of the relevant product market(s) was ultimately left open as the notified operation did not raise serious doubts as to its compatibility with the internal market under any plausible market definition.[447]

(C) Results of the market investigation and the Commission's assessment

(623) The results of the market investigation broadly confirm the Notifying Party's view that mainline signalling projects should be considered separate from mainline signalling products.

(624) The majority of respondents indicated that mainline signalling products can be purchased as part of a signalling solution, but that they are also purchased separately as spare parts.[448] […]explains that "[t]*he signalling market is mostly a project-driven market. Signalling products are purchased separately from the system in three cases: End customers may purchase signalling products as spares to maintain their existing lines; A signalling system provider may buy non critical products that it does not*

442 Form CO, Chapter C.1, paragraph 128.
443 Form CO, Chapter C.1, paragraph 129.
444 Form CO, Chapter C.1, paragraph 178.
445 Commission Decision in Case M.4508 – Alstom UK/Balfour Beatty/JV (2007), recitals 10 and 14; Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recital 6.
446 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recitals 7 and 20.
447 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recitals 19 and 23.
448 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.13; Q9 – Mainline signalling – Questionnaire to customers, question 15.

have in its portfolio from another supplier; Customers [may buy] *field equipment where they want the same product across their network for maintenance synergies (e.g. axle counters)*".[449] Among customers, […] confirms that spare parts and replacement parts/subsystems are purchased for maintenance purposes,[450] and […] indicates that mainline signalling products are purchased through specific contracts with each manufacturer to maintain existing lines.[451]

(625) In line with what the Notifying Party submits, and in contrast to sales of mainline signalling products, the mainline signalling purchased on a project basis include not only the equipment itself, but also the system adaptation, engineering, project management, and other services required to install, validate and put the system into operation. Infrastructure managers are interested in a signalling solution in which each element works seamlessly together as a whole. The building up of such a well-functioning mainline signalling system entails significant risk that customers are not willing to bear and prefer leaving to the mainline signalling supplier. The project management capabilities of a supplier are, in fact, a key factor used in evaluating bids.

(626) As explained by […], there is a tendency to pass on "greater levels of responsibility for integration and project management to […] contractors on major signalling projects. Key benefits […]include: reduced external costs; reduced internal costs; and safety improvements".[452] […] also submits that project management skills are "key to any signalling project but the larger a project becomes the more critical this role will be".[453] […] explains in relation to the bundling of subsystems in single projects, that the main reasons for doing so include "shifting the responsibility for the works as much as possible to the suppliers".[454] […] similarly explains that bundling separate subsystems in a single tender and project helps "reduce our interface risk between these two subsystems: suppliers are best placed to manage this risk between their own subsystems".[455]

(627) The Commission's therefore concludes that there is a distinction between mainline signalling projects and mainline signalling products.

(628) The results of the market investigation were mixed as to whether mainline signalling maintenance services are supplied as part of a mainline signalling project. While the majority of competitors indicated that they provide mainline signalling maintenance services and/or spare parts together with mainline signalling projects, customers were evenly split on whether they sourced maintenance activities and/or spare parts together with mainline signalling projects.[456] The results of the market investigation showed that mainline signalling services are generally purchased for a fixed period

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449 […] response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.13 (ID2418).

450 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 15.1 (ID2825).

451 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, question 15.1. (ID2347).

452 […]'s response to Q21 – Mainline signalling – Questionnaire to customers (Phase II), question 3.2. (ID5223).

453 […]'s response to Q21 – Mainline signalling – Questionnaire to customers (Phase II), question 19.1 (ID5223).

454 [...]'s response to Q21 – Mainline signalling – Questionnaire to customers (Phase II), question 3.2 (ID5223).

455 […]s response to Q21 – Mainline signalling – Questionnaire to customers (Phase II), question 3.2 (ID4458).

456 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.13; Q9 – Mainline signalling – Questionnaire to customers, questions 15.

of time and the duration for which they are provided depends on the customer's requirements.[457]

(629) In any event, since neither Party supplies signalling services to third parties, the question whether there is a distinct market for services can be left open as the Transaction will have no impact on the merchant market for the provision of signalling services.

6.2.1.3. Segmentation by mainline signalling sub-systems

(A) The Notifying Party's views

(630) The Notifying Party submits that the market for mainline signalling projects should be further segmented between subsystems (in particular ATP, interlockings, and OCS) as there is no demand-side or supply-side substitutability between the different subsystems.[458]

(631) First, subsystems are purchased separately although in some cases (e.g. greenfield lines and re-signalling projects) an infrastructure manager may also purchase a comprehensive signalling solution. According to the Notifying Party there is not, separate product market for bundles comprising two or more subsystems because there is no distinct demand or supply for bundled offers. The Notifying Party further submits that there is no pattern of customers in the EEA procuring specific subsystems together with other subsystems.[459]

(632) Second, the suppliers that offer the different subsystems differ, with some suppliers offering all types of subsystems and others specialising in a particular subsystem. The fact that some suppliers offer the whole range of subsystems does not indicate supply-side substitution. In fact, subsystems are highly complex and fundamentally different; they require different software and components, and different engineering and development. They also need to undergo separate authorisation processes. The Notifying Party submits that authorisation requirements for the various subsystems differ from one country to another and therefore there are differences in the competitive alternatives available to customers. The Notifying Party gives the example of a supplier of interlockings in a particular country that may not necessarily have legacy or ETCS ATP systems, while suppliers of ATP (legacy or ETCS) or OCS in a particular country may not have a homologated interlocking in that country.[460]

(633) Third, subsystems are purchased from different suppliers. The Notifying Party submits that as a result of the variation in competitive conditions that can arise across subsystems, it is not unusual for the interlockings, ATP systems and OCSs on a railway line to be provided by several separate suppliers.[461] There are no unique advantages, according to the Notifying Party, for customers to purchase a combination of subsystems from the same supplier. Rather, in cases where a customer has decided to procure subsystems together, the advantages of doing so have not been directly related to the "bundle" but to other reasons, such as access to

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457 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.14; Q9 – Mainline signalling – Questionnaire to customers, question 16.

458 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, page 18.

459 Form CO, Chapter C.1, paragraph 132; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, page 12.

460 Form CO, Chapter C.1, paragraph 132; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, page 12.

461 Form CO, Chapter C.1, paragraph 132.

EU funding, the need to replace several subsystems at the same time due to the existing systems reaching the end of their lifecycle around the same time; and the customer's attempts to limit administrative costs linked to the tender organisation in the context of greenfield projects. The Notifying Party points to ADIF and the projects for the roll out of new built high-speed lines in Spain as an example where the customer has tendered out all subsystems in one tender.[462]

(634) In their response to the Article 6(1)(c) decision, the Parties also point out that the market investigation conducted in Phase I confirms that mainline signalling subsystems belong to separate product markets.[463]

(635) In their response to the Statement of Objections, the Parties agree with the Commission's conclusion that legacy OBU projects, ETCS OBU projects, legacy ATP wayside projects and standalone interlockings projects constitute separate product markets. They disagree, however, with the Commission's product market definition with regard to ETCS ATP wayside projects, namely that ETCS ATP wayside overlay projects and ETCS ATP wayside re-signalling projects constitute separate product markets.[464]

(A.i) ATP

(636) With regard to ATP systems, the Notifying Party discusses a further segmentation between OBUs and wayside ATP, and between legacy and ETCS systems. The Notifying Party also considers a further segmentation of ATP between re-signalling and overlay projects, by project size and by ETCS level.

a) ATP wayside and on-board systems

(637) The Notifying Party submits that there is neither demand-side nor supply-side substitutability between OBUs and wayside ATP systems and the two should be treated as separate product markets. OBUs and wayside ATP systems have different functionality, they can be purchased from two different suppliers, and the competitor set for OBUs and wayside ATPs available to a customer may also differ for any given network. One example given by the Notifying Party is Austria, where Bombardier supplies legacy OBUs, but does not supply the legacy wayside systems. The Notifying Party also points to the different customers for the two systems: OBUs being purchased by rolling stock manufacturers or train operators (depending on whether intended for installation on new trains or on existing train fleets) whereas wayside ATP systems are purchased by infrastructure managers. Also, while OBUs and wayside ATP must be compatible, the customers will select among those suppliers that can offer compatible OBUs, which may not necessarily be the same supplier as the supplier of the ATP wayside system on a particular network.[465]

b) Legacy and ETCS systems

(638) The Notifying Party considers that for OBUs and wayside ATP systems a further segmentation should be made between legacy and ETCS systems considering that they present significant technical differences and are not substitutable. The Notifying Party explains that ETCS ATP systems conform to published ETCS standards, and standardised interfaces are used between ETCS OBUs and the ETCS wayside elements. Legacy ATP systems were developed independently in different countries,

462 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, pages 17-19.
463 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, pages 19-20.
464 Parties' response to the Statement of Objections, Mainline signalling, page 27.
465 Form CO, Chapter C.1, paragraph 136.

do not conform to standardised designs, and do not use standardised interfaces. The technical means of operation can vary significantly between legacy systems. An ETCS OBU can only communicate with an ETCS wayside system and, similarly, a legacy OBU can only communicate with a compatible legacy wayside system. A signalling system only works if the same type of ATP system is installed on the trains and at the wayside. Both legacy and ETCS ATP systems often operate simultaneously on sections of a network, and similarly, some trains have both legacy and ETCS OBUs allowing them to operate on tracks fitted with either type of system.[466]

c) Re-signalling and overlay projects – ATP wayside

(639) The Notifying Party also discusses a further segmentation between re-signalling and overlay projects, but does not consider that separate product markets should be defined on that basis. It explains that a clear-cut line between re-signalling and overlay projects may not be possible and specific projects may often include both overlay and re-signalling components where the installed interlocking infrastructure is of varying age.

(640) The Notifying Party explains that from a demand-side perspective, a customer may indeed find it more advantageous to launch a ATP wayside re-signalling project (namely a project bundling both wayside ATP and interlockings) when its existing interlocking infrastructure has also reached the end of its lifecycle and conversely, if the customer has more recently installed existing interlocking infrastructure, an overlay ATP wayside project (i.e. installing only an ATP wayside system which interacts with existing interlocking infrastructure) may be the more attractive (and cheaper) option to a customer. From a supply-side perspective, overlay projects entail a cost advantage to the supplier already supplying or familiar with the existing interlocking on a particular line as it is necessary to develop an interface between the two subsystems for them to function. By contrast, in re-signalling projects, interlockings are replaced and the supplier of ATP wayside systems can rely on their own interlocking solution. The supplier with an already authorised/homologated interlocking solution may still have an advantage over a non-incumbent supplier that will incur the homologation costs also for its interlockings.[467]

(641) The Notifying Party further submits that even when ETCS wayside ATP and interlockings are bundled together in a re-signalling project, it is "*far from clear*" that such bundles could form a separate product market from the perspective of demand-side and supply-side substitution. The Notifying Party also argues that in addition to interlockings and ETCS wayside ATP, no other subsystems (such as OCS) should be included in such bundles.[468]

(642) In their response to the Statement of Objections, the Parties contest the Commission's conclusion that overlay and re-signalling projects constitute separate product markets. The Parties repeat the arguments presented in the Form CO and their response to the Article 6(1)(c) Decision, and indicate that identifying separate markets for overlay and re-signalling projects is unsubstantiated on the basis of the evidence in the case file and does not reflect the nature of competition. They argue that neither demand side nor supply side factors support such a finding. The Parties refer in particular to mixed responses from competitors and customers in the

466 Form CO, Chapter C.1, paragraph 139.
467 Form CO, Chapter C.1, paragraphs 140-144.
468 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraph 31.

Commission's market investigation, to major ETCS ATP wayside suppliers being active both in overlay and re-signalling projects and the same set of players bidding and winning both types of projects, as well as to the practice of suppliers forming consortia in the event that single suppliers are not able to supply all elements required in a re-signalling project on their own.[469]

d) Segmentation by ETCS level

(643) The Notifying Party also considers a segmentation of ETCS OBU and ETCS wayside ATP systems by ETCS level, namely between ETCS Level 1 and ETCS Level 2 but concludes that distinguishing separate product markets on that basis would not be meaningful. While there is not complete demand-side substitutability, there is full supply-side substitutability between the two levels, with suppliers usually offering both levels and OBUs typically designed to be compatible with both ETCS levels.[470] The Commission does not either consider ETCS Level 3 for the purposes of product market definition, given the R&D nature of these activities, which rather fall under development and innovation activities within the different markets for ETCS ATP and OBU technology.

e) Segmentation by project size

(644) The Notifying Party finally also considers a possible segmentation by project size but concludes that defining separate markets on that basis would not be appropriate. The Notifying Party submits that any such distinction (i) would not reflect accurately the complex competitive dynamics of signalling projects in which different factors (such as the development and approval costs, the availability of interface information from the incumbent supplier, the availability of a standardised interface) influence the suppliers' behaviour; (ii) it is impossible to define a general threshold above/below which competitive conditions change; and (iii) there are numerous examples of small players winning large projects or of small suppliers teaming up and winning large contracts.[471]

(A.ii) Interlockings

(645) The Notifying Party submits that interlockings form a distinct product market whenever tendered standalone, but to the extent that interlockings are tendered together with ETCS wayside ATP (in re-signalling projects), they form an "*inseparable bundle*" and should be considered separately from the standalone interlocking product market.[472]

(646) The Notifying Party considers that a further sub-segmentation by types of interlocking technology is not warranted as the market has almost completely moved from non-electronic relay-based interlockings to computer chip-based electronic interlockings.

(A.iii) Segmentation between greenfield and brownfield projects

(647) The Notifying Party considers that greenfield and brownfield projects are similar to re-signalling and overlay projects respectively and as such the same arguments why

469 Parties' response to the Statement of Objections, Mainline signalling, pages 14-19.

470 Form CO, Chapter C.1, paragraphs 149-151.

471 Form CO, Chapter C.1, paragraphs 145-148.

472 The Notifying Party explains that legacy ATP wayside systems and interlockings are only rarely tendered together and is aware of only very few occasions where this has occurred in the period 2012-2017; Form CO, Chapter C.1, paragraphs 157-158.

the latter segmentation is not meaningful apply also in relation to a possible segmentation between greenfield and brownfield projects.[473]

(B) The Commission's decisional practice

(648) In *Siemens/Invensys Rail*, the Commission considered the market for railway signalling projects and explained that it included four key systems, namely:

(1) interlocking systems consisting of signals, trackside sensors, point machines, and electronic interlockings;

(2) ATP, consisting of both conventional and ETCS ATP systems;

(3) OCS; and

(4) level crossing systems.[474]

(649) The Commission also analysed whether the market should be further subdivided according to the rail network type (mainline/urban), the (interlocking) technology applied (non-electronic/electronic), and the size of the project.[475] However, the exact definition of the relevant product market was ultimately left open.[476]

(C) Results of the market investigation and the Commission's assessment

(650) The Commission considers that mainline signalling projects should be further segmented by subsystem, namely ATP, interlockings, and OCS. For ATP systems, a distinction should also be made between OBUs and wayside ATP, between legacy and ETCS technology, and between overlay and re-signalling projects. A re-signalling ATP project covers not only ETCS wayside ATP but also interlockings. Each of these (sub-)segmentations constitutes a separate product market.

(651) The market investigation shows that a majority of customer and competitor respondents consider that mainline signalling projects should be segmented by subsystem. There are, however, discrepancies as to the appropriate sub-segmentation of the mainline signalling project market[477]. Among competitors, for example, [...] agrees on segmentation by sub-system but indicates that this would give rise to at least three separate markets, namely "*Conventional systems*" (including conventional ATP and interlockings), "*ERTMS systems*", and "*OCS*".[478] […], on the other hand, refers to mainline signalling being a "*project oriented market*" where "*most of the tenders require a full and integrated solution*" and concludes on that basis that segmentation by subsystems does not make sense.[479] Among customers, for example, […] and […] agree with a distinction between interlocking systems, ATP and

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473 Parties' response to the 6(1)(c) decision, Mainline signalling, paragraph 309.

474 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recital 8.

475 In the Case M.4508 – Alstom UK/Balfour Beatty/JV (2007), the Commission considered a possible segmentation of railway signalling projects by project size, with three categories: small (value below EUR 8 million), medium-size (value between EUR 8 million and EUR 75 million) and large (value above EUR 75 million) projects. In Siemens/Invensys Rail the Commission also considered that a segmentation based on size could be justified and reflected in different prices and technical complexity required for small, medium and large projects; see Commission Decision in Case M.4508 – Alstom UK/Balfour Beatty/JV (2007), recital 12 and Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recital 19.

476 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recitals 9, 19.

477 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.2; Q9 – Mainline signalling – Questionnaire to customers, question 5.

478 [...]'s response to Q8 – Mainline Signalling – Questionnaire to competitors, question B.A.2.1 (ID2398).

479 […] response to Q8 – Mainline Signalling – Questionnaire to competitors, question B.A.2.1 (ID2418).

OCS[480]. Other customers take a different view, including [...], that indicates that "*further segmentation* [between signalling subsystems] *is not currently feasible given the low level of standardization in the marke[t]*".[481]

(652) From the demand side, the different views expressed in the market investigation as to the sub-segmentation of the mainline signalling market are reflective of the procurement strategies of customers in terms of which subsystems they include in a single tender/project. While some customers procure complete systems, including the various subsystems, others tender subsystem by subsystem.[482] Half of the customer respondents indicate that they purchase the different signalling subsystems separately, while the other half indicate that they purchase complete systems or bundles comprising two or more subsystems.[483] As an example, […] indicates that it purchases interlockings, ETCS components and subsystems, OCS and other systems separately,[484] while […]indicates that it procures all subsystems together.[485] [...] explains that certain subsystems are purchased together, for example ATP and interlockings, while other subsystems are purchased separately, in particular OCS[486]. […] indicates that due to technical reasons, ATP systems are purchased separately.[487]

(653) Moreover, variability in procurement strategy also exists not only between customers but also by a given customer, depending on their needs and circumstances in a particular case. A single customer may adopt different procurement strategies from one tender to the next and purchase subsystems at times together and at other times separately. This is the case for […] that purchases sub-systems separately where they do not form part of a "*Major Signalling project*".[488]

(654) The different ways in which customers procure mainline signalling subsystems is also reflected in the estimates provided by the Notifying Party of the share of subsystems purchased together or separately by different customers,[489] as well as in the bidding data that the Parties have submitted.[490]

(655) Despite the variation in procurement strategies, some competitors observe that even though each subsystem performs a specific function in the mainline signalling system, customers require mainline signalling solutions functioning as a whole and as such require a full and integrated solution including all subsystems.[491] Although customers may source subsystems from different suppliers, the entire signalling system with its various subsystems must work together. Compatibility between subsystems is therefore essential. One competitor, [...], indicates that from a demand-side perspective, segmentation by subsystem is unclear because (i) major projects are tendered in an integrated way combining various subsystems and (ii) the way in

480 [...]'s and [...]'s responses to Q9 – Mainline signalling – Questionnaire to customers, question 5.1 (ID2172 and ID2356).
481 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 5.1 (ID2825).
482 Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.2 and B.A.3; Q9 – Mainline signalling – Questionnaire to customers, questions 5 and 6.
483 Q9 – Mainline signalling – Questionnaire to customers, question 6.1.
484 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 6.1 (ID2356).
485 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, question 6 (ID2347).
486 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 6 (ID2172).
487 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 6 (ID1985).
488 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, questions 5 and 6 (ID2172).
489 Form CO, Chapter C.1, Table 4 and Annex RFI 21 Q4.
490 CPL, Annex 105, Q2.2 (Alstom).
491 […] response to Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.2 and B.A.3 (ID2418).

which integration between subsystems is achieved requires proprietary solutions in the absence of standards for such integration,[492] including the use of proprietary interfaces.

(656) Contrary to the Notifying Party's assertion that there are no "unique advantages" to purchase a combination of subsystems from the same supplier, the market investigation shows otherwise.[493] The interfacing of subsystems so that they work seamlessly as a whole is essential, and to achieve such interoperability customers feel a very clear advantage of procuring certain subsystems, in particular wayside ATP and interlockings together.[494] As explained by [...], it "*must resort to bundling of some subsystems*", in particular ETCS wayside ATP and interlockings, for the purposes of mitigating "*risks and responsibility*"; doing otherwise would leave [...] responsible for ensuring that the interlocking functions properly with the ETCS wayside system and thus exposing the company to additional risk. [...] concludes that tendering out subsystems separately would only become an option with "*comprehensive standardisation*" of the "*building blocks*" between the subsystems, which presently is lacking.[495]

(657) Similarly, […] indicates that separate tenders for interlockings and ATP wayside are "*practically impossible*", as there is "*an almost unbreakable link between core signalling subsystem interlocking (IXL) and ATP*". […] also confirms, similarly to [...], that bundling allows reducing the "*interface risk*" between interlockings and ATP, as "*suppliers are best placed to manage this risk between their own subsystems*".[496] […] indicates that "[t]*endering subsystems separately as long as standard interfaces are not available* […] *would cause huge expenses in developing ad hoc integration among different suppliers and high risk for the Project time line*".[497]

(658) Contrary to what the Parties seem to suggest in their response to the Statement of Objections,[498] there is no contradiction in customers identifying advantages in purchasing a combination of subsystems (for instance ATP and interlockings) from a single supplier (see recitals (656) and (657)) to limit, for instance interface risk where possible, but also continuing to procure subsystems separately. These purchasing patterns support the notion that there is a distinct demand for both.

(659) From a supply-side perspective, the results of the market investigation confirm that certain mainline signalling suppliers, Siemens, Alstom, Bombardier, Ansaldo STS and Thales all offer the various mainline signalling subsystems and are thus able, at least in principle, to offer full mainline signalling projects or any combination of subsystems included in a tendered project. Other smaller suppliers only provide specific mainline signalling subsystems. This is for example the case of Resonate in the UK that provides traffic management systems (or OCSs). These specialised suppliers are often national players only active in one Member State and due to historical reasons focus on solutions meeting specific requirements in a given country.[499] As such, they are not representative of the EEA market for mainline

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492 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.2.1 (ID2011).

493 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraph 30.

494 Q21 – Mainline signalling – Questionnaire to customers, question 3.3.4.

495 [...]'s response to Q21 – Mainline signalling – Questionnaire to customers, question 3.2 (ID5128).

496 […]s response to Q21 – Mainline signalling – Questionnaire to customers, question 3.2 (ID4458).

497 […] 's response to Q21 – Mainline signalling – Questionnaire to customers, question 3.2 (ID4060).

498 Parties' response to the Statement of Objections, Mainline signalling, page 33.

499 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.3.2.

signalling projects that is largely concentrated in the hands of five players, each of them able to supply complete mainline signalling projects, including all subsystems and combinations of subsystems.

(C.i) ATP

a) ATP wayside and on-board systems

(660) The Commission considers that ATP projects should be sub-segmented between ATP wayside and on-board unit (OBU) projects, each constituting a separate product market.

(661) With regard to ATP, the market investigation confirms that wayside ATP and on-board equipment should be treated separately. The two are not substitutable neither from the demand or supply side; they have different functionality, are purchased by different customers, and can be supplied by different suppliers on a given network.

(662) OBUs and wayside ATP perform different functions. While wayside ATP receives information from the interlocking and communicates this information to the passing trains, the OBU receives this information and transmits it to the train driver.

(663) OBUs and wayside ATP are generally procured separately from one another by different customers.

(664) Market participants indicate that OBUs are purchased separately from other mainline signalling subsystems.[500] […] indicates that "*OBUs are always procured separately*",[501] [...] explains that "*OBUs are purchased jointly with [rolling stock]*"[502], while [...]indicates that "*[on board] ATP systems usually are tendered in a different project*".[503] This is also confirmed by the bidding data submitted by the Parties.[504]

(665) Moreover, the customers for the two ATP elements are different. OBUs are usually purchased by the rolling stock manufacturers or the train operating company (depending on whether the OBU is intended for installation on new rolling stock or installation on existing rolling stock); whereas ATP wayside systems are procured by infrastructure managers.[505]

b) Legacy and ETCS systems

(666) The Commission considers that ATP wayside and OBU projects should be segmented into legacy and ETCS projects, each constituting a separate product market.

(667) The results of the market investigation also confirm that ATP systems, both wayside ATP and OBUs, should be further segmented between conventional/legacy systems

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500 See for example [...]'s, [...]'s and [...] responses to Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.3.1.1 (ID2512, ID2398, ID2418).

501 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.3.1.1 (ID2512).

502 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.3.1.1 (ID2398).

503 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.3.1.1 (ID2011).

504 CPL, Annex 105, Q2.2 (Alstom).

505 Q9 – Mainline signalling – Questionnaire to customers, question 6.1.

and ETCS systems.[506] […]explains that legacy ATP wayside and legacy OBUs "*cannot fulfil functionalities required by the ETCS systems*".[507] [...] explains that both ATP wayside and OBUs "*should be divided into (i) conventional or legacy solutions, which are not interoperable; and (ii) ECTS solutions (ERTMS level 1 and level 2), which requires interoperability and conformity with European standard rules*".[508] [...] indicates that the two should be distinguished because of "*[d]ifferent requirements and competition*".[509]

(668) With regard to ATP wayside systems, market participants argue for the segmentation between legacy and ETCS in particular on the basis of the following factors: (i) legacy ATP wayside systems cannot fulfil the functionalities required by ETCS ATP wayside systems; (ii) legacy solutions are built on proprietary technology, which implies a strong dependency from the supplier and leads to negotiated tenders with the supplier of the legacy system, whereas ETCS solutions are more standardised and as such allow for more open tenders (while still featuring a certain advantage of the supplier of the legacy solutions, with the exception of the signalling of new lines, which is, however, rather rare); (iii) approval procedures for legacy and ETCS systems are different: while ETCS requires a notified body ("NoBo") responsible for the certification of ERTMS equipment and being a new technology, is subject to a much more sophisticated testing process, legacy systems are approved in a national process and usually do not include an approval process for individual projects.[510]

(669) With regard to OBUs, a majority of market investigation respondents also consider that OBUs should be further segmented between legacy and ETCS for the same reasons as for ATP wayside systems.[511]

c) Re-signalling and overlay projects – ATP wayside

(670) The Commission considers that ATP projects should be segmented between overlay and re-signalling projects, each constituting a separate product market.

(671) The market investigation confirms that ATP wayside systems can be procured separately as a standalone subsystem placed over an existing interlocking infrastructure ("overlay project"), but is often procured together with interlockings as part of bundled project, or "re-signalling" project.

(672) In the Form CO, the Notifying Party has recognised differences between re-signalling and overlay projects, the existence of a specific customer demand for re-signalling projects, and has argued that ETCS ATP systems and interlockings form an "inseparable bundle" when tendered together by a customer. It claims, however, that identifying separate markets for re-signalling and overlay projects is not

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506 Q8 - Mainline signalling – Questionnaire to competitors, questions B.A.4.1 and B.A.4.2; Q9 - Mainline signalling – Questionnaire to customers, questions 7.1 and 7.2; Q10 – Mainline signalling – Questionnaire to OBU customers, question 5.

507 [...] response to Q8 - Mainline signalling – Questionnaire to competitors, questions B.A.4.1 and B.A.4.2 (ID2418).

508 [...]'s response to Q8 - Mainline signalling – Questionnaire to competitors, questions B.A.4.1 and B.A.4.2 (ID2398).

509 [...]'s response to Q8 - Mainline signalling – Questionnaire to competitors, questions B.A.4.1 and B.A.4.2 (ID2512).

510 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.4.1; Q9 – Mainline signalling – Questionnaire to customers, question 7.1.

511 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.4.2; Q9 – Mainline signalling – Questionnaire to customers, question 7.2.

appropriate as clear-cut lines between the two cannot be drawn (see recitals (639)-(641)).

(673) In their response to the Statement of Objections, the Parties contest the Commission's conclusion that overlay and re-signalling projects constitute separate product markets. The Parties repeat the arguments presented in the Form CO and their response to the Article 6(1)(c) Decision, and indicate that identifying separate markets for overlay and re-signalling projects is unsubstantiated on the basis of the evidence in the case file and does not reflect the nature of competition. They argue that neither demand side nor supply side factors support such a finding.[512]

(674) Respondents to the market investigation give mixed responses as to whether a segmentation of the market between re-signalling and overlay projects is warranted.[513]

(675) Some market participants consider that a segmentation should not apply because the signalling solutions for re-signalling or overlay projects do not differ much, the main components of the system remain the same and the suppliers able to provide re-signalling projects can also offer overlay projects.[514] On the other hand, some market participants consider that there are differences between re-signalling or overlay projects as far as their complexity is concerned. Overlay projects are more complex because the new signalling solution needs to interface with the existing signalling system thus conferring an incumbency advantage to the supplier with the installed base.[515] A re-signalling project is considered to be technically simpler as it includes products from the same supplier avoiding complex external interfaces, whereas an overlay project requires external interfaces which could be challenging depending on the age and type of the existing signalling solution. The high-level solution in ATP wayside projects could be the same in both overlay and re-signalling projects, but the detailed solution will require different products and extra modules for external interfaces in overlay projects. Thus, the main difference between overlay and re-signalling projects lies in the development of the interface to ensure compatibility of the system, in particular of the ATP wayside with the existing interlockings.[516]

(676) In seeking to justify a single product market comprising both overlay and re-signalling projects, the Parties argues in their response to the Statement of Objections that competitive conditions are similar for re-signalling and overlay projects with the same set of players bidding for and winning both re-signalling and overlay projects.[517]

(677) It is accurate that the largest mainline signalling suppliers in the Europe, including the Parties, Thales, Ansaldo and Bombardier are actively pursuing both types of projects. Their capacity to do so does not disprove, however, the differences between the two types of projects, in particular in terms of technical requirements for interfaces and overall technical complexity, or the specific customer demand for one

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512 Parties' response to the Statement of Objections, Mainline signalling, pages 14-19.

513 Questionnaire Q8 – Mainline signalling – Questionnaire to competitors, question B.A.9 and B.A.10; Q9 – Mainline signalling – Questionnaire to customers, questions 11-12.

514 Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.9 and B.A.10; Q9 – Mainline signalling – Questionnaire to customers, questions 11 and 12.

515 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question B.A.9.1 (ID2398).

516 Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.9 and B.A.10; Q9 – Mainline signalling – Questionnaire to customers, questions 11 and 12.

517 Parties' response to the Statement of Objections, Mainline signalling, page 18.

or the other type of project, not least in view of the interface risk that procuring interlockings and ETCS ATP wayside separately entails for the customer.

d) OBUs for new rolling stock and OBUs for retrofitting existing rolling stock

(678) The Commission does not consider that a segmentation of OBUs into separate product markets based on installation, i.e. new rolling stock or retrofitting existing rolling stock, is warranted.

(679) The majority of customers consider that OBU projects should not be further segmented between (i) retrofitting rolling stock (i.e. replacing the OBU on an existing train) and (ii) installing OBU for new rolling stock, on the basis that both types of project cover the same solutions. However, several customers outline that retrofitting projects are more complex and many customers explain that if the OBU is the same for both old and new rolling stock, the integration work is different between retrofitting old rolling stock and installing OBUs on new rolling stock.[518] Further, access to the engineering details of the rolling stock can be an important determinant in the retrofitting process.

(680) Among competitors, respondents concur with the responses by customers, and indicate that technically the OBUs are the same whether intended for installation on new rolling stock or for installation on old rolling stock. It is explained that the same suppliers provide OBUs for both new and retrofitted rolling stock.[519] For example [...] explains that "[t]*here are no differences in technology for OBUs for new rolling stock and OBUs for retrofitting, so suppliers of OBUs for new rolling stock can also provide OBUs for retrofitting*", however there are practical hurdles linked to accessing legacy OBU technology that suppliers wishing to retrofit old rolling stock may encounter. This is the case when the supplier of the new OBU is different from supplier of the legacy OBU or is different from the supplier of the rolling stock on which to retrofit the new OBU.[520] [...] similarly points out that "*if the supplier does not own the Legacy / STM technology or cannot acquire it, the supplier will only be able to offer an overlay solution*".[521]

(681) These submissions by [...] and [...] confirm the Commission's assessment that a distinction between OBUs for new rolling stock and OBUs for retrofitting is not warranted, but that a distinction should be made between ETCS and legacy technologies (see recitals (666) to (669)).

(682) […] explains that all suppliers can provide ETCS OBUs for new vehicles and for retrofitting old vehicles, but not all suppliers can supply legacy OBUs. This response highlights again the distinction between legacy and ETCS systems. Similarly to customers and [...] and [...], also […] refers to the complexity linked to retrofitting old vehicles, namely the interfacing challenge between ETCS and legacy systems. […] submits that an OBU supplier that did not provide the legacy OBU or the rolling stock on which to retrofit the new OBU will need some "goodwill" from the legacy suppliers to gain the required access to the know-how held by the vehicle supplier and the legacy OBU supplier.[522]

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518 Q10 – Mainline signalling – Questionnaire to OBU customers, questions 9 and 10.

519 [...]'s response to the Commission's request for information RFI 49, question 11 (ID5849).

520 [...]'s response to the Commission's request for information RFI 53, question 11 (ID5950).

521 [...]'s response to the Commission's request for information RFI 48, question 11 (ID5798).

522 [...]'s response to the Commission's request for information RFI 54, question 13 (ID5674).

e) Segmentation by ETCS level

(683) The Commission considers that there is no need to define separate product markets for ETCS wayside ATP and ETCS OBU projects based on ETCS level (namely ETCS Level 1, ETCS Level 2).

(684) On the demand side, a majority of customer respondents to the Commission's market investigation do not support the notion that competitive conditions, for example the number of competitors, strength of competitive constraints, different emphasis of parameters such as price, delivery time, safety performance, etc., would significantly differ for ETCS Level 1 and ETCS Level 2 systems.[523] Those responding that conditions are different, indicate that the number of competitors differs between Level 1 and Level 2, with the number of ETCS Level 2 suppliers being larger than the number of Level 1 suppliers.[524]

(685) Among competitors, views are mixed. […]explains that it does not support such a product market segmentation as "*all of the major suppliers can supply ETCS Level 1, 2 and 3 in the future*", but recognises that customers request specifically one or the other ETCS level and, from a supply side, moving from ETCS Level 1 to ETCS Level 2 (and in the future ETCS Level 3) is a costly and time consuming exercise.[525] [...] explains that the set of suppliers is different between ETCS Level 1 and ETCS Level 2, that suppliers, such as […], do not all have all wayside elements in their product offering, and that different customers purchase different levels of ETCS solutions.[526] [...] highlights the differences between ETCS Level 1, 2 and 3 systems, and indicates that customers purchase different level ETCS mainline signalling solutions depending on their need, available funding, the state of their conventional technology, and available time to deploy ETCS.[527] [...] considers that ETCS Level 1 and ETCS Level 2 can be considered two separate product markets in view of the different technologies they represent, and explains that customers demand specific ETCS level solutions in their tenders, and competitors are different for both levels, with the "*main signalling suppliers*", i.e. the Parties, Ansaldo, Bombardier and Thales providing both Level 1 and Level 2 solutions, but smaller competitors, for example Mermec, CAF, AZD only offering Level 1 as they lack the RBC technology needed for Level 2.[528]

(686) The Commission considers that on the customer side there appears to be a distinct demand for either ETCS Level 1 or ETCS Level 2 solutions with limited demand-side substitutability. On the supply side, however, all the main mainline signalling suppliers are active in both Level 1 and Level 2 systems. It is recognised that smaller players may only be active in one or the other ETCS level, or have incomplete product portfolios of one or the other ETCS level solution. To the extent that is the case, it may indeed affect these players' ability to compete with the main mainline signalling players for specific contracts and meet specific customer requirements. Such differences between competitors will, however, be discussed as part of the competitive assessment.

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523 Q21 – Mainline signalling – Questionnaire to customers, question 2.

524 Q21 – Mainline signalling – Questionnaire to customers, question 2.

525 [...] response to the Commission's request for information RFI 47, question 12 (ID4772).

526 [...]'s response to the Commission's request for information RFI 53, question 12 (ID5950).

527 [...]'s response to the Commission's request for information RFI 48, question 12 (ID5798).

528 [...]'s response to the Commission's request for information RFI 49, question 12 (ID5849).

f) Segmentation by project size

(687) The Commission considers that there is no need to define separate product markets for ATP wayside overlay and re-signalling by project size.

(688) The results of market investigation were mixed as to whether projects should be sub-segmented on the basis of size. There is also no clear threshold discernible for the separation of small(er) and large(r) projects.

(689) On the one hand, the majority of customers indicate that they do not consider that mainline signalling projects should be sub-segmented on the basis of the size of the project.[529] On the other hand, some of these customers indicate that competition conditions differ significantly for different size projects.[530] They explain that mainline signalling suppliers are not interested in participating in small tenders, because of the costs to participate to such public procurements. Due to the high development costs, companies are more interested in large contracts that will enable them to recoup the investments made. Customers therefore try to tender large mainline signalling projects, instead of tendering projects out in smaller segments, in order to attract as many competitors as possible.[531]

(690) The majority of competitors consider that mainline signalling projects should be further segmented according to the size of the project, on the basis that large projects are typically more complex, usually require specific commercial references making it more difficult for certain suppliers to become credible bidders and necessitate higher investments and costs. As a result, the set of competitors participating in tenders for mainline signalling projects differ depending on the size of the project and competitive conditions significantly differ according to the size of the projects.[532] Several competitors indicate a dividing line between small and large projects varying between EUR 15 million and EUR 25 million; while others seem to consider that another category should include medium size projects.[533] Finally several competitors indicate that smaller competitors ECM, Mipro, Mermec, AZD or Sirti do not participate in tenders for large projects.[534]

(691) The Commission recognises that smaller players, with limited financial capabilities or more limited technical or project management capabilities, may focus their activities on projects of more limited size and they may not be equally well positioned as the main signalling suppliers to compete for the larger tenders. Such differences between competitors will, however, be discussed as part of the competitive assessment.

(C.ii) Interlockings

(692) The Commission considers that standalone interlocking projects constitute a separate product market, distinct from re-signalling projects involving the supply of both ETCS ATP wayside systems and interlockings.

(693) As the Notifying Party has argued in the Form CO (and despite questioning the merit of defining a separate bundle market for re-signalling projects) to the extent that ETCS ATP systems and interlockings are tendered together in re-signalling projects,

529 Q9 – Mainline signalling – Questionnaire to customers, question 8.
530 Q9 – Mainline signalling – Questionnaire to customers, question 9.
531 Q9 – Mainline signalling – Questionnaire to customers, questions 8 and 9.
532 Q8 – Mainline signalling – Questionnaire to competitors, questions B.A.5 and B.A.6.
533 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.5.2.
534 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.8.

they form an "*inseparable bundle*" and standalone interlockings projects should be considered separately from such re-signalling projects.[535]

(694) There exists, in fact, a distinct demand for standalone interlocking projects. The tender data submitted by the Parties indicates that in the period 2008-2018, more than 300 contestable standalone interlocking projects were tendered in 20 different EEA countries.[536]

(695) The Commission considers that there is no need to define separate product markets for standalone interlockings projects based the type of technology used.

(696) The Commission has not received indications that the market for standalone interlockings projects should be further segmented between non-electronic technology and computer-based technology. The Commission notes, however, that non-electronic interlockings are becoming an outdated technology.

(697) The Commission also considers that there is no need to define separate product markets for standalone interlockings based on project size, in line with the arguments presented in recitals (687)-(691).

(C.iv) Segmentation between greenfield and brownfield projects

(698) The market investigation shows that a several competitors consider that brownfield and greenfield projects should be distinguished. While the same signalling solution can be used for both brownfield and greenfield projects there is a difference in the integration work specific to brownfield projects.[537] Greenfield and brownfield projects should be distinguished, notably on the basis that (i) brownfield projects are more complex and customers are generally concerned by issues such as integration with legacy systems and migration of systems without causing disruption to train services; and (ii) from a demand side perspective, greenfield projects are more driven by price than brownfield projects: the prices of mainline systems are quite standard for greenfield projects whereas prices for brownfield projects can be strongly impacted by the complexity of the line and the number of existing systems.[538] Competitors consider that while in theory the main suppliers are able to provide both brownfield and greenfield projects, the complexity linked to the need for interfaces in brownfield, and in particular, overlay projects may make non-incumbents uncompetitive or smaller suppliers less capable of delivering on such complex projects.[539]

(699) On the customer side, a majority of respondents consider that mainline signalling projects should be segmented between greenfield and brownfield projects mostly because requirements for the implementation of these projects are different, even though the signalling solution could be the same in both types of projects.[540]

(700) The Commission considers that the responses from market participants on brownfield and greenfield projects essentially relate to what has been defined as

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535 Form CO, Chapter C.1, paragraph 157.

536 CPL, Annex 105, Q2.2 (Alstom).

537 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.11 and B.A.12.

538 Q8 – Mainline signalling – Questionnaire to competitors, question B.A.11.

539 [...] response to the Commission's request for information RFI 47, question 10 (ID4772); [...]'s response to the Commission's request for information RFI 48, question 10 (ID5798); [...]'s response to the Commission's request for information RFI 49, question 10 (ID5849); [...]'s response to the Commission's request for information RFI 53, question 10 (ID5950).

540 Q9 – Mainline signalling – Questionnaire to customers, question 13.

overlay and re-signalling projects, which have been discussed in recitals (670)-(675). Pure greenfield projects (distinct from re-signalling projects) are rare in the EEA, and the Commission considers that respondents' feedback on the specificities of brownfield projects (including on interfacing and integration with legacy systems) are essentially about the projects defined as "overlay".

(701) The Commission therefore considers that there is no need to define a separate product market for greenfield and brownfield projects.

6.2.1.4. Conclusions on product market definitions in mainline signalling

(702) For the purpose of the assessment of the Transaction, the Commission's view is that mainline signalling and urban signalling are separate markets. Within mainline signalling, signalling projects and products[541] constitute separate markets. In addition, mainline signalling projects should be further segmented, with the following separate relevant product markets defined:

- Legacy OBU projects;
- ETCS OBU projects;
- Legacy ATP wayside projects;
- Standalone ETCS ATP wayside (so-called overlay) projects;
- Standalone interlocking projects;
- ETCS ATP wayside re-signalling projects (bundle of ETCS ATP wayside and interlockings).

6.2.2. Geographic market definition

6.2.2.1. Introduction and framework for reference

(703) The Commission Notice on the definition of the relevant market[542] highlights that the Commission "*will take a preliminary view of the scope of the geographic market on the basis of broad indications as to the distribution of market shares between the parties and their competitors, as well as a preliminary analysis of pricing and price differences at national and Community or EEA level*".[543] The Commission will also need to explore "*the reasons behind any particular configuration of prices and market shares* […]".[544] For example, "*companies might enjoy high market shares in their domestic markets just because of the weight of the past, and conversely, a homogeneous presence of companies throughout the EEA might be consistent with national or regional geographic markets*".[545]

(704) The Notice goes on to identify a number of factors such as the "*importance of national or local preferences, current patterns of purchases of customers, product differentiation/brands, other) in order to establish whether companies in different areas do indeed constitute a real alternative source of supply for consumers*" and "*the question to answer is again whether the customers of the parties would switch their orders to companies located elsewhere in the short term and at a negligible*

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541 See section 6.4 on mainline signalling products.

542 Commission Notice on the definition of relevant market for the purposes of Community competition law (OJ C 372, 9.12.1997, p. 5–13).

543 Commission Notice on the definition of the relevant market, paragraph 28.

544 Commission Notice on the definition of the relevant market, paragraph 29.

545 Idem.

cost".[546] The Notice also states that "*the Commission will identify possible obstacles and barriers isolating companies located in a given area from the competitive pressure of companies located outside the area, so as to determine the precise degree of market interpenetration at national, European or global level*".[547]

6.2.2.2. Mainline signalling projects

(A) The Notifying Party's views

(705) The Notifying Party submits that the geographic markets for the mainline subsystem projects assessed in this decision are as follows:

(1) EEA-wide for ETCS OBUs;

(2) national for legacy wayside system and legacy OBUs projects;

(3) national for standalone interlocking projects; and

(4) national for ETCS wayside projects.

(706) As regards **ETCS OBUs**, the Notifying Party submits that the relevant geographic market is EEA-wide because the ETCS system is designed to specify a standard interface between OBUs and balises so that a single OBU can operate with ETCS balises in any country. The Notifying Party further explains that in practice, however, when delivering an ETCS OBU, the supplier will typically need to integrate the ETCS OBU with one or more national OBUs that are either already installed or that must be installed alongside the ETCS OBU. The Notifying Party submits that nevertheless those integration requirements are typically no barrier to suppliers delivering ETCS OBUs to customers in new countries.[548]

(707) The Notifying Party also submits that the geographic market for **legacy wayside system and legacy OBUs** is national in scope because (i) they are purchased only by infrastructure managers and other national customers within a relevant country (with the exception of legacy OBUs for cross-border trains), (ii) they are supplied by different suppliers, and (iii) typically rely on proprietary technologies. Legacy OBUs, the Notifying Party explains, must conform to national specifications even though they are purchased by customers both within and outside a given Member State (for use in cross-border trains).

(708) The Notifying Party further submits that the geographic market for **interlockings** is national in scope because (i) interlockings must be adapted to conform to national systems and signalling rules vary to some degree between countries, (ii) national authorisation processes, and (iii) interlockings need to interface with existing interlockings on adjacent or intersecting parts of the track, although these integration requirements, the Notifying Party submits, do not normally present a major hurdle.[549]

(709) As regards **ETCS ATP wayside projects**, the Notifying Party submits that the relevant geographic market is national because even though the market for ETCS wayside systems is, relative to legacy systems, more open to non-incumbent suppliers, non-incumbent suppliers still have to obtain national authorisation and customise their products to certain remaining national specifications of ETCS.[550] The

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546 Idem.

547 Commission Notice on the definition of the relevant market, paragraph 30.

548 Form CO, Chapter C.1, paragraph 156.

549 Form CO, Chapter C.1, paragraphs 162-164.

550 Form CO, Chapter C.1, paragraphs 153-155.

Notifying Party explains that in the case of an overlay project (which requires the development of an interface between the ETCS system and the installed interlockings if from a different supplier), the supplier of the ETCS system needs to create an interface to the installed interlockings and homologate the ETCS system. On the other hand, in the case of a re-signalling project, the supplier has to homologate and customise their interlocking to comply with the applicable national standards which vary significantly between countries.[551]

(710) More generally, the Notifying Party acknowledges that there is a trend towards European standardisation of ATP systems through the deployment of ETCS systems which can (i) support interoperability between different rail networks (ii) support interoperability between the equipment of different suppliers, and (iii) provide a common safety platform for taking steps towards further benefits (e.g., autonomous driving systems). At the same time, the Notifying Party recognises a number of characteristics associated with ETCS deployment that support a narrower than EEA-wide geographic market definition, namely: (i) certain national operators continue to require national adaptations of the ETCS systems to accommodate national specifications,[552] (ii) in the case of overlay projects where the infrastructure manager chooses to keep the existing interlockings, the ETCS supplier must develop a (national specific) interface between the existing interlockings and the ETCS system,[553] and (iii) the ETCS deployment is still in the early stages with only a very small proportion of the total EU rail network complete and no deadline for the completion of the entire project.[554]

(711) In their response to the Article 6(1)(c) Decision, the Parties submit that based on the available evidence an EEA-wide market for ETCS ATP wayside and interlockings can be excluded because:[555]

(1) there is a significant variation in the set of competitors active in, and their relative strength across, EEA-countries, in ETCS ATP wayside, and interlockings (where a substantial proportion of interlocking suppliers are active in only two or fewer countries);

(2) customers cannot switch to suppliers active in other Member States in a sufficiently short timeframe and at sufficiently negligible cost to justify identifying an EEA-wide market (they cannot directly deploy in their network a signalling solution used in another country), due to technical requirements and regulatory barriers, such as homologation, specific to each country (unlike in urban signalling, where all adaptation and authorisation processes are always project specific and not country-specific);

(3) suppliers cannot move from one Member State into another sufficiently easily to justify an EEA-wide market, given the time-consuming and costly technical adaptation and regulatory requirements at national level (also illustrated by the majority of signalling projects won by suppliers already active in the relevant country (bids from suppliers established in other countries reflect potential entry, not an EEA-wide market);

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551 Form CO, Chapter C.1, paragraphs 153-155.
552 Form CO, Chapter C1, paragraphs 34 to 43.
553 Form CO, Chapter C1, paragraphs 69 to 71.
554 Form CO, Chapter C1, paragraphs 69 to 71.
555 Parties' response to the Article 6(1)(c) Decision, paragraphs 33-50 and 71-76.

(4) feedback gathered during the market investigation confirms the national scope of mainline signalling markets; and

(5) any hypothetical bundled market including both ETCS ATP wayside projects would also be national.

(712) In relation to recital (711)(3), the Parties provide specific arguments for each mainline signalling subsystem. For ETCS ATP, despite standardisation, ETCS ATP wayside systems require substantial national adaptations, as it remains subject to National Technical Rules ("NTR"), which require multi-million R&D investments in each country. The interaction of ETCS and legacy national signalling system also requires specific implementation in different countries. ETCS ATP systems need to be certified at EU level (for TSI harmonised requirement) and at the national level, once for each national market. As regards interlockings, national adaptation and authorisation requirements are even more cumbersome than for ETCS ATP wayside (average timeline of […] months and costs between […] and […]).[556]

(713) In their response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and their response to the Article 6(1)(c) Decision. They also submits that:

(1) the Statement of Objections incorrectly treats ERTMS (which applies to differing extents to OBUs and ETCS wayside) and EULYNX (which applies to interlockings) as if they impact a similar portion of the specifications for each subsystem. The Parties submit that while nearly all the specifications in an ETCS OBU are defined by the EEA ERTMS standard, the situation is different for ETCS ATP systems, which include a portion of specifications defined by the ERTMS standard, but also a substantial portion of specifications defined at national level (national technical requirements), especially in France and Italy. The Parties submit further that this difference is even more marked for interlockings, where instead of defining technical specifications as ERTMS does for OBUs and ATP systems, EULYNX only defines interfaces between the interlocking and other parts of the signalling system. Furthermore, the Notifying points out that EULYNX is not yet operational and no EULYNX interlockings are in operation;[557]

(2) the Statement of Objections fails to undertake a comparative assessment of adaptation costs as a portion of project value across different mainline signalling sub-systems; while adaptations costs for ETCS OBUs are low compared to the project size, this is not the case for ETCS ATP and interlocking systems;[558]

(714) According to the Parties, the relevant market for interlockings is unambiguously national because (i) the requirements are fully national (no EEA-wide authorisation and adaptation costs),[559] (ii) the example of adaptations costs provided in the Statement of Objections are not representative or reflect a proper assessment,[560] (iii) the Statement of Objections ignores evidence on the file suggesting that adaptations costs are high[561] and, (iv) the Statement of Objections wrongly concludes that the

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556 Parties' response to the Article 6(1)(c) Decision, paragraphs 51-70.
557 Parties' response to the Statement of Objections, Chapter C1, paragraph 54.
558 Parties' response to the Statement of Objections, Chapter C1, paragraphs 55-56.
559 Parties' response to the Statement of Objections, Chapter C1, paragraphs 57-59.
560 Parties' response to the Statement of Objections, Chapter C1, paragraphs 61-63.
561 Parties' response to the Statement of Objections, Chapter C1, paragraphs 64-65.

same interlocking platforms are used across countries, while Alstom has six different interlocking applications across the EEA.[562] In addition, the Parties argue that the bidding analysis has material flaws in relation to the number of non-incumbent suppliers bidding and winning interlocking projects in the EEA,[563] and that the Statement of Objections overstates the extent to which homologation occurs post-tender. [564]

(715) In relation to the market for ETCS ATP wayside overlay projects, the Parties submit in their response to the Statement of Objections that its scope is national, because (i) the Statement of Objections overstates EEA aspects of ETCS ATP wayside adaptation and ignores national adaptation requirements, as EEA-wide requirements cover fewer specifications for wayside systems than for OBUs,[565] (ii) the examples cited for adaptation costs do not support that they are low relative to project value,[566] (iii) the Parties use more than one ETCS ATP wayside application across the EEA (Siemens has two) and substantial country adaptation is required,[567] (iv) the bidding analysis does not support the Commission's claims,[568] (v) it draws the wrong conclusions from competitors' participation in tenders in a number of countries,[569] and (vi) it derives the wrong conclusions from the Parties' internal documents.[570]

(716) As regards ETCS ATP wayside re-signalling projects, the Parties submit in their response to the Statement of Objections that its scope is national for the same reasons argued for ETCS ATP wayside overlay projects.[571]

(B) The Commission's decisional practice

(717) In previous cases the Commission did not considered the geographic scope of the mainline signalling market, but rather a unified signalling market, which included both urban and mainline signalling projects.

(718) In case M.4337 – *Thales/Alcatel Divisions Transport et Systèmes*, the Commission considered the geographic scope of a product market that comprised both mainline and urban signalling. The Commission noted that the market investigation suggested that the geographic scope of this unified market for urban and mainline signalling projects was at least EEA-wide but ultimately left the precise geographic market definition open.

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562 Parties' response to the Statement of Objections, Chapter C1, paragraphs 66-67.

563 Namely, that the Statement of Objections (i) limits its analysis to 14 countries, (ii) includes non-signalling suppliers, or suppliers only active in the installation of interlockings equipment, (iii) includes local companies already active in that country, which is irrelevant for geographic market definition, (iv) wrongly identifies as non-incumbents firms with an already homologated interlocking, (v) includes re-signalling projects as examples of bids, and (vi) bids and wins by non-incumbent suppliers should be assessed relative to the total number of bids, not on a country-by-country basis. Parties' response to the Statement of Objections, Chapter C1, paragraphs 68-83.

564 Parties' response to the Statement of Objections, Chapter C1, paragraphs 84-85.

565 Parties' response to the Statement of Objections, Chapter C1, paragraphs 94-106.

566 Parties' response to the Statement of Objections, Chapter C1, paragraphs 107-111.

567 Parties' response to the Statement of Objections, Chapter C1, paragraphs 112-113.

568 Namely, that the Statement of Objections (i) only includes 15 countries, (ii) it uses the wrong definition for incumbent suppliers, (iii) assumes that suppliers can enter multiple times, (iv) even in its own terms, the entry shown is not sufficient to support an EEA-wide market. Parties' response to the Statement of Objections, Chapter C1, paragraphs 114-118.

569 Parties' response to the Statement of Objections, Chapter C1, paragraph 119.

570 Parties' response to the Statement of Objections, Chapter C1, paragraphs 120-121.

571 Parties' response to the Statement of Objections, Chapter C1, paragraphs 124-147.

(719) In case M.4508 – *Alstom UK/Balfour Beatty/JV*, the Commission considered the geographic scope of a unified market for urban and mainline rail signalling projects. In that case, the parties argued that the relevant geographic market was national because, in particular in the UK, standards are set by the national safety and standards authority. The Commission noted that, on the other hand, the market investigation in a previous case (*Thales/Alcatel*) suggested the relevant geographic scope was European-wide and ultimately left the precise geographic market definition open.

(720) In case M.6843 – *Siemens/Invensys Rail*, the Commission considered the geographic scope of a united product market comprising urban and mainline signalling projects. The Commission noted that during the market investigation some participants considered that railway signalling projects are comparable in the EEA or even worldwide due to similar technologies, comparable safety requirements, progressing standardisation and exchange of information between customers. Other respondents however indicated that customer preferences, national technical specifications, national safety standards and national authorisation processes were often mentioned in the market investigation as barriers to entry. The precise geographic market definition was ultimately left open.

(C) Results of the market investigation and the Commission's assessment

(C.i) ETCS OBUs

(721) The Commission considers that the relevant geographic market for ETCS OBU projects is EEA-wide in scope for reasons set out below.

(722) First, although ETCS OBU projects still need to undergo national authorisation procedures, ETCS has several standardised elements that are reflected in the TSI compliance requirements. The Notifying Party notes that ETCS ATP wayside and on-board systems are subject to a European TSI, which limits the extent of differences between suppliers' offering. One of the reasons for that is that that the interface between ETCS OBUs and ETCS ATP systems is standard, as are most of the requirements for ETCS OBU and, therefore, as the Form CO points out "*As a result, the large majority of the authorisation process for ETCS OBUs takes place at EU level, and the national certification and authorisation process is more limited and relatively fast, in particular compared to other signalling systems*".[572] In that respect, [...] submits that it "*approximates that, on average across the EEA, 15-20% of requirements (including NTRs) are not caused by TSI*".[573] […]notes that "*ETCS OBU is standardized by the TSI to an extent of 90% and the remaining 10% is nationally / rolling stock dependent*".[574] Therefore, the large majority of the resources allocated by ETCS OBU suppliers are to meet requirements at the EEA-level, for a given product/solution.

(723) The Commission however notes that ETCS OBUs still need to interface with legacy signalling systems and, although most of the authorisation process takes places at the EU level, there is still a national process as well. Regarding the compatibility of ETCS wayside and ETCS OBUs, [...] submits that "*The interoperability requirements for ETCS ATP and ETCS OBUSs are fully standardized by the ETCS specifications. However, because testing and homologation is still necessary due to*

572 Form CO, Chapter C.1, paragraphs 185, 652.

573 […] response to the Commission's request for information RFI 104, question 13 (ID5799).

574 [...] response to the Commission's request for information RFI 105, question 13 (ID5763).

national operational and engineering rules, ERA and UNISIG have worked out the concept of a "Compatibility test" called ESC (ERTMS System Compatibility) to be included in the 4th Railway Package update CCS TSI in mid 2019. This process will be a step forward in making interoperability processes and homologation more affordable for ETCS OBU providers".[575] The Notifying Party does not submit that the requirement for ETCS OBUs to interface with legacy signalling systems constitutes such a barrier to give rise to national markets nor a reason that the relevant scope of the geographic market for ETCS OBUs should be considered national.

(724) The market investigation supports the view that the adoption of EU-wide authorisation procedures and standards, and in particular of ERTMS, is developing homogeneous conditions for competition between mainline signalling suppliers within the EEA.[576] While there is a need for ETCS OBUs to operate with legacy signalling systems, which to some extent confers a competitive advantage to those suppliers having access to those systems, the Commission considers, in accordance with the Notifying Party's view of the relevant scope of the market, considers that this advantage is surmountable so as to not present a national barrier to suppliers participating in ETCS OBU projects in different countries.

(725) Second, adaptation costs for ETCS OBU suppliers not present in a specific country (without access to the legacy signalling system) are low, relative to the size (value) of ETCS OBU projects. For example, […].[577] [...] submits that adaptation costs amounted to EUR […] for a EUR […] project in Belgium and to EUR […] for the a EUR […] project in Denmark.[578] While the majority of ETCS OBU projects are smaller than these examples ([…], as identified by the Parties and submitted to the Commission in the so-called *Consolidated Project List* ("CPL")), the Commission considers, based on the Form CO and the Parties' internal documents, that these costs may be amortised over several projects in the same country if an ETCS OBU supplier is awarded the first project and that suppliers would therefore have an incentive to participate in the first ETCS OBU tender.

(726) Moreover, the results of the market investigation clearly show that ETCS OBUs entail much fewer differences (in terms of customer preferences, technical specifications and regulatory requirements) across EEA countries than conventional OBUs. As a result, the cost of adapting ETCS OBUs between EEA countries is lower and the degree of supply-side substitutability broader for ETCS OBUs than for conventional OBUs.[579]

(727) In terms of demand-side substitutability, when asked whether there are significant differences in terms of customer preferences, technical specifications and regulatory requirements across the EEA, such that a signalling solution for ETCS OBUs deployed in one EEA Member State cannot be used in another EEA Member States, the majority of respondents responded 'No'.[580] Finally, the market investigation

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575 […] response to the Commission's request for information RFI 48, question 26(d) (ID5798).

576 Q8 – Mainline signalling – Questionnaire to competitors, question C.5; Q9 – Mainline signalling – Questionnaire to customers, question 20; Q9 – Mainline signalling – Questionnaire to customers, question 15.

577 Parties' response to the Commission request for information RFI 131, question Q2 Alstom.

578 [...]'s response the Commission request for information RFI 106, question 4 (ID5848).

579 Q8 – Mainline Signalling – Questionnaire to competitors, questions C.2.5 and C.2.6.

580 Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.6; Q10 – Mainline Signalling – Questionnaire to OBU customers, question 14.2.1.

supports the view that the adoption of EU-wide authorisation procedures and standards, and in particular of ERTMS, is developing homogeneous conditions for competition between mainline signalling suppliers within the EEA.[581]

(728) Third, from a supply-side substitutability point of view, the same baseline ETCS OBU platforms developed by the respective suppliers are used in each Member State after adaptation (Alstom: Atlas Trainborne; Siemens: Trainguard OBUs; CAF: Auriga OBU; Bombardier: EBI CAB OB, Thales: AlTrac ETCS OBU). In theory, a competitor with a presence in at least one Member State and a track record in the EEA should be able to enter a new Member State subject to being able to overcome the requirement to adapt its product to national specifications and customer preferences. The Commission considers that the use of standard platform/products in tenders across different EEA countries provides an indication that competitive conditions are similar across the EEA.

(729) Fourth, the evidence available to the Commission shows, based on the EEA countries where the Parties have submitted bidding data, that suppliers previously not present in a given country (through a legacy signalling system), and therefore having a competitive advantage, are frequently bidding and winning in that country. The Commission defines an incumbent supplier for the market of ETCS OBUs as a supplier already providing the legacy OBUs in a given country. In line with the Notifying Party's observation that no legacy signalling system remains in place in Luxembourg,[582] the Commission has removed Luxembourg from the list of countries where entrants' bids and wins are assessed, as no incumbency advantage would apply at least with regard to an existing legacy signalling system (as there would be no legacy signalling system to connect to).

(730) The Notifying Party has argued in its reply to the Letter of Facts that the Commission's definition of incumbency for ETCS OBUs is inconsistent and does not align with the operation of incumbency in the market as it would lead to suppliers that previously had won ETCS OBU projects in a country not being recognised as incumbents in the Commission's analysis. According to the Notifying Party the Commission's definition of incumbency is overly broad as it could lead to the same supplier entering the same market multiple times. The Notifying Party also submits that prior homologation of a legacy OBU does not remove the need for a supplier to subsequently homologate also its ETCS OBU. The Notifying Party further submits that for some ETCS OBU projects there is no requirement for legacy OBUs, thus making the legacy technology entirely irrelevant for such projects.[583]

(731) The Commission considers that its definition of incumbency is appropriate, in particular as being a supplier of legacy OBUs confers an advantage to a supplier of ETCS OBUs as it allows that supplier to interconnect its ETCS OBU to the legacy signalling system in a given country, which is the usual situation, be it through the use of a legacy OBU or by means of an interface. That supplier also has an advantage, compared to the non-legacy OBU supplier, in homologating its ETCS OBU solution.

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581 Q8 – Mainline signalling – Questionnaire to competitors, question C.5; Q9 – Mainline signalling – Questionnaire to customers, question 20; Q9 – Mainline signalling – Questionnaire to customers, question 15.

582 Parties' response to the Statement of Objections, Chapter C1, Table 25.

583 Parties' response to Letter of Facts, paragraphs 66-67 and 70-71.

(732) As regards the revised Table provided by the Parties' in their response to the Letter of Facts,[584] the minor variations suggested therein would not alter the Commission's conclusion.

(733) In relation to the Parties' argument in relation to the inclusion of non-contestable projects for the purposes of geographic market definition,[585] the Commission notes that only contestable projects have been considered as, by their nature, entry cannot occur in non-contestable projects, awarded to suppliers already present in that country.

(734) Table 24 shows that in the 2008-2018 period, non-incumbent suppliers submitted bids in […] out of […] countries and won tenders in […] out of […] countries. Only countries where contestable ETCS OBU tenders were organised during that period have been included.

Table 24: Non-incumbent bids and wins in ETCS OBUs, 2008-2018

Country	Bidders	Winners	Incumbent list	Bid	Win
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
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[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

584 Parties' response to the Letter of Facts, Annex II.

585 Parties' response to the Letter of Facts, paragraph 72.

Source: CPL and Form CO, incumbent list as submitted by the Notifying Party (response to the Statement of Objections, Chapter C.1, Table 25).

Note: the Commission has accepted the Parties' amendments in their response to the Letter of Facts, except for changes resulting from non-contestable projects or in contradiction with the list of incumbents provided in Table 25 of Chapter C.1 of their response to the Statement of Objections

(735) Fifth, the CPL shows that the participation in ETCS OBU tenders across the EEA is limited to the same set of competitors, who typically bid in many EEA countries. The presence of regional or national competitors is very limited, as shows Table 53. The number of countries where suppliers have bid is: Siemens ([…]), Alstom ([…]), Bombardier ([…]), Thales ([…]), Ansaldo ([…]) and CAF ([…]). This shows that the Parties, and to a lesser extent Bombardier, Thales and Ansaldo are consistently present in tenders across the EEA. With the exception of CAF (present in […] countries) and Mermec (only in Poland, but with sales also in Italy), no other players are active in ETCS OBU tenders in the EEA.

(736) Sixth, the fact that market shares greatly fluctuate across countries does not affect these conclusions, as this can be due to historical reasons and the lumpiness of market shares in ETCS OBUs.

(737) The results of the market investigation confirm the Notifying Party's view and point towards an EEA-wide market for the supply of ETCS OBUs. When asked specifically about ETCS OBUs, more than half of the respondent suppliers consider that the relevant geographic market should be at least EEA-wide.[586] Similarly, a large majority of infrastructure managers indicate that the market for ETCS OBUs should be considered as at least EEA-wide in scope and an overwhelming majority of OBU customers consider the geographic scope of the market to be at least EEA-wide.[587]

(738) As a result, all major ETCS OBU suppliers are able to exercise a bidding constraint on each other across the EEA, even though they do not necessarily bid in all tenders in all EEA countries.

(739) The Commission also notes one of the arguments of the Notifying Party supporting an EEA-wide geographic market in urban signalling. The Notifying Party submits that customers purchase from suppliers from across the EEA and that "*the fact that certain suppliers did not bid in tenders during a given period in a particular country should not be taken as evidence that those suppliers could not have bid in that tender or could not bid in future tenders in a particular country*".[588] The Commission considers that a similar situation applies in mainline signalling which could speak in favour of an EEA-wide market.

(740) For the reasons set out in Section 6.2.2 the Commission considers that the relevant geographic market for ETCS OBU projects is EEA-wide.

(C.ii) Legacy OBU projects

(741) The results of the market investigation confirm the Notifying Party's view that the relevant geographic market for legacy OBUs systems is national in scope.

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586 Q8 – Mainline Signalling – Questionnaire to competitors, question C.1.

587 Q9 – Mainline Signalling – Questionnaire to customers, question 18; Q10 – Mainline Signalling – Questionnaire to OBU customers, question 13.

588 Form CO, Chapter 2, paragraph 56.

(742) Around three quarters of respondent suppliers consider that the relevant geographic market for legacy OBUs is national in scope.[589]

(743) The Commission therefore considers that the relevant geographic market for legacy OBU projects is national.

(C.iii) Interlockings

(744) In its assessment of the geographic of the market for standalone interlocking projects, the Commission has considered the following factors.

(745) First, the Commission has considered the adaptation costs incurred by standalone interlocking suppliers not present in a specific country relative to the project size. Alstom submits that an investment of EUR […] was necessary for adapting its […] platform to obtain homologation in France (a new interlocking platform in a country where it is already present). The first orders that Alstom expects to obtain for this platform are worth EUR […].[590] Siemens submits that its adaptation costs for entering the interlockings market in Poland would be EUR […] (the size of the market for standalone interlockings in Poland amounted to EUR […] in 2008/2018).[591] […] project in the UK, which included interlockings (and the required homologation) had a value of EUR […], for a much larger standalone interlockings market.[592] […] reports adaptation costs of EUR […] for product homologation and adaptation to national rules in an interlocking project in Slovenia.[593] […]reports EUR […] in country- and project-specific adaptation costs for the framework agreement for interlockings in Norway (worth EUR […]) and, in general, EUR […] for achieving certification for an interlocking in a given country.[594] The Commission continues to consider […]example as valid for interlockings (framework contract), as submitted by the Notifying Party.[595]

(746) The average project size for standalone interlocking is EUR […], while […]% of the projects are larger than EUR […].[596] The Commission acknowledges that the homologation and adaptation costs reported by the various competitors represent a higher share of the project value than it is the case for ETCS ATP overlay/re-signalling and ETCS OBU projects (see recitals (776)-(777) and (805)-(808)).

(747) The Commission further notes that, contrary to the Notifying Party's arguments, it considers the total market size for interlockings in a given country a relevant measure for assessing adaptation costs to that country, as it represents the available opportunities that a new entrant can expect to have in that country. This is confirmed by the Notifying Party when it notes that transparency in deployment plans by infrastructure managers is a factor that encourages entry, as set out in recital (834).

(748) The Commission acknowledges that, for some projects of small size, these costs can represent a significant barrier for those suppliers not already present in that country

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589 Q8 – Mainline Signalling – Questionnaire to competitors, question C.1; Q9 – Mainline Signalling – Questionnaire to customers, question 18.5.

590 Notifying Party's response to the Commission's request for information RFI 131, question 2.4 [Annex Q2 Alstom].

591 Notifying Party's response to the Commission's request for information RFI 131, question 2.3 [Annex Q2 Siemens].

592 [...]'s response to the Commission's request for information RFI 106, question 4 (ID5848).

593 [...]'s response to the Commission's request for information RFI 53, question 22(c) (ID5950).

594 [...] response to the Commission's request for information RFI 105, question 12 (ID5763).

595 CPL ID MLEEA567 and Form CO, Chapter C.1, Table 54.

596 CPL, Annex 105, Q2.2 (Alstom).

to submit a competitive offer. This is however mitigated by the following factors: (i) these costs may be amortised over several projects in the same country that would follow the award of the first project; (ii) the Parties themselves recognise that increased transparency on the deployment plans of infrastructure managers provides a greater incentive to bid for suppliers not present in a country,[597] and (iii) where one project does not have sufficient size to attract competitors not already present in that country, there may be other tenders by the same customer of a larger size. As discussed in recital (778), these views are shared by some of the competitors.

(749) The Commission considers that the EULYNX standardisation initiative, despite being at an early stage, will further decrease adaptation costs for interlockings as it will harmonise some of the interfaces which are currently not standard. The Notifying Party expects this reduction in costs to be of […].[598] As the Notifying Party submits, "*EULYNX may lower non-incumbents' authorisation costs for products and systems. In addition to obtaining cross acceptance for the generic functionality of an interlocking, a supplier could obtain cross acceptance for the interfaces, which could reduce the time and cost associated with homologating a system in a new Member State. National authorisation of the country-specific functionality would still be required (although, in future, there may be additional convergence of functionality requirements). This would facilitate cross-border expansion of formerly national suppliers as certification for interfaces and generic functionality would only need to be obtained in relation to the first project*".[599]

(750) Second, from a supply-side substitutability point of view, the same baseline interlocking products developed by the respective suppliers are used in each Member State after adaptation. (Alstom: Smartlock 400; Siemens: Trackguard Westlock, Westrace and SIMIS; CAF: Quasar; Thales: LockTrac Bombardier: EBI LOCK). In theory, a competitor with a presence in at least one Member State and a track record in the EEA should be able to enter a new Member State subject to being able to overcome the requirement to adapt its product to national specifications and customer preferences. The Commission considers that the use of standard platform/products in tenders across different EEA countries provides an indication that competitive conditions are similar across the EEA.

(751) The market investigation provided mixed as to whether interlocking projects differ significantly in terms of customer preferences, technical specifications and regulatory requirements across the EEA. While some respondents claim that there are different technical specifications and operating rules as well as specific requirement for national homologation;[600] others indicate that national requirements are similar and do not act as a barrier to entry[601] or that interlocking systems can otherwise be adapted for use in different countries and that differences across the EEA are not significant.[602]

(752) Contrary to the Notifying Party's views that the Commission is wrong to consider that the same interlockings applications are used throughout the EEA, the

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597 Form CO, Chapter C.1, paragraph 199.

598 Form CO, Chapter C.1, Figure 2.

599 Form CO, Chapter C.1, paragraph 24.

600 [...]'s and [...] response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.2.1 (ID2398 and ID2418).

601 […]'s response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.2.1 (ID2372).

602 [...]'s response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.2.1 (ID2512).

Commission notes that, […].[603] This shows, in the Commission's view, that most EEA countries are served by one interlocking platform and the other Alstom's platforms correspond to legacy technology. The same applies for Siemens, which uses only three platforms for the whole EEA, largely as a result of previous consolidation and the legacy situation in a number of EEA countries. Therefore, the Commission's view that the same platform(s) are used throughout a large number of EEA countries remains valid.

(753) Third, the evidence available to the Commission, based on the EEA countries where the Parties have submitted bidding data, non-incumbent suppliers are frequently bidding and winning. The Commission defines an incumbent supplier for the market of standalone interlockings as a supplier already providing the interlockings in a given country prior to 2008. Homologation of interlocking systems by winning an ETCS ATP wayside re-signalling tender is also accounted as entry into the standalone interlocking market.

(754)

603 […].

(755) Table 25 shows that in the 2008-2018 period, non-incumbent suppliers submitted bids in […] out […] countries and won tenders in […] out of […] countries. This is so despite the fact that in some countries there were many suppliers of interlockings (e.g. Spain, Netherlands), which means that the chances to win for new bidders not present in the country were comparatively small relative to those countries with only one or two incumbent suppliers. The Commission has only included in this analysis countries where tenders took place in the 2008-2018 period.

(756) With regard to the Parties' argument in their response to the Letter of Facts in relation to the inclusion of non-contestable projects for the purposes of geographic market definition,[604] the Commission notes that only contestable projects have been considered as, by their nature, entry cannot occur in non-contestable projects, awarded to suppliers already present in that country.

(757) The Commission further notes that the latest version of the CPL (Annex RFI 174 – Q8) includes contestable projects for standalone interlockings in Slovenia.

(758) As regards the revised Table provided by the Parties in response to the Letter of Facts,[605] the suggested variations contained therein would not alter the Commission's conclusions.

(759) In relation to the (non-)inclusion of Ansaldo as an incumbent supplier of interlockings in the UK,[606] the Commission has decided not to include it as an incumbent, despite the Notifying Party's statement in the Form CO, namely: "*Ansaldo STS had previously delivered an interlockings project. In 1999, Network Rail awarded Ansaldo STS a re-signalling project at the Manchester South station, as a result of which it has homologated an interlocking in the UK in 2001. There were, however, challenges with that project. Hitachi/Ansaldo is homologating a different, newer interlocking with the 2016 project*".[607] The decision not to include Ansaldo is based on the Commission's understanding that Ansaldo did not have a functioning interlocking in the UK as it had to undergo homologation for a new interlocking again in 2016.

(760) Regarding the (non-)inclusion of Ansaldo as an incumbent provider of interlockings in Romania,[608] the Commission notes that, as submitted in the Form CO,[609] Ansaldo has only homologated a hybrid interlocking in Romania, which can only be used for certain projects. For this reason, the Commission has not considered Ansaldo an incumbent supplier of interlockings in Romania, as its competitive pressure cannot be compared to that of other existing suppliers of interlockings in Romania. In any event, this would not change the Commission's conclusion in relation to Romania.

(761) The Commission has modified its analysis on non-incumbent bids and wins to include the Parties' comments in their response to the Statement of Objections, in particular as follows: (i) entry of suppliers already active in a given country in markets other than standalone interlockings projects such as rail engineering, for example in Spain (ENYSE/SICE, CAF through acquisitions), Finland (Mipro), Austria (RDCS) and the UK (Atkins), has not been considered as entry for the purposes of geographic market definition (marked as * in

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604 Parties' response to the Letter of Facts, paragraph 72.
605 Parties' response to the Letter of Facts, Annex II.
606 Parties' response to Letter of Facts, Annex II.
607 Form CO, Chapter C.1, footnote 187.
608 Parties' response to the Letter of Facts, paragraph 72.
609 Form CO, Chapter C.1, paragraph 590.

(762) Table 25); (ii) some countries which were not in the corresponding Table in the Statement of Objections have been added, namely those where contestable tenders for standalone interlockings projects occurred in the 2008-2018 period (for which the Commission has taken the list of incumbents provided by the Notifying Party for those countries), and (iii) exclusion of non-signalling suppliers such as Semi (Spain) or Verebus/Sweco (Netherlands), (iv) given the limited scope of Alstom's win in Portugal (level crossing project), it has not be counted as entry (marked as ** in the Table), and (v) Siemens and Alstom have been considered incumbents in Greece.[610]

610 Parties' Response to the Statement of Objections, Chapter C1, paragraph 69.

Table 25: Non-incumbent bids and wins in standalone interlocking projects, 2008-2018

Country	Bidders	Winners	Incumbent list	Bid	Win
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL and Form CO

Note: the list of incumbents has been obtained from the Notifying Party's description of each of the markets in the Form CO; where such information was not available, it has been derived from the list of incumbents active on 1 October 2007 (Parties' response to Article 6(1)(c) Decision, data pack). The Commission has accepted the Parties' amendments in their response to the Letter of Facts, except for (i) changes resulting from non-contestable projects (see recital (756)), (ii) those explained in recitals (759)-(760), namely Ansaldo in UK and Romania, and (iii) those where entry is considered "de novo" (suppliers, such as Atkins, Mipro, ENYSE/SICE, and RDCS, already active in a given country in markets other than standalone interlockings projects such as rail engineering), as explained in recital (761). If "de novo" entry were to be considered, it would increase the number of countries where entry took place.

(763) The Commission disagrees with the Notifying Party's arguments that the assessment should be carried out relative to all the available opportunities, and not on a country-

by-country basis.[611] Given the limited number of bids and the considerable time needed to homologate an interlocking project, the Commission considers that potential entrants act according to long-term plans to initiate activities in a given country where they are not yet present, identify certain tenders where successful entry is more likely and bid accordingly, which necessarily limits the number of tenders where they would participate. Moreover, an analysis based on all available opportunities would overstate the participation of incumbent suppliers, who necessarily bid in all or most tenders, as they have a homologated product in the countries where they are present. The higher the number of these incumbent suppliers, the higher the overstatement of their participation if accounted by the number of bids. Therefore, the Commission takes the view that a country-by-country analysis provides a more accurate representation of entry dynamics in mainline signalling markets for the purposes of geographic market definition.

(764) The Commission notes that a factor that facilitates that suppliers not present in a given EEA country bid and potentially win in tenders is that, in many cases, homologation can actually occur after the award of the tender (not as a prerequisite to participate). According to the information available to the Commission, this is common practice at least by some infrastructure managers.[612]

(765) Fourth, the CPL shows that the participation in standalone interlockings tenders across the EEA is limited to the same limited set of competitors, who typically bid in many EEA countries. The Commission acknowledges an increased presence of local competitors in certain countries, although overall the list of providers that are active in a high number of countries in the EEA is limited to the Parties, Thales, Bombardier, to a lesser extent Ansaldo, and AZD only in Eastern European countries. The number of countries where suppliers have bid are: Siemens ([…]), Alstom ([…]), Thales ([…]), Bombardier ([…]), Ansaldo ([…]), CAF ([…]), AZD ([…]). Other regional players, such as CAF ([…]) and AZD ([…]) have a very limited bidding activity. There are a number of local players active in one or two countries only: […].[613]

(766) Fifth, the fact that market shares greatly fluctuate across countries (see Form CO, Chapter C.1, Annex RFI 21 Q1) does not affect the Commission's assessment, as this can be due to historical reasons and the lumpiness of market shares in standalone interlocking markets, as a result of the fact that this market is a bidding market.

(767) The results of the Phase I market investigation were inconclusive as to whether the market for the supply of interlockings should be considered as national or EEA-wide in scope. When asked specifically about the relevant geographic scope for interlocking systems, respondents were similarly split with just over half considering the appropriate geographic market was national in scope and the remainder considering it should be at least EEA-wide.[614] The majority of customers responding to the same question in the market investigation consider that the relevant geographic scope of interlocking systems is at least EEA-wide.[615]

(768) The Phase II market investigation supports the fact that some suppliers not active in a given EEA country are credible bidders. While some infrastructure managers show a

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611 Parties'response to the Statement of Objections, Chapter C1, paragraph 74.
612 Form CO, Chapter C.1, paragraphs 266, 292, 496, 579.
613 CPL, Annex 105, Q2.2 (Alstom).
614 Q8 – Mainline Signalling – Questionnaire to competitors, question C.1.
615 Q9 – Mainline Signalling – Questionnaire to customers, question 17.

preference for established suppliers, other mention non-incumbents as credible bidders in their tenders. For example, […] mentions "*Siemens, Bombardier, Alstom, Thales*" as credible suppliers in tenders for interlockings and ETCS ATP wayside (both re-signalling and overlay), while […] states that it considers "*basically the UNISIG ones with 5 to 10 minor companies*" (both for IXL, ETCS ATP overlay and re-signalling).[616] […] also submits that "*Thales, Siemens, CAF, Ansaldo (has not made an offer yet but we know their technology from other Infrastructure managers) and Iskra (if relay interlockings)*" are credible IXL suppliers.[617]

(769) The Commission also notes one of the arguments of the Notifying Party supporting an EEA-wide geographic market in urban signalling. The Notifying Party submits that customers purchase from suppliers from across the EEA and that "*the fact that certain suppliers did not bid in tenders during a given period in a particular country should not be taken as evidence that those suppliers could not have bid in that tender or could not bid in future tenders in a particular country*".[618] The Commission considers that a similar situation applies in mainline signalling which could speak in favour of an EEA-wide market.

(770) The Commission notes that, while some factors point to an EEA-wide geographic market for standalone interlocking projects, such as the use of similar platforms across countries, entrants bidding and winning and the presence of the same suppliers across a large number of EEA countries, other factors point to a national geographic scope, such as a more important presence of local suppliers in some EEA countries, the absence of EEA-wide standardisation with the exception of the EULYNX initiative (in contrast with ETCS ATP wayside overlay/re-signalling or ETCS OBU projects) and a higher share of national adaptation costs relative to project value (whereas this share is lower for ETCS OBUs and ETCS ATP wayside overlay/re-signalling projects).

(771) On balance, for the reasons set out in recitals (745)-(770), the Commission considers that the relevant geographic markets for standalone interlockings projects is national and will undertake the competitive assessment on that basis.

(C.iv) ETCS ATP wayside overlay projects (standalone)

(772) The Commission considers that the relevant geographic market for ETCS ATP overlay projects is EEA-wide in scope for the reasons set out in recitals (773)-(801).

(773) First, although ETCS ATP wayside overlay project still need to undergo national authorisation procedure, ETCS has standardised elements that are reflected in the TSI compliance requirements. The Notifying Party however highlights that "*[f]or an ETCS ATP wayside system, authorisation would include the interface between the ETCS system and the interlocking The process is typically longer* [compared to ETCS OBUs] *(*[…] *years where the customer helps to accelerate the process, but* […] *years otherwise) because the TSI cover fewer specifications and leave more room for National Technical Rules*". In that respect, [...] submits that it "*approximates that, on average across the EEA, [20-40]% of requirements (including NTRs) are not caused by TSI*".[619] Therefore, a certain share of the

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616 […]'s and [...]'s responses to Q21 – Mainline Signalling – Questionnaire to customers, questions 5.1, 5.2 and 5.5 (ID4416, ID4336).

617 […]'s response to Q21 – Mainline Signalling – Questionnaire to customers, questions 5.1, 5.2 and 5.5 (ID3920).

618 Form CO, Chapter 2, paragraph 56.

619 [...]'s response to the Commission's request for information RFI 104, question 13 (ID5799).

authorisation process only occurs once at the EEA-level, for a given product/solution.

(774) The market investigation supports the view that the adoption of EU-wide authorisation procedures and standards, and in particular of ERTMS, is developing homogeneous conditions for competition between mainline signalling suppliers within the EEA.[620]

(775) In relation to the arguments put forward by the Parties in their response to the Statement of Objections, the Commission notes that (i) although some respondents to the market investigation pointed to national differences between the requirements for ETCS ATP wayside systems across countries, some of them ([…]) indicate that the market for ETCS ATP wayside systems is EEA-wide in scope;[621] (ii) the Notifying Party notes in the Form CO that "*[t]he role of NTRs is limited for ERTMS systems since most of the functionality and many of the interfaces are certified at EU level on the basis of TSIs. As a result, the national certification process may be relatively shorter for these systems*"[622] and (iii) the lower adaptation costs for ETCS ATP wayside submitted by the Notifying Party in Table 69 of the Form CO ([…]) are in line with the Commission's understanding that these costs are lower due to an EEA-wide standardisation.

(776) The Commission notes that, compared to standalone interlockings and ETCS ATP wayside re-signalling projects, ETCS ATP wayside overlay projects have a higher share of EEA-wide requirements (TSI) as no interlockings (with no EEA-wide common functionality) are included in them.

(777) The Commission however notes that ETCS ATP wayside systems still need to operate with legacy signalling systems, largely through the interface to interlockings, which to some extent confers a competitive advantage to those suppliers having access to those systems. This advantage is surmountable and therefore not leading to national geographic markets, for the reasons outlined in this Section.

(778) Second, adaptation costs for ETCS ATP wayside overlay suppliers not present in a specific country (without access to the legacy signalling system) are low, relative to the project size. For example, an Alstom internal document suggests that […].[623] Siemens reports adaptation costs of EUR […] for its ETCS L2 RBC for a EUR […] project in Germany. These costs however, would not need to be incurred in additional ETCS ATP wayside Level 2 tenders in Germany.[624] […] reports country-adaptation costs of EUR […] for a EUR […] project ([…]).[625] These examples of ETCS ATP wayside overlay projects provided by the Parties' and their competitors show that adaptation costs that are country specific (e.g. NTRs, interfacing with interlockings) can be surmountable, as they represent a relatively low share of the project's total value, which ranges from […] in the examples included. The average project size for ETCS ATP wayside overlay projects is EUR […], while […]% of the projects are larger than EUR […], which means that there is a substantial share of

620 Q8 – Mainline signalling – Questionnaire to competitors, question C.5; Q9 – Mainline signalling – Questionnaire to customers, question 20; Q9 – Mainline signalling – Questionnaire to customers, question 15.

621 Parties' response to the Statement of Objections, Chapter C1, footnotes 76, 78 and 82.

622 Form CO, Chapter C.1, paragraph 709.

623 Alstom's document […].

624 Parties' response to the Commission's request for information RFI 131, question 2.3 [Annex Q2 Siemens].

625 [...]'s response to the Commission's request for information RFI 104, question 4 (ID5799).

projects that are large compared to the typical adaptation costs of up to EUR […] submitted by the Notifying Party.

(779) The Commission acknowledges that, for some projects of small size, these costs can represent a significant barrier for those suppliers not already present in that country to submit a competitive offer. This is however mitigated by the following factors: (i) adaptation to NTRs can also be acquired through the award of ETCS ATP wayside re-signalling projects, (ii) these costs may be amortised over several projects in the same country that would follow the award of the first project; the Parties themselves recognise that increased transparency on the deployment plans of infrastructure managers provides a greater incentive to bid for suppliers not present in a country,[626] and (iii) where a project does not have sufficient size to attract competitors not already present in that country, there may be other tenders by the same customer of a larger size. The Commission reiterates the arguments set out in recital (747) as to why the overall market size is a relevant measure to compare adaptation costs.

(780) As regards the Parties' statement in their response to the Statement of Objections that these three mitigating factors are not relevant for geographic market definition, the Commission disagrees because (i) entry through ETCS ATP wayside re-signalling projects (which also includes interlockings) has to be considered as it represents one possible way for an entrant in a given country to become a bidder/supplier of standalone interlockings sytems, and (ii) buyer power for attracting entry into a given country (either by announcing medium- or long-term plans or by tendering larger projects) should not be regarded as something exceptional, as the Notifying Party suggests, but be assessed as a contributing factor that customers can use for attracting entry into a given country, and therefore relevant for geographic market definition.

(781) In this respect, […]notes that adaptation efforts can vary from "*very little and significant*" depending on "*the complexity of the local signalling principles and the delta to the already implemented solutions*".[627] Some competitors note that the larger the project value the relatively smaller, proportionally, the adaptation costs become (all else equal). Therefore, the ability and incentive for competitors to expand into a new Member State and undertake those adaption costs increases the larger the project. In that sense, […]notes that the adaptation costs are "*reduced the bigger a project gets*".[628]

(782) Furthermore, the Parties' internal documents suggest that […].[629] […], it confirms the Commission's view that standard solutions can be deployed across different geographies and be adapted to countries where they have not been yet deployed.

(783) Third, from a supply-side substitutability point of view, the same baseline interlocking products developed by the respective suppliers are used in each Member State after adaptation (Alstom: Atlas; Siemens: Trainguard OBUs; CAF: Auriga; Thales: AlTrac L1 and L2, Bombardier: Interflo). In theory, a competitor with a presence in at least one Member State and a track record in the EEA should be able to enter a new Member State subject to being able to overcome the requirement to adapt its product to national specifications and customer preferences. The Commission considers that the use of standard platform/products in tenders across

626 Form CO, Chapter C.1, paragraph 199.
627 [...] response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.7.1 (ID2418).
628 [...] response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.6.1 (ID2418).
629 Alstom's internal document […]

different EEA countries provides an indication that competitive conditions are similar across the EEA.

(784) In relation to the Parties' argument that Siemens has two ETCS ATP wayside applications and not one, the Commission notes that (i) this was historically due to past acquisitions, (ii) Alstom has only one ETCS ATP application (for each level),[630] and (iii) the Commission's argument intended to show that ETCS applications are standardised and can be deployed in different EEA countries (with the required national adaptations), which is confirmed by the fact that Siemens has two platforms only and Alstom only one.

(785) Fourth, the evidence available to the Commission, based on the EEA countries where the Parties have submitted bidding data, shows that non-incumbents are frequently bidding and winning. The Commission defines an incumbent supplier for the market of ETCS ATP wayside overlay projects as a supplier of interlockings systems in that country prior to 2008, as it understands that incumbents have an advantage in developing the interface to connect to their own interlocking systems. The arguments as to why the Commission undertook its analysis on a country-by-country basis set out in recital (763), also apply to ETCS ATP wayside overlay projects. The Commission has only included in this analysis countries where tenders took place in the period 2008-2018.

(786) The Parties have argued in the reply to the Letter of Facts that the Commission's definition of incumbency for ETCS ATP wayside subsystems (either overlay or re-signalling) is inconsistent and does not align with the operation of incumbency in the market as it would lead to suppliers that previously had won ETCS ATP wayside projects in a country not being recognised as incumbents in the Commission's analysis. According to the Parties, the Commission's definition of incumbency is overly broad as it could lead to the same supplier entering the same market multiple times, referring in this context to Siemens' project win in Belgium in 2015 counting as new entry to the market in Belgium even if Siemens had already won a project in 2004. The Parties also submit that prior homologation of an interlocking does not remove the need for a supplier to subsequently homologate also its ETCS ATP wayside solution.[631]

(787) The Commission considers that its definition of incumbency is appropriate; in particular as being a supplier of interlockings confers an advantage to a supplier of ETCS ATP wayside overlay projects because of the need for it to interface its ETCS ATP solution with the existing interlockings. The Commission does not dispute that an interlocking supplier in a country would also need to homologate its ETCS ATP wayside solution, but the advantage of the interlocking supplier lies in that supplier not facing the same technical and commercial interfacing challenges and risks as suppliers without the existing interlockings technology, considering the need for the ETCS wayside system to communicate seamlessly with the interlockings in place. As regards the Parties' argument in relation to Siemens in Belgium, the Commission notes that Siemens provided an ETCS ATP wayside overlay project in 2004, but, as this was an overlay project, it did not include interlockings. Furthermore, while the 2004 project consisted of ETCS Level 1 technology, the project won by Siemens in

630 Parties' submission "*Mainline Signalling – Second Interlockings and ETCS Wayside Remedy Briefing Paper*" of 9 November 2018, paragraphs 35-42.

631 Parties' response to Letter of Facts, paragraphs 66-67 and 69-71.

2015[632], which the Commission considers as entry, consisted of the more advanced ETCS Level 2 technology.

(788) As regards the Parties' arguments in their response to the Letter of Facts in relation to the inclusion of non-contestable projects for the purposes of geographic market definition,[633] the Commission notes that only contestable projects have been considered as, by their nature, entry cannot occur in non-contestable projects, awarded to suppliers already present in that country.

(789) As regards the revised Table provided by the Parties in response to the Letter of Facts,[634] the variations suggested therein would not alter the Commission's conclusion.

(790) In relation to the inclusion of Ansaldo as an incumbent supplier of interlockings in the UK[635], the Commission has decided not to include it as an incumbent, despite the Notifying Party's statement in the Form CO, namely: "*Ansaldo STS had previously delivered an interlockings project. In 1999, Network Rail awarded Ansaldo STS a re-signalling project at the Manchester South station, as a result of which it has homologated an interlocking in the UK in 2001. There were, however, challenges with that project. Hitachi/Ansaldo is homologating a different, newer interlocking with the 2016 project*".[636] The decision not to include Ansaldo is based on the Commission's understanding that Ansaldo did not have a functioning interlocking in the UK as it had to undergo homologation for a new interlocking again in 2016.

(791)

632 Parties' response to Letter of Facts, paragraph 72; contrary to the Parties' suggestion, the 2015 project won by Siemens consisted of both overlay and re-signalling components.

633 Parties' response to Letter of Facts, paragraph 72.

634 Parties' response to Letter of Facts, Annex II.

635 Parties' response to Letter of Facts, Annex II.

636 Form CO, Chapter C.1, footnote 187.

(792) Table 26 shows that in the 2008-2018 period, non-incumbent suppliers submitted bids in […] out […] countries and won tenders in […] out of […] countries. This is so despite the fact that, in some countries there were many incumbent suppliers (Spain, Germany), which means that the chances that new bidders not present in the country would win are very small relative to those countries with only one or two incumbent suppliers.

Table 26: Non-incumbent bids and wins in ETCS ATP wayside overlay projects, 2008-2018

Country	**Bidders**	**Winners**	**Incumbent list**	**Bid**	**Win**
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL and Form CO

Note: the list of incumbents has been obtained from the Notifying Party's description of each of the markets in the Form CO; where such information was not available, it has been derived from the list of incumbents active on 1 October 2007 (Parties' response to Article 6(1)(c) Decision, data pack). The Commission has accepted the Notifying Party's amendments in their response to the Letter of Facts, except for (i) changes resulting from non-contestable projects, and (ii) Ansaldo in UK as explained in recital (790).

(793) The Commission notes that a factor that facilitates that suppliers not present in a given EEA country bid and potentially win in tenders is that in many cases, homologation can actually occur after the award of the tender (not as a prerequisite to participate). According to the information available to the Commission, this is common practice at least by some infrastructure managers.[637]

(794) Fifth, the CPL shows that the participation in ETCS ATP wayside tenders across the EEA is limited to the same set of competitors, who typically bid in many EEA countries. The presence of regional or local competitors is very limited, as shows Table 63. The number of countries where suppliers bid are: Siemens ([…]), Alstom ([…]), Thales ([…]), Bombardier ([…]), Ansaldo ([…]), CAF ([…]), AZD ([…]). This shows that the Parties and Thales, and to a lesser extent Bombardier, and Ansaldo are consistently present in tenders across the EEA. Other regional players, such as CAF (present in […]) and AZD ([…] countries) have a very limited bidding activity. […].[638]

637 Form CO, Chapter C.1, paragraphs 266, 292, 496, 579.

638 CPL, Annex 105 Q2.2 (Alstom).

(795) Another supply-side factor that supports a broader than national geographic market definition is the fact that customer references for participating in a tender are relevant across EEA Member States.[639] For example, [...] indicates that it would generally require a certain number of kilometres of systems installed and or a number of references of projects and when the project relates specifically to ETCS, it would require a minimum ETCS experience.[640] Another customer says that "*[t]he requirement of having successfully finished a similar project within the EU is one of the decisive factors. No bid is accepted without proving a successful project within the EU*".[641]

(796) Moreover, market participants indicated that for ERTMS, the competitors do not differ between EEA Member States.[642] In this regard, all of the major competitors have developed ETCS ATP wayside systems and the majority have deployed them in more than one Member State (see Tables 63 and 74).

(797) Sixth, the fact that market shares greatly fluctuate across countries does not affect these conclusions, as this can be due to historical reasons and the lumpiness of market shares in ETCS ATP wayside system, as a result of the fact that this market is a bidding market.

(798) The results of the market investigation are inconclusive as to whether the market for the supply of ETCS ATP wayside systems should be considered as national or at least EEA-wide in scope.[643] When asked specifically about the correct geographic scope of the market for ETCS ATP wayside systems, the majority of competitors indicate that it is at least EEA-wide,[644] and an even larger majority of customers also consider the market to be at least EEA-wide in scope.[645]

(799) In relation to demand-side substitutability, the results of the market investigation were mixed as to whether there are significant differences in terms of customer preferences, technical specifications and regulatory requirements across the EEA such that a signalling solution for ETCS ATP wayside systems deployed in one EEA Member State cannot be used in another EEA Member State.[646] While some competitors note that "[…] *the core requirements ETCS wayside system are the same for each projects*"[647] and that "*ETCS wayside ATP systems are standardized systems applicable to all EU countries*"; other competitors consider that national differences remain, since even though "*ETCS was designed to achieve a standard at pan-European level.* […] *customers usually require the ETCS solution to integrate the legacy system, which implies the adaptation of the ETCS solution to national specifications, safety rules and homologation processes*".[648]

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639 Q9 – Mainline Signalling – Questionnaire to customers, questions 22.5, 22.5.1, 22.5.2.2.

640 [...]'s response to Q9 – Mainline Signalling – Questionnaire to customers, questions 22.5.1, 22.5.2.2 (ID2172).

641 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 22.5.2.2 (ID2207).

642 Q8 – Mainline Signalling – Questionnaire to competitors, question C.4.1.

643 The Phase I market investigation asked about ETCS ATP wayside system, without specifically making a distinction between overlay and re-signalling project. The Commission considers that its results may be therefore applied to both re-signalling and overlay projects.

644 Q8 – Mainline Signalling – Questionnaire to competitors, question C.1.

645 Q9 – Mainline Signalling – Questionnaire to customers, question 18.

646 Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.5; Q9 – Mainline Signalling – Questionnaire to customers, question 18.4.

647 [...]'s and [...]'s responses to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.4.1 (ID2512 and ID2701).

648 [...]'s response to Q8 – Mainline Signalling – Questionnaire to competitors, question C.2.4.1 (ID2398).

(800) The market investigation supports the fact that suppliers not active in a given EEA country are credible bidders. While some infrastructure managers show a preference for established suppliers, others mention non-incumbents as credible bidders in their tenders.[649] For example, […] identifies "*Siemens, Bombardier, Alstom, Thales*" as credible suppliers in tenders for interlockings and ETCS ATP wayside (both signalling and overlay), while […] states that it considers "*basically the UNISIG ones with 5 to 10 minor companies*" (both for IXL, ETCS ATP overlay and re-signalling). […] also submits that "*Thales, Siemens, CAF, Ansaldo (has not made an offer yet but we know their technology from other Infrastructure managers) and Iskra (if relay interlockings)*" are credible IXL suppliers.[650]

(801) The Commission also notes one of the arguments of the Notifying Party supporting an EEA-wide geographic market in urban signalling. The Notifying Party submits that customers purchase from suppliers from across the EEA and that "*the fact that certain suppliers did not bid in tenders during a given period in a particular country should not be taken as evidence that those suppliers could not have bid in that tender or could not bid in future tenders in a particular country*".[651] The Commission considers that a similar situation applies in mainline signalling which could speak in favour of an EEA-wide market.

(802) In relation to the Parties' arguments in their Response to the Article 6(1)(c) Decision and their response to the Statement of Objections (see Recital (715)) that (i) despite ERTMS efforts ETCS ATP wayside systems require substantial national adaptations and remain subject to applicable NTRs in each country and therefore considers the market national and (ii) ETCS OBU are more standardised at the EEA-level (as trains need to be able to run across countries) and therefore considers the market to be EEA-wide, the Commission notes that (i) ETCS OBUs also require interaction with legacy signalling systems and some degree of national homologation and this does not prevent the Notifying Party from arguing that the market is EEA-wide, (ii) ETCS ATP systems are to some extent also standardised at the EEA-level, and (iii) any adaptation to NTRs or interaction with legacy signalling systems represents costs that are surmountable to providers outside a given country and therefore do not give rise to national markets.

(803) For the reasons set out in Section 6.2.2 and in light of the results of the investigation, the Commission considers that the relevant geographic markets for ETCS ATP wayside overlay projects is EEA-wide.

(C.v) ETCS ATP wayside re-signalling projects (bundle of ETCS ATP wayside and interlockings)

(804) The Commission considers that the relevant geographic market for ETCS ATP re-signalling projects (bundle of ETCS ATP wayside and interlockings) is EEA-wide in scope for the following reasons.

(805) First, although ETCS ATP wayside re-signalling projects still need to undergo a national authorisation procedure, ETCS has standardised elements that are reflected in the TSI compliance requirements. Although there are no TSI standards in relation to interlockings (all requirements are national), there is a certain degree of

649 Q21 – Mainline Signalling – Questionnaire to customers, questions 5.1, 5.2 and 5.5.

650 […]'s, [...]'s, and […]'s responses to Q21 – Mainline Signalling – Questionnaire to customers, questions 5.1, 5.2 and 5.5 (ID4416, ID4336, ID3920).

651 Form CO, Chapter C.2, paragraph 56.

standardisation of ETCS ATP wayside system, as noted in recitals (773)-(774). Therefore, a certain share of the authorisation process only occurs once at the EEA-level, for a given product/solution. The Commission notes that, while ETCS ATP wayside re-signalling have a smaller share of EEA-wide standardised components than ETCS ATP wayside projects (given than the interlocking systems do not have such EEA-wide standardisation), ETCS ATP wayside re-signalling projects require fewer interfaces to existing systems than ETCS ATP wayside overlay projects.

(806) The market investigation supports the view that the adoption of EU-wide authorisation procedures and standards, and in particular of ERTMS, is developing homogeneous conditions for competition between mainline signalling suppliers within the EEA.[652]

(807) The Commission understands that the need to interoperate with existing interlockings in a given country's mainline network is more limited than for ETCS ATP overlay projects (an interface with existing interlockings needs to be developed for ETCS ATP wayside overlay projects) than for re-signalling projects (where the interlocking are also replaced and hence only the interface between neighbouring interlocking needs to be developed). The Commission considers that any advantage to existing suppliers arising from being already supplying interlockings in a given country is surmountable and therefore not leading to national geographic markets.

(808) Second, adaptation costs for ETCS ATP wayside re-signalling suppliers not present in a specific country (without access to the legacy signalling system) are low, relative to the project size. For example, Alstom reports adaptation costs of EUR […] for an RFF (Réseau Ferré de France, now SNCF Réseau) project in France worth EUR […].[653] Siemens reports adaptation costs of up to EUR […] for ETCS ATP wayside and up to EUR […] for interlockings projects.[654] […]reports EUR […] for […] tender (of over EUR […]) and, more generally, EUR […] to adapt and obtain certification for an interlocking according to national rules.[655] [...] estimates in EUR […] its adaptation costs for the NTRs for the […]re-signalling tender (worth over EUR […]).[656][…] estimates its adaptation costs at EUR […] for a EUR […] project in ….[657] [...] estimated in […] the need for adaptation for a EUR […] tender in […].[658] These figures represent a cost share due to national adaptations of about [[…]]%, which is lower than for ETCS ATP wayside overlay or standalone interlockings projects, and in line with ETCS OBU projects.

(809) In relation to the Parties' response to the Statement of Objections (see recitals (715) and (716)), the Commission notes that (i) […] costs correspond to a ETCS ATP wayside re-signalling project but an example of the homologation cost for a standalone interlocking is also provided as it is part of the necessary homologation for any ETCS ATP wayside re-signalling project, and (ii) the same logic applies to

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652 Q8 – Mainline signalling – Questionnaire to competitors, question C.5; Q9 – Mainline signalling – Questionnaire to customers, question 20; Q9 – Mainline signalling – Questionnaire to customers, question 15.

653 Parties' response to the Commission's request for information RFI 131, question 2.4 [Annex Q2 Alstom].

654 Form CO, Chapter C.1, paragraph 718.

655 [...] response to the Commission's request for information RFI 105, question 4 (ID5763).

656 [...]'s response to the Commission's request for information RFI 106, question 4 (ID5848).

657 [...]'s response to the Commission's request for information RFI 107, question 4 (ID5949).

658 [...]'s response to the Commission's request for information RFI 104, question 4 (ID5799). The Commission notes that [...] considers the costs of [5-20] months of adaptation in EUR [0-2] million (ERTMS L1 project in Bulgaria).

the example provided for Siemens: given the Notifying Party's inability to provide an example of adaptation costs for an ETCS ATP wayside re-signalling project, the Commission has used the costs for each an interlocking and a ETCS ATP wayside system as an indication for these costs. The Commission considers that these are good proxies for adaptation costs.

(810) These examples of ETCS ATP wayside re-signalling projects provided by the Parties' and their competitors show that adaptation costs that are country specific (e.g. NTRs, interfacing with interlockings) can be surmountable, as they represent a relatively low share of the project's total value. For re-signalling projects, adaptation costs are even lower than for ETCS ATP wayside overlay projects or standalone interlockings projects if considered as a share of the overall value of the projects, as re-signalling projects are typically larger.

(811) The Commission acknowledges that, for some projects of small size, these costs can represent a significant barrier for those suppliers not already present in that country to submit a competitive offer. This is however mitigated by the following factors: (i) ETCS ATP re-signalling projects are typically larger than overlay projects and standalone interlocking projects (re-signalling projects in the CPL have an average size of EUR […] and a median size of EUR […], against EUR […] and EUR […] for overlay), (ii) these costs may be amortised over several projects in the same country that would follow the award of the first project; the Parties themselves recognise that increased transparency on the deployment plans of infrastructure managers provides a greater incentive to bid for suppliers not present in a country,[659] and (iii) although one project does not have sufficient size to attract competitors not already present in that country, there may be other tenders by the same customer of a larger size. As discussed in recital (778), these views are shared by some of the competitors. The Commission reiterates the arguments set out in recital (747) as to why the overall market size is a relevant measure to compare adaptation costs. As noted in recital (778), the Commission considers that buyer power should be assessed as a contributing factor that customers can use for attracting entry into a given country, and therefore relevant for geographic market definition.

(812) Third, as stated in recitals (750) and (783), the Parties and their competitors use the same ETCS ATP wayside and interlocking platform(s) across all countries in the EEA. The Commission considers that the use of standard platform/products in tenders across different EEA countries provides an indication that competitive conditions are similar across the EEA.

(813) Fourth, the evidence available to the Commission, based on the EEA countries where the Parties have submitted bidding data, shows that non-incumbent suppliers previously not present in a given country are frequently bidding and winning. The Commission defines an incumbent supplier for the market of ETCS ATP wayside re-signalling projects as a supplier of interlockings systems in that country prior to 2008. The reason for this choice is that a large share of the cost for a re-signalling project lies with the interlocking (and having a homologated interlocking in a given country would be an incumbency advantage).

(814)

659 Form CO, Chapter C.1, paragraph 199.

(815) Table 27 shows that in the 2008-2018 period, non-incumbent suppliers submitted bids in […] out […] countries and won tenders in […] out of […] countries. This is so despite the fact that in some countries there were many suppliers of legacy ATP systems ([…]), which means that the chances that new bidders not present in the country win are very small relative to those countries with only one or two incumbent suppliers.

(816) The Notifying Party has argued in its reply to the Letter of Facts that the Commission's definition of incumbency for ETCS ATP wayside subsystems (either overlay or re-signalling) is inconsistent and does not align with the operation of incumbency in the market as it would lead to suppliers that previously had won ETCS ATP wayside projects in a country not being recognised as incumbents in the Commission's analysis. According to the Notifying Party, the Commission's definition of incumbency is overly broad as it could lead to the same supplier entering the same market multiple times. The Notifying Party also submits that prior homologation of an interlocking does not remove the need for a supplier to subsequently homologate also its ETCS ATP wayside solution.[660]

(817) The Commission considers that its definition of incumbency is appropriate, in particular as being a supplier of interlockings confers an advantage to a supplier of ETCS ATP wayside re-signalling projects because a re-signalling project also involves the supply of interlockings, which typically corresponds to the largest share of the project costs. The Commission does not dispute that an interlocking supplier would also need to homologate its ETCS ATP wayside solution, but the advantage of the interlocking supplier lies in that supplier already having part of the overall solution ready, namely the interlocking technology adapted for that country.

(818) As regards the Parties' arguments in their response to the Letter of Facts in relation to the inclusion of non-contestable projects for the purposes of geographic market definition,[661] the Commission notes that only contestable projects have been considered as, by their nature, entry cannot occur in non-contestable projects, awarded to suppliers already present in that country.

(819) As regards the revised Table provided by the Parties in response to the Letter of Facts,[662] the variations suggested therein would not alter the Commission's conclusion.

(820) In relation to the (non-)inclusion of Ansaldo as an incumbent supplier of interlockings in the UK,[663] the Commission has decided not to include it as an incumbent, despite the Notifying Party's statement in the Form CO, namely: "*Ansaldo STS had previously delivered an interlockings project. In 1999, Network Rail awarded Ansaldo STS a re-signalling project at the Manchester South station, as a result of which it has homologated an interlocking in the UK in 2001. There were, however, challenges with that project. Hitachi/Ansaldo is homologating a different, newer interlocking with the 2016 project*".[664] The decision not to include Ansaldo is based on the Commission's understanding that Ansaldo did not have a functioning interlocking in the UK as it had to undergo homologation for a new interlocking again in 2016.

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660 Parties' response to Letter of Facts, paragraphs 66-67 and 69-71.

661 Parties' response to Letter of Facts, paragraph 72.

662 Parties' response to Letter of Facts, Annex II.

663 Parties' response to Letter of Facts, Annex II.

664 Form CO, Chapter C.1, footnote 187.

(821) Regarding the (non-)inclusion of Ansaldo as an incumbent provider of interlockings in Romania,[665] the Commission notes that, as submitted in the Form CO,[666] Ansaldo has only homologated a hybrid interlocking in Romania, which can only be used for certain projects. For this reason, the Commission has not considered Ansaldo an incumbent supplier of interlockings in Romania, as its competitive pressure cannot be compared to that of other existing suppliers of interlockings in Romania. In any event, this would not change the Commission's conclusion in relation to Romania.

(822) The Commission has modified its analysis on non-incumbent bids and wins to include the Parties' comments in their response to the Statement of Objections,[667] in particular the following: (i) entry of suppliers already active in a given country, though not in standalone interlockings projects, such as in Spain (CAF through the acquisition of Núcleo de Comunicaiones y Control S.A and ENYSE/SICE), has not been considered entry for purposes of geographic market definition; (ii) only countries where contestable tenders were organised in 2008-2018 have been retained in the Table, (iii) for countries where no description about incumbency status was provided in the Form CO, the Commission has relied on the list of incumbent providers submitted by the Parties in the data pack.[668]

665 Parties' response to the Letter of Facts, paragraph 72.
666 Form CO, Chapter C.1, paragraph 590.
667 Parties' response to the Statement of Objections, Chapter C1, paragraph 69.
668 Parties' response to the Article 6(1)(c) Decision, data pack.

Table 27: Non-incumbent bids and wins in ETCS ATP wayside re-signalling projects, 2008-2018

Country	Bidders	Winners	Incumbent list	Bid	Win
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]
[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL and Form CO

Note: the list of incumbents has been obtained from the Notifying Party's description of each of the markets in the Form CO; where such information was not available, it has been derived from the list of incumbents active on 1 October 2007 (Parties' response to Article 6(1)(c) Decision, data pack). The Commission has accepted the Parties' amendments in their response to the Letter of Facts, except for (i) changes resulting from non-contestable projects, (ii) Ansaldo in the UK and Romania as explained in recitals (820)-(821), (iii) companies which participated in tenders but do not have signalling manufacturing capabilities (such as engineering companies like Ferrovial or Emte)

(823) The Commission notes that a factor that facilitates that suppliers not present in a given EEA country bid and potentially win in tenders is that in many cases, homologation can actually occur after the award of the tender (not as a prerequisite to participate). According to the information available to the Commission, this is common practice at least by some infrastructure managers.[669]

669 Form CO, Chapter C.1, paragraphs 266, 292, 496, 579.

(824) This is, for example, highlighted in an Alstom internal document "[…].[670]

(825) Fifth, the CPL shows that the participation in ETCS ATP wayside re-signalling tenders across the EEA is limited to the same set of competitors, who typically bid in many EEA countries. The presence of regional or local competitors is very limited, as shows Table 74. The number of countries where suppliers bid are: Siemens ([…]), Alstom ([…]), Thales ([…]), Bombardier ([…]), Ansaldo ([…]), CAF ([…]), AZD ([…]) and ECM ([…]). This shows that the Parties and Thales, and to a lesser extent Bombardier, and Ansaldo are consistently present in tenders across the EEA. Other regional players, such CAF ([…]) and AZD ([…]) have a very limited bidding activity. […].[671]

(826) Another supply-side factor that supports a broader than national geographic market definition is the fact that customer references for participating to a tender are relevant across EEA Member States.[672] For example, [...] indicates that it would generally require a certain number of kilometres of systems installed and or a number of references of projects and when the project relates specifically to ETCS, it would require a minimum ETCS experience.[673] Another customer says that "[t]*he requirement of having successfully finished a similar project within the EU is one of the decisive factors. No bid is accepted without proving a successful project within the EU*".[674]

(827) Moreover, market participants indicated that for ERTMS, the competitors do not differ between EEA Member States.[675] In this regard, all of the major competitors have developed ETCS ATP wayside systems and the majority have deployed them in more than one Member State.

(828) In that regard, an Alstom internal document […].[676] Another Alstom internal document[677] […].

(829) Sixth, the fact that market shares greatly fluctuate across countries does not affect these conclusions, as this can be due to historical reasons and the lumpiness market shares in ETCS ATPs, as a result of the fact that this market is a bidding market.

(830) As mentioned in recital (798), the results of the Phase I market investigation are inconclusive as to whether the market for the supply of ETCS ATP wayside systems should be considered as national or at least EEA-wide in scope. They were also inconclusive as regards demand-side substitutability.

(831) The market investigation supports the fact that suppliers not active in a given EEA country are credible bidders. While some infrastructure managers show a preference for established suppliers, others mention non-incumbents as credible bidders in their tenders. For example, […] identifies "*Siemens, Bombardier, Alstom, Thales*" as credible suppliers in tenders for interlockings and ETCS ATP wayside (both signalling and overlay), while RFI considers "*basically the UNISIG ones with 5 to 10 minor companies*" (both for IXL, ETCS ATP overlay and re-signalling). […] also

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670 […].

671 CPL, Annex 105, Q2.2 (Alstom).

672 Q9 – Mainline Signalling – Questionnaire to customers, questions 22.5, 22.5.1, 22.5.2.2.

673 [...]'s response to Q9 – Mainline Signalling – Questionnaire to customers, questions 22.5.1, 22.5.2.2 (ID2172).

674 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 22.5.2.2 (ID2207).

675 Q8 – Mainline Signalling – Questionnaire to competitors, question C.4.1.

676 Alstom's internal document […].

677 Form CO, Chapter C.1, 5.4 documents, Alstom's internal document […].

submits that "T*hales, Siemens, CAF, Ansaldo (has not made an offer yet but we know their technology from other Infrastructure managers) and Iskra (if relay interlockings)*" are credible IXL suppliers.[678]

(832) The Commission also notes one of the arguments of the Notifying Party supporting an EEA-wide geographic market in urban signalling. The Notifying Party submits that customers purchase from suppliers from across the EEA and that "*the fact that certain suppliers did not bid in tenders during a given period in a particular country should not be taken as evidence that those suppliers could not have bid in that tender or could not bid in future tenders in a particular country*".[679] The Commission considers that a similar situation applies in mainline signalling which could speak in favour of an EEA-wide market.

(833) The Notifying Party argues that ETCS OBU are more standardised at the EEA-level (as trains need to be able to run across countries) and therefore considers the market to be EEA-wide. The Commission notes that (i) ETCS OBUs also require interaction with legacy signalling systems and some degree of national homologation, (ii) ETCS ATP systems are to some extent also standardised at the EEA-level, and (iii) any adaptation to NTRs or interaction with legacy signalling systems represents costs that are surmountable to providers outside a given country and therefore do not give rise to national markets.

(834) For the reasons set out in Section 6.2.2 and in light of the results of the investigation, the Commission considers that the relevant geographic markets for ETCS ATP wayside re-signalling projects is EEA-wide.

6.3. Mainline signalling projects - Competitive assessment – horizontal unilateral effects

6.3.1. Framework for the competitive assessment

(835) As regards the Commission's legal framework applicable to the competitive assessment of unilateral horizontal effects of concentrations, reference is made to section 5.3.1.1.

6.3.2. Horizontal unilateral effects

6.3.2.1. Notifying Party's view

(836) The Notifying Party submits that the mainline signalling industry has the following key market characteristics that drive competition in mainline signalling markets: (i) powerful buyers have the choice to increase or reduce the number of bidders depending on their preferences; (ii) increasing standardisation is levelling the playing fields and facilitating entry and expansion; (iii) as a result, a strong group of established players and a growing set of new competitors are fiercely competing in mainline signalling tenders, and (iv) increasing digitalisation and technical evolutions open the mainline signalling market to new competitors.[680]

(A) Powerful buyers have the choice to increase or reduce the number of bidders depending on their preferences

(837) The Notifying Party submits that customers are highly sophisticated and powerful buyers, given that demand for mainline signalling systems is concentrated, customers

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678 Q21 – Mainline Signalling – Questionnaire to customers, questions 5.1, 5.2 and 5.5.

679 Form CO, Chapter C.2, paragraph 56.

680 Form CO, Chapter C.1, paragraph 192.

have spent years acquiring, operating and maintaining signalling systems and have a deep knowledge of the industry, and are often subject to strict monetary constraints. In addition, customers in different countries are actively exchanging best practices from each other's tender processes.

(838) In addition, customers often consciously restrict the number of suppliers, focusing on two or three suppliers as long as it provides competitive outcomes. They can however, also sponsor entry of new suppliers whenever they consider it in their interest, which constrains incumbents. Among the tools customers can use to promote entry, the Notifying Party refers to increasing the size of their projects, tendering framework contracts for exclusive supply over several years and publishing plans for future projects that will allow the use the same technology as in the initial tender (thus increasing the total expected return on investment for suppliers). In order to reduce entry costs, customers can also facilitate the interfacing to the installed technology, decide to roll out ETCS though re-signalling instead of overlay projects, opt for standardised technology and a reduced set of additional national requirements, or allow suppliers to participate in bids even if they do not have a homologated product at the moment of placing their bid. Customers can also use a range of instruments to constrain their chosen suppliers, such as framework contracts (through a two-step tender process).[681]

(839) The Notifying Party submits that the Commission's assessment in the Article 6(1)(c) decision should evolve to reflect the crucial implications of buyer power for competition in mainline signalling. Specifically, the Notifying Party refers to (i) buyer power being recognised as a significant constraining factor in industries showing similar demand features to wayside mainline signalling; (ii) powerful customers often chose to limit the pool of actual suppliers; (iii) customers with a small number of actual suppliers benefit from constraints exercised by potential new entrants in tenders; (iv) customers have the proven ability to attract new suppliers where they consider this beneficial for competitive outcomes; (v) internal documents support the conclusion that the Parties are, and will continue to be, heavily constrained by buyer power; and (vi) contrary to the Commission's assessment, the lack of European commercial references does not exclude non-EEA suppliers from the pool of potential entrants. The Notifying Party also submits that the Parties will continue to face significant constraints from well-established and emerging competitors in each national sub-system market.[682]

(B) Increasing standardisation is levelling the playing fields and facilitating entry and expansion

(840) The Notifying Party argues that while local incumbent suppliers have historic advantages, the increasing standardisation contributes to reducing these advantages and lowering entry barriers with regard to OBUs, ATP systems, and interlockings.

(841) Historically, the advantages for incumbents of purely national mainline signalling systems were due to the need for a supplier to customise its products to local standards, homologate its products and create an interface to pre-existing systems, all through investments that were country-specific. However, in the Notifying Party's view, increasing standardisation reduces the need for investments in developing new solutions, creates opportunities for smaller players to enter by delivering smaller parts or teaming up with others, reduces the need for authorisation and interface

681 Form CO, Chapter C.1, paragraphs 193-208.

682 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, section D.

complexity (both ETCS and EULYNX reduce the need for compliance with national rules and interface issues).[683] According to the Notifying Party, as ETCS standards have matured, the costs of entry into the ETCS market have decreased significantly, opening the door to expansion and new entry.[684]

(C) A strong group of established players and a growing set of new competitors are fiercely competing in mainline signalling tenders

(842) The Notifying Party submits that the mainline signalling competitor set includes a well-established group of competitors (Bombardier, Thales, Ansaldo), and two previously more local and now rapidly expanding suppliers CAF and AZD Praha.[685] The Notifying Party also notes these competitors' progress in ETCS and the fact that the development of ERTMS as de facto international standard outside the EU creates opportunities for non-EU suppliers.[686]

(843) In particular, the Notifying Party notes that the Chinese CTCS standard is near identical to ETCS in terms of technical standards and, having developed ETCS systems for non-EU markets, suppliers have a strong basis for competing with ETCS systems in the EEA. It also submits that China Railway Signal & Communication ("CRSC") (active with a CTCS Level 3 solution, equivalent to ETCS Level 2, according to the Notifying Party) is actively taking steps to enter the EEA because it has clear international expansion plans and has already obtained certification for its mainline signalling systems in the EEA (TSI certification for its radio block centre of ETCS Level 2 and for ETCS Level 1 and Level 2 OBUs). Several paths of entry would be available to CRSC, either participating directly in tender processes or partnering with its sister company CRRC.[687]

(844) Moreover, the Notifying Party argues that in the EEA there are a number of smaller competitors with a regional focus, such as Scheidt and Bachmann (Germany), Mipro (Finland), Mermec (Italy), ENYSE (Spain), which have a simplified supply structure, cost advantages and local staffing.[688]

(D) Increasing digitalisation and technical evolutions open the mainline signalling market to new competitors

(845) The Notifying Party submits that infrastructure managers are actively pursuing digitalisation strategies (e.g. DB Netze, Network Rail, SNCF, SBB) and this would further level the playing field and open competition from new players, in particular from software or telecom companies.[689]

6.3.2.2. ETCS OBU projects

(A) The Notifying Party's views

(846) The Notifying Party's views are set out in relation to the mainline signalling industry in Section 6.3.2.1, and those arguments also apply to the market for ETCS OBU projects in the EEA.

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683 Form CO, Chapter C.1, paragraph 211.
684 Form CO, Chapter C.1, paragraph 215.
685 Form CO, Chapter C.1, paragraphs 218-220.
686 Form CO, Chapter C.1, paragraphs 223-228.
687 Form CO, Chapter C.1, paragraphs 221-222.
688 Form CO, Chapter C.1, paragraphs 229-232.
689 Form CO, Chapter C.1, paragraphs 233-248.

(847) In addition, and specifically in relation to ETCS OBUs, the Notifying Party submits that ETCS creates an opportunity for new suppliers to deliver on-board systems across the EEA, as the same OBU could be sold to customers located across the EEA, also in countries where the OBU supplier was not previously present. The examples of CAF supplying OBUs for trains in the UK and in the Netherlands, and Alstom and Ansaldo supplying OBUs for trains operated in Germany or in the UK, are given as examples.[690]

(848) In the Notifying Party's view, while it is usually necessary to create an interface between an ETCS OBU and one or more legacy OBUs, the specifications to develop the interface are becoming widely available to non-legacy suppliers. For some legacy ATP technologies the situation is somewhat different: in France the interface to TVM technology is in practical terms open to Ansaldo only, and in other countries operators have made available the specifications to the market.[691]

(849) Furthermore, the Notifying Party submits that demand for ETCS OBUs has been increasing as the Commission has taken steps to require the installation of ETCS OBUs on new vehicles.[692]

(850) In relation to ETCS OBUs, the Notifying Party argues that existing competitors, such as Thales, Ansaldo, and Bombardier are expanding and enhancing their ETCS OBU offering. In addition, smaller players are entering the market and expanding their presence, such as CAF (active in the UK, Spain, Netherlands, Turkey and Mexico), Mermec (recently winning a project in Italy and entering into a JV with Stadler for the supply of on-board systems) and CRSC (that is very close to entering the European market and has recently obtained European TSI certification for its on-board Baseline 2 system).[693]

(851) The Notifying Party also argues that customers such as SNCF, Deutsche Bahn, Network Rail and Skoda are sponsoring entry.[694]

(852) In their response to the Article 6(1)(c) Decision, the Parties argue that the Commission's assessment of the Parties' market shares and bidding data is flawed because (i) the assessment should not be based on historic market shares, (ii) the bidding analysis should reflect the threat by competitors bidding across the EEA, (iii) there is significant evidence that a number of competitors will become more significant constraints going forward, (iv) suppliers now face low barriers to entry and expansion, and (v) there is a growing demand for ETCS OBUs which further increases competitors' incentives to expand their activities.[695]

(853) In their response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and their response to the Article 6(1)(c) Decision.[696]

(B) The Commission's assessment - EEA level

(B.i) Market shares

(854) In **ETCS OBU projects**, as shown in the following table, the Merged Entity will become the clear market leader in the EEA, representing three-quarters of the market

690 Form CO, Chapter C.1, paragraph 213.
691 Form CO, Chapter C.1, paragraphs 404-405.
692 Form CO, Chapter C.1, paragraph 407.
693 Form CO, Chapter C.1, paragraphs 408-423.
694 Form CO, Chapter C.1, paragraphs 424.
695 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraphs 254-261.
696 Parties' response to the Statement of Objections, Chapter C1, paragraphs 151-160.

with a market share of [70-80]%. Bombardier will be a distant competitor with a market share more than five times smaller than that of the Merged Entity. The three remaining suppliers, CAF, Ansaldo and Thales, will all have a market share of […]% or less.

Table 28: ETCS OBU projects, market shares, 2008-2018, order intake (by value)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]1	[…]	[50-60]%	[10-20]%	**[70-80]%**	BT: [10-20]% Ansaldo: [5-10]% CAF: [0-5]% Thales: [0-5]% Mermec [0-5]%

Source: Notifying Party's response to the Commission's request for information RFI 79, Annex 5.3

(855) The Parties claim to have visibility on all ETCS OBU projects in the EEA in 2008-2018. Therefore, the market size for contestable projects coincides with the overall market size above.

(856) Market participants have raised competitive concerns as to the impact of the Transaction in relation to OBU projects in the EEA. The majority of OBU customers have indicated that the Transaction will have a negative impact on their activities in the procurement of OBUs.[697] For example, […] considers that the Transaction will result in less competition on the market, a risk of higher prices and less possibilities to discuss process and adapt the proposed solutions to the company's needs.[698] […] anticipates the risk to have a monopoly and "*For the ongoing projects* […] *the risk of removing products from the product portfolio*".[699] […] indicates that *"Reduced competition will cause prices to rise and will reduce our ability as a customer to get good level of service*".[700]

(857) The vast majority of OBU customers also consider that the Transaction will lead to higher prices for OBUs and none thinks prices will fall.[701] For example, […], notes that "*We will lose one out of four OBU suppliers, so a significant portion of our negotiation power will disappear*" and considers the "*main impact might be on ETCS solutions*"; [702] while […] indicates that "*it may lead to a very dominant player reducing actual competition in this segment*".[703]

(858) […].[704]

(859) On the basis of these market shares and the feedback received by market participants, the Commission concludes that the Parties' combined market share in the EEA-wide

697 Q10 – Mainline signalling – Questionnaire to OBU customers, question 61.

698 […]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 61.1 (ID2323).

699 […]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 61.1 (ID2210).

700 […] response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 61.1 (ID1861).

701 Q10 – Mainline signalling – Questionnaire to OBU customers, question 62.

702 […]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, questions 62.1, 62.2 (ID2571).

703 […]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 62 (ID1770).

704 Siemens' internal document, […].

market for ETCS OBU projects is likely to lead to a significant impediment of effective competition.

(B.ii) Closeness of competition

(860) Table 29 shows the EEA countries where the different ETCS OBU suppliers have bid in 2008-2018 (out of a total of […] countries where tenders took place).

Table 29: Countries in which the Parties and competitors have bid for ETCS OBU projects (2008-2018)

Country	Siemens	Alstom	Thales	BT	Ansaldo	CAF[705]
Austria	[…]	[…]	[…]	[…]	[…]	[…]
Belgium	[…]	[…]	[…]	[…]	[…]	[…]
Czech Republic	[…]	[…]	[…]	[…]	[…]	[…]
Denmark	[…]	[…]	[…]	[…]	[…]	[…]
Finland	[…]	[…]	[…]	[…]	[…]	[…]
France	[…]	[…]	[…]	[…]	[…]	[…]
Germany	[…]	[…]	[…]	[…]	[…]	[…]
Hungary	[…]	[…]	[…]	[…]	[…]	[…]
Italy	[…]	[…]	[…]	[…]	[…]	[…]
Luxembourg	[…]	[…]	[…]	[…]	[…]	[…]
Netherlands	[…]	[…]	[…]	[…]	[…]	[…]
Norway	[…]	[…]	[…]	[…]	[…]	[…]
Poland	[…]	[…]	[…]	[…]	[…]	[…]
Portugal	[…]	[…]	[…]	[…]	[…]	[…]
Romania	[…]	[…]	[…]	[…]	[…]	[…]
Slovakia	[…]	[…]	[…]	[…]	[…]	[…]
Spain	[…]	[…]	[…]	[…]	[…]	[…]
Sweden	[…]	[…]	[…]	[…]	[…]	[…]
UK	[…]	[…]	[…]	[…]	[…]	[…]
Total # countries bid	[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL, Annex 105 Q2.2

705 […].

(861) In terms of EEA countries covered, Siemens and Alstom are ahead of competitors with […] and […] countries each, while Bombardier has bid in […] countries, Ansaldo in […] countries, Thales in […] countries, and CAF in only […] countries. Mermec participated in tenders in Poland only.

(862) As regards bidding data, the Commission examined the Parties' participation in […] contestable tenders for ETCS OBU projects over a period of ten years (2008-2018). In […] of these tenders there were two or more bidders. Based on the […] tenders, the following statistics can be compiled:

– The Parties both participated in the majority ([…]%) of all contestable tenders and in […]% of tenders with two or more bidders;

– Alstom was the most frequent bidder ([…]% of tenders), immediately followed by Siemens ([…]% bids). At a considerable distance follows Bombardier ([…]%), Thales ([…]%) and Ansaldo ([…]%);

– Siemens and Alstom were the most frequent winners (approximately […]% each), followed by Bombardier ([…]%), Ansaldo ([…]%), Thales ([…]%) and CAF ([…]%);

– In the […] contestable tenders with two or more bidders in which Alstom bid, Siemens was the most frequent rival bidder ([…]%), followed by Bombardier ([…]%);

– In the […] contestable tenders with two or more bidders in which Siemens bid, Alstom was the most frequent rival bidder ([…]%), followed by Bombardier ([…]%);

– Of the […] contestable tenders lost by Alstom, the vast majority ([…] tenders) were won by Siemens, […] by Bombardier, […] each by Thales and Ansaldo and […] by CAF;

– Of the […] contestable tenders lost by Siemens, the vast majority ([…] tenders) were won by Alstom, […] by Bombardier, […] each by Thales, by Ansaldo and by CAF.

(863) The bidding data shows that Siemens and Alstom are close competitors in ETCS OBU projects. […], suggest that the Parties exercise a significant competitive constraint on each other. As submitted by the Parties in their response to the Statement of Objections,[706] the Commission acknowledges that the bidding shares of the Parties' competitors are higher in the 2012-2018 period if weighted by tender value (e.g. Bombardier participates in tenders corresponding to […]% of the market value and Ansaldo to […]%). This is however not accompanied by an equivalent share of wins ([…]% and […]% by value respectively), which clearly show Bombardier's and Ansaldo's limited constraint on the market. This is confirmed by the Commission's bidding analysis set out in recital (862).

(864) The responses to the Phase I market investigation also show that Siemens and Alstom are considered as close competitors by customers. The large majority of OBU customers considered that Alstom is the best alternative to Siemens for OBUs and Siemens is the best alternative to Alstom.[707] [...] considers that "*Siemens and*

706 Parties' response to the Statement of Objections, Chapter C.1, Table 4.

707 Q10 – Mainline signalling – Questionnaire to OBU customers, question 22.

Alstom are dominating the market" and *"All other (potential) alternatives are far off*"[708], […] indicates that "*Siemens and Alstom are the most close competitors*".[709]

(865) The Parties' internal documents show that […].

(866) Alstom's internal document […][710] […].[711] In this respect, the Commission's view is that the Parties' access to legacy signalling systems, and legacy OBUs in particular, in many EEA-countries confer them an important competitive advantage over their competitors.

(867) The same Alstom internal document […].

Figure 16: […]

[…]

Source: Form CO, 5.4 documents, Annex Q9.2.14

(868) In relation to the evolution to BL3, […].

Figure 17: […]

[…]

Source: Form CO, 5.4 documents, Annex Q9.2.14

(869) […][712] […].

(870) Regarding other existing competitors in the market for ETCS OBU projects, Bombardier is the only one which has a meaningful market share in the EEA ([…]%) and some bidding activities (participated in […]% of tenders). The Parties' same internal document[713] […]. The Commission considers that Bombardier cannot be considered a strong competitor of the Parties, based on the lack of competitiveness of Bombardier's platform, low market share and bidding activity.

(871) Ansaldo's market share in ETCS OBUs is very low ([…]%) and so too is Ansaldo's bidding activities in ETCS OBU projects in the EEA (Ansaldo is present in only […]% of tenders). Ansaldo also suffers, similarly to Bombardier, from problems with its on-board platform in terms of price and evolution to BL 3.[714] Taken together, these factors suggest, in the Commission's view, that Ansaldo does not constitute a strong competitive constraint to the Parties.

(872) The Parties consider Thales as a potential threat, considering its efforts to develop an innovative platform for BL 3. Thales has not, however, won any tenders since 2010, with the exception of one tender by the Czech rolling stock manufacturer Skoda in 2016.[715] Therefore, Thales' competitive constraint cannot match the Parties' in terms of experience, installed base, customer relationships, etc.

(873) CAF, a new entrant in the market for ETCS OBUs, has so far almost exclusively sold its OBUs associated to its own rolling stock. The exception is a tender CAF won in Spain in consortium with Alstom and Siemens in 2008. The Commission considers that CAF cannot therefore be considered a competitor for the whole market for ETCS

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708 [...]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 22 (ID2020).
709 [...]'s response to Q10 – Mainline signalling – Questionnaire to OBU customers, question 22 (ID2532).
710 Form CO, 5.4 document, Annex Q9.2.14.
711 Parties' response to the Statement of Objections, Chapter C.1, paragraph 158.
712 Form CO, 5.4 documents, Annex Q8.5.
713 Form CO, 5.4 documents, Annex Q8.5.
714 Form CO, 5.4 documents, Annex Q8.5.
715 CPL, Annex 105 Q2.2 (Alstom).

OBUs, as CAF's rolling stock only represent a small part of all ETCS OBU market opportunities.

(874) The Commission considers that the installed base, track record and reputation will also play in favour of the Parties against its smaller competitors (Ansaldo, Bombardier). [...] shares this view: "*Given barriers to entry are high and the installed base both of rolling stock and* [signalling] *technology is important, we do not believe that the remaining competitors, notably Bombardier and Ansaldo STS/Hitachi, with a combined market share of 7%, will be able to compete meaningfully and change the competitive situation in the foreseeable time*".[716]

(875) It follows that the Parties are very close competitors in the market for ETCS OBU projects in the EEA and exert significant competitive pressure on one another. The Parties' internal assessments also show that more distant competitors will not make up for the loss of competition that will result from the Transaction.

(B.iii) Innovation

(876) Competitors and customers note that the main innovations for ETCS OBUs are driven by the development of the ETCS standard, for example the evolution from Baseline 2 to BL 3.[717]

(877) The Commission considers that both Parties are important innovators in ETCS OBUs, and that the Transaction would therefore remove an important innovator, for the following reasons.

(878) First, both Siemens and Alstom […].[718] […].[719]

(879) Second, as noted in recital (868), one of the main innovations or evolutions in ETCS OBUs is keeping up to date with the different releases of baselines of the specifications. In that respect, the Commission notes that Siemens and Alstom are, together with Thales in some aspects, the most advanced suppliers in terms of readiness for BL 3 Release 2 and experience in BL 3 ETCS OBU projects.

(880) On innovation in ETCS OBUs, [...]notes that "*Siemens and Alstom have developed OBUs ETCS for nearly ten years*" and that the Parties are strong innovators and against whom other suppliers benchmark themselves since "*having strong innovative leaders pushes other suppliers to innovate as well*".[720] The large majority of ETCS OBU customers that responded to the Phase I market investigation also agree that Siemens and Alstom are the number 1 and number 2 players in R&D activities, in relation to OBUs.[721]

(B.iv) Competitive advantage due to access to legacy signalling systems

(881) The Commission's view is that the Merged Entity will enjoy a competitive advantage which would in turn weaken competitors and significantly decrease competition post-Transaction, due to the Parties' access to legacy signalling systems and the Parties' stronger position for international corridors.

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716 [...]'s response to the Commission's request for information RFI 54, question 5(b) (ID5674).

717 Q8 – Mainline signalling – Questionnaire to competitors, questions D.E.1, D.E.2; Q10 – Mainline signalling – Questionnaire to OBU customers, question 38.

718 Form CO, Chapter B.6, Annex RFI 6 Q 13.1.

719 Form CO, Chapter C.1, paragraphs 783-789.

720 [...] response to Q8 – Mainline signalling – Questionnaire to competitors, question D.E.4 (ID2418).

721 Q10 – Mainline signalling – Questionnaire to OBU customers, question 42.

(882) As noted in recital (866), one of the crucial elements of mainline signalling systems is the know-how and the ownership of specific interfaces between legacy/conventional systems and ETCS – including the relevant "STMs" (specific transmission modules).[722] STMs allow seamless interface between ETCS OBUs and legacy (class B) infrastructure. Availability of suitable STMs is therefore vital for rolling stock/OBU manufacturers selling trains for use on many routes – but the STMs are in general subject to intellectual property rights and controlled by particular manufacturers. Of each legacy system there is usually only one producer, with a long-lasting experience in the legacy system and qualified in ETCS market, which produces the Member State specific STM. During the transition phase in which ETCS will not be available throughout the entire cross-border routes including last miles, alternative routes and nodes, STMs will determine the possibility to access a Member State network. As such, the Merged Entity will *de facto* have the ownership of many specific interfaces between legacy/conventional systems and ETCS across the EEA and thus strengthen its incumbency advantage compared to its competitors.

(883) The Parties will also have joint incumbency in pairs of neighbouring countries which may result in a strong position for international corridors through the installed conventional wayside systems in the two neighbouring countries. If data on sales of interlockings in the period 2012-2017 are considered, as submitted by the Notifying Party, the merger would potentially affect international corridors between Denmark and Germany, Germany and France, Netherlands and Belgium, Belgium and Germany, Belgium and France, Austria and Germany, Austria and Italy, and France and Spain.[723]

(B.v) Entry/potential competitors

(884) The Commission considers that entry is unlikely in the EEA market for ETCS OBUs and would, in any event, entail significant investment and uncertainty.

(885) Stadler has announced that it will form a JV with Mermec[724] in order to develop an ETCS OBU jointly. This project, however, is expected to take a number of years and, even when Stadler's OBU is fully developed, […].[725] Furthermore, this JV is oriented towards equipping Stadler's own rolling stock, a small fraction of the market. These factors suggest, in the Commission's view, that Stadler/Mermec will not represent a significant competitive constraint to the Parties in the foreseeable future.

(886) In relation to AZD, as the Notifying Party notes, […].[726] The Commission is not aware of any steps of AZD developing an ETCS OBU solution and therefore considers that it is unlikely that it will impose a significant competitive constraint in the foreseeable future.

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722 STM is an interface necessary to run a train equipped with ERTMS system but not with a fully flagged legacy or national system (defined as "class B").

723 Form CO, Chapter C.1, Annex RFI 23 Q1(g); [...]'s presentation "Siemens/Alstom combination", 22 March 2018, page 8 (ID3015).

724 Mermec, based in Italy, is developing an ETCS OBU. Mermec has only won a non-contestable contract in the EEA in 2008-2018, and submitted a bid for another tender in Poland in 2013.

725 […]'s Supplementary Submission", dated 21 June 2018 (ID4127).

726 Form CO, Chapter C.1, footnote 224.

(887) In relation to CRSC as a potential supplier of OBUs in the EEA, the Commission notes that CRSC's has already received European TSI certification for its ETCS L1 and L2 OBUs, issued by Ricardo Certification (NoBo).[727]

(888) The Commission's view is that these potential entrants in the EEA-wide market for ETCS OBUs will not likely offset the competitive constraint exerted by the Parties, for the following reasons.

(889) First, significant investments are needed in order to develop an ETCS OBU and to keep with the new releases of the standard (baseline 3). [...] highlights that "*The development of an ERTMS solution requires significant investments and costs for new entrants*".[728] This is also confirmed by […], an OBU customer of the Parties, which is developing ETCS OBU technology, and states that "*[…]*".[729]

(890) Second, access to legacy systems is one of the main parameters of competition in ETCS OBUs, as discussed in recital (866) and therefore would act as a barrier to entry. The possible new entrants do not generally have access to legacy signalling systems with the exception of one or two countries. [...] agrees noting that "*legacy systems are a significant barrier for ETCS OBU market, from 2 perspectives: - Integration: the legacy system has to interface with the ETCS and this requires a R&D investment per system/country, which usually cannot be covered by the revenue of single projects. - Competitivity: depending of the country, the legacy system/STM has to be provided by the ETCS supplier, who has to buy it from the original legacy supplier (usually a competitor) thus creating an economic disadvantage*". [730]

(891) Third, references, installed base and commercial track record are needed, also in terms of reputation. [...], for example, notes that "*New Player – market introduction and lack of references* [are the] *most difficult barrier*" which would disadvantage new players in terms of reputation.[731]

(892) Fourth, some of the newer players or entrants, such as Stadler or CAF focus on their own rolling stock and therefore, will not be in a position to replace the competitive constraint exerted today by the Parties.

(893) Fifth, CRSC's entry in the ETCS OBU market in the EEA is unlikely in the foreseeable future. To date CRSC has not been awarded any contract nor participated in any mainline signalling tenders in the EEA. The Phase I market investigation supports the Commission's findings that CRSC will not likely become a credible supplier of ETCS OBUs in the foreseeable future. No OBU customer that responded to the market investigation states having had CRSC as a candidate in a OBU tender in the EEA over the past ten years (only […] for a non-EEA project). In that respect, […] submits that "*We know the China quality, mentality and technical capabilities from other projects, which is why we are preferring European suppliers*".[732]

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727 Form CO, Chapter C.1, paragraph 675.

728 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question D.A.2.3.1 (ID4124).

729 [...]'s submission entitled "[…]", dated 21 June 2018, paragraph 2.7 (ID4127).

730 [...]'s response to the Commission's request for information RFI 53, question 36 (ID5950).

731 [...]'s response to the Commission's request for information RFI 54, question 3(d) (ID5674).

732 […]'s response to Q10 – Mainline Signalling – Questionnaire to OBU customers, questions 33, 33.1 (ID2673).

(894) Sixth, in relation to other Asian suppliers, the majority of respondents who expressed a view took the view that it will take them more than five years to be able to submit a credible bid.[733]

(895) Seventh, the Commission does not consider that the foreseen expansion of the ETCS OBU market in the EEA will, as submitted by the Parties in their response to the Statement of Objections,[734] significantly increase the likelihood of entrants or small ETCS OBU suppliers of significantly expanding its activities in the EEA, for the reasons outlined in recitals (884)-(895).

(896) It follows that potential entry in the market for ETCS OBUs is unlikely and in any event will not make up for the loss of competition that will result from the Transaction.

(B.vi) Conclusion – ETCS OBU projects

(897) For the reasons set out in sections 6.3.2.2 (B.i)-(B.v), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects in relation to ETCS OBU projects in the EEA.

6.3.2.3. Legacy OBU projects

(898) As discussed at Section 6.2.1.3, the Commission considers that ATP wayside and OBU projects should be segmented into legacy and ETCS projects, each constituting a separate product market.

(899) In this section, the Commission will analyse only the market for legacy OBU projects in Belgium because it is the only country for which the Commission has concerns relating to legacy OBU projects.

(A) The Notifying Party's views

(900) The Notifying Party indicates that the Parties activities in legacy OBUs are largely complementary and the overlap limited. Only Belgium, in which both have a homologated product, would amount to a potential relevant market.[735]

(901) In Belgium […].[736] According to the Notifying Party, […].[737]

(902) The Notifying Party submits that the Merged Entity will be constrained by the threat of new entry: SNCB owns the legacy technology and has made the specifications accessible to any supplier that want to develop a legacy TBL1+ OBUs, as Siemens did. In addition, the legacy OBU market in Belgium is expected to decrease in the future given Infrabel's roll-out plans for ETCS.[738]

(903) In their response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and their response to the Article 6(1)(c) Decision, adding that certain suppliers already have experience with the relevant legacy technology (such

733 Q10 – Mainline Signalling – Questionnaire to OBU customers, question 37.
734 Parties' response to the Statement of Objections, Chapter C.1, paragraph 157.
735 Form CO, Chapter C.1, paragraphs 484-485.
736 Alstom also supplies […] in Belgium, and Ansaldo supplies the TVM-430 type legacy OBU in Belgium.
737 Form CO, Chapter C.1, paragraphs 485-486.
738 Form CO, Chapter C.1, paragraphs 487-489.

as Hasler Rail) and that the underlying technology is simple so that suppliers could develop their own legacy ETCS/TBL1+ legacy OBU.[739]

(B) The Commission's assessment

(904) In the period 2008-2018, Alstom was the sole supplier of legacy OBU projects in Belgium.[740] It therefore held a monopoly on this market. Post-Transaction, the Merged Entity is likely to hold the main position in the Belgian market. Absent the Transaction, given that Siemens has a homologated legacy OBU in Belgium, Siemens could have easily become a legacy OBU supplier in the Belgian market.

(905) Siemens, as the only available alternative supplier with a homologated […] in Belgium, is a credible competitor to which legacy OBU customers could turn to should they wish to seek better terms from Alstom through competitive tendering. After the merger, this option will no longer exist. The Commission rejects the Notifying Party's argument that other suppliers would be in the same position as Siemens post-Transaction, given that these suppliers do not have a homologated TBL1+ OBU in Belgium and would need to incur the costs of developing one.

(906) In the Commission's view, new entry into the market for legacy OBUs in Belgium is unlikely because: (i) […]; (ii) TBL1+ technology could only be used in Belgium, unlike ETCS, which removes some of the incentives of possible entrants to develop an alternative legacy OBU to those of Siemens and Alstom.

(907) Furthermore, the Commission considers that, while Belgium has ambitious plans for ETCS deployment, TBL1+ technology is likely to remain active for a number of years, as it was deployed relatively recently and was linked to the deployment of ETCS Level 1. TBL1+ has been in operation since 2005 and deployment was completed in 2015.[741]

(908) For the reasons set out in recitals (904)-(907), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects in relation to legacy OBU projects in Belgium.

6.3.2.4. Interlockings (standalone)

(A) The Notifying Party's views

(909) The Notifying Party submits that the Transaction will not significantly impede effective competition in the standalone interlockings markets as the Parties will be constrained by actual and potential competitors and by the buyer power exerted by sophisticated customers that are able to facilitate entry. In particular, the Notifying Party submits that customers will continue to have sufficient alternative suppliers available from actual competitors present in the markets today, but also have the ability to sponsor entry when they consider it desirable to do so. It further submits that the Parties pose no greater constraint than any other actual or potential competitor.[742]

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739 Parties' response to the Statement of Objections, Chapter C1, paragraphs 161-167.

740 The Commission's assessment focuses, following the Parties' approach, on the TBL1+ legacy OBU market in Belgium, as the Parties have limited visibility on the market for other legacy OBUs in Belgium (such as TVM-430 and TBL2); Form CO, Chapter C.1, footnote 281.

741 [..]'s presentation entitled "[…]", 9 March 2018, slides 15-16 (ID927).

742 Parties' Response to Article 6(1)(c) Decision, Chapter C.1, pages 81-82.

(910) The Notifying Party submits that customers have been able to attract a variety of alternative suppliers to tenders and provides examples of sponsored entry for standalone interlocking projects in various countries, including the UK, and examples of sponsorship for ETCS re-signalling projects which enabled a new supplier to homologate an interlocking in the relevant country.[743]

(911) The Notifying Party submits also that EULYNX will further increase competition in the supply of interlockings by opening national markets to new entrants and to smaller suppliers because: (i) an open standard supports widespread adoption and development, (ii) EULYNX members have also proposed developing standardised interfaces between interlockings and ATP systems, and (iii) EULYNX supports competition by specialised suppliers (disaggregation of systems). According to the Notifying Party, the EULYNX consortium anticipates the share of EULYNX signalling systems.[744]

(912) In their response to the Statement of Objections, the Parties submit that the Statement of Objections is based on "*unsubstantiated generalisations*" and fails to take into account the competitive dynamics of the different national markets. They argue that the objections are based on the Parties' combined market shares and bidding data and the Commission "*ignores*" the competitive constraints imposed by rivals in the relevant countries. The Parties note that in the majority of the countries in which the Statement of Objection raises issues there is, in fact, no actual sales overlap between the Parties, and there are only two national markets, namely Belgium and the UK, in which "*the data might support the view that there are limited rivals actively competing today*". Even in Belgium and the UK, the Parties submit that the Transaction would not produce a significant impediment to effective competition in view of the countervailing buyer power that the infrastructure manager exerts and in view of the threat of entry from other suppliers. In short, the Parties consider that the Statement of Objections is "*fundamentally flawed*" because the bidding analysis conclusions are based on a "*biased review of a limited number of tenders*", the constraints imposed by rivals is not taken into account, and the conclusions that the Parties are "*closer competitors to each other than to rivals*" lacks basis. There is also, according to the Parties, no in-depth analysis of countervailing buyer power exerted by the infrastructure managers in each country, the Statement of Objection "*ignores*" the different competitive conditions in each market, and the Commission "*cherry picks*" excerpts from the Parties' internal documents and ignores other instances where the competitive constrains imposed by rivals are considered by the Parties.[745]

(B) The Commission's assessment – national level

(B.i) Countries in which affected markets arise

(913)

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743 Parties' Response to Article 6(1)(c) decision, Chapter C.1, Table 8.

744 Form CO, Chapter C.1, paragraphs 216-217, and in particular footnote 86.

745 Parties' response to the Statement of Objections, Mainline Signalling, pages 78-81.

(914) Table 30 below shows the countries in which affected markets arise for interlocking projects in the EEA based on market shares (by order intake) in the period 2008-2018.

Table 30: Standalone interlocking projects, market shares, actual overlaps (order intake, 2008-2018)

Geography	Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
Croatia[746]	[…]	[…]	[…]	[60-70]%	[30-40]%	**[90-100]%**	-
Portugal	[…]	[…]	[…]	[0-5]%	[40-50]%	**[50-60]%**	Thales: [5-10]% Unidentified: [40-50]%
Spain	[…]	[…]	[…]	[10-20]%	[30-40]%	**[40-50]%**	Thales: [20-30]% BT: [10-20]% CAF: [10-20]% ENYSE: [0-5]%
UK	[…]	[…]	[…]	[10-20]%	[60-70]%	**[70-80]%**	Atkins: [10-20]% Ansaldo: [0-5]% Unidentified: [10-20]%

Source: Parties' response to the Commission's request for information RFI 79, Annex 5.3; RFI 131, Question 6.

(915) Based on the market shares, in **Spain**, the Merged Entity will be the market leader with a market share of [40-50]% and the second largest competitor will be Thales with a market share of [20-30]%. In the **UK**, the Merged Entity will have a dominant position with a market share of [70-80]%, and the second player, Atkins will be more than seven times smaller at [10-20]% market share. In **Croatia**, the Merged Entity will be dominant with [90-100]% market share for the period 2008-2018 and [90-100]% market share for the 2012-2018 period.[747] In **Portugal** the Merged Entity will be the largest player with a market share of [50-60]% and the next largest identified competitor will be Thales with a market share of [5-10]%.

(a) Spain

(916) The Notifying Party submits that the Transaction will not result in a significant impediment to effective competition in the market for standalone interlocking projects in Spain because there is a large supplier base that will continue to exert significant constraints on the Merged Entity. There are seven incumbent suppliers of interlockings in Spain, namely the Parties, Bombardier, CAF, Ansaldo, Thales, and ENYSE. ENYSE is a Spanish regional player active in interlockings only in the "Iberian gauge" (1668 mm) network, namely on lines fitted with legacy ATP. Ansaldo, on the other hand, is only active in interlockings on the standard gauge (1435 mm) network. Others are active in both. According to the Notifying Party, these suppliers will continue to pose a significant constraint as the infrastructure manager ADIF works to upgrade its interlockings. Furthermore, the Notifying Party

746 The Parties provided updated shares for Croatia for the period 2012-2018 in the response to the Commission's request for information RFI 131. The market shares displayed for Croatia are therefore for the 2012-2018 period. In their response of 28 January 2019 to the Letter of Facts, the Parties provided updated figures for Croatia, indicating the following market shares for the 2008-2018 period: Siemens: [40-50]%, Alstom: [40-50]%, Combined: [90-100]%, Others: [10-20]%.

747 In response to the Commission's request for information RFI 131, the Parties provided market shares for Croatia covering the 2012-2018 period only. In their response of 28 January 2019 to the Letter of Facts, the Parties provided updated figures for Croatia also covering the 2008-2018 period, indicating the following market shares for the 2008-2018 period: Siemens: [40-50]%, Alstom: [40-50]% (Combined: [90-100]%), Others: [10-20]%.

expects entry of new players, as ADIF has generally favoured re-signalling projects and is expected to continue to do so in the future.[748]

(917) In their response to the Statement of Objections, the Parties repeat some of their arguments made in the Form CO and in response to the Article 6(1)(c) Decision. They also submit, in particular, that the market is competitive with five homologated suppliers in addition to the Parties that provide an equal or greater competitive constraint as the other Party. According to the Parties, it is incorrect to conclude that the Parties are close competitors, […]. The Parties further argue that the internal documents cited in the Statement of Objection do not support the conclusion that the Parties are close competitors, that the installed base of the Parties in Spain does not confer them any advantage in tenders, and ADIF will face sufficient alternative viable suppliers to be able to exert buyer power.[749]

(918) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in standalone interlocking projects in Spain.

(919) First, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will have a high market share of [40-50]% (Siemens: [30-40]%, Alstom [10-20]%), far higher than any of its competitors (Thales: [20-30]%; Bombardier: [10-20]%; CAF: [10-20]%; ENYSE: [0-5]%). Post-Transaction, the Merged Entity would be almost double the size of the next player on the market, namely Thales, and three times the size of Bombardier. There are seven homologated suppliers of interlockings in Spain but only six have had success in securing orders for standalone interlockings projects. Of these seven homologated suppliers, ENYSE is only active in interlockings for the Iberian gauge network with legacy ATP, and Ansaldo is only active in interlockings for the standard gauge network, thus limiting the competitive constraint they exert on the market. Ansaldo has, as submitted by the Parties, also only supplied interlockings as part of re-signalling projects and has participated in only one tender for standalone interlockings in 2008 representing […]% of the total value of standalone interlockings projects in Spain in 2008-2018.[750] In addition, the four main players (the Parties, Thales and Bombardier) account for a lion's share of the total interlockings market in Spain representing […]% of all order intake in the 2008-2018 period. Furthermore, […].[751]

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748 Form CO, Chapter C.1, pages 107, 116-127; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, pages 87-89.

749 Parties' response to the Statement of Objections, Mainline signalling, pages 84-90.

750 Parties' response to the Statement of Objections, Mainline signalling, page 84; Parties' response to the Commission's request for information RFI 174, Annex Q.8.

751 Parties' response to the Commission's request for information RFI 79, Annex Q 5.2 and Annex Q 5.3.

Table 31: Standalone interlocking projects, market shares, actual overlaps (order intake, 2012-2018)

Geography	Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
Spain	[…]	[…]	[…]	[10-20]%	[20-30]%	**[40-50]%**	Thales: [20-30]% CAF: [10-20]% BT: [10-20]% ENYSE: [0-5]%

Source: Parties' response to the Commission's request for information RFI 79, Annex 5.2.

(920) Second, the Parties are close competitors and exert a significant competitive constraint on one another, as evidenced by the bidding data (see recitals (921)-(922)), but also as perceived by the Parties themselves.

(921) The Parties were the most frequent and third most frequent bidders and winners of interlocking projects in Spain in 2008-2018. They also met in the large majority of tenders. Only Thales shows a similar participation and winning rate to that of the Parties, with Bombardier and CAF at a certain distance in terms of participation. All other competitors only participated in a small set of tenders. Moreover, the winning rates of competitors other than the Parties, Thales and Bombardier are very low.

(922) The Commission examined the Parties' participation in […] contestable[752] tenders for interlocking projects in 2008-2018 in Spain. On this basis, the following statistics can be compiled:

(a) The Parties both participated in a significant number of tenders: Siemens and Alstom were among the most frequent bidders: Siemens bid in […]% and Alstom bid in […]% of all contestable tenders.

(b) The only other supplier who bid as much as the Parties, was Thales ([…]%). Bombardier was the next closest ([…]%), followed by CAF ([…]%).

(c) The Parties bid against each other in approximately four out of five ([…]%) contestable tenders.

(d) Siemens was the most frequent winner ([…]%), followed by Thales ([…]%) and Alstom ([…]%), Bombardier ([…]%) and CAF ([…]%).

(e) In the […] contestable tenders in which Alstom bid, Siemens was a rival bidder in all tenders ([…]%) followed by Thales ([…]%) and Bombardier ([…]%);

(f) In the […] contestable tenders in which Siemens bid, Thales was the most frequent rival bidder ([…]%), followed by Alstom ([…]%) and Bombardier ([…]%);

(g) Out the […] contestable tenders lost by Alstom, most ([…] tenders) were won or partially won in consortia by Siemens, […] by Thales, […] by Bombardier, […] by CAF and […] by local players;

(h) Out the […] contestable tenders lost by Siemens, most ([…] tenders) were won by Thales, […] by Alstom, […] by Bombardier, […] by CAF and […] by other local players.

(923) The Parties argue that instead of considering bidding data for the longer 2008-2018 period, a more appropriate time period to consider would be 2012 to 2018, as the

752 The indication of which were the contestable tenders was provided by the Notifying Party.

longer time period "overstates" the position of Alstom in the interlockings market in Spain.[753] The Commission observes that despite […] any standalone interlockings tenders in that period, Alstom has nevertheless participated in […] of the […] contestable tender, thus continuing to exert a competitive constraint on the other players. In fact, Alstom met Siemens in […] tenders it participated in the 2012-2018 period. This does not support the notion, as put forward by the Parties […].[754]

(924) The closeness of the Parties is also confirmed by the Parties' internal documents where they assess competitors in tenders. […].

(925) For example, for the 2014 project La Robla/Pola, a re-signalling project that the Parties summarise […],[755] […].[756] […].[757] As pointed out by the Parties, Siemens considered […].[758]

(926) […].[759] The Parties contest that this document would show closeness of the Parties, and refers in this context to another Siemens internal document […].[760] […].[761] This shows that Siemens once again saw Alstom as an equal and close competitor to it.

(927) Third, the results of the market investigation do not support the view that the Spanish infrastructure manager ADIF has sufficient buyer power to counter any price increase by the Merged Entity.

(928) Any buyer power that ADIF has will be significantly reduced post-Transaction by virtue of the fact that (i) by far the Parties and Thales are the most frequent bidders with other competitors participating in and winning a significantly smaller number of tenders; (ii) the vast majority of tenders ([…]% together) are won by the Parties; (iii) […].[762]

(929) As the Transaction reduces the number of viable alternative suppliers of standalone interlocking projects in Spain, this arguably also reduces any buyer power that ADIF may have had prior to the Transaction.

(930) Therefore, the Commission concludes that ADIF cannot be considered to hold sufficient bargaining power post-merger to constrain the Merged Entity.

(b) United Kingdom

(931) The UK railway infrastructure manager, Network Rail, procures through regional frameworks, based on five-year funding cycles known as control periods. It is currently in the final financial year of Control Period 5 (CP5). Control Period 6 (CP6) will cover April 2019 to March 2024. Under CP5, Network Rail procured major signalling projects under the Major Signalling, Renewals, Enhancements Framework (MaSREF). The following suppliers submitted bids on the MaSREF framework: […][763] The MaSREF framework was awarded to the Parties and Atkins.

(932) Under MaSREF, Network Rail can award projects […]

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753 Parties' response to the Statement of Objections, Mainline signalling, page 85.
754 Parties' response to the Statement of Objections, Mainline signalling, pages 85, 87.
755 CPL, RFI 174, Annex Q.8.
756 […].
757 […].
758 Parties' response to Statement of Objections, Mainline signalling, page 88; […])
759 Alstom's internal document, […].
760 Parties' response to the Statement of Objections, Mainline signalling, pages 64-65, […].
761 Parties' response to the Statement of Objections, Mainline signalling, pages 64-65: […].
762 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, question 51 (ID2347).
763 […]

(933) […].[764] […].[765]

(934) The Notifying Party submits that the Transaction will not give rise to competition concerns on the market for standalone interlocking projects in the UK. It submits that the market share data does not reflect competitive conditions in the UK, which is influenced by […].

(935) […]in the ongoing Control Period 5 (CP5) the participation to contestable tenders organised within the framework is limited only to the three framework suppliers (the Parties and Atkins) and, when tenders are open also to non-framework suppliers, such other players will lack incentives to bid in view of limited value of projects and uncertain prospects of future business opportunities. The tender for the framework contract itself attracts wider participation, […], thus showing that the competition for standalone interlockings projects in the UK is higher than only the three current framework suppliers. In the upcoming tender for Control Period 6 (CP6), the infrastructure manager will once again be able to invite a larger number of suppliers to bid.

(936) Also, the Notifying Party submits, Network Rail pursues a strategy of standardisation, digitalisation and diversification of its supplier base, which has allowed Ansaldo to homologate an interlocking through a legacy ATP re-signalling project (Ferriby-Gilberdyke line) awarded to it by Network Rail without requiring upfront homologation.[766] The Notifying Party also submits that […]. The Notifying Party further submits that Network Rail is actively promoting the entry of engineering companies (Amey, Babock Rail, Linbrooke) that could become viable alternative suppliers especially for smaller projects. The Notifying Party, therefore, considers that instead of focusing on past tender data, the competitive assessment should take account of competitors for future tenders.[767]

(937) In their response to the Statement of Objections, the Parties repeat their arguments already made in the Form CO and response to the Article 6(1)(c) Decision. The Parties submit, in particular, that the Commission's findings in the Statement of Objections are based on past data that does not accurately reflect competitive conditions in the UK today. The Parties argue that the competitive assessment of the market should take account of competitors for future tenders and considers that the infrastructure manager is able to sponsor entry as shown by it awarding a first contract to Ansaldo (Ferriby-Gilberdyke) and its engagement with Thales and Bombardier to discuss future opportunities. The Parties conclude that a forward-looking analysis of the market in the UK does not support a finding of a significant impediment to effective competition in the UK market for standalone interlockings.[768]

(938) The Commission considers, however, that the Transaction would cause a significant impediment to effective competition in the market for standalone interlocking projects in the UK.

(939) First, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will be dominant with a market share of [70-80]% and the next largest

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764 […].

765 […].

766 […]; Form CO, Chapter C.1, paragraph 380.

767 Form CO, Chapter C.1, pages 127-128, 131-139,141-146; Parties' response to the Article 6(1)(c) Decision, pages 89-90.

768 Parties' response to the Statement of Objections, Mainline signalling, pages 92-93.

identified competitor will be Atkins with a market share of [10-20]%. The market share data reflects the fact that the Parties won the vast majority ([…]) positions as primary contractor under MaSREF. Atkins was awarded […] positions as primary contractor. The majority of work is automatically allocated to the primary contractor. While it is accurate, as the Parties submit in their response to the Statement of Objections, that there was a wider pool of bidders for the initial tender for the CP5 framework contract in 2012, the Parties are the only suppliers with the required interoperable technology ("Westlock" and "Smartlock"), that has been installed throughout the Network Rail network (with the exception of […] that was awarded to Ansaldo).

(940) The Parties' internal documents confirm that […][769] […].[770]

(941) Second, the market investigation has found that the Parties are close competitors since the Parties' interlockings are interchangeable with each other but not with third parties' interlockings.[771] There are two interlocking systems installed in the UK: the 'Smartlock' technology owned by Alstom (through its acquisition of GE) and the 'Westlock' technology owned by Siemens (through its acquisition of Westinghouse). Due to historic reasons, having been jointly developed in the 1980s in the context of the tripartite agreement between British Rail, Westinghouse (now Siemens) and General Electric Signals (now Alstom),[772] the Smartlock interlockings and related data systems and the Westlock interlockings and related data systems[773] can communicate with each other, meaning that Network Rail can effectively switch one product for the other. None of the Parties' interlockings are interoperable with any third party interlockings. As a result, the Parties already have pre-Transaction an advantage over any other suppliers when competing for projects involving interlockings in the UK.

(942) The bidding data also shows that Siemens and Alstom are close competitors. The Parties met in […]% of contestable bids with more than one bidder. Alstom participated in […]% of the tenders in which Siemens bid ([…]% of tenders with more than one bidder), and Siemens participated in […]% of the tenders in which Alstom bid ([…]% in tenders with more than one bidder). When Alstom bids and does not win, Siemens wins […]% of the time; and when Siemens bids and does not win Alstom wins […]% of the time.

(943) Even when considering "off-framework" tenders (bidding for which is open to all suppliers), we still see that the Parties are closest competitors. Out of […] such tenders in CP5, Alstom won […], Siemens won […] and in […] cases […] to Atkins who won […]. The only project that was not won by the Parties (or by a supplier relying on their technology) was for a "*less complex job*" involving interlockings works […].[774]

(944) Third, there are few alternative suppliers to the Parties. The Notifying Party submits that Atkins (who is the only other supplier on the CP5 framework) is a strong, long-established interlockings supplier in the UK that will continue to provide a

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769 Alstom's internal document, […].

770 Alstom's internal document, […].

771 […].

772 […].

773 The interlocking communicates with the trackside equipment via the object controller (also called the Trackside Functional Module (TFM)). In the case of the Parties' interlocking technologies, their respective interlocking and data systems can communicate with each other's TFMs.

774 […].

significant competitive constraint in the future. The Notifying Party explains that Atkins has recently been purchased by the Canadian engineering firm, SNC-Lavalin, which will increase Atkins' financial and competitive strength.

(945) Atkins is an integrator and does not have its own signalling technology; Atkins installs exclusively the Parties' equipment. It therefore relies on the Parties, and pre-merger, can benefit from the competitive tension between them. Atkins has won six major signalling projects under MaSREF in CP5: it was 'called off' as primary contractor for two tenders, two tenders were bid on-framework and two tenders were bid off-framework. […]; the only project in which it did not use one of the Parties' interlocking technologies was for the Norwich-Yarmouth-Lowestoft line which is due to commission at the end of March 2019 using, for the first time, the ElectroLogIXS interlocking, […].[775]

(946) […] submits that […].[776] Moreover, the market investigation shows that the only other interlocking technology installed on the Network Rail network that is not owned by the Parties, is that of Ansaldo which accounts for only […]interlocking in Great Britain and which was only made possible because it won […].

(947) Fourth, no potential entrant exists that can offer a product that is interoperable with that of the Parties' interlockings currently installed on the Network Rail network. The market investigation shows that, in addition, no potential competitor exists who has access to the Parties' intellectual property, design and compatibility specifications necessary to interoperate with the Parties' installed base. Nor does any potential competitor currently have a sizeable workforce in the UK, together with the requisite scale of operations to provide an integrated end-to-end solution that is currently provided by the Parties.[777] […].[778]

(948) Fifth, post-Transaction Network Rail will not have the ability to sponsor new entry (even if such a credible entrant existed). As noted above, no alternative suppliers are currently in a position to provide an end-to-end solution in the UK and […].[779] As regards Chinese suppliers, […]CRRC has not entered the British signalling market and […].[780]

(949) […][781] Therefore, the Commission considers that Post-Transaction, Network Rail will likely lose any buyer power it currently has.

(950) The Commission's view that Network Rail will not have sufficient buyer power post-Transaction to overcome the reduction in competition resulting from the Transaction is supported by […]. […]considers that Network Rail's ability to presently exercise buyer power is restricted by the following characteristics of the UK rail industry and Network Rail's structure:

(1) Network Rail's status as a public authority may constrain its ability and incentive to exercise buyer power in negotiations with suppliers (due to a number of factors, such as its governance structure and procedures, its financial management incentives, the public nature of operational failures or risk-aversion);

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775 […]; Form CO, Chapter C.1, paragraph 379.
776 […].
777 […].
778 Agreed non-confidential minutes of meeting with […], 23 November 2017, paragraph 9 (ID322).
779 […].
780 Agreed non-confidential minutes of meeting with […], 23 November 2017, paragraph 10 (ID322).
781 […].

(2) Network Rail's ability to exercise choice, a key determinant of buyer power, is very limited considering that for the majority of large, complex signalling projects, Siemens and Alstom are the only two credible bidders;

(3) Network Rail does not expect new entrants to be able to enter and compete effectively with the Merged Entity in the foreseeable future;

(4) Network Rail's ability to change the structure of supply away from turnkey projects that provide an end-to-end solution (which has been encouraged by the Parties) in favour of multi-sourcing and procure signalling systems on a standalone basis is limited by reason of (i) the complexity of signalling projects and the enhanced reliance of Network Rail on suppliers to provide end-to-end solutions, and (ii) increased level of risk associated with self-implementing which would expose Network Rail to greater operational and reputational risk in circumstances where Network Rail lacks the in-house capability to tender for standalone projects and aggregate products itself.[782]

(951) […]also provides evidence of the likely extent of Network Rail's buyer power using […][783] […]does not indicate that Network Rail has a significant degree of buyer power.[784]

(c) Croatia

(952) The Notifying Party submits that the Transaction will not give rise to competitive concerns on the standalone interlockings market in Croatia. It submits that in Croatia, interlocking tenders are typically a small component of large rail construction projects tendered by the infrastructure manager, where the signalling suppliers are selected as sub-suppliers by construction companies. It explains that in the 2012-2018 period, despite […]. The Notifying Party explains that the infrastructure manager has taken steps to facilitate entry to the market by allowing non-homologated suppliers to participate in tenders and by announcing future tenders to incentivise suppliers to homologate their interlockings in Croatia. Furthermore[…].[785]

(953) In their response to the Statement of Objections, the Parties reject the Commission's conclusions in the Statement of Objections with regard to the standalone interlocking market in Croatia by arguing, in particular, that (i) the bidding data and submissions by the Croatian infrastructure manager do not show that the Parties would be closer competitors to each other than to other suppliers, and (ii) that post-Transaction there will be five viable alternative suppliers, in addition the Merged Entity, participating in tenders for standalone interlockings projects in Croatia.[786]

(954) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in the market for standalone interlocking projects in Croatia.

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782 […].

783 […]explains that a "unit" is defined by the scale of the work, and is primarily measured by the number of signalling apparatus and points (where trains switch track) installed/renewed in a scheme. […]considers that this is a relatively crude measure of costs that is subject to a number of limitations, including, for example, the fact that only capital expenditure is included in the SEU measure, while some project specific costs are excluded from the SEU (for example additional costs incurred due to safety considerations); […]

784 […].

785 Parties' response to the Commission's request for information RFI 131, pages 6-9.

786 Parties' response to the Statement of Objections, Mainline signalling, pages 90-92.

(955) First, based on market share figures (by order intake) in the period 2012-2018, the Merged Entity would be in complete control of the market with a combined share of [90-100]%. In their response to the Letter of Facts, the Parties provided shares also for the period 2008-2018, reporting a combined market share for the Merged Entity of [90-100]% (Siemens: [40-50]%; Alstom [40-50]%), thus confirming the Merged Entity's very strong market position in standalone interlocking projects in Croatia.

(956) The incumbent suppliers of interlockings in Croatia are Alstom, Siemens, and Bombardier.[787] Siemens and Bombardier have homologated interlockings in Croatia, and […].[788] Thales has also supplied interlockings in projects directly awarded to it in 2005 and 2009 and the Notifying Party explains that Thales is currently in the process of homologating those interlockings in Croatia.[789] The Transaction would remove one of the suppliers with a homologated interlocking in Croatia.

(957) There were […] contestable tenders for standalone interlocking projects in the period 2008-2018: (i) […]. The Notifying Party submits that in relation to the tender that Alstom won, Alstom was a sub-supplier in the bid presented by Swietelsky, an Austrian construction company, and that the tender included a small component of legacy ATP wayside. The only other bidders for the 2016 and 2018 tenders were […] for the 2018 tender.

(958) Second, the Parties are close competitors in the market for standalone interlockings in Croatia. According to the bidding data, the Parties are […] having won contestable tenders in the 2008-2018 period. Alstom met Siemens in […] it participated in. It won the largest of the three tenders, namely the 2018 project […]. Siemens is the legacy ATP wayside supplier in Croatia. The constraint the Parties exert on each other is highlighted by the fact that Alstom's win of the 2018 tender, that included a legacy ATP component, marks the first time that an interlocking project was not awarded to Siemens in Croatia.

(959) The market investigation also shows that the Parties are generally considered close competitors. When asked about the best alternative in terms of products, product ranges, competitiveness, quality, and innovation, […], considers that the best alternative to Alstom is Siemens, followed by Thales, Bombardier and finally AZD while the best alternative to Siemens is Thales, followed by Bombardier, then Alstom, and finally AZD.[790] While the infrastructure manager may put Thales and Bombardier ahead of Alstom in terms of best alternative to Siemens, this does not mean, as suggested by the Parties, that the Parties would be distant competitors.[791] Such an interpretation would also be incompatible with the fact that the customer has awarded each of its standalone interlocking projects in the 2008-2018 period to one or the other of the Parties.

(960) The results of the market investigation also do not support the Notifying Party's argument that the customers have available to them and use a variety of tools to attract new suppliers to their tenders, such as increasing the size of projects.[…], has never used the methods suggested by the Notifying Party. Moreover, […] considers

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787 Parties' response to the Commission's request for information RFI 131, pages 6-8; Bombardier won two re-signalling projects (involving interlockings) in 2009 and 2012, as shown in the response to the Commission's request for information RFI 105, Annex Q2.2.

788 Parties' response to the Statement of Objections, Mainline signalling, page 91.

789 Notifying Party's response to the Commission's request for information RFI 131, page 8.

790 Q9 – Mainline Signalling – Questionnaire to customers, question 27.

791 Parties' response to the Statement of Objections, Mainline signalling, page 91.

that all of […] mainline signalling projects in Croatia could be considered small, and that therefore the scope and size of […] mainline signalling projects would have no impact on suppliers' participation in tenders.[792]

(961) Third, the infrastructure manager lacks sufficient buyer power to constrain the Merged Entity. With the elimination of Alstom, there will be one less bidder in the tenders, which is likely to reduce any bargaining power HŽ Infrastruktura may have to encourage new entry in order to offset any potential price increase resulting from the merger. Moreover, the Notifying Party has put forward no concrete evidence of other competitors' plans to enter the interlockings market in Croatia in the near future.

(d) Portugal

(962) The Notifying Party submits that the Transaction will not give rise to competitive concerns on the standalone interlockings market in Portugal. A total of at least four suppliers are expected to participate in future tenders and exert considerable competitive constraints on the merger entity: (i) Thales is already active on the market, being an incumbent supplier of interlockings; (ii) Bombardier is taking steps to enter; and (iii) CAF and Ansaldo would be well positioned to bid for future standalone interlockings projects in Portugal, being interlockings suppliers in Spain. Further, the Parties expect participation from more suppliers in future tenders given the infrastructure manager's, Infraestruturas de Portugal (IP), willingness and successful efforts to open up the market to new entrants.[793] In the Notifying Party's view, IP has taken steps to open up the market and attract additional suppliers, such as publishing its future plans, bundle works and allowing for authorisation of interlockings after the tender award.[794]

(963) In their response to the Statement of Objections, the Parties repeat some of their arguments already made in the Form CO and in their response to the Article 6(1)(c) Decision. They submit, in particular, that there is no effective overlap between the Parties in Portugal in relation to standalone interlocking projects and the order intake that is attributed to Alstom and giving rise to a [0-5]% market share in the 2008-2018 period concerns not the supply of interlockings, but the "*integration of level crossings with the existing interlockings*".[795] Portugal is therefore not be considered an affected market, but a market where there is a bidding overlap between the Parties. The Parties further submit that in any case, the competitive constraint provided by Alstom is limited; Alstom is not in any better position than any other "*potential entrant*", and the Parties are not each other's closest competitors. The Parties submit that Thales is the closest competitor of Siemens in Portugal. Furthermore, the Parties submit that there will remain sufficient other potential or actual competitors post-Transaction, and to the extent that IP will continue its strategy to not only invite homologated interlocking suppliers (namely Siemens and Thales) to participate in tenders but to open up the market also to non-homologated suppliers, it can be expected that a sufficient range of suppliers, including

792 Q9 – Mainline Signalling – Questionnaire to customers, question 56.

793 Form CO, Chapter C.1, paragraph 583.

794 Form CO, Chapter C.1, paragraphs 574-582; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, pages 84-85.

795 Parties' response to the Statement of Objections, Mainline signalling, page 82.

Bombardier, CAF and Ansaldo will enter the standalone interlockings market in Portugal.[796]

(964) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in the market for standalone interlocking projects in Portugal.

(965) First, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will control half of the market with a combined market share of [50-60]% (Siemens [40-50]%; Alstom [0-5]%) and the next largest identified competitor will be Thales with a market share of [5-10]%. The market share of Thales may, however, be larger considering that the Notifying Party has allocated a market share of 41% to 'unidentified' competitors, which, in view of Siemens and Thales being the only homologated suppliers in Portugal, suggests that at least part of this "unidentified" share belongs to Thales.

(966) The Parties attribute a [0-5]% market share to Alstom based on the order intake that Alstom secured for a project awarded in 2009 ("Vouga Line"). The Parties have categorised this as an interlockings project in their submissions to the Commision.[797] They argue, however, in response to the Statement of Objections that this does not in fact relate to interlockings but to the "*integration of level crossings with the existing interlockings*", and that Alstom is not a homologated supplier of interlockings in Portugal.[798]

(967) Irrespective of whether the order intake from the 2009 "Vouga Line" contract should be categorised as interlockings or not, the Commission's concerns on the standalone interlockings market in Portugal remain as Alstom exerts a competitive constraint on the interlockings market in Portugal through its bidding activity in Portugal. The Transaction would eliminate this constraint.

(968) Depending on whether the 2009 "Vouga Line" project is taken into account or not, there were three, alternatively two contestable tenders in Portugal for standalone interlockings projects in the period 2008-2018. Siemens bid in each tender and Alstom bid in the 2016 tender (in addition to the 2009 tender for the Vouga Line). These tenders are listed in

796 Parties' response to the Statement of Objections, Mainline signalling, pages 82-84.

797 CPL, Annex 105 Q2.2 (Alstom); Parties' response to the Commission's request for information RFI 79, Annex 5.3.

798 Parties' response to the Statement of Objections, Mainline signalling, page 82.

(969) Table 32.

Table 32: Contestable tenders for standalone interlockings projects in Portugal (2008-2018)

Year	Project name	Winner	Value (EUR M)	Other bidders
2009	*Vouga Line - 52 Level Crossings*	*Alstom*	[…]	[…]
2013	Conceção, Fornecimento / Montagem de Sinalização Eletronica no Troço Olhão - Vila Real de Santo António, na linha do Algarve	Siemens	[…]	[…]
2016	54033-PT-MM-PT-MM-ML-Lote A [317847] - Conceçao, Fornecimento, Muntagem e Manutençao de sistemas de Controlo - Comando e Sinalizaçao de varios troços de Rede Ferroviaria Nacional	Siemens	[…]	[…]

Source: CPL

(970) As shown in this table, […].

(971) Second, the Parties are close competitors in the market for standalone interlockings in Portugal. The Commission notes that Alstom participated in […] out of […] tenders in Portugal (corresponding to […]% of the value) if the Vouga Line project is included, and in […] tenders (corresponding to […]% of the value) if the Vouga Line project is excluded. Alstom was […] of only […] competitors in the largest of the interlockings tenders organised in Portugal during the 2008-2018 period. This implies a significant competitive constraint. Despite the customer allowing for non-homologated suppliers to bid in the 2016 tender, only Alstom and Bombardier, in addition to the incumbent suppliers, took part in it. In particular, rivals such as Ansaldo and CAF that were specifically highlighted by the Parties in their response to the Statement of Objections, did not participate in this tender, despite its large size and absence of requirements regarding homologation.

(972) Moreover, to the extent that the Vouga Line project is categorised as an interlockings project, it is noteworthy that Alstom managed to secure this contract despite not yet being present in the country. This contract is the only contestable project categorised by the Notifying Party as an interlockings project not won by Siemens in the 2008-2018 period.

(973) The Parties' internal documents […][799] […].[800] Contrary to the Parties' assertions in their response to the Statement of Objections,[801] the internal assessment by Siemens […].

(974) […].[802] […].[803] […].[804]

(975) Third, as the Transaction reduces the number of viable alternative suppliers of standalone interlocking projects in Portugal, from […], this arguably also reduces any buyer power that IP may have had prior to the Transaction. While the Notifying Party has argued that IP was able to attract […] suppliers, including […], to participate in its 2016 tender by bundling works over several sections, thus increasing the volume and value of the project to make it more attractive to non-incumbent suppliers, it has not adduced any evidence to support its claim that in the

799 CPL, Annex 105 Q2.2 (Alstom): […].
800 […].
801 Parties' response to the Statement of Objections, Mainline signalling, pages 82-83.
802 […].
803 […].
804 Parties' response to the Statement of Objections, Mainline signalling, page 83.

future, post-Transaction, IP would be able to attract a "sufficient range" of suppliers, including new entrants such as CAF and Ansaldo, to participate in its tenders.[805] What is evident is, however, that of the […] suppliers that IP managed to attract for its 2016 tender, one would now be lost as a result of the Transaction. The Commission therefore concludes that IP cannot be considered to hold sufficient buyer power post-merger to constrain the Merged Entity.

(B.ii) Countries in which the Parties' bidding activities overlap

(976) In addition, even though there is no actual (sales) overlap between the Parties' activities, the Commission considers that the Transaction will lead to unilateral horizontal effects also in **Greece and Romania** as the Parties exert a strong bidding constraint on each other.

Table 33: Standalone interlockings, market shares, bidding overlaps (order intake, 2008-2018)

Geography	Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
Greece	[…]	[…]	[…]	[90-100]%	[0-5]%	[90-100]%	-
Romania	[…]	[…]	[…]	[0-5]%	[40-50]%	[40-50]%	Thales: [20-30]%, Unidentified: [30-40]%

Source: Notifying Parties' response to the Commission's request for information RFI 79, Annex 5.3.

(977) In their response to the Statement of Objections, the Parties argue that the Statement of Objections disregards the fundamental difference between the countries in which there is an actual sales overlap and countries in which there is only a "loss of potential competition", and fails to apply the Commission's guidance on the assessment of the loss of potential competition as included in the Horizontal Merger Guidelines, namely that the loss of potential competition is only a concern where a potential competitor already exerts a significant constraint, and there are not sufficient other potential or actual competitors that could maintain sufficient competitive pressure after the merger. It is submitted by the Parties that neither of these conditions is met in relation to Greece, and Romania.[806]

(978) Contrary to the Notifying Party's submission, the countries in which the Parties bidding activities overlap should not be considered markets where there is "potential competition" between the Parties.[807] The standalone interlockings market is a bidding market where both Parties are actual competitors in view of their participation in contestable tenders. This is the case in relation to Greece and Romania, […].

(a) Greece

(979) In Greece, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will have a dominant position, with a [90-100]% market share, which corresponds to Alstom's pre-Transaction market share.

805 Form CO, Chapter C.1, paragraph 579; Parties' response to the Statement of Objections, Mainline signalling, page 83-84.

806 Parties' response to the Statement of Objection, page 93.

807 Horizontal Merger Guidelines, paragraphs 58-60.

(980) The incumbent suppliers of interlockings in Greece comprise, according to the Notifying Party, […].[808]

(981) There were three contestable standalone interlocking tenders in Greece in the period 2008-2018: (i) a tender for the Suburban Ikonio line (project ID GR1345) (ii) a tender for the Thriasio Depot (project ID K943) and (iii) a tender for the Athens-Thesaloniki-Promachonas line (project ID S3039). Alstom participated […] while Siemens participated in […] of the tenders, namely […]. For Suburban Ikonio, […],[809] while for the Thriasio Depot tender, […] participated in addition to civil works companies who also bid.[810]

(982) The Notifying Party submits that the Transaction will not significantly impede effective competition in the market for standalone interlocking projects in Greece as post-Transaction, the Parties will continue to be constrained by […] other suppliers of standalone interlockings, […]. The Notifying Party argues that the bidding data is proof of the competitiveness of the Greek standalone interlockings market, where […] suppliers, including […], competed for the 2013 Thriasio project.[811] The Parties would also likely face competition in any future standalone interlockings tender from CAF, that has shown interest in the Greek market and participated in the 2014 re-signalling tender that would have also included interlockings.[812]

(983) In their response to the Statement of Objections, the Parties repeat some of their arguments already made in the Form CO and response to the Article 6(1)(c) decision. The Parties submit, in particular, that the Transaction does not give rise to any competition concerns because the Parties are not close competitors- This, according to the Parties, is evidenced by the bidding data which would suggest that Siemens is not a "*particularly close competitor*" to Alstom, and Siemens only participated in the […] interlockings tenders during the 2008-2018 period. One of these tenders was, according to the Notifying Party, not even a "*formal tender*", but rather the Parties acted as sub-contractors to civil work's companies that competed for the contract. The Parties further argue that the internal documents of the Parties do not support a finding that the Parties are close competitors, but rather show that the Parties have different views as to which rival is a "*closer competitor*" and the Parties face competition from other suppliers as much as they do from one another. The Parties also submit that post-Transaction, there will remain alternative actual or potential competitors that would maintain sufficient competitive pressure and in the event the infrastructure manager wishes to introduce a new supplier to the market it will be able to do so, including Bombardier, AZD, Ansaldo, Thales, and CAF. The Parties finally argue that the claim in the Statement of Objections as to the lack of countervailing buyer power by OSE is unfounded and should, therefore, be dismissed.[813]

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808 Form CO, Chapter C.1, paragraph 542, footnote 297.

809 The Notifying Party explains that the suburban Ikonio project was not formally tendered, but the civil works company approached both Alstom and Siemens as potential sub-contractors, and it is not excluded that others may also have been contacted; see Form CO, Chapter C.1, paragraph 194.

810 CPL, Annex 105 Q2.2 (Alstom).

811 Suppliers were encouraged to participate by the absence of a requirement to have an authorised interlocking as a pre-condition for participation in the tender; see Form CO, Chapter C.1, paragraphs 542-543.

812 Form CO, Chapter C.1, paragraphs 542-543.

813 Parties' response to the Statement of Objections, Mainline signalling, pages 93-95.

(984) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in standalone interlockings projects in Greece for the following reasons:

(985) First, the Parties exert a significant competitive constraint on the market for interlockings in Greece in view of their tender participation. Siemens competed against Alstom in […] contestable tenders for standalone interlockings in Greece in the 2008-2018 period, which were all three won by Alstom. The Transaction would eliminate one bidder and the constraint that this bidder exerted.

(986) The Transaction would also remove one of the main three suppliers with a homologated interlocking solution in Greece. The infrastructure manager, OSE, would therefore have limited possibilities to switch to other suppliers. Although it may be accurate, as the Notifying Party submits, that also non-homologated suppliers have been able to participate in at least one of the tenders for standalone interlockings (namely the 2013 Thriasio Depot project), and the infrastructure manager has, as a consequence, more alternatives to choose from, it remains the case that only a homologated supplier, namely Alstom, has been successful in any standalone interlocking tenders during the relevant period. Also, while it may be the case that for some projects the Parties have acted as sub-contractors to civil works companies, it is unlikely especially in such projects that a non-homologated supplier would be considered as an equally attractive sub-contractor to the civil works company as a homologated supplier. If the choice is between homologated suppliers, that choice is therefore very limited in Greece, with only three homologated suppliers for the time being, of which one would be eliminated as a result of the Transaction. Contrary to what is submitted by the Notifying Party, the infrastructure manager would not have "*[five] viable alternative[s]*" to switch to.[814]

(987) Second, the Parties are close competitors in Greece, and are perceived as such by the Parties themselves in their internal documents.

(988) For example, during the tendering for the Thriasio Depot project […],[815] […].[816] […].[817] […].[818] […].

(989) Third, as the Transaction reduces the number of viable alternative suppliers of standalone interlocking projects in Greece, this arguably also reduces any buyer power that OSE may have had prior to the Transaction. To the extent that the customer only has a choice between homologated suppliers, that number would fall from three to two. Therefore, the Commission concludes that OSE cannot be considered to hold sufficient buyer power post-merger to constrain the Merged Entity.

(b) Romania

(990) In Romania, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will be the largest player with a market share of [40-50]% and the next largest identified competitor will be Thales with a market share of [20-30]%. The Notifying Party reports 'unidentified' competitors as being responsible for [30-40]% of the market of standalone interlocking projects. However, this share is likely

814 Parties' response to the Statement of Objections, Mainline signalling, page 95.
815 […].
816 Siemens' internal document, […].
817 Siemens' internal document. […].
818 Alstom's internal document, […].

to also belong to Thales as it is the other incumbent provider in Romania. There were […] contestable interlocking tenders in the period 2008-2018 and both Parties bid in […] of them. In the […], as shown in Table 34.

Table 34: Contestable tenders for standalone interlockings in Romania (2008-2018)

Year	Project name	Winner	Value (EUR M)	Other bidders
2010	18665-RO-Calafat-Donaubrücke IV	Siemens	[…]	[…]
2015	25472-RO-RA-RO-Lugoj-Ilia	Thales	[…]	[…]
2016	26230-RO-RA-RO-Ghimes-Adjud	Siemens	[…]	[…]
2016	25471-RO-RA-RO-Siculeni-Ghimes	Siemens	[…]	[…]
2016	25564-RO-RA-RO-Station Videle	Thales	[…]	[…]

Source: CPL

(991) The Notifying Party considers that each Alstom, Siemens, and Thales have an authorised interlocking in Romania and Ansaldo has a "hybrid" interlocking (namely a "*relay interlocking with computerized MMI*") which could be used for certain specific projects.[819] The Notifying Party expects strong competition from suppliers active in the period 2008-2018 (Alstom, CAF, Mipro, Siemens and Thales).[820] The Notifying Party also submits that the Romanian infrastructure manager Cai Ferate (CFR) has facilitated entry by increasing the size of projects, pointing to an ETCS roll-out that attracted bids from several suppliers not previously present in interlockings or ATP in the Romanian market including Alstom, Bombardier and Ansaldo.

(992) In their response to the Statement of Objections, the Parties repeat some of their arguments already made in the Form CO and response to the Article 6(1)(c) decision. The Parties submit, in particular, that the Transaction does not give rise to any competition concerns because the Parties are not close competitors as evidenced by the bidding data that instead shows the competitive constraint of rival bidders, in particular Thales, AZD, CAF and Mipro, with Thales being, according to the Parties, a "*closer competitor to Siemens than Alstom*".[821] The Parties also submit that the internal documents of the Parties quoted in the Statement of Objections do not confirm any closeness of competition between the Parties, and furthermore argues that the standalone interlockings market in Romania will have "*sufficient alternative suppliers*" for the customer CFR to exert buyer power, namely Thales, AZD, Mipro, but also Ansaldo and Bombardier. According to the Parties, the customer is likely to continue tendering small interlockings projects to replace old relay interlockings and in the absence of a requirement to have a homologated product to participate in the bidding, new suppliers may use the opportunity of small interlocking tenders to homologate its interlockings to then be able to compete for the larger ETCS re-signalling projects.[822]

819 Form CO, Chapter C.1, paragraph 590 and footnote 313.
820 Form CO, Chapter C.1, paragraphs 584-594.
821 Parties' response to the Statement of Objections, Mainline signalling, page 98.
822 Parties' response to the Statement of Objecitons, Mainline signalling, pages 99-100.

(993) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in standalone interlockings projects in Romania for the following reasons:

(994) First, Alstom exerts a significant competitive constraint in view of its tender participation in projects involving interlockings (Alstom was present in […] but […]).[823] The Transaction would eliminate this constraint. The only player with comparable bidding activity, in addition to Thales (present in […] standalone interlocking tenders), was AZD, present […]. The other competitors, CAF and Mipro, were less active bidders, participating […] standalone interlocking tenders, respectively. As submitted by the Notifying Party, […] participated in standalone interlocking projects prior to 2012 and, in fact, the first of the five standalone interlockings projects tendered in the 2008-2018 period falls within this first period when only Siemens and Thales competed. But, for the remaining […] tenders, Alstom has bid […], thus exerting a competitive constraint on the incumbents Siemens and Thales that would be eliminated as a result of the Transaction.

(995) Second, the Parties are close competitors in Romania, and are perceived as such by the Parties themselves.

(996) […]. For example, […]. Thales was the ultimate winner of that project. […]. Contrary to what is argued by the Notifying Party, […].[824]

(997) […],[825] […].[826] […].[827] In their response to the Statement of Objections, the Parties submit that this document does not show that the Parties are "*closer competitors*" to each other than rivals, and refers to Siemens' internal document for the Logoj-Ilia […].[828] What the Notifying Party fails to observe, however, is that when ranking its rivals for the Logoj-Ilia project, […]. This shows again that the Parties are perceived by each other as close competitors.

(998) In relation to the Station Videle project, Alstom also addresses the suitability of its solution to the customer requirements for the project in its gap analysis by stating that […].[829]

(999) Third, as the Transaction reduces the number of viable alternative suppliers of standalone interlocking projects in Romania, this arguably also reduces any buyer power that CFR may have had prior to the Transaction. To the extent that the customer opts between homologated suppliers, that number would fall from three to two. While the Notifying Party has claimed that there are "*at least five suppliers*"[830] for the infrastructure manager to choose from, only three are homologated and the infrastructure manager has a track record of only procuring interlockings from one of the three homologated suppliers.[831] Therefore, the Commission concludes that CFR cannot be considered to hold sufficient bargaining power post-merger to constrain the Merged Entity.

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823 This includes […] standalone interlockings projects as well as all […] ETCS re-signalling projects tendered during the 2008-2018 period.

824 […].

825 Parties' response to the Statement of Objections, Mainline signalling, page 64.

826 Alstom's internal document, […].

827 Alstom's internal document, […].

828 Parties' response to the Statement of Objections, Mainline signalling, footnote 163: […].

829 Alstom's internal document […].

830 Parties' response to Statement of Objections, Mainline signalling, page 99.

831 In the case of Alstom, this procurement has been made in the context of re-signalling projects.

(B.iii) Other countries where a competitive constraint is exercised

(1000) In addition to countries in which affected markets arise and those in which the Parties have actual bidding overlaps, the Commission takes the view that the Transaction could also lead to unilateral horizontal effects in countries in which one of the Parties has actual sales or has participated in bids, while the other or both Parties are potential bidders as a result of homologated products (see recitals (1003)-(1004) concerning Belgium).

(1001) This group of countries would also include those in which the Parties may not have participated in any standalone interlocking tenders, or have a homologated product, but have offered interlocking technology in the context of a re-signalling project, and are thus potential bidders that exert a competitive constraint (see recitals (1014)-(1015), and (1018)-(1022) concerning Hungary), in a similar manner as the Parties have argued in relation to Ansaldo in the UK following its win of a re-signalling tender for the Ferriby-Gilberdyke line in 2016.[832]

(1002) The Commission considers that the Transaction will lead to unilateral horizontal effects in two such markets, namely **Belgium** and **Hungary**. The market size and competitors active on those markets are included in Table 35:

Table 35: Standalone interlocking projects, market shares (order intake, 2008-2018)

Geography	Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
Belgium	[…]	[…]	[…]	[90-100]%	[0-5]%	[90-100]%	-
Hungary	[…]	[…]	[…]	[0-5]%	[30-40]%	[30-40]%	Thales: [60-70]%

Source: Notifying Parties response to the Commission's request for information RFI 79, Annex 5.3.

(a) Belgium

(1003) In Belgium, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will be dominant with a market share of [90-100]%, based on Alstom's share alone. Alstom is the only supplier that has provided standalone interlocking projects in Belgium: it was awarded a framework contract in the 1990s and an additional non-contestable framework contract in 2015.[833]

(1004) Siemens has a homologated interlocking in Belgium in connection with the ETCS re-signalling project it was awarded in 2015.[834] The Commission is not aware of any other suppliers that have a homologated interlocking in Belgium.[835]

(1005) The Notifying Party submits that the Transaction will not give rise to competition concerns on the market for standalone interlocking projects in Belgium as the Parties do not compete against each other in Belgium. Alstom was awarded in 2015 […].

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832 Form CO, Chapter C.1, paragraph 380: The Notifying Party argues that Ansaldo would be well placed to participate in future projects for standalone interlockings as a result of the interlocking technology it included and homologated as a result of its successful bid for a re-signalling tender (not a standalone interlocking tender), namely the Ferriby-Gilberdyke re-signalling project.

833 Form CO, Chapter C.1, paragraph 268.

834 Form CO, Chapter C.1, paragraph 269-269.

835 The Parties confirm this in their response to the Statement of Objections, Mainline signalling, page 79 (Table 10).

The Notifying Party explains that Siemens has only supplied interlockings as part of the ETCS re-signalling project it was awarded by Infrabel in 2015. The Notifying Party submits that the infrastructure manager supported entry by Siemens by allowing it to homologate its interlocking after the contract had been awarded and this was one of the steps taken by Infrabel to attract participants to its re-signalling tender. The Notifying Party submits that the Parties will not be able to exert any market power given the characteristics of the Belgian interlockings market, namely that Infrabel has the ability to introduce new suppliers if it wishes to do so; the Parties have no incentive to take steps that would risk antagonising their only customer; and finally, as Infrabel is a member of the EULYNX consortium and could introduce EULYNX interfaces for future interlockings projects, this could facilitate the introduction of new suppliers and facilitate Infrabel to purchase and install interlocking equipment itself. The Merged Entity will, according to the Parties, be constrained by the threat of new entry and the threat of exclusion by the infrastructure manager from its future projects.[836]

(1006) In their response to the Statement of Objections, the Parties repeat their arguments already made in the Form CO and response to the Article 6(1)(c) decision. The Parties submit, in particular, that the Statement of Objections fails to recognise Infrabel's ability to, and track record of, introducing new suppliers if it wishes to do so, pinpointing to the homologation of Siemens as an interlockings supplier in Belgium as a "*very successful effort*" by Infrabel to "*ensure competitive outcomes in consequent tenders*".[837]

(1007) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in the market for standalone interlocking projects in Belgium. More specifically, Siemens exercises a competitive constraint on Alstom as the only other supplier with a homologated interlocking in Belgium. This constraint would be eliminated by the Transaction.

(1008) First, the Parties are close competitors and thus exert a significant competitive constraint on one another, as perceived by the customer and the Parties themselves.

(1009) In its response to the market investigation, […] confirms that the Parties are close competitors by stating as follows: "*Alstom and Siemens are close competitors. In tenders for which they did not bid together but separately, competition was fierce on all grounds*".[838] In relation to interlockings specifically, […] submits that until 2014 "*Alstom has been the almost exclusive supplier of interlocking systems*", namely until Siemens became an interlocking supplier in its own right in Belgium through its participation to the tender for and win of the re-signalling project awarded to it in 2015.[839]

(1010) The Parties' internal documents confirm that the Parties are close competitors. […].[840]

(1011) Second, the result of the market investigation does not support the Notifying Party's view that Infrabel has sufficient buyer power to counter any price increase by the

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836 Form CO, Chapter C.1, paragraphs 604-607; Parties' response to the Article 6(1)(c) Decision, pages 82-83.

837 Parties' response to the Statement of Objections, Mainline signalling, pages 100-101,

838 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 25.9 (ID2172).

839 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, questions 3.1.2 and 25.9 (ID2172).

840 Alstom's internal document, […].

Merged Entity. To the extent that the infrastructure manager can only choose between homologated suppliers, the Transaction would leave only one option available to it, namely the Merged Entity.

(1012) While the Notifying Party argues that Infrabel is able to introduce new suppliers and had previously done so, this is not supported by the evidence in the case file. The Commission recognises that […] that it allows tender participants to seek authorisation for their signalling solutions following the award of the contract being tendered and has done so in the context of the 2015 re-signalling project with the aim of generating wider interest in its tender among signalling suppliers.[841]

(1013) As submitted by the Notifying Party, Infrabel's strategy may have made it possible for Siemens to win the re-signalling contract and thereby become a homologated supplier of interlockings in Belgium. This experience does not, however, show that Infrabel will be able to attract new entry post-Transaction "*if it wishes to do so*", as suggested by the Parties.[842] In fact, in the 2015 re-signalling tender, the "*track record*" that the Parties refer to (in their response to the Statement of Objections[843]) shows that despite generating interest in the re-signalling tender from other signalling players, namely Ansaldo, Thales and Bombardier, it was only Alstom and Siemens that ultimately were able to submit conforming offers. Also, by awarding the contract to Siemens, Infrabel did not introduce or select a new player in mainline signalling in Belgium, but instead […].[844] […].[845] Infrabel's allegedly "*successful effort to ensure competitive outcomes in consequent tenders*"[846] by awarding the 2015 re-signalling contract to Siemens, therefore would be short lived as the Transaction would remove such competition from future tenders.

(b) Hungary

(1014) In Hungary, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will have a market share of [30-40]%, based on Siemens' share alone.

(1015) There were eight contestable standalone interlocking projects in Hungary in the period 2008-2018. Siemens bid in […]. There were […]. As far as the Commission is aware, Siemens and Thales are the only suppliers with a homologated interlocking in Hungary.[847]

(1016) In their response to the Statement of Objections, the Parties submit that the Transaction does not give rise to any competition concerns in Hungary as Alstom has no history of bidding in standalone interlockings projects in the country and has never been a "*credible potential entrant into the ETCS wayside market in Hungary*" as it has bid in […] of the […] ETCS wayside ATP re-signalling projects between 2012-2018, […].[848]

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841 [...]'s non-confidential response to Q21 – Mainline Signalling – Questionnaire to customers, question 18.3.2.

842 Parties' response to the Statement of Objections, Mainline signalling, paragraph 254.

843 Parties' response to the Statement of Objections, Mainline signalling, paragraph 254.

844 Alstom's internal document, […].

845 Alstom's internal document, […].

846 Parties' response to the Statement of Objections, Mainline signalling, page 101.

847 The Parties confirm this in their response to the Statement of Objections, Mainline signalling, page 79 (Table 10).

848 Parties' response to the Statement of Objections, Mainline signalling, page 105.

(1017) The Commission, however, considers that the Transaction would cause a significant impediment to effective competition in the market for standalone interlocking projects in Hungary in view of the elimination of the competitive constraint exerted by Alstom.

(1018) […].

(1019) First, while Alstom […], it is an active mainline signalling supplier for contracts tendered by customers in Hungary,[849] in particular it has participated in […] tenders involving interlocking technology, […].

(1020) The bidding data shows that there are very few actual bidders for mainline signalling projects in Hungary, this is true both for wayside signalling projects in general and wayside signalling projects involving interlockings, where […], have participated in tenders. In standalone interlocking projects, the only bidders are […]. For re-signalling projects involving an interlocking component, also […] tenders in the relevant period. Based on the bidding data, […].

(1021) Alstom is therefore […]. Alstom is therefore […] competitive constraint that the […] established players in standalone interlockings market in Hungary face, and this constraint would be eliminated by the Transaction.

(1022) Second, while the Notifying Party […], this is not supported by the facts in the market. Alstom is, after all, one of only a few mainline signalling suppliers that has a proven ability to bid and win interlocking projects in countries that are new to it in the EEA. The Transaction would remove this competitive threat. In fact, and in addition to Thales that already has an interlocking presence in Hungary, only Bombardier and to a lesser degree Ansaldo have shown an ability to enter new countries for standalone interlocking projects in the EEA to the same degree as the Parties. Based on the bidding data submitted by the Parties […].

(1023) Third, the Commission considers that any potential buyer power of the infrastructure manager in Hungary would be insufficient to overcome the loss of competition from the Transaction given the small number of suppliers who present potential bidding constraints for standalone interlocking projects in Hungary and based on the small number of actual bidders (namely […]) that the infrastructure manager has so far been able to attract for standalone interlocking projects.

(C) Entry and expansion by Asian suppliers

(1024) In relation to the potential entry of Asian players, and in particular CRSC, in the markets for standalone interlockings in the various national markets, the Commission's view is that entry is unlikely in the foreseeable future. To date CRSC has not been awarded any contract nor participated in any mainline signalling tenders anywhere in the EEA and contacts between CRSC and mainline signalling customers have been scarce so far. Only 18% of infrastructure managers that responded to the market investigation have had contacts with CRSC.[850] Mainline signalling customers and competitors consider it unlikely that CRSC enters the markets in the EEA in the next five years. None of the competitors who replied to the Phase I market investigation considers that Asian suppliers would enter in the next five years or that CRSC will be able to submit a credible bid. All competitors who responded also stated that it will take CRSC more than five years to become a credible mainline

849 Both ETCS OBU projects and ETCS wayside ATP re-signalling projects.

850 Q9 – Mainline Signalling – Questionnaire to customers, question 38.

signalling player in the EEA.[851] A customer […] points that "*Asian players would not be shortlisted for the time being even if they were to place bids in* […]*'s tenders as they are considered "high risk": Asian players are no[t] represented/members in UNISIG*".[852]

(1025) Furthermore, mainline signalling systems (including interlockings) are of critical importance as they ensure the safety of railway operations.[853] The prospect of a Chinese player such as CRSC being awarded a significant signalling contract could also raise national security concerns among customers, namely the state-owned railway infrastructure managers that may be reluctant to do so. This is confirmed by […] that explains as follows: "*Sourcing signalling solutions from CRSC raises also national security issues, which would dissuade Infrabel from procuring from CRSC*".[854]

(1026) As a result, CRSC and other Asian players will unlikely exert a competitive constraint on the Merged Entity in tenders for standalone interlocking projects in the various national standalone interlocking markets.

(1027) Therefore, for the reasons stated above, the Commission considers that any potential entry of Chinese suppliers would not be enough to overcome the significant impediment to effective competition that would result from the Transaction.

(D) Countervailing buyer power

(1028) In addition to what has been stated in relation to each national market for standalone interlockings, and contrary to the Parties' response to the Statement of Objection, the Commission considers, more generally, that infrastructure managers lack sufficient buyer power to overcome the reduction in competition resulting from the Transaction.

(1029) First, the bidding data shows that for each of the countries for which competition concerns are identified, there are limited number of bidders in the contestable tenders that have been organised in the 2008-2018 period. The elimination of one of the competitors will reduce the available options to the customer, thus reducing the customers' countervailing power. The Parties suggest that the limited number of suppliers is a choice of the customer itself: "*a reduced pool of suppliers is typically due to decisions made by the infrastructure manager rather than a lack of alternative options*" and "*most infrastructure managers prefer to focus on two or three suppliers, instead of working with a larger number of competitors, as this facilitates management of the network*".[855] Whatever the customer's preference, there is nothing to suggest that post-Transaction, in each of the relevant countries, the customer would be able to easily turn to a wider pool of potential suppliers if it so wished. It needs to be borne in mind that in six out of the eight countries assessed in this section the Parties already have a homologated product, which has required significant time and cost of each of the Parties. The Transaction would eliminate one of the Parties and would place those homologated products in single hands, namely those of the

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851 Q9 – Mainline signalling – Questionnaire to competitors, question D.D.2.3.

852 Agreed non-confidential minutes of call with […], 23 January 2018, page 2 (ID747).

853 Rail infrastructure is a critical infrastructure for Member States. Rail transport is one of the European Critical Infrastructure (ECI) sectors foreseen by Council Directive 2008/114/EC of 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection (article 3 and Annex I).

854 Agreed non-confidential minutes of a call with [...], 9 March 2018 (ID6138).

855 Parties' response to the Statement of Objections, Mainline signalling, pages 73-74.

Merged Entity. Any attempts by the customer to switch to a new supplier post-Transaction which would have a comparable presence as each of the Parties had pre-Transaction, including a homologated product, would be difficult and require significant investments and time.

(1030) Second, the market investigation confirms that while some strategies are available to customers to encourage entry generally, customers face limitations to sponsoring entry for interlocking projects. These limitations reduce any buyer power customers may otherwise have had. The complexity of interlocking projects is one factor that restricts customers from sponsoring entry, in addition to time constraints. […] states that "*For less complex projects (i.e., not involving interlockings) this strategy [of relaxing the requirements for authorisation (e.g., by allowing participants to seek authorisation following the award of contract] has seen some success. For interlockings, however, there have been two relatively small-scale examples of entry in recent years* […]" and goes on to state that in relation to the example provided by the Notifying Party, namely the sponsorship of Ansaldo […], this represents only […]which are otherwise supplied by the Parties (or their predecessors).[856]

(1031) Third, the market investigation does not clearly conclude that it is possible for customers to encourage entry into interlocking projects by increasing the size of the project. For example, […] notes that "*bigger projects implyies [sic] less competence as big companies make it impossible for Little ones to play*".[857]

(E) Conclusion

(1032) For the reasons set out in sections 6.3.2.4 (B)-(D), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK.

6.3.2.5. ETCS ATP wayside overlay projects (standalone)

(A) The Notifying Party's views

(1033) The Notifying Party argues that markets are national and there are a significant number of other actual and potential competitors in each of those national markets for ETCS ATP wayside projects, with the Parties posing no greater constraint as potential competitors to each other than any other potential competitor. In addition, the other potential entrants in these markets will continue to exert significant constraints.[858] In the Parties' view, customers in all affected national markets have sufficient competitive alternatives available, as demand is concentrated in the hands of a small number of sophisticated monopsonistic purchasers.[859]

(1034) In the Notifying Party's view, ETCS creates an opportunity for new suppliers to deliver wayside ATP systems across the EEA. As infrastructure managers install ETCS wayside systems, competitors from across the EEA who have developed such

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856 Non-confidential response by […] to Q21 – Mainline signalling - Questionnaire to customers, question 18.3.2 (ID5223); […] […] has one pilot ETCS application on the Cambrian line from Shrewsbury to Aberstwith for which it used its own interlocking. All other interlockings are provided by the Parties or their predecessors.

857 Non-confidential response by […]to Q21 – Mainline signalling - Questionnaire to customers, question 18.6.2 (ID4060).

858 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraphs 126-129.

859 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraphs 157-161.

systems can compete to deliver them, although each supplier must still address any potential remaining interface issues and authorisation requirements which, in the Notifying Party's view, are not however a barrier to a new supplier.[860]

(1035) In their response to the Article 6(1)(c) decision, the Parties argue that the Commission overlooks the competitive conditions in the market for ETCS ATP wayside projects, in particular (i) the competitive constraints imposed by other competitors both in affected and potential relevant markets, and (ii) the Parties face significant buyer power from sophisticated customers and the threat of entry is a credible constraint for the Parties.[861]

(1036) The Notifying Party further considers, in relation to ETCS ATP wayside overlay tenders that Infrabel strategically designed tender K320 in Belgium in such a way as to encourage bid participation by players other than Alstom despite the fact they would first have to homologate an interlocking before being able to execute the project.[862]

(1037) The Parties also submit in relation to the Article 6(1)(c) decision that the assessment of market share and bidding data at EEA level is flawed because: (i) historic market shares should not be the basis for the Commission's economic analysis, (ii) the bidding analysis should also take into account the threat imposed by other competitors actively bidding across the EEA, for example, there are 7 suppliers actively bidding for projects in the EEA, and (iii) Thales' significant competitive constraint on the Parties is disregarded.[863]

(1038) In their response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and in their response to the Article 6(1)(c) Decision. They further submit that (i) a combined market share of [30-40]% (EEA) is moderate and not indicative of a dominant position,[864] (ii) as the Parties do not have full visibility of their competitors' market shares (i.e. those "unidentified"), the market shares of competitors are underestimated (especially those prior to 2012). According to the Parties, if these "unidentified" shares are allocated proportionally to the orders the Parties have identified, the resulting shares are much higher.[865] The Parties further state that the assessment based on contestable projects only is biased against the Parties[866] and the bidding analysis does not support that Siemens and Alstom are particularly close competitors because […], the analysis based on the geographic footprint of their bidding activities is not relevant to assess closeness of competition, and the case file does not contain any evidence that indicates that the Parties have any greater incentive than other players to expand their geographic scope.[867] Further, according to the Parties, the bidding analysis disregards the competitive constraint imposed by other competitors that are bidding across the EEA;[868] the responses to the

860 Form CO, Chapter C.1, paragraph 214.

861 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraph 124.

862 Form CO, Chapter C.1, paragraph 266; For example, Infrabel made available the interface information required to overlay ETCS Level 2 ATP on the legacy interlocking infrastructure, bundled works planned for the period until 2025, published a Masterplan of its ambition to fully harmonise the network to ETCS Level 2, and allowed bidders to homologate their interlockings only after the award of the tender.

863 Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraphs 185-189.

864 Parties' response to the Statement of Objections, Chapter C1, paragraph 270.

865 Parties' response to the Statement of Objections, Chapter C1, paragraphs 271-274.

866 Parties' response to the Statement of Objections, Chapter C1, paragraphs 275-276.

867 Parties' response to the Statement of Objections, Chapter C1, paragraphs 278-292.

868 Parties' response to the Statement of Objections, Chapter C1, paragraphs 293-296.

market investigation are inconclusive as regards closeness of competition;[869] the Parties' internal documents quoted in the Statement of Objections are highly selective and have been misinterpreted;[870] the assessment of entry is contradicted by evidence in the case file,[871] and customers have proven ability to attract new suppliers (by bundling projects, sponsoring entry and providing interfacing information).[872]

(B) The Commission's assessment - EEA level

(B.i) Parties and their competitors

(1039) Siemens' ETCS ATP products are Trainguard 100, Trainguard 200 and Trainguard 300, for Level 1, Level 2 and Level 3 applications respectively. Alstom's ETCS ATP platform is the ATLAS product line, of which it currently markets A500 and A400.

(1040) Bombardier's offering comprises INTERFLO 250 (ETCS L1), INTERFLO 450 (ETCS L2) and INTERFLO 550 (ETCS L3). Thales supplies AlTrac 6413 ETCS TSS (L1), AlTrack 64821 RBC (RBC solution for L2), AlTrack 6415 OBS (integrated systems for ETCS L1 and L2). Ansaldo and CAF (Auriga L1 and Auriga L2) also provide ETCS ATP wayside solutions.

(B.ii) Market shares

(1041) At EEA level, based on market share figures (by order intake) in the period 2008-2018, the Merged Entity will become the market leader, with a combined market share of [30-40]% (Siemens: [20-30]%; Alstom: [10-20]%). Thales and Ansaldo will be distant competitors and the remaining suppliers will have significantly smaller market shares, all below [5-10]%.

Table 36: ETCS ATP wayside projects (overlay only), market shares, 2008-2018, order intake (by value)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[10-20]%	[20-30]%	**[30-40]%**	Thales: [10-20]% Ansaldo: [10-20]% AZD: [5-10]% Bombardier: [5-10]% Mermec: [0-5]% CAF: [0-5]% Unidentified: [20-30]%

Source: Notifying Parties' response to the Commission's request for information RFI 131, Annex Q1

(1042) While the Commission acknowledges that the competitors' market share may be understated in Table 36, as argued by the Parties in their response to the Statement of Objections, the Commission considers that even if the "unidentified" market shares were to be attributed following the Notifying Party's approach (which attributes the "unidentified" market shares in the same proportion as the "identified" market shares of the Parties' competitors), the resulting picture of the market would not substantially change. Thales and Ansaldo would remain at a distance of the Merged

869 Parties' response to the Statement of Objections, Chapter C1, paragraph 297.
870 Parties' response to the Statement of Objections, Chapter C1, paragraphs 298-300.
871 Parties' response to the Statement of Objections, Chapter C1, paragraphs 301-306.
872 Parties' response to the Statement of Objections, Chapter C1, paragraphs 307-311.

Entity ([10-20]% against [30-40]%) and other rivals such as AZD or Bombardier would be much smaller ([10-20]% and [10-20]% respectively). The Commission also notes that if market shares for the 2012-2018 are instead used, as provided by the Notifying Party,[873] the share of "unidentified" order intake is much lower ([10-20]%), and the resulting market shares of competitors (without attributing this [10-20]% market) share are [10-20]% for Ansaldo, [10-20]% for Thales, [5-10]% for AZD and [5-10]% for Bombardier, therefore much closer to the situation depicted in Table 36.

(1043) If only the contestable projects in the period 2008-2018 are considered, the market share of the Parties and their competitors would be higher, as shown in Table 15. The Parties would be dominant on the market with a combined market share of [50-60]% (Siemens: [30-40]%; Alstom: [20-30]%) and the next closest competitor, Thales, would be significantly smaller with a share of [20-30]%. Bombardier would have a market share of [5-10]% and the remainder would be in the single digits. The Commission acknowledges that these market shares for contestable projects are based only on tenders known to the Parties and could therefore overestimate the Parties' market shares to the extent that it can be presumed that all those contestable tenders in which at least one of the Parties participated would be included in the sample used to calculate the contestable market share figures (as such tenders would certainly be known to at least the Party that participated in the tender) while the possibility cannot be excluded, however unlikely, that one or more contestable tenders for ETCS overlay projects in the EEA in which neither of the Parties participated and neither of the Parties had knowledge of, would have been omitted from the sample used to calculate the market share figures. In any event, the Commission's conclusion in recital (1101) would not change, whether the Parties' market share is expressed in terms of contestable projects only or includes also non-contestable ones, for the reasons set out in recitals (1041)-(1100).

Table 37: ETCS ATP wayside contestable projects (overlay only), market shares, 2008-2018, order intake (by value)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[20-30]%	[30-40]%	**[50-60]%**	Thales: [20-30]% Bombardier: [5-10]% Ansaldo: [0-5]%, CAF [0-5]% Others: [10-20]%

Source: Commission based on CPL

(B.iii) Closeness of competition

(a) The market investigation confirms the Parties are close competitors

(1044) The results of the market investigation confirm that customers perceive Siemens and Alstom generally as close competitors. Siemens was mentioned most frequently by responding customers as the best alternative to Alstom, while Alstom was perceived to be the second best alternative to Siemens after Thales in terms of products, product ranges, competitiveness, quality, and innovation.[874]

873 Notifying Party's response to the Commission's request for information RFI 79, Annex 5.2.

874 Q9 – Mainline signalling – Questionnaire to customers, questions 27.1, 27.3.

(1045) […], rates the ETCS ATP wayside solutions of Siemens and Alstom identically in terms of technology/level of innovation, ability to adapt to customer requirements, reputation, reliability and safety, price, customer service, product breadth, project management and integration capability as well as overall.[875]

(1046) One customer, [...], explains that "*Siemens, Alstom and Thales are significantly more advanced than other signalling players, including Bombardier and Ansaldo STS*".[876]

(1047) When asked whether the participation of Alstom in mainline signalling tenders had any impact on the customer's ability to obtain better conditions from Siemens, 27% of customers stated that Alstom's participation in a tender had such an effect, and similarly 33% of respondents considered that the tender participation of Siemens had allowed to obtain better conditions from Alstom.[877]

(1048) [...] considers that "*Siemens and Alstom are very close competitors in terms of product offering. They can both be considered as incumbent companies*".[878] [...] also states that no other competitor comes close to the Parties: "*Hitachi-Ansaldo, in its bid for the 2014 ETCS L2/IL project, seemed technically less capable than Siemens and Alstom*…".[879] While [...]'s observation refers to the ETCS re-signalling component of the project, considering the added complexity involved in addressing ETCS overlay projects, including research and innovation capabilities, it is not likely that Ansaldo would be considered as close competitor as the Parties are with each other when addressing the ETCS overlay market.

(1049) Moreover, the market investigation shows that the participation of Siemens in tenders in which Alstom bids has a positive effect on […]'s ability to obtain better conditions from Alstom. No other supplier, apart from Siemens, has the same constraining effect on Alstom.[880]

(1050) […] states that the Transaction will "*eliminate one competitor in the fields of ETCS, OBU and trains. The Merged Entity will likely have significant market power. In our view, there is a credible risk that the Merged Entity could exploit this strong market position in the future*".[881] […] also states in relation to ETCS wayside ATP that "[t]*here is a limited range of suppliers for balises for ETCS technology. Other suppliers buy these products externally. The proposed [m]erger of Siemens and Alstom will reduce the number of balise manufacturers*".[882]

(1051) The deployment of ETCS wayside signalling is ongoing on the German mainline rail network, but yet only limited deployment of ETCS has occurred. […] contends that […].[883] […]According to the plans by Deutsche Bahn, there will be significant ETCS roll-out in coming years. The infrastructure managed has "*outlined plans for the deployment of ETCS across its rail network, including the full rollout of the technology on the 1450km TEN-T Rhine-Alpine corridor and more than half of its cross-border lines by 2022*".[884] In view of […] the published plans by Deutsche

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875 […]'s response to Q21 – Mainline signalling – Questionnaire to customers, question 20 (ID4469).

876 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 27.2 (ID2825).

877 Q9 – Mainline signalling – Questionnaire to customers, questions 25, 26.

878 [...]'s response to Q9 – Mainline Signalling – Questionnaire to customers – question 23.1 (ID2172).

879 [...]'s response to Q9 – Mainline Signalling - Questionnaire to customers – question 24.4.1 (ID2172).

880 [...]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 25 (ID2172).

881 […] 's response to Q9 – Mainline signalling – Questionnaire to customers – question 60.6.1 (ID2435).

882 […] 's response to Q21 – Mainline signalling – Questionnaire to customers, question 5 (ID5726).

883 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, question 2 (ID2435).

884 Form CO, Chapter C.1, paragraph 235-236, footnote 114 and press article by International Railway Journal (IRJ), "*DB to push ahead with ETCS rollou*t", 26 January 2018, available at

Bahn, significant ETCS wayside projects are therefore likely to be tendered shortly. According to the National Implementation Plan,[885] ETCS should be deployed by 2023 on more than 1800 kilometres of track, from the current roughly 200 kilometres.[886] These plans are taking shape.[887]

(1052) As explained […], Siemens and Alstom are among the suppliers of ETCS wayside ATP projects in Germany […] together with Thales, Bombardier and Ansaldo.[888] In Germany, the competitive constraint exerted by Alstom relates particularly to the ETCS ATP market, in which Alstom is together with Siemens a leading innovator.[889] In the Commission's view, this statement highlights the Parties' role as leading innovators in ETCS ATP projects.

(1053) As explained by […], the suppliers of mainline signalling systems closest to Alstom in terms of product offering and technical capabilities are Siemens and Thales, whereas the closest suppliers to Siemens are Thales and Alstom.[890] […] also ranks Siemens (and Thales) as the best alternative to Alstom in terms of products, product ranges, competitiveness, quality and innovation, while Alstom is ranked second (after Thales) as the best alternative to Siemens in relation to the same factors.[891]

(1054) In the UK, the market investigation shows that the Parties are each other's closest competitors. […] submits that "no other potential competitor [apart from the Parties] has… a sizeable GB workforce and GB base, along with the requisite scale of operations and established geographical presence across GB, to provide sales, R&D planning, design, project management, IT and other services as part of an end-to-end solution".[892] […] also considers that no other supplier has access to the necessary interoperability information to ensure interoperability with the Parties' installed base, nor do they have […].

(1055) The market investigation confirms that even at the level of the framework tender, the merger will eliminate an important competitor for the next tender period, CP 6, which can expect to see more ETCS work. […] submits that "*a number of third party*

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http://www railjournal.com/index.php/signalling/db-to-push-ahead-with-etcsrollout html; see National ETCS Implementation Plan, 11.12.2017, available at: https://ec.europa.eu/transport/sites/transport/files/rail-nip/nip-ccs-tsi-germany-en.pdf

885 https://ec.europa.eu/transport/sites/transport/files/rail-nip/nip-ccs-tsi-germany-en.pdf

886 See National ETCS Implementaion Plan, 11.12.2017, page 22, available at: https://ec.europa.eu/transport/sites/transport/files/rail-nip/nip-ccs-tsi-germany-en.pdf

887 As recently as September 2018, Deutsche Bahn and the German government jointly announced the results of a feasibility study conducted by the government and proposals therein for a first phase of "accelerated roll-out" of the latest generation ETCS across the entire 33 000 kilometres of the German rail network to ensure, among other things, increased reliability of the German rail system, raising rail capacity, raising the energy efficiency of the rail network, lowering its operating costs, and fostering seamless international rail traffic. For the initial phase from 2020 to 2025 the proposals include equipping the entire rail corridor running from the North and Baltic Seas through central Germany and Bavaria to the Brenner Base tunnel route with ETCS, as well as equipping the Cologne-Rhine/Main and Dortmund-Bielefeld-Hanover high-speed lines and Magdeburg-Knappenrode line with ETCS. These projects would go beyond what is foreseen by the ERTMS National Implementation Plan and would require investments between 2018 and 2025 amounting to around EUR 1 700 million. See press release by Deutsche Bahn and Bundesministerium fur Verkehr und digitale Infrastruktur, "*Digitalization is the future of the German rail system*", 19 September 2018.

888 Agreed non-confidential minutes of a call with […] of 28 November 2017 (ID3568).

889 […] 's response to Q9 – Mainline signalling – Questionnaire to customers – questions 25.9, 47 (ID2435).

890 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 24 (ID2207).

891 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 27 (ID2207).

892 […].

competitors ([…]) bid but failed in the competition against Siemens and Alstom in CP5" for reasons that included the failure to have approved products in the UK.[893]

(1056) […] further explains that "…As a result, Siemens and Alstom are moving further ahead of competitors in conventional signalling". The problem, […]is that until conventional signalling is completely phased out, the Siemens ETCS wayside ATP, in particular RBCs, will only work with the Siemens interlockings (and the same is true for Alstom). To the extent that another supplier may be able to obtain the relevant information in order to interface its system with the Parties' interlockings […] that "access to the intellectual property, design and compatibility specifications necessary to ensure interoperability with the merging parties' installed base at the fringes, where the new project meets existing infrastructure".[894]

(b) The Parties' participation in tenders confirms they are close competitors

(1057) First, the Parties meet frequently in tenders for ETCS ATP wayside overlay projects in the EEA and thereby exercise a competitive restraint on one another. Of the […] contestable[895] tenders for ETCS ATP wayside overlay projects in 2008-2018 in the EEA, the Parties met each other on average in […]. The only other competitor that the Parties meet […].

(1058) Second, Siemens, together with Thales, was the most frequent rival bidder […]. Alstom was among the most frequent bidders […] have submitted more frequently competing bids for Siemens than Alstom.

(1059) Third, the Parties are among the most frequent competitors in tenders for ETCS ATP wayside overlay projects in the EEA. Siemens […] and Alstom […], when looking at the […] contestable[896] tenders for ETCS ATP wayside overlay projects in 2008-2018 in the EEA. Figure 18 shows the number of ETCS ATP wayside overlay tenders that the Parties and their competitors bid in during the period 2008-2018.

Figure 18: Bidding in contestable ETCS ATP wayside overlay projects (2008-2018)

[…]

Source: CPL

(1060) Fourth, the geographic spread of the Parties' bidding activity in the EEA is matched only by Thales showing the Parties have the ability to bid for ETCS ATP overlay projects across the EEA. The Parties bid in more ETCS ATP wayside overlay tenders and in more European countries than almost all of their competitors over the period 2008-2018. The Parties together with Thales are […] suppliers bidding for ETCS ATP wayside overlay projects in at least […] countries in the EEA (see

893 Agreed non-confidential minutes of conference call with […], 19 April 2018 (ID2493).
894 […].
895 The indication of which were the contestable tenders was provided by the Notifying Party.
896 The indication of which were the contestable tenders was provided by the Notifying Party.

(1061) Table 38). Ansaldo and Bombardier have bid in […] countries. CAF and AZD have […] countries each. No other suppliers have participated in ETCS ATP wayside overlay tenders in the EEA in 2008-2018, according to the information available to the Commission.

(1062) Table 38 shows the countries in which the different suppliers participated in ETCS ATP wayside overlay tenders in 2008-2018.

(1063) The Commission considers that the Parties' highly geographically diverse bidding activity may be an indication of their enhanced ability, relative to competitors, to bid for ETCS ATP wayside overlay projects in a greater number of countries. This is particularly relevant as the roll out of ETCS technology develops and new countries tender for ETCS projects. The Commission's view is supported by the results of the bidding data, which shows that the Parties are among the most successful players in challenging incumbent suppliers in the EEA. […]. As a result, the Commission's view is that the Parties are among the most capable of suppliers who can bid and thereby exert a competitive constraint in tenders outside of their home countries.

(1064) Fifth, in addition to the Parties' proven ability to bid for projects and thereby exert a competitive constraint in a greater number of countries than almost all of their competitors, the Parties' internal documents show […]. For the reasons stated, the Commission considers that the Parties are among few competitors with the proven ability to […].

(1065) For example, an Alstom internal document […].[897] […][898] […]. This shows that Alstom is among the capable providers of expanding to market where it is not present, including a major European market such as Germany.

(1066) Siemens also shows […][899] […]. Post-Transaction, any competitive bidding competition between Siemens and Alstom in Germany that would have otherwise existed by virtue of their aggressive expansion plans would be lost. The same applies to those countries where Siemens is planning to bid and Alstom is already present.

(1067) Sixth, the only other competitors who, based on the bidding data, have proved to have the ability to bid across the EEA – even though to a lesser degree than the Parties – are Bombardier and Ansaldo. Smaller suppliers are likely to lack the financial and other resources required to geographically expand the scope of their bidding activity across the EEA in the near future so as to exert a significant bidding constraint on the Merged Entity. The Parties themselves acknowledge that "*acquisition by a large international player may well give access to additional financial and other resources that can support such bidding investments*".[900] The Notifying Party later clarified in its reply to a request for information that this quote related to the specific example where Ansaldo faced financial difficulties, and was acquired by Hitachi.[901] Therefore, it would appear even Ansaldo before its acquisition and being an already relatively large player, faced financial difficulties in competing. The market investigation shows that a company's financial resources play a key role in its ability to bid for tenders. [...] notes that its "*capacity to bid is directly linked to* [...] *size. The bidding budget of a company is directly proportional to revenues*".[902]

(1068) In relation to the Parties' arguments that the Statement of Objections does not reflect the strategic moves of CAF and AZD Praha to expand their geographic scope of their

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897 Form CO, Chapter C.1, 5.4 […].

898 Alstom's internal document […].

899 Siemens' internal document […].

900 Notifying Party's response to the Commission's request for information RFI 78, paragraph 27.3.

901 Notifying Party's response to the Commission's request for information RFI 131, paragraph 3.1.

902 [...] response to the Commission's request for information RFI 105, question 6 (ID5763).

activities,[903] the Commission considers that this does not undermine the statements in recital (1067), in particular because, as bidding data confirm, and even taking into account the strategic moves to enter new countries (eventually including those mentioned in footnote 1022 if those were to be confirmed), CAF and AZD have a much smaller presence in the EEA than the Parties, Thales, Bombardier and Ansaldo, both in number of bids and wins as well in the geographic scope of its activities.

(1069) Seventh, the Parties are among the top four suppliers most likely to win an ETCS ATP wayside overlay tender. The bidding data shows that Siemens was the second most frequent winner with […]%, behind Thales with […]%, followed by Alstom and Bombardier with each […]%. Value-weighted winning rates show that Siemens is the most successful bidder with a value-weighted winning rate of […]%, followed by Thales with […]% and by Alstom as third most successful bidder in terms of value with […]% winning rate. When Alstom loses a tender, the most likely supplier to win is Thales followed by Siemens: of the […] contestable tenders lost by Alstom, […] were won by Siemens and […] were won by Thales. The most likely supplier to win when Siemens loses is Thales: of the […] contestable tenders that Siemens lost, Thales won […] and Bombardier and Alstom won […] and […] respectively. In that respect, the Commission notes that its finding that the Parties are close competitors does not necessarily imply that the Parties are each other's closest competitors, as the Parties appear to argue in their response to the Statement of Objections.[904]

(1070) The Parties argue that the Commission misrepresents the bidding and winning statistics by not including bids and wins in consortia.[905] In that respect, the Commission highlights that (i) computing bids and wins excluding consortia provides a more reliable picture of the competitive strength of suppliers standalone, given that a win by a consortium may be due to the strength of the other supplier, not the Parties, therefore distorting the analysis, (ii) even if these bids and wins in consortia are computed, the overall picture does not changes substantially, as they represent a small share of all bids ([…] ETCS ATP wayside overlay projects).

903 Parties' response to the Statement of Objections, Chapter C.1, paragraphs 286-292.
904 Parties' response to the Statement of Objections, Chapter C.1, paragraph 278.
905 Parties' response to the Statement of Objections, Chapter C.1, paragraphs 280-283.

Table 38: Countries in which the Parties and competitors have bid for ETCS ATP wayside overlay projects (2008-2018)

Country	Siemens	Alstom	Thales	BT	Ansaldo	CAF[906]	AZD
Austria	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Belgium	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Czech Republic	[…]	[…]	[…]	[…]	[…]	[…]	[…]
France	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Germany	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Hungary	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Netherlands	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Poland	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Slovakia	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Slovenia	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Spain	[…]	[…]	[…]	[…]	[…]	[…]	[…]
UK	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Total # countries bid	[…]	[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL, Annex 105 Q2.2.

(1071) On the basis of the bidding data, the Commission considers that Siemens and Alstom are close competitors in ETCS ATP wayside overlay projects. The frequent direct competition between the Parties in […], in conjunction with the observed facts of winning together the vast majority of tenders and a significant share of tenders in which the other Party submitted a bid, suggest that the Parties exercise a significant competitive constraint on each other.

(c) The Parties' internal documents confirm they are close competitors

(1072) The Parties' internal documents confirm that they consider themselves among the five major signalling suppliers for ETCS ATP wayside projects. The other competitors identified in the internal documents as major ETCS suppliers are Thales, Bombardier and Ansaldo.

(1073) […].[907] […].

(1074) […].[908] […].[909]

(1075) The Commission's view (based on the bidding data) that the Parties are close competitors is supported by internal documents. […][910] […]. Alstom's document

906 [...]'s reply to Q8 –Mainline signalling – Questionnaire to competitors, question D.B.8 (ID2398).
907 Siemens' internal document, […].
908 Form CO, 5.4 document, […].
909 Form CO, 5.4 document […].

also show […]. Although these documents refer to the Parties' and their competitors' relative global positioning, the Commission considers that given that the EEA represents the largest market for ETCS ATP wayside projects globally, these global assessments are relevant to assessing the Parties' activities also in Europe. Regarding the Parties' arguments set out in their response to the Statement of Objections in relation to this document,[911] the Commission acknowledges that the document also refers to the certain competitors (such as CAF, AZD or Mermec), but the statements cited by the Parties largely reflect that these players have only a meaningful presence in their home countries with a small geographic footprint in relation to the Parties ([…]).

Figure 19: Competitive positioning - ERTMS trackside L1 and L2

[…]

Source: […]

(1076) The same document (slide 54) shows […]. According to the CPL, AZD has participated in Level 1 tenders in Greece in 2014. However, the Commission is not aware of any deployment of a Level 1 solution. Therefore, these smaller competitors do not have the full portfolio of ETCS ATP solutions and cannot be a constraint to the Parties in all tenders. Furthermore, some of them have only recently homologated ETCS ATP Level 2 solutions, and therefore suffer from considerably less experience than the Parties in deploying ETCS ATP projects.

(1077) On the other hand, Siemens' strength in ETCS Level 1 is confirmed by an internal document in which […],[912] […],[913] […].

(1078) Internal documents also confirm the closeness of Siemens and Alstom on the Austrian ETCS wayside ATP market. In the internal Siemens documents drawn up in connection […].[914] Similarly, […].[915]

(1079) In relation to the tender in Belgium referred to as K320 (ETCS Level 1 and 2 overlay solution, in addition to the ETCS Level 2 re-signalling solution comprised in the same tender),[916] a Siemens internal document […].[917]

(1080) In the internal documents prepared during the tendering for the 2015 ETCS Level 2 framework contract, Siemens identified its main competitors as […].[918] Likewise, […].[919]

(1081) As regards Spain, an Alstom's internal document "[…][920] […][921] […].

(1082) In the internal documents prepared during the tendering for the 2012 ETCS Level 1 project (TEN-T Corridor D) in Slovenia, Siemens assessed […].[922] Similarly Alstom assessed […].[923]

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910 Form CO, 5.4 documents, Annex RFI 6 Q.9.2.16, […].
911 Parties' response to the Statement of Objections, Chapter C.1, paragraph 298.
912 Form CO, 5.4 documents, […]
913 Parties' response to the Statement of Objections, Chapter C.1, paragraph 230.
914 […].
915 Alstom's internal document, […].
916 Awarded to Siemens. […].
917 Siemens internal document, […].
918 Siemens' internal document, […].
919 […].
920 Alstom's internal document, […].
921 Alstom's internal document, […].

(1083) In summary, the bidding data, the market investigation and the Parties' internal documents demonstate that Siemens and Alstom are close competitors in the market for ETCS ATP overlay projects and that its presence in this market has been an important driver of competition. The frequent direct competition between the Parties in […]% of the contestable tenders in the period 2008-2018, in conjunction with the observed facts of the Parties winning together a substantial share of tenders ([…]) and participating in a significant share of tenders in which the other Party submitted a bid (Alstom participates in […] tenders in which Siemens bid, Siemens participates in […] tenders in which Alstom bids), suggest that the Parties exercise a significant competitive constraint on each other. Therefore, the Transaction will remove a significant competitive constraint from the market.

(B.iv) Entry and expansion of competition

(a) Entry by Chinese suppliers and other Asian players is not likely in the near future

(1084) In relation to the potential entry of CRSC and other Asian players such as Nippon Signalling and Hyundai Rotem, as discussed in recitals (1024)-(1027), the Commission's view is that entry into mainline signalling markets in the EEA is unlikely in the foreseeable future. Consequently, CRSC will unlikely exert a competitive constraint on the Merged Entity in tenders for ETCS ATP wayside overlay projects in the EEA.

(b) Smaller competitors' ability to expand is limited and will likely be negatively affected by the merger

(1085) First, the Parties, Thales, Ansaldo and Bombardier are to date the only suppliers of ETCS ATP wayside overlay projects that bid consistently across countries in the EEA. Other suppliers bid in only a few countries. AZD focusses its activities in the Czech Republic and Slovakia. CAF has only participated in tenders in Spain and Bulgaria. Therefore, the bids by AZD and CAF exert no competitive constraint on the Parties outside of these geographies. No compelling evidence is put forward by the Notifying Party that would suggest that the situation is likely to change in the near future post-Transaction.

(1086) This is confirmed by some customers. For example, in response to a question on whether it expects a sufficient number of bidders in future tenders post-Transaction, […] states that it is "[n]*ot too sure*" as the number of present suppliers is limited and will be more so following the Transaction.[924] […] explains that "*the four "big players", namely Siemens, Alstom, Bombardier and Thales tend to all participate in* […]*s tenders, especially the larger tenders*".[925] The acknowledgement by the Notifying Party that the Parties, as incumbent suppliers […] are expected to participate in the upcoming re-signalling tenders to be launched by […] in 2019-2020 further indicates that the number of bidders will be reduced post-Transaction.[926]

(1087) The Commission reiterates, in response to the Parties' response to the Statement of Objections,[927] that the fact that an incumbency advantage due to the installed base exists does not undermine the finding of an EEA-wide market for ETCS ATP

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922 Siemens' internal document, […].
923 Alstom's internal document […].
924 […]s response to Q21 – Mainline signalling – Questionnaire to customers, question 28 (ID4458).
925 Agreed non-confidential minutes of call with […], 14 February 2018 (ID1199).
926 Form CO, Chapter C.1, paragraph 277.
927 Parties' response to the Statement of Objections, Chapter C.1, paragraph 304.

wayside overlay projects, as such incumbency advantage can be surmountable as set out in Section 6.2.2.2(C.iv) and it does influence the competitive dynamics in that EEA-wide market.

(1088) Second, smaller suppliers are likely to lack the financial and other resources required to geographically expand the scope of their bidding activity across the EEA in the near future so as to exert a significant bidding constraint on the Merged Entity. The Parties themselves acknowledge that "*acquisition by a large international player may well give access to additional financial and other resources that can support such bidding investments*".[928] The Notifying Party later clarified in its reply to a request for information that this quote relates to the specific example where Ansaldo faced financial difficulties, and was acquired by Hitachi.[929] Nevertheless, the market investigation shows that a company's financial resources play a key role in its ability to bid for tenders. [...] notes that its "*capacity to bid is directly linked to* [...] *size. The bidding budget of a company is directly proportional to revenues*".[930] The market investigation also shows that there is a link between large tenders (what internal documents of the Parties' refer to as "big tickets") and the financial resources of a bidder. In this respect, a competitor notes that "*Larger projects which are cash-negative at the early stages (resources mobilization, procurement of goods, and initial developments) require a large financing capacity*".[931]

(1089) Third, the Commission's view is that the Transaction will likely negatively affect competitors' own assessments of winning and in turn their decision to bid. A supplier will not bid unless it considers it has a real chance of winning since bidding is expensive and time intensive.[932] In this regard, the Commission considers that the Merged Entity will enjoy a competitive advantage, due to the Parties' access to legacy signalling systems and the Parties' stronger position for international corridors, which would in turn weaken competitors and significantly decrease competition (i.e., bidding by competitors) post-Transaction,

(1090) With regard to access to legacy signalling systems, the Merged Entity's footprint of legacy ATP and interlockings would significantly increase and be unmatched in relation to that of its competitors. For example, according to the data on installed base of interlockings provided by the Notifying Party for 18 EU countries, […].[933] In this regard, the Merged Entity would face lower interfacing costs for its ETCS ATP wayside projects due to its installed base of legacy ATP systems and interlockings. If data on sales of interlockings in the 2012-2017 period are considered, as submitted by the Notifying Party, the Parties are present in […] EU countries.[934]

(1091) The market investigation confirms that the Merged Entity will enjoy an increased competitive advantage by reason of its greater installed base. The vast majority of competitors responding to the Phase I market investigation consider that post-Transaction the Merged Entity will have a strong competitive advantage due to its installed base of mainline signalling systems (incumbent position). Many customers also consider that the Merged Entity will have a competitive advantage due to its installed base and will be in a better position compared to its competitors, thus

928 Notifying Party's response to the Commission's request for information RFI 78, paragraph 27.3.
929 Notifying Party's response to the Commission's request for information RFI 131, paragraph 3.1.
930 [...] response to the Commission's request for information RFI 105, question 6 (ID5763).
931 [...] response to the Commission's request for information RFI 105, question 7 (ID5763).
932 Q8 – Mainline signalling – Questionnaire to competitors, question D.A.2.2.1.
933 Notifying Party's response to the Commission's request for information RFI 33, Annex Q21(a).
934 Form CO, Chapter C.1, Annex RFI 23 Q1(g).

implying more market power for the supply of components, (maintenance) services and new (sub-)systems.[935] For example, […] submits that "*the [merged] company will have a[n] installed base enough superior than competitors*" which will result in "*more expensive products, less innovation, worse service […]*".[936]

(1092) With regard to international corridors, the Parties will have joint incumbency in pairs of neighbouring countries which may result in a strong position for international corridors through the installed conventional wayside systems in the two countries. The Transaction would potentially affect international corridors between Denmark and Germany, Germany and France, Netherlands and Belgium, Belgium and Germany, Belgium and France, Austria and Germany, Austria and Italy, and France and Spain.[937] The Commission recognises that if track sections along these international corridors are tendered separately for each country, such a strong position at international corridors may not change significantly post-Transaction. However, to the extent that track sections on both sides on the border need to interface each other and if a tender includes more than one country, these joint incumbency pairs would have a detrimental effect on competition.

(1093) Finally, for the reasons stated in recitals (1084)-(1092), the Commission considers that any hypothetical potential entry of Chinese suppliers or the expansion by existing smaller suppliers already bidding in the EEA would not be enough to overcome the significant impediment to effective competition resulting from the Transaction.

(B.v) Countervailing buyer power

(1094) The Commission's view is that customers do not have a sufficient degree of buyer power to overcome the reduction in competition that will occur as a result of the Transaction.

(1095) First, the bidding data shows that for the majority of ETCS ATP wayside overlay projects, there are only two or three bidders. Therefore, any countervailing power of customers will be even more diluted post-Transaction given the even smaller pool of potential suppliers.

(1096) Second, the market investigation does not support the Notifying Party's general submission that customers support entry. Only 28% of the respondents to the market investigation reported that they had sponsored the participation of suppliers in tenders.[938] Customers also point at limitations to these strategies, such as procurement rules or safety requirements.[939]

(1097) For example, [...] disagrees with the Notifying Party's argument that customers can facilitate entry by tendering framework contracts for the exclusive supply of yet undefined projects over several years. [...] notes that "*whether contracts are awarded*

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935 Q9 – Mainline signalling – Questionnaire to customers, question 57; Q10 – Mainline signalling – Questionnaire to OBU customers, question 51.

936 […] 's response to Q9 – Mainline signalling – Questionnaire to customers – Question 57 (ID2347).

937 Form CO, Chapter C.1, Annex RFI 23 Q1(g); non-confidential version of [...]'s presentation of 22 March 2018, page 8 (ID3015).

938 Q9 – Mainline signalling – Questionnaire to customers, question 54.

939 […]s and […]'s responses to Q9 – Mainline signalling – Questionnaire to customers, question 54 (ID2656 and ID1617).

as framework agreements or are tendered out on a punctual basis, does not affect entry".[940]

(1098) […] in fact considers that over the past 10 years, its negotiating power vis-à-vis its signalling suppliers has decreased in view of the limited market volume and small number of suppliers able to provide products that meet technical requirements,[941] and therefore, a further consolidation of the supplier base is not likely to reverse that trend. As […] explains, the Transaction will have a negative impact of its activities in the procurement of mainline signalling systems and will lead to higher prices. It further states that "*Siemens is already the market leader for mainline signalling systems* […]. *Post-merger,* […] *expects negotiation power vis-a-vis customers and pressure on competitors to increase*".[942]

(1099) The results of the market investigation do not support either the view that the Spanish infrastructure manager, ADIF, has sufficient buyer power to counter any price increase by the Merged Entity. […].[943]

(1100) The […] considers, in fact, that prices for mainline signalling have been increasing over the past ten years due to the small network size and small market in […] with own "*system requirements and language*" and considers that due to the small size of the network it manages, "*it is hard to get favourable terms*" when procuring mainline signalling systems.[944] The Transaction is unlikely to reverse this trend.

(1101) Third, the market investigation does not show that it is possible for customers to encourage entry into ETCS ATP wayside overlay projects by increasing the size of the project. According to customers, a strategy of bundling small signalling projects into a single larger one also shows some limitations. Although 42% of customers acknowledge having bundled single small projects into a single tender,[945] some customers indicate that the larger the project, the more limited the number of suppliers participating in the tender.[946] […], submits that it "*noticed* […] *participation is not affected by the scope and size*" of projects[947] […] notes that "*bigger projects [imply] less [competition] as big companies make it impossible for [l]ittle ones to play*" and […] suggests that the "*strategy [to increase size of projects]is useful [to encourage market entry of non-incumbent suppliers] in our ERTMS projects but not within the traditional developments where separate projects are used*".[948] While [...] recognises that it has in the past bundled interlocking, OCS and ETCS together with a view to encouraging participation, [...] does not identify strategies that encourage entry into the interlocking market in circumstances when an ETCS solution is not also required.[949]

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940 [...]'s response to Q21 – Mainline signalling – Questionnaire to customers, question 18.2.2 (ID5138).

941 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, question 52 (ID2435).

942 […] 's response to Q9 – Mainline signalling – Questionnaire to customers, questions 59, 60 (ID2435).

943 […] 's response to Q9 – Mainline signalling – Questionnaire to Customers – Question 51 (ID2347).

944 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 51 (ID2207).

945 Q9 – Mainline signalling – Questionnaire to customers, question 55.

946 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 56.1 (ID1794).

947 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 56.1 (2356).

948 […] 's and […]responses to Q21 – Mainline signalling – Questionnaire to customers, question 18.6 (ID4060 and ID2391).

949 [...]'s response to Q9 – Mainline Signalling – Questionnaire to customers – question 18.6.2 (ID2172).

(1102) As regards other measures, in the Phase II market investigation only 30% of respondents stated that they could, for some or all projects, encourage market entry by facilitating interfacing with the installed technology. For example, […][950]

(C) Conclusion

(1103) For the reasons set out in section 6.3.2.5 (B), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to ETCS ATP wayside overlay projects in the EEA.

6.3.2.6. ETCS ATP wayside re-signalling projects (bundle including ETCS ATP wayside and interlockings)

(A) The Notifying Party's views

(1104) In their response to the Commission's Article 6(1)(c) decision, the Parties argue that a significant number of suppliers will continue to compete for re-signalling projects post-Transaction and that there are at least seven suppliers with re-signalling capabilities in the EEA. In particular, the Parties submit that Thales is far from being "*behind of the Merged Entity*".[951]

(1105) The Parties explain that by bundling projects, the Dutch Government aims to attract participation in the tenders and maximise its buying power and synergies. In fact, instead of tendering separate projects for discrete lines, the plan is to divide the Dutch railway infrastructure into two parts, a north and south section. In each section, six corridors are defined for migration to ETCS Level 2 by 2030. The Parties further contend that the tenders will be structured in such a way that the same supplier cannot bid for both the north and south lots, which will leave ProRail with two different suppliers that will be allocated six corridors each. In view of the Transaction, the Parties can therefore at maximum win one of the lots, not both. As these are re-signalling tenders, incumbent suppliers of interlockings will not be at any particular advantage and ProRail is furthermore expected to allow for suppliers of interlockings without a homologated product in the Netherlands to participate in the tenders. The Parties submit that the upcoming re-signalling tenders will attract a significant number of powerful competitors that will constrain the Merged Entity, including […].[952]

(1106) In relation to the re-signalling part of the K320 tender in Belgium, the Parties submit that Infrabel strategically designed the tender in a way as to encourage bid participation by players other than Alstom, despite the fact that they would first have to homologate an interlocking before being able to execute the project. The Parties submit that Infrabel did this by including interface information in the tender, bundling all works planned for the time period until 2025, publishing its Masterplan that sets out its ambition to convergence towards a fully harmonised ETCS Level 2 network, and allowing bidders to homologate their interlockings only after the award of the tender.

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950 […] 's response to Q21 – Mainline Signalling Questionnaire to Customers (Phase II), question 18.1 (ID4060).

951 Parties' response to Article 6(1)(c) Decision, Mainline signalling, paragraphs 190-192.

952 Form CO, Chapter C.1, paragraphs 275-285; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraphs 163-166.

(1107) The Parties also note that the Norwegian nation-wide re-signalling project requires EULYNX compliance, which will lower entry barriers for new suppliers of interlockings in Norway.[953]

(1108) In their response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and the response to the Article 6(1)(c) Decision. They further submits that (i) the Statement of Objections' bidding analysis does not support the conclusions reached based on historic market shares,[954] (ii) the analysis on closeness of competition is flawed because the market investigation input does not support the conclusion ([…]'s input is specific to the […] market, the outcome of the Danish re-signalling tender suggests that Alstom and Thales were the closest competitors, […] states that the Parties are not closest competitors, internal documents quoted are several years old),[955] (iii) the Parties face strong competition on "big tickets" tenders (Bombardier, Thales and Ansaldo compete as much or more often than the Parties on large projects in the EEA);[956] (iv) the Commission's argumentation around ETCS technology is unclear and lacks any basis;[957] (v) the assessment of bidding data understates the role played by competitors;[958] (vi) evidence of entry and expansion is ignored;[959] and (vii) countervailing buyer power is a defining factor in re-signalling projects (by bundling projects).[960]

(B) The Commission's assessment - EEA level

(B.i) Market shares

(1109) The Commission notes that the ETCS ATP wayside re-signalling market is much bigger than the overlay market ([…]). The Parties' internal documents also note that […].[961] […].[962]

(1110) In ETCS ATP wayside re-signalling projects (bundle of ETCS ATP wayside and interlockings), as shown in

953 Form CO, Chapter C.1, paragraphs 562-568, 571-573; see Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraph 207.
954 Parties' response to the Statement of Objections, Chapter C1, paragraphs 403-404.
955 Parties' response to the Statement of Objections, Chapter C1, paragraphs 405-409.
956 Parties' response to the Statement of Objections, Chapter C1, paragraphs 410-412.
957 Parties' response to the Statement of Objections, Chapter C1, paragraphs 413-420.
958 Parties' response to the Statement of Objections, Chapter C1, paragraphs 421-427.
959 Parties' response to the Statement of Objections, Chapter C1, paragraphs 428-431.
960 Parties' response to the Statement of Objections, Chapter C.1, paragraphs 432-434.
961 Form CO, 5.4 documents, Annex Q.9.2.16, slides 13, 43, 46. […].
962 CPL, Annex 105 Q2.2 (Alstom)

(1111) Table 39, the Merged Entity will become the clear market leader in the EEA, with a market share of [50-60]%. Thales will only be a distant competitor and the remaining suppliers will have significantly smaller market shares, all below [5-10]%.

Table 39: Bundle of ETCS ATP wayside and interlockings, market shares, 2008-2018, order intake (by value)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[10-20]%	[30-40]%	**[40-50]%**	Thales: [30-40]% Ansaldo STS: [5-10]% BT: [0-5]% CAF: [0-5]% AZD: [0-5]% Revenga: [0-5]% Unidentified: [0-5]%

Source: Notifying Party's response RFI 131, Annex Q1

(1112) If only the contestable projects in 2008-2018 are considered, the Parties' and their competitors' market shares in ETCS ATP wayside re-signalling projects are shown in Table 40. As can be seen, on this measure, the Merged Entity will also remain dominant with a share nearing [50-60]% and the closest competitor, Thales, will be significantly smaller ([30-40]%). The remaining suppliers will have significantly smaller market shares, all [0-5]% or less.

(1113) In relation to the Parties' argument in their response to the Statement of Objections that competitors' market shares are underestimated, the Commission notes that only [0-5]% of the market is "unidentified" and hence not allocated to any competitor. Given that the Parties' market shares are based on an overall market size estimate, this "unidentified" market share does not affect their shares, but it could affect their competitors' shares. However, given that only [0-5]% is "unidentified", the possible market shares increase resulting from attributing this share is unlikely to increase the competitors' market shares significantly. In any event, all of the Parties' competitors, with the exception of Thales, will be a fraction of the size of the Merged Entity.

Table 40: ETCS ATP wayside contestable projects (re-signalling), market shares, 2008-2018, order intake (by value)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[10-20]%	[30-40]%	**[40-50]%**	Thales: [30-40]% Bombardier: [0-5]% Ansaldo: [0-5]%, CAF [0-5]% Others: [5-10]%

Source: Commission based on CPL

(B.ii) Closeness of competition

(a) The market investigation confirms the Parties are close competitors

(1114) The results of the Phase I and Phase II market investigations supports the view that customers perceive Siemens and Alstom, together with Thales as close competitors in ETCS ATP wayside systems.

(1115) [...] submits that "*Alstom and Siemens are close competitors. In tenders for which they did not bid together but separately, competition was fierce on all grounds*", referring to the 2014 ETCS Level 2 tender and that only *"Eventually Siemens,*

Alstom, Ansaldo submitted tenders for the ETCS2/IL project but, after negotiations, only Siemens and Alstom could propose conforming offers".

(1116) [...] further considers that "*Siemens and Alstom are very close competitors in terms of product offering. They can both be considered as incumbent companies*". [...] considers that for re-signalling projects, no other competitor comes close: "*Hitachi-Ansaldo, in its bid for the 2014 ETCS L2/IL project, seemed technically less capable than Siemens and Alstom…*".[963] The market investigation also shows that the participation of Siemens in tenders in which Alstom bids has a positive effect on [...]'s ability to obtain better conditions from Alstom, as expressly stated by [...], which shows the competitive interaction between the Parties. No other supplier, apart from Siemens, has the same constraining effect on Alstom.[964]

(1117) […] reports that "[t]*he size of the contracts and the active participation of the 2 largest suppliers (Alstom and Siemens) together with the runner-up Thales made all suppliers participate fiercely in the tender clarification phase, leading to massive improvements between First negotiation* [phase of the tender] *and Best and Final Offer on both technical project management and price parameters*".[965] […] further states, when asked who is the closest supplier to Siemens in terms of technical capabilities, that "[t]*he closest is Alstom both for mainline (ERTMS) and suburban (CBTC). Thales is second both for mainline (ERTMS) and suburban (CBTC). Ansaldo and Bombardier are not as complete in their product offering but are still part of the competition*".[966]

(1118) According to […], the elimination of competition between the Parties and their combined overall size on the market in Denmark where they would control "*four of the five major Danish signalling contracts, essentially covering everything but the signal[l]ing infrastructure in Jutland"* would lead to an additional reduction of competition as the Merged Entity would "*disincentiv[ise] the remaining smaller suppliers from bidding on supplementary contracts or economically disadvantage their bids through high interface costs. Moreover the consolidation of products [is] almost given to negatively impact several of the existing Danish contracts under execution*".[967]

(1119) […] perceives Siemens as the closest competitor to Alstom and Alstom as the closest competitor to Siemens in terms of product offering and technical capabilities, ahead of Thales, Ansaldo and Bombardier. […] submits that Ansaldo and Bombardier are "*not as complete in their product offering*".[968]

(1120) […] also submits that the tender participation of Alstom and Siemens respectively impacted on the customer's ability to obtain better conditions from the other company, as well as from the other tender participants Thales, Bombardier and Ansaldo. […] further explains that "[t]*he size of the contracts and the active participation of the 2 largest suppliers (Alstom and Siemens) together with the runner-up Thales made all suppliers participate fiercely in the tender clarification phase, leading to massive improvements between First negotiation* [phase of the

963 [...]'s response to Q9 – Mainline Signalling – Questionnaire to Customers, question 24.4.1 (ID2172).

964 [...]'s response to Q9 – Mainline Signalling – Questionnaire to Customers, question 25 (ID2172).

965 [...]'s and [...]'s responses to Q9 – Mainline signalling – Questionnaire to Customers, question 25.9 (ID2172 and ID2825).

966 [...]'s and [...]'s responses to Q9 – Mainline signalling – Questionnaire to Customers, question 24.4 (ID2172 and ID2825).

967 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 58.3 (ID2825).

968 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 24 (ID2825).

tender] *and Best and Final Offer on both technical project management and price parameters*".[969]

(1121) […] also considers that the Parties are each other's best alternatives in terms of products, product ranges, competitiveness, quality and innovation: "*Siemens, Alstom, and Thales are significantly more advanced than other signalling players, including Bombardier and Ansaldo STS. […] has not had any interaction with the Asian signalling suppliers (especially CRSC) regarding trackside systems*".[970] According to […], the investments made by the Parties and Thales in ETCS Level 3 and automatic train operation (ATO) with ETCS will likely further increase the distance between the market leaders (Siemens, Alstom, and Thales) versus the rest.[971]

(1122) Regarding the Norwegian tenders, as explained by[…] : "*the number of potential signalling suppliers has considerably diminished as a result of consolidation (Alstom/GE, Siemens/Invensys, Hitachi/Ansaldo); the proposed Siemens/Alstom transaction would reduce that number further, which is problematic. Only four viable signalling suppliers would be left in Europe*".[972] While the re-signalling tender awarded in 2018 may cover a significant share of demand by […] for ATP wayside and interlockings in the coming years, it cannot be excluded that other tender opportunities will arise in Norway.

(1123) […] sees Siemens and Alstom as two of the three main suppliers of mainline signalling in Norway and as head-on competitors, with Bombardier and Siemens ranked at the top, and Alstom as number three. […] considers Thales and Ansaldo less significant and/or successful players in Norway.[973]

(1124) […] when asked about the competitive pressure exercised by Alstom, submits that "*i) Alstom has reached a 20% share of our market from almost nothing in 20 years. Their competitive pressure has been [maximal] ii) We have [been] able to get better services and products at lower prices*".[974] […] also submits that the competitive pressure exerted by Siemens has been "*The same as Alstom but with a higher market share*".[975]

(1125) In the Netherlands, following the elimination of the competitive constraint between the Parties as a result of the Transaction, the customer will have limited possibilities to switch to alternative suppliers. The upcoming re-signalling tender by the Dutch Government will be very large, with a total budget of some EUR 2 300 million, of which ProRail is responsible for the implementation of track-side signalling worth around EUR 1 000 million to EUR 1 400 million.[976] The Commission considers that only the largest players are able to undertake projects of such large size and complexity. In fact, if the re-signalling tenders in Norway (2018) and Denmark (2012) are taken as any guidance, the suppliers likely to participate in such large tenders are limited to only the very largest European players, namely the Parties, Thales, Ansaldo and Bombardier. CAF did not participate in either the Norwegian or Danish re-signalling tenders.

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969 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, questions 25-26 (ID2825).

970 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 27 (ID2825).

971 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 45 (ID2825).

972 Agreed non-confidential minutes of call with […], 23 January 2018 (ID747).

973 Agreed non-confidential minutes of call with […], 23 January 2018 (ID747).

974 […] 's responses to Q9 – Mainline signalling – Questionnaire to Customers, question 25.9 (ID2347).

975 […] 's responses to Q9 – Mainline signalling – Questionnaire to Customers, question 26.9 (ID2347).

976 Agreed non-confidential minutes of call with […], 14 February 2018 (ID1199).

(1126) In response to a question on whether it expects a sufficient number of bidders in future tenders post-Transaction, […].[977]

(1127) […]explains that the four "*big players*", namely Siemens, Alstom, Bombardier and Thales tend to all participate in […]'s tenders, especially the larger tenders. In relation to the upcoming re-signalling tender, […].[978]

(1128) In the UK, the bidding data shows that the Parties were the only two bidders for the single ETCS re-signalling project in the UK. This is so despite the fact that the re-signalling project would be strategically valuable for a supplier seeking to gain a foothold in the UK in anticipation of the full ETCS roll-out. A Siemens internal document […].[979] Moreover, the Commission notes that […], was pre-qualified but dropped out during the tender process. The Commission considers that, on the basis of the available evidence, there are presently no other credible bidders for ETCS ATP wayside re-signalling projects in the UK apart from the Parties.

(1129) Re-signalling projects by their nature require the deployment of interlockings which, with few exceptions, are supplied exclusively by the Parties in the UK.[980] One market participant explains that the interlocking system will remain at the heart of ETCS signalling, which will need to interact with the interlocking technology supplied by the Parties.[981] Other suppliers do not have access to the intellectual property that is held by the Parties in order to interoperate with the installed base. In this respect, […] observes that no other potential competitor has "*[a]ccess to the intellectual property, design and compatibility specifications necessary to ensure interoperability with the merging parties' installed base at the fringes, where the new project meets existing infrastructure*".[982]

(1130) The focus on ETCS re-signalling projects in the UK is projected to increase and interlockings will be an important element in competitors' ability to compete for ETCS re-signalling projects. ETCS roll-out is at the early stages in the UK and, as noted above, the market investigation shows that the merger will only strengthen the Parties' existing strong position in conventional signalling and further augment their advantage relative to other competitors when subsequent ETCS framework contracts are tendered. […] explains this trend noting that […]". The problem, […] explains, is that until conventional signalling is completely phased out, the Siemens ETCS RBCs will only work with the Siemens interlockings (and the same is true for Alstom).

(b) Internal documents confirm that the Parties are the top ETCS Level 1 and Level 2 suppliers and close competitors in ETCS ATP wayside re-signalling projects

(1131) The Parties' internal documents support the view that the Parties' main competitors in ETCS ATP wayside are limited to the five largest suppliers, Siemens, Alstom, Thales, Bombardier and Ansaldo, […]. In this regard, the findings set out in recitals (1072)-(1078) are also valid for ETCS ATP wayside re-signalling projects. It is clear that Ansaldo and Bombardier, within this group of five players, present a much

977 […]s response to Q21 – Mainline signalling – Questionnaire to customers, question 28 (ID4458).
978 Agreed non-confidential minutes of call with […], 14 February 2018 (ID1199).
979 Siemens' internal document, […].
980 Ansaldo supplies one of the total 1,700 interlockings supplied by Parties or their predecessors. Atkins sources interlockings from the Parties.
981 […].
982 […].

weaker constraint on the Parties than the Parties do on each other. An Alstom internal document […].[983]

(1132) Siemens considers […].[984] This document is relatively recent (December 2016), and over a year after Hitachi acquired a majority share in Ansaldo STS.

Figure 20: […]

[…]

Source: Siemens' internal document (ID1331-89)[985]

(1133) The view that the Parties are close competitors in ETCS ATP wayside is also supported by Alstom's internal documents. An Alstom […]. The document shows […].

Figure 21: […]

[…]

Source: Alstom's internal document (ID2159-17557)[986]

(1134) Moreover, the Parties' internal documents also confirm that Siemens and […].[987] […].[988] In relation to the Parties' argument in their response to the Statement of Objections that this […].

(1135) Internal documents regarding tender participation also confirm that the Parties see themselves together with Thales as close competitors in ETCS ATP wayside re-signalling projects. For example, […].

(1136) The Parties' internal documents also show that they are close competitors for the supply of ETCS ATP wayside re-signalling projects in Belgium. An internal Siemens […].[989]

(1137) In the internal documents prepared during the tendering for the 2012 re-signalling project in Denmark, Siemens […].[990] Also Alstom considered […].[991] […].[992]

(1138) In the internal documents prepared during the tendering for the Hanzelijn re-signalling project in the Netherlands, Siemens identified […].[993] In its internal documents, Alstom assessed […].[994]

(1139) As regards Croatia, […].

Figure 22: […]

[…]

Source: Alstom's internal document, […]

(1140) This Alstom internal document shows […].

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983 Form CO, 5.4 documents, Annex Q.9.2.16, slide 52.
984 Form CO, 5.4 documents, […].
985 Siemens' internal document; […].
986 Alstom's internal document, […].
987 Form CO, 5.4 documents, Annex Q.9.2.16, slide 14, 19.
988 Form CO, 5.4 documents, Annex Q.9.2.16, slide 19.
989 Siemens' internal document, […].
990 Siemens' internal document, […].
991 Alstom's internal document, […].
992 Alstom's internal document, […].
993 Siemens' internal document, […].
994 Alstom's internal document, […].

(1141) In relation to Romania, the Parties' internal documents confirm that the Parties exert a significant competitive constraint on each other. […].[995] […].[996]

(1142) The Parties' internal documents also confirm that the Parties are close competitors for tenders in Spain. For example, […][997] […].

(1143) Alstom's internal document "[…][998] […]. With regard to this tender, Siemens attributed itself […].[999]

(1144) Another Alstom internal document[1000] […].

(1145) Furthermore, Siemens also attributed itself […][1001] […].

(1146) In relation to Greece, for example, in the internal documents […].[1002] […],[1003] […].[1004]

(1147) Contrary to the Notifying Party's submission, Alstom does impose a competitive constraint on Siemens in tenders in Hungary. A Siemens internal document […].[1005] […].

(1148) Internal documents also confirm the closeness of Siemens and Alstom on the Norwegian market. In relation to the 2018 re-signalling tender, Alstom […].[1006] […].[1007]

(1149) In relation to the UK, the Parties' internal documents confirm that they are close competitors. An Alstom internal document shows […]. As explained in recital (945), Atkins relies on the Parties' products to deliver signalling solutions to Network Rail. Moreover, it did not bid for the ETCS re-signalling tender and the Commission is not aware that it has access to its own ETCS platform.

(c) The Parties are leaders in advancements of the ETCS technology and close competitors for ETCS Level 2 Baseline 3

(1150) Competitors and customers note that the main innovations for ETCS are driven by the development of the ETCS standard, for example the evolution from Baseline 2 to Baseline 3 in addition to digitalisation and the introduction of ATO systems.[1008] An Alstom internal document […].[1009] […].

(1151) Therefore, the Commission considers that an important factor of competition for the rollout of ERTMS will be the ability of suppliers to commit to providing the latest technology ERTMS solution.

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995 Siemens' internal document, […].
996 CPL, Annex 105 Q2.2 (Alstom).
997 Siemens' internal document, […].
998 Alstom's internal document, […].
999 Siemens' internal document, -[…].
1000 Alstom's internal document, […].
1001 Siemens' internal document, […].
1002 Alstom's internal document, "[…].
1003 Parties' response to the Statement of Objections, paragraph 482.
1004 Alstom's internal document, […].
1005 Siemens' internal document, […].
1006 Alstom's internal document, […].
1007 Alstom's internal document, […].
1008 Q8 – Mainline signalling – Questionnaire to competitors, questions D.E.1, D.E.2; Q10 – Mainline signalling – Questionnaire to OBU customers, question 38.
1009 Alstom's internal document […].

(1152) There are only two other competitors, apart from the Parties, who have developed ERTMS Level 2 Baseline 3 technology.[1010] The market investigation reveals that Siemens and Thales both have in delivery an ERTMS Level 2 Baseline 3 wayside technology in Denmark, while Siemens has a pilot projects in Switzerland.[1011] This is in line with the Parties' response to the Statement of Objections.[1012]

(1153) An Alstom internal document shows […].[1013]

(1154) The market investigation also confirms the Parties' leadership in Baseline 3. A competitor, [...], suggests that Siemens and Alstom have a competitive advantage for Level 2 Baseline 3 ETCS technologies since (i) they have already developed technologies for wayside Baseline 3; (ii) they are at the most advanced stage, relative to the competition, in testing and delivery; and (iii) they have introduced their technologies in the largest number of countries to date (this point refers to both onboard and wayside).[1014] The fact that the Notifying Party considers that developing ETCS Level 2 Baseline 3 technology is […] does not undermine the Commission's finding that this constitutes an important area of innovation (for onboard and wayside) where the Parties have a competitive advantage.

(1155) [...] notes that "*Siemens and Alstom are market leaders in innovation, particularly in the deployment of ERTMS baseline 3, ATO systems for mainline railways, digitalization and the use of big data"*.[1015] [...] response also supports the view that the Parties are leaders in innovation indicating that the Parties "*have a long history of acting as competing innovators in the railway industry in general, including in relation to the Automatic Train Operation (ATO) business*…".[1016] While the Commission notes that some of these technologies are also related to onboard systems, it nevertheless notes that the statement is also relevant for ETCS ATP wayside.

(1156) Finally, the considerations discussed in recital (1064) are also applicable to ETCS ATP re-signalling projects. In that regard, the Commission highlights that the same Alstom internal document […].[1017] The Transaction would, therefore, eliminate a potential competitor in those markets, such as Germany, where one Party (Siemens) is present in the market for re-signalling projects and the other Party (Alstom) is not.

(d) The bidding data shows that the Parties are close competitors

(1157) The Commission examined the Parties' participation in […] contestable[1018] tenders for ETCS ATP wayside re-signalling projects in 2008-2018 in the EEA and the results confirm the view that the Parties are close competitors.

(1158) First, the bidding analysis shows that the Parties bid frequently: they are the number one and number three most frequent bidders for ETCS ATP wayside re-signalling projects. Siemens was, together with Thales, the most frequent bidder ([…]% and […]%), followed by Alstom ([…]%), and Bombardier ([…]%). As the Parties point out in the response to the Statement of Objections, Bombardier's and Ansaldo's

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1010 [...]'s response to the Commission's request for information RFI 49, question 7 (ID5849).
1011 [...]'s response to the Commission's request for information RFI 49, question 7 (ID5849).
1012 Parties' response to the Statement of Objections, Chapter C.1, paragraph 416.
1013 Alstom's internal document, […].
1014 […]'s submission, "[…]", dated 28 June 2018, p. 29 (ID6127).
1015 [...]'s response to Q8 – Mainline Signalling – Questionnaire to competitors, question D.E.3 (ID2398).
1016 [...] response to Q8 – Mainline Signalling – Questionnaire to competitors, question D.E.3.1 (ID2418).
1017 Form CO, 5.4 documents, […].
1018 The indication of which were the contestable tenders was provided by the Notifying Party.

participation rates increase if the share is computed by value ([…]% and […]% respectively). Nevertheless, an examination of value-weighted wining rates of contestable tenders shows that Bombardier and Ansaldo play minor roles in the ETCS ATP wayside re-signalling market with […]% and […]% won tenders in terms of value.

(1159) Second, the Parties meet frequently in all contestable tenders. The Parties bid against each other in […]% of […] contestable tenders. In particular, in the […] contestable tenders in which Alstom bid, Siemens was the most frequent rival bidder ([…]%), Ansaldo, Bombardier and Thales participate in […]% of tenders in which Alstom bids. When Siemens bids, Alstom is, together with Thales, the most likely competitor it will encounter. In the […] contestable tenders in which Siemens bids, Alstom was the most frequent rival bidder ([…]%), followed by Thales ([…]%).[1019]

(1160) Third, the Parties are among the top three most likely to win a tender and post-Transaction they will be responsible for almost […] of all wins in contestable ETCS ATP wayside re-signalling projects. Siemens was the most frequent winner ([…]%), Thales second most frequent winner ([…]%),[1020] followed by Alstom ([…]%), and Bombardier ([…]%). These results confirm the position evident from the Parties' internal documents, namely that Alstom, Siemens and Thales are close competitors, with Ansaldo and Bombardier being less close.

(1161) Fourth, when the Parties bid and lose, […]. Moreover, Siemens' internal tender documents show that […]. In that respect, the Commission notes that its finding that the Parties are close competitors does not necessarily imply that the Parties are each other's closest competitors, as the Parties appears to argue in the response to the Statement of Objections.[1021]

(1162) Fifth, the Parties are the most geographically diverse bidders for ETCS ATP wayside re-signalling projects indicating a willingness and ability to compete for projects across the EEA. Table 41 shows the countries in which the different suppliers participated in ETCS ATP wayside re-signalling tenders in 2008-2018.

(1163) As shown in the table, the Parties bid in more ETCS ATP wayside re-signalling tenders and in more European countries than almost all of their competitors over the period 2008-2018. The Parties together with Thales are the only suppliers bidding for ETCS ATP wayside re-signalling projects in […] countries or more (Siemens: […]) in the EEA. Ansaldo and Bombardier have bid in […] countries each. CAF and AZD have only bid in […] countries, the latter predominantly focused in Eastern Europe.[1022] Although some other suppliers have participated in ETCS ATP wayside re-signalling tenders in the EEA in 2008-2018, according to the information available to the Commission, all of them are active in one country only (e.g. ECM and Mermec in Italy, Movares in the Netherlands). In some cases, these local players participated in consortia with other signalling companies (such as Alstom/Movares in the Netherlands, which suggests that Movares focused on the interlockings and Alstom on ETCS ATP).

1019 Excluding consortia bids with Siemens.

1020 If excluding wins in consortia with Siemens, Thales wins […]% of all contestable tenders.

1021 Parties' response to the Statement of Objections, Chapter C.1, paragraph 278.

1022 The Notifying Party claims that "[…] but has not provided information on these projects in the Consolidated Project List. In any event, this would not change the Commission's conclusion that CAF's geographical footprint is very limited compared to the Parties'.

Table 41: Countries in which the Parties and competitors have bid for ETCS ATP wayside re-signalling projects (2008-2018)

Country	Siemens	Alstom	Thales	BT	Ansaldo	CAF	AZD
Austria	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Belgium	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Bulgaria	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Croatia	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Denmark	[…]	[…]	[…]	[…]	[…]	[…]	[…]
France	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Germany	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Greece	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Hungary	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Italy	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Netherlands	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Norway	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Poland	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Romania	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Slovakia	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Spain	[…]	[…]	[…]	[…]	[…]	[…]	[…]
UK	[…]	[…]	[…]	[…]	[…]	[…]	[…]
Total # countries bid	[…]	[…]	[…]	[…]	[…]	[…]	[…]

Source: CPL, Annex 105 Q2.2

Note: other bidders identified […].

(1164) Finally, the Commission's view is that the Merged Entity will enjoy a competitive advantage which would in turn weaken competitors and significantly decrease competition post-Transaction, due to the Parties' access to legacy signalling systems and the Parties' stronger position for international corridors. The arguments discussed in recitals (1044)-(1078) also apply to ETCS ATP wayside re-signalling projects.

(B.iii) Entry and expansion of competition

(1165) The Parties, Thales, Bombardier and Ansaldo are the only ETCS ATP wayside re-signalling suppliers who bid consistently across countries in the EEA. CAF and AZD are the next most active in terms of the geographic breadth of their bidding activity, with AZD focusing its activities in Eastern Europe. Other suppliers bid almost exclusively in their home countries. This shows that these suppliers do not exert a competitive constraint on the Parties outside these geographies.

(a) Entry by Chinese suppliers is not likely in the near future

(1166) In relation to the potential entry of CRSC and other Asian players, as discussed in recitals (1024)-(1027), the Commission's view is that entry into mainline signalling markets in the EEA is unlikely in the foreseeable future. As a result, CRSC will unlikely exert a competitive constraint on the Merged Entity in tenders for ETCS ATP wayside re-signalling projects in the EEA.

(1167) Therefore, the Commission considers that any potential entry of Chinese or Asian suppliers such as Nippon Signalling and Hyundai Rotem and expansion by existing smaller suppliers already bidding in the EEA would not be enough to overcome the significant impediment to effective competition that the Commission considers would result from the Transaction.

(b) Smaller competitors' ability to expand is limited and will likely be negatively affected by the merger

(1168) The Commission also notes that the Parties' smaller competitors suffer significant shortcomings that will prevent them from exerting a significant competitive constraint on the Merged Entity.

(1169) First, as shown in Table 41, competitors other than Thales, Bombardier and Ansaldo, have very limited activities in terms of geographic footprint and access to legacy signalling systems. While these five companies are bidding for ETCS ATP wayside re-signalling projects in […]. This is also noticeable in Figure 24 of the Parties' response to the Statement of Objections, where smaller players play a very limited role in bidding for ETCS ATP wayside re-signalling projects ([…]).[1023]

(1170) The market investigation supports that, post-Transaction, the Merged Entity would have an advantage due to its installed base of signalling systems because, as […] submits "*the [merged] company will have a[n] installed base enough superior than competitors*" which will result in "*more expensive products, less innovation, worse service* […]".[1024]

(1171) Second, some of these competitors do not have a full portfolio of ETCS ATP wayside and interlocking solutions, which means that they would need to team up with other suppliers to meaningfully submit bids in upcoming tenders. For example, the Parties' internal documents also highlight […].[1025]

(1172) The shortcomings of not providing the full portfolio of ETCS ATP products is highlighted by [...]: "*There are some suppliers that do not provide some sub-systems (*[...]*does not provide interlocking, AZD does not provide ETCS L1 or OBU systems…). Therefore, they can only bid for "bundled" projects in consortium with other suppliers*".[1026] While pre-Transaction the Parties could have an incentive to complement their product portfolio with smaller suppliers providing specialised systems (such as specialised OCS suppliers, interlockings providers already established in a given country) in order to enhance their offerings, post-Transaction the Merged Entity will likely no longer need to team up with those suppliers given the reduced competitive pressure. This would in turn weaken these specialised or smaller suppliers who may be pushed out of the market.

1023 Parties' response to the Statement of Objections, Chapter C.1, Figure 24.

1024 […] 's response to Q9 – Mainline signalling – Questionnaire to customers – Question 57 (ID2347).

1025 Form CO, 5.4 documents, Annex Q.9.2.16, slide 53.

1026 [...]'s response to the Commission's request for information RFI 53, question 8 (ID5950).

(1173) Third, small suppliers face financial and resource constraints to following a rapid expansion strategy across the EEA. The market investigation shows that bidding for projects is cost intensive and smaller companies lack the financial resources that larger companies have to bid for new projects. Even larger companies face constraints: as [...] put it "*[…]'s ability to compete effectively for mainline signalling projects is strongly dependent on its financial capability/resources…[when] Entering a country with a product for the first time…initial effort is required as an upfront investment leading to a return on investment after a couple of years. However, this waiting period is only possible for companies above a certain critical company size as it is required to offset the high initial capital invest for a multi-year period*".[1027]

(1174) Fourth, the market investigation suggests that smaller players' more limited financial resources makes it more difficult for them to compete for large projects, which the Parties refer to as "big tickets". [...] suggests that the importance of financial resources differs between projects and that a "*larger project increases the importance of company size (financial capabilities) to compete successfully, as financial requirements and capacity requirements increase significantly*". Moreover, the trend with the roll-out of ETCS across the EEA will mean that "*customers increasingly tender bigger projects covering complete roll-out schemes for a complete country…this factor gains importance and drives the market towards few large and financially capable players*". Other competitors agree: [...] acknowledges that while smaller suppliers such as AZD, Mermec, Sirti, ECM and Atkins are sometimes subcontracted for large projects "*they are not able to compete for them directly in tenders because of lack of specific capabilities (e.g., technology or workforce) for the local market*".[1028] Therefore, the trend of larger projects as the ERTMS roll-out proceeds, suggests that, contrary to the Notifying Party's view, smaller players are not likely to be able to sufficiently constrain the Merged Entity post-Transaction.

(B.iv) Countervailing buyer power

(1175) The Notifying Party submits that customers have a variety of tools available to them in order to attract new suppliers to their tenders for signalling systems and to support suppliers in overcoming barriers to entry. The Notifying Party argues that these tools consist of increasing the size of projects by bundling together smaller ETCS ATP wayside projects or combining them with interlockings, permitting suppliers to homologate after a project award, and facilitating the development of interfaces to installed systems.

(1176) The Commission's view is that customers do not have a sufficient degree of buyer power to overcome the reduction in competition that will occur as a result of the Transaction because (i) there are very few bidders and there will be even fewer post-Transaction, thereby further restricting customers' choice and in turn their bargaining power, (ii) customers face limitations to exercising buyer power and encouraging entry, and (iii) the market investigation shows that customers rarely use the tools that the Notifying Party claims exhibit buyer power, despite being in a position where they are already facing a low number of bidders.

(1177) The considerations discussed in Section 6.3.2.5.B.v in relation to overlay projects are also applicable for ETCS ATP wayside re-signalling projects.

1027 [...]'s response to the Commission's request for information RFI 104, question 6 (ID5799).

1028 […]'s submission "[…]", dated 28 June 2018, page 26 (ID6127).

(a) Few bidders limit buyer power and the merger will further reduce it

(1178) The bidding data shows that for the majority of ETCS ATP wayside re-signalling projects, there are only two or three bidders. Therefore, any countervailing power of customers will be diluted post-Transaction given the even smaller pool of potential suppliers.

(1179) The average number of bidders in the 68 tenders in ETCS ATP wayside re-signalling projects in 2008-2018 is […] if tenders with only one bidder are considered and […] if only tenders with at least two bidders are considered. In tenders in which both Parties submitted bids the average number of bidders was […] (including the Parties). Hence, the merger leads to a reduction on average to […] bidders per tender, given the observed distribution of the number of bidders in past tenders.

(1180) Second, these […] bidders comprise, for the vast majority of projects, […]. The internal documents and market investigation already confirm (as explained in recitals (1150)-(1164)) that the Parties and Thales are close competitors operating as leaders in the market. Therefore, post-Transaction any buyer power that customers may otherwise have had will be significantly reduced by virtue of the fact that customers' choice of leading suppliers for ETCS ATP wayside re-signalling projects will be reduced from three to two.

(1181) Third, smaller suppliers lack the financial resources to support a strategy of extensive bidding across the EEA and as such are not expected to expand their activities in the foreseeable future so as to exercise a real constraint on the Merged Entity. For the same reason, the Commission's view is that smaller competitors are not in a position to act as a credible alternative to customers faced with limited alternative options: indeed, if customers considered these players could be a viable alternative it would be expected that they already have encouraged the expansion of these players beyond the few countries in which they operate, considering the limited number of bidders customers already face.

(b) Customers face limitations in exercising buyer power

(1182) The market investigation does not show that it is possible for customers to encourage entry into ETCS ATP wayside re-signalling projects by increasing the size of the project. According to customers, a strategy of bundling small signalling projects into a single larger one also shows some limitations. Although 42% of customers acknowledge having bundled single small projects into a single tender,[1029] some customers indicate that the larger the project, the more limited the number of suppliers participating in the tender.[1030] […], submits that it "*noticed* […] *participation is not affected by the scope and size*" of projects.[1031] […] notes that "*bigger projects* [imply] *less* [competition] *as big companies make it impossible for* [l]*ittle ones to play*" and […] suggests that the "*strategy [to increase size of projects] is useful [to encourage market entry of non-incumbent suppliers] in our ERTMS projects but not within the traditional developments where separate projects are used*".[1032]

1029 Q9 – Mainline signalling – Questionnaire to customers, question 55.

1030 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 56.1 (ID1794).

1031 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 56.1 (ID2356).

1032 […] 's response to Q21 – Mainline Signalling – Questionnaire to customers, question 18.6 (ID4060); […] 's response to Q21 – Mainline Signalling – Questionnaire to customers, question 18.6 (ID4472).

(1183) For example, […] points out that it was able to exert buyer power only one time (by sharing the interface to the legacy technology in the context of an ETCS ATP wayside overlay tender), while […] usually has no possibility of facilitating interfacing to the installed technology.[1033] […] 's view was that "*Signalling market is based on few competitor[s]. That [does] not allow us to have the ability to obtain favourable terms*".[1034]

(c) Little evidence of customers exercising buyer power

(1184) The market investigation does not confirm the Notifying Party's view that customers can use buyer power in the form of sponsoring entry, altering the structure of demand (e.g., by increasing project size or splitting up projects), or relaxing authorisation requirements.

(1185) For example, in the Phase II market investigation only 20% of respondents stated that they had relaxed authorisation requirements in order to encourage market entry for some projects.[1035]

(1186) In the case of Belgium, any buyer power that Infrabel might have would be severely limited post-Transaction given the very few alternative suppliers. Contrary to the Notifying Party's assertion, Infrabel's experience in the K320 re-signalling tender suggests that […]. […] explains that […]. Despite its efforts, only the Parties and Ansaldo ended up submitting bids and following negotiations only Siemens and Alstom were able to propose a compliant offer.[1036]

(1187) In relation to Denmark, the results of the market investigation do not support the view that Banedanmark has sufficient buyer power to counter any price increase by the Merged Entity. In fact, while […].[1037] […].[1038]

(1188) In any event, the findings discussed in Section 6.3.2.5.B.v in relation to overlay projects are also applicable to ETCS ATP wayside re-signalling projects.

(C) Conclusion

(1189) For the reasons set out in section 6.3.2.6 (B), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to ETCS ATP wayside re-signalling projects in the EEA.

6.4. Mainline signalling products – Relevant markets and competitive assessment

(1190) This section will only address the market for interlocking equipment in the UK for which the Transaction would result in a significant impediment to effective competition.

1033 […] 's response to Q21 – Mainline Signalling – Questionnaire to customers, question 18.1 (ID4060).

1034 […] 's response to Q9 – Mainline signalling – Questionnaire to customers – Question 51 (ID2347).

1035 Q21 – Mainline Signalling – Questionnaire to customers, question 18.3.

1036 [...]'s presentation of 9 March 2018, slide 20 (ID927).

1037 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, questions 51, 56 (ID2825).

1038 [...]'s response to Q9 – Mainline signalling – Questionnaire to customers, questions 69-70, 72 (ID2825).

6.4.1. Relevant markets

6.4.1.1. Product market definition

(A) The Notifying Party's views

(1191) The Notifying Party submits that the market for signalling products should be segmented for each individual product. Each signalling product would constitute a separate product market, as there is no substitutability from a demand-side perspective.[1039]

(1192) The Notifying Party submits that although individual signalling products for mainline and urban signalling fulfil comparable functions and may rely on the same core technology, there are a number of reasons that suggest it may be appropriate to distinguish between mainline and urban signalling products.[1040]

(1193) First, signalling products for mainline use must comply with technical specifications and safety authorisation requirements that are different to those applicable in an urban context. In addition, as mainline network operators begin to introduce EULYNX standard interfaces, these will apply to mainline, but not to urban, components which will therefore require different specifications (all members of the EULYNX working group are mainline network operators).[1041]

(1194) Second, signalling products are usually developed for either mainline or urban application, notably because mainline services operate at much higher speeds than urban operations. The Notifying Party explains that although mainline products could technically be deployed for urban use, and urban products for mainline use, they would often need to be adapted or upgraded.[1042]

(1195) The Notifying Party proposes also a segmentation between mainline and urban interlocking equipment based on the different authorisation processes. Furthermore, the Notifying Party explains that there are different types of electronic interlockings in the one affected geographic market (namely the UK), and these types of interlocking equipment can be differentiated.

(1196) The Notifying Party distinguishes between two categories of electronic interlocking technology used in the UK, namely SSI protocol-based interlockings and non-SSI-based interlockings. The Notifying Party submits that today the majority of projects in the UK use newer, non-SSI, electronic interlockings and SSI interlocking equipment would only be used for small repair or refurbishment projects on lines already equipped with SSI interlockings. The installed base is still to a large extent SSI.[1043]

(1197) According to the Notifying Party, whether these different types of electronic interlocking equipment are included in the same product market or not would make no material difference to the assessment as the Transaction would not, in the Notifying Party's view, raise competition concerns with respect to interlocking equipment on any basis. The Notifying Party has, therefore, addressed all interlocking equipment as belonging to the same product market.[1044]

1039 Form CO, Chapter C.3, paragraph 10.
1040 Form CO, Chapter C.3, paragraph 10.
1041 Form CO, Chapter C.3, paragraph 10.
1042 Form CO, Chapter C.3, paragraph 6.
1043 Form CO, Chapter C.3, paragraph 32.
1044 Form CO, Chapter C.3, paragraph 9.

(B) The Commission's decisional practice

(1198) The Commission's decisional practice in relation a distinction between mainline signalling projects and mainline signalling products is discussed in section 6.2.1.2 (B).

(1199) In *Alstom UK/Balfour Beatty*, the Commission considered possible markets for interlocking equipment and point machines for heavy rail in the UK. In relation to interlocking equipment, the Commission noted that "*although making up only 1-5% of the costs of a project, is a crucial components of a signalling system*". It also considered a further distinction between different types (electronic, non-electronic, by rail type) of interlocking equipment, but left the exact delineation open.[1045]

(1200) In *Siemens/Invensys Rail*, the Commission referred to the distinction between interlocking equipment and point machines and identified other products that may constitute separate mainline signalling product markets (namely track circuits, track signals, conventional on-board units, relays, and balises), but ultimately left the product market definition open.[1046]

(C) Results of the market investigation and the Commission's assessment

(1201) The Commission notes that the different signalling products are not alternatives to each other (demand-side substitutability), as each product is used for a different purpose by the customer.

(1202) The vast majority of infrastructure managers who responded to the market investigation purchase mainline signalling products separately from signalling projects. For example, […] "*purchases mainline signalling products, including relays, axle counters and track circuits both separately from as part of railway signalling project contracts. Interlocking components are purchased within the framework of a larger agreement and constitute an integral part of the contract*".[1047]

(1203) With regard to mainline interlocking equipment specifically, the Commission will, in line with the approach taken by the Notifying Party in the Form CO, analyse the mainline interlocking equipment market as one product market. The interlocking equipment offered (and homologated) in a specific country is also substitutable (see recitals (1220)-(1221)).

(1204) Therefore, for the purpose of the present decision, the Commission's view is that mainline interlocking equipment constitutes a separate product market.

6.4.1.2. Geographic market definition

(A) The Notifying Party's views

(1205) The Notifying Party does not provide views on the geographic scope of the market for signalling products, but provides market data on a national basis.

(B) The Commission's decisional practice

(1206) In *Alstom UK/Balfour Beatty*, the Commission discussed a national geographic market for railway signalling products in the UK, in particular interlocking equipment and point machines, based on the adaptation costs and time needed to meet the specific UK product standards. The Commission concluded that the

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1045 Commission Decision in Case M.4508 – *Alstom UK/Balfour Beatty/JV* (2007), recitals 14-18.

1046 Commission Decision in Case M.6843 – Siemens/Invensys Rail (2013), recitals 20-23.

1047 Q9 – Mainline signalling – Questionnaire to customers, question 15.

adaptation costs varied between interlocking equipment on the one hand, and point machines on the other, with the cost and time needed for interlocking equipment being more expensive and burdensome than for point machines. The Commission estimated that the market appeared to be national despite some limited importation of railway signalling products. The precise geographic market definition was, nevertheless, left open.[1048]

(1207) In *Siemens/Invensys Rail*, the Commission referred to the feedback from respondents to the market investigation according to which obtaining national authorisation for the railway signalling products was not easy in view of different authorisation processes in different Member States which, in addition, can be time consuming. Therefore, the Commission could not exclude that the geographic scope of the market for railway signalling products should be national. The Commission, however, left the exact geographic market definition open.[1049]

(C) Results of the market investigation and the Commission's assessment

(1208) The responses to the market investigation in relation to the relevant geographic scope of the supply of mainline signalling products were mixed. While some infrastructure managers procure them at the national level, due to national specificities, others procure mainline signalling products at EEA-level or even worldwide to achieve economies of scale.[1050] In particular, with respect to mainline signalling products, […] submits that, […] which excludes imports as a source for supply of interlocking equipment.[1051]

(1209) The Commission considers that the scope of the market for interlocking equipment is national, given that (i) the market size in the UK is small, which limits the incentive of customers to source these products abroad (that is, transaction costs due to imports are likely to be high relative to the overall amount procured from abroad), (ii) interlocking equipment is country-specific and the supply of interlocking equipment for that specific country would involve specific investments and costs, which are not negligible nor can be done in a short time; (iii) barriers to entry are high as potential entrants need to go through country-specific authorisation/homologation processes for supplying their products. Therefore, only interlocking suppliers already active in a country would be in a position to supply interlocking equipment.

(1210) For the purpose of the present decision, the Commission considers that the geographic scope of the market for interlocking equipment is national.

6.4.2. Competitive assessment – horizontal unilateral effects

(1211) The Parties supply mainline signalling products on a standalone basis (not as part of projects) and overlap in a number of countries. Of those, the Commission will undertake its analysis in relation to horizontal unilateral effects in the market of interlocking equipment in the UK only, namely the market for which the Transaction would result in a significant impediment to effective competition.

1048 Commission Decision in Case M.4508 – *Alstom UK/Balfour Beatty/JV* (2007), recitals 24-26.

1049 Commission Decision in Case M.6843 – *Siemens/Invensys Rail* (2013), recitals 28-30.

1050 Q9 – Mainline Signalling – Questionnaire to customers, question 17.

1051 Q9 – Mainline Signalling – Questionnaire to customers, question 18.7.

6.4.2.1. Interlocking equipment in the United Kingdom

(A) The Notifying Party's views

(1212) The Notifying Party argues that the overlap between the Parties' activities in interlocking equipment in the UK will not lead to any horizontal competition concerns post-Transaction because:[1052]

(1) the Parties' offerings of interlocking equipment differ and are not substitutable within a single project (SSI and non-SSI electronic interlockings are not substitutable); Siemens does not sell non-SSI electronic interlockings to third parties, but uses them only internally for its own projects in the UK and […]. As regards SSI interlockings, Network Rail only sources products from the original suppliers of the relevant installed system the original suppliers to avoid risks of instability and interference with the existing system;

(2) given the small sales of interlocking equipment, the Parties would not risk the relationship with Network Rail by raising prices for interlocking equipment hence they have no incentive to raise prices post-Transaction;

(3) Network Rail is a sophisticated customer that can sponsor entry (such as Ansaldo's homologation of a new interlocking in the UK) or purchase product/projects on a target cost basis to limit prices;

(4) other suppliers can develop their own SSI interlockings, such as Unipart Rail; and

(5) standardisation and digitalisation efforts, such as EULYNX standards, will encourage new suppliers of interlocking equipment in the UK.

(1213) In the response to the Article 6(1)(c) Decision, the Parties reiterate the arguments put forward in the Form CO.[1053]

(1214) In the response to the Statement of Objections, the Parties reiterate the arguments set out in the Form CO and the response to the Article 6(1)(c) Decision, and further submit that (i) Siemens' and Alstom's interlockings are only theoretically substitutable (the Parties not being aware of instances where this has occurred), and (ii) Siemens does not "*typically*" supply interlocking equipment to "*third parties*" in the UK, and therefore the Transaction would not result in any "*material reduction*" in the number of suppliers of interlocking equipment in the UK. The Parties acknowledge however that Siemens has supplied its "*older electronic interlockings*", namely SSI and Westlock, to Atkins, but notes that Atkins has now also secured a long-term contract with GE (now Alstom) for non-SSI electronic interlockings (ElectroLogIXS) which will guarantee it a long-term access to interlocking equipment.[1054]

(B) Results of the market investigation and the Commission's assessment

(1215) Both Parties supply interlocking equipment in the UK. The Parties' combined market shares show that only one supplier of interlocking equipment would remain in the UK post-Transaction (see

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1052 Form CO, Chapter C.3, paragraphs 36-40.

1053 Parties' response to the Article 6(1)(c) Decision, Mainline Signalling, paragraphs 265-268.

1054 Parties' response to the Statement of Objections, Chapter C.1, paragraphs 537-541.

(1216) Table 42).

Table 42: Interlocking equipment, market shares (order intake, 2015-2017)

Product	Geography	Alstom order EUR million	Siemens order EUR million	Total market volume EUR million	Alstom	Siemens	Combined	Other competitors
Interlocking equipment	UK	[…]	[…]	[…]	[70-80]%	[20-30]%	**[90-100]%**	[0-5]%

Source: Form CO, Chapter C.3, Table 4

(1217) Second, although suppliers like Ansaldo are undertaking efforts to homologate their interlocking equipment in the UK to be able to compete for future standalone interlocking projects, they will not be in a position, if they succeed to enter, to supply equipment for existing interlockings in the UK, deployed by Siemens and Alstom, which are technically substitutable and interoperable (namely the Parties original SSI and Smartlock and Westlock interlockings), unlike Ansaldo's. The Parties' interlocking technology represents the quasi-totality of the interlockings currently deployed in Network Rail's rail network.

(1218) Third, the market investigation does not support that Network Rail will exert countervailing buyer power on the Merged Entity post-Transaction. For example, […] submits […].[1055]

(1219) This view is shared by […]: "[…]submits that there are a number of factors that contribute to Network Rail having only limited buyer power at present, and, post-merger even this limited power would be significantly reduced. In short, Network Rail does not have sufficient buyer power to adequately mitigate the significant detrimental effect the proposed merger would have on competition".[1056]

(1220) As the Transaction reduces the number of viable alternative suppliers of interlocking equipment in the UK from two to one, this also reduces any buyer power that Network Rail may have had prior to the Transaction. Therefore, the Commission concludes that Network Rail cannot be considered to hold sufficient bargaining power post-merger to constrain the Merged Entity.

(1221) In relation to the Notifying Party's arguments that the substitutability between the Parties' product is very limited for compatibility issues, in particular for safety critical equipment, the Commission considers that (i) Network Rail could potentially solve these compatibility issues by means of its established relationships with Siemens and Alstom, and (ii) Network Rail could always resort to replace an entire interlocking of one of the Parties by the other Party's product, as both are currently homologated suppliers of interlocking projects and equipment in the UK, a possibility that would not exist post-Transaction.[1057]

(1222) In relation to the first point, […]Siemens' and Alstom's interlockings are interoperable and can be replaced with one another, unlike third-party interlockings: […].[1058]

(1223) Regarding the Parties' argument in the response to the Statement of Objection that Siemens does not "*typically*" sell its interlocking equipment to third parties in the UK (namely external sales to companies such as Atkins) and that Atkins […], the

1055 […]'s response to Q9 – Mainline Signalling – Questionnaire to customers, question 51.1 (ID2427).
1056 […].
1057 […].
1058 […].

Commission notes the following: (i) Siemens is a viable option from which third parties could source interlocking equipment today, which will disappear post-Transaction, (ii) the Merged Entity's incentive to […], given that, post-Transaction, Atkins would not have any outside option to source interlocking equipment from, and (iii) in any event, the fact that Atkins […] does not change the Commission's concern that the Merged Entity would be a monopolist in this market.

(1224) For the reasons set out in recitals (1215)-(1223), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to interlocking equipment in the UK.

6.5. Mainline signalling projects – Competitive assessment - vertical effects

6.5.1. Framework for the assessment – non-horizontal effects

(1225) As regards non-horizontal effects, two broad types of mergers can be distinguished: vertical mergers and conglomerate mergers. Vertical mergers involve companies operating at different levels of the supply chain. Conglomerate mergers are mergers between firms that are in a relationship that is neither horizontal (as competitors in the same relevant market) nor vertical (as suppliers or customers).

(1226) As regards the assessment of vertical relationships, the Commission guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings[1059] (the "Non-Horizontal Merger Guidelines") distinguish between two main ways in which mergers between undertakings active on vertically related relevant markets may significantly impede effective competition, namely through input or customer foreclosure. Input foreclosure occurs where the merger is likely to raise the costs of downstream competitors by restricting their access to an important input. Customer foreclosure occurs where the merger is likely to foreclose upstream competitors by restricting their access to a sufficient customer base.

(1227) According to paragraph 25 of the Non-Horizontal Merger Guidelines, "*The Commission is unlikely to find concern in non-horizontal mergers, be it of a coordinated or of a non-coordinated nature, where the market share post-merger of the new entity in each of the markets concerned is below 30% and the post-merger HHI is below 2 000*".

(1228) Vertical relationships between the Parties' activities arise from the fact that both Parties purchase from and sell to other mobility suppliers.[1060] Vertically affected markets arise in several Member States and at the EEA level for a variety of products sold solely to mobility customers as well as for products that are sold one level upstream in the supply chain and that serve as inputs for mobility products.[1061]

(1229) The Notifying Party submits that there are a number of vertically affected markets in relation to the supply of mainline signalling products (upstream) into mainline signalling projects (downstream). Of those, the Commission will undertake its analysis in relation to the vertically affected markets for interlocking equipment in the UK, namely the upstream market for interlocking equipment and downstream

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1059 Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, adopted on 28 November 2007 (OJ C265, 18.10.2008, p.6).

1060 Form CO, Chapter F.

1061 Form CO, Chapter F.

market for standalone interlocking projects for which the Transaction would result in a significant impediment to effective competition.

(A) The Notifying Party's views

(1230) The Notifying Party identifies vertical relationships between the Parties' upstream supply of interlocking equipment and their downstream presence in the markets for standalone interlocking projects and ETCS ATP wayside (re-signalling) projects in the UK.[1062] The Notifying Party submits that despite the Parties representing [90-100]% of the market for the supply of interlocking equipment in the UK, the Merged Entity will neither have the *ability* nor the *incentive* to foreclose access or to increase their cost to downstream competitors for the following reasons:

(1) There is no material overlap between the Parties' activities in interlocking equipment in the UK. The infrastructure manager in the UK procures two types of electronic interlockings, namely Solid State Interlocking (SSI) systems and non-SSI interlockings. There is no substitutability between the two types within a single project as the UK infrastructure manager, Network Rail, specifies which type of interlocking is needed. With regard to SSI interlocking equipment, the Notifying Party submits that both Parties supply them in the UK, but there is only limited if any substitutability between the Parties' SSI products as Network Rail is claimed to only source products from the original supplier of the relevant installed system to minimise compatibility issues. As for non-SSI interlockings, there is no overlap given that Siemens has no external sales of this equipment. The Notifying Party submits that Siemens neither supplies nor licences non-SSI interlocking equipment in the UK other than for spare parts to support an existing installation. While the Parties can compete in the downstream market for signalling projects, they do not compete on the upstream product market for non-SSI interlocking equipment;

(2) […];

(3) The Parties have no incentive to antagonise Network Rail by raising prices for interlocking equipment, and thereby jeopardise the much broader relationship they have with Network Rail. The Notifying Party submits that Network Rail represented for the Parties an order intake of EUR […] in the period 2012-2016 (and EUR […] in the period 2012-2017) for interlocking projects only, while the interlocking equipment sales in the period 2015 to 2017 represented a marginal EUR […];

(4) Any attempt to foreclose competition would be neutralised and sanctioned by Network Rail that is, according to the Parties, a sophisticated customer and could enter into a framework contract to purchase interlocking equipment directly from the Merged Entity and then make that equipment available to the Parties' downstream competitors.[1063]

(1231) In their response to the Statement of Objections the Parties reiterate the arguments set out in the Form CO and the response to the Article 6(1)(c) Decision and further adds that: (i) the reason why Atkins has only won one project with the ElectroLogIXS interlocking is that it was only homologated in 2016, (ii) the suggestion that the Parties may have an incentive to breach the ElectroLogIXS

1062 Form CO, Chapter F, section B.VII.

1063 Form CO, Chapter F, section B.VII.; Parties' response to the Article 6(1)(c) Decision, Mainline signalling, paragraph 265-268.

contract is entirely implausible, and (iii) to the extent that there are other suppliers of interlocking equipment in the UK (such as Ansaldo once it completes homologation) Atkins could seek this equipment from such other suppliers as well.[1064]

(B) The Commission's assessment

(B.i) Market shares

(1232) The Parties' combined market share in the upstream market for interlocking equipment (SSI and non-SSI interlocking equipment) in the UK is [90-100]% (Siemens: [20-30]%; Alstom: [70-80]%).

Table 43: Interlocking equipment – Mainline – United Kingdom (order intake, 2015-2017)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[70-80]%	[20-30]%	**[90-100]%**	[0-5]%

Source: Response to Form CO, Chapter F, Table 13.

(1233) Interlocking equipment is used as input in the downstream markets for standalone interlocking projects and ETCS ATP wayside re-signalling projects. Given that the ETCS ATP wayside re-signalling market is EEA-wide while the market for standalone interlocking projects is national, the Commission will focus its analysis on the effects on the standalone interlockings market in the UK.

(1234) The Parties combined market share in the downstream market for standalone interlocking projects in the UK is [70-80]% (Siemens: [60-70]%; Alstom: [10-20]%) in the period 2008-2018. The only other significant players on the downstream market are Atkins, with a market share of [10-20]% and Ansaldo with a [0-5]% market share.[1065]

Table 44: Standalone interlocking projects, market shares, United Kingdom (order intake, 2008-2018)

Alstom order (EUR million)	Siemens order (EUR million)	Total market volume (EUR million)	Alstom market share	Siemens market share	Combined market share	Other competitors' market shares
[…]	[…]	[…]	[10-20]%	[60-70]%	**[70-80]%**	Atkins: [10-20]% Ansaldo: [0-5]% Unidentified: [10-20]%

Source: RFI 79, Annex 5.3

(B.ii) UK procurement framework

(1235) As explained in recitals (931)-(932), the UK infrastructure manager, Network Rail, procures through regional framework contracts, based on 5-year funding cycles known as control periods. It is currently in the final financial year of Control Period 5 (CP5). Control Period 6 (CP6) will cover April 2019 to March 2024. Under CP5,

1064 Parties' response to the Statement of Objections, paragraphs 545-546.

1065 The market share data submitted by the Parties in response to the Commission's Request for information RFI 79, Annex 5.2 and 5.3 allocates [10-20]% of the overall market for interlocking projects in the UK to "unidentified" suppliers in the 2008-2018 period. For the 2012-2018 period, the entire order intake is allocated to the Siemens ([70-80]%), Alstom ([10-20]%), Atkins ([10-20]%), and Ansaldo ([0-5]%).

Network Rail procured major signalling projects under the Major Signalling, Renewals, Enhancements Framework (MaSREF). The framework contracts in CP5 were awarded to the Parties and Atkins. The UK Office for Rail and Road reports that the Parties account for some […]% of Network Rail's MaSREF spending in CP5 to date, and […]% of Network Rail's major signalling spend in 2016/2017. The third player on the UK market, Atkins, has secured the remaining […]% of Network Rail's spend in 2016/2017 and […]% of all major signalling spend by Network Rail in CP5.[1066]

(1236) The primary and secondary contractors allocated to each regional framework area for CP5 are shown in Figure 23.[1067]

Figure 23: Allocations under Network Rail's Framework Allocation

Source: […].

(1237) Other than the Parties, the only […]OEMs that tendered for CP5 were […]. Atkins has […][1068] which it achieves using interlocking equipment from the Parties.[1069]

(B.iii) Input foreclosure[1070]

(1238) The Commission considers that post-Transaction the Merged Entity will have the ability and the incentive to foreclose access to interlocking equipment to downstream rivals in the UK against whom the Merged Entity competes for the supply of standalone interlocking projects. This theory of harm is supported by the responses to the market investigation and third party submissions.[1071]

(1239) First, the Merged Entity will have the ***ability*** to foreclose access to interlocking equipment, by increasing prices or otherwise frustrating the ability of competitors active on the market for standalone interlocking projects, to bid competitively in tenders for which they rely on the Parties' interlocking products. This is the case given that the Parties' interlocking products are a critical component in the supply of standalone interlocking projects in the UK and the Merged Entity holds a significant degree of market power on the upstream market for the supply of interlocking equipment in the UK. The Parties combined market share is [90-100]% on that market (see recital (1232)) and the interlocking products offered by the Parties are the only fully authorised interlocking products in the UK.

(1240) […]submits that "[t]*he ownership of upstream technology by the Parties, including the key control products Westlock (Siemens) and Smartlock (Alstom) may confer an advantage on the Parties in downstream markets for signalling solutions. This ability to leverage upstream market power would be strengthened further post-merger*".[1072]

(1241) As regards the Parties' assertion that there is limited substitutability between their SSI interlockings anyway, the Commission notes that the benefit from such substitutability, even if limited (as suggested by the Parties), would be lost as a result

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1066 See […].

1067 […].

1068 […].

1069 [...] response to Q8 – Mainline signalling – Questionnaire to competitors, questions A.1 and D.C.4.2 (ID6143).

1070 Customer foreclosure will not be discussed since there are no upstream rivals that could be foreclosed.

1071 See in particular [...] response to Q8 – Mainline signalling – Questionnaire to competitors (ID6143); [...] response to the Commission's request for information RFI 112 (ID6145); […]

1072 […].

of the Transaction. In any case, the market investigation shows, however, that the Parties' interlocking products are fully substitutable. In fact, […]the SSI interlockings of the Parties are fully interoperable/interchangeable with each other in view of joint development in the 1980s in the context of the tripartite agreement between British Rail, Westinghouse (now Siemens) and General Electric Signals (now Alstom).[1073]

(1242) With the products being interchangeable in the UK, […]presently "Atkins is free to use competition between the merging parties on a project-by-project basis to try to achieve an input cost which is sufficiently viable to allow it to tender", but that the merger will "remove any leverage that Atkins has".[1074] […] explains that Atkins' presence on the CP5 framework "is as an installer of the merging parties' (compatible) equipment only. […] Atkins' prospects of success at CP5 were improved by the fact it would perform projects using proven, interoperable, Siemens and Alstom technology".[1075]

(1243) The dependence of Atkins on the Parties is also underlined by […] that submits that while the Parties are "*the only two major providers of signalling projects in CP5*", Atkins is "*the only other provider […] that is able to supply major signalling works in [Great Britain]*" but, at the same time, Atkins is "*reliant on having access to the merging Parties' products – specifically the interlockings*".[1076]

(1244) This reliance on the Parties' equipment is also borne out by the list of projects delivered by Atkins to Network Rail in CP5. Of the […]major signalling projects Atkins won under CP5, Atkins […].[1077]

(1245) With regard to […] interlockings, this is a competing interlocking technology to Smartlock and Westlock, […].[1078] With regard to the Notifying Party's argument that input foreclosure is not plausible due to the […].[1079] […], for which it may no longer have an incentive post-Transaction. With regard to […], Atkins has only been successful in […].[1080] As noted in recital (1244), Atkins has relied on […] interlockings from either of the Parties for […] it has won under CP5.

(1246) The critical nature of having access to the Parties interlocking technology is also reflected in […]. In addition, Alstom's presentation shows that […].[1081]

(1247) It follows that without access to the interlocking equipment of the Merged Entity, and at reasonable cost, competitors, such as Atkins, that do not have their own interlocking technology, would not be able to compete successfully for Network Rail's contracts. Having access to the Parties' interlocking equipment is a prerequisite for a competitor, such as Atkins, to remain active on the market.

(1248) There are also no alternative suppliers that competitors, such as Atkins, could turn to post-Transaction for the supply of interlockings. [...]submits that "*there are no other viable options […] in the near term as* [...] *are not aware of any other products [that] are approved for use on the UK rail network. Further to this, we believe that*

1073 […].
1074 […].
1075 […].
1076 […].
1077 […].
1078 […].
1079 As explained by […] submission […].
1080 […] submission […].
1081 Alstom's internal document, […].

custom and practice will drive the Infrastructure Manager to procure in a manner which continues to favour products made and developed by the merged entity".[1082]

(1249) Second, the Merged Entity will have an ***incentive*** to foreclose access to upstream signalling products post-Transaction because it would be a profitable strategy.

(1250) The incentive to pursue such strategy is likely to be greater following the Transaction than it is pre-Transaction since (i) Siemens represented a constraint for Alstom as regards the supply of interlocking equipment in the UK, whereas post-Transaction there is no other OEM supplier with material operations in the UK; (ii) in the longer term, it will be much more profitable for the Merged Entity to refuse to supply third parties in order to remove competition from tenders for standalone interlocking projects (encompassing not only the equipment and any profit to be made on it, but also system adaptation, engineering, project management and other services, see recital (625)) which it could win at higher prices in the absence of competitors for interlocking projects that rely on the Parties' interlocking equipment; and (iii) Network Rail lacks countervailing buyer power.

(1251) Contrary to the Notifying Party's submission that Network Rail will be able to neutralise the effect of any attempted foreclosure efforts by the Merged Entity, the market investigation demonstrates that this will not be the case. […].[1083] [...]notes that the willingness of Siemens and Alstom currently to "*play ball"* […] *is motivated – at least in part – by a desire to maintain good relations with the client. However, once the merger has been consummated, the parties' negotiating power towards the client will be increased, diminishing the need to maintain good commercial relations with the client and to be seen as a co-operative partner*".[1084]

(1252) Only Atkins has succeeded to challenge the Parties for the framework contracts under Network Rail's CP5. Network Rail estimates that its annual spend on signalling is GBP […].[1085] Pursuing a strategy in relation to interlocking equipment that would make it more costly and difficult for the likes of Atkins to present a competitive bid in tenders for Network Rail's projects would allow the Merged Entity to further increase its already very large share (beyond the […]% that the Parties represented in 2016/2017) of Network Rail's annual spend. The share lost by Atkins as a result of such a foreclosure strategy would likely be won by the Merged Entity as the main and only other framework contract holder in Network Rail's CP5 and owner of the only fully authorised interlocking technologies used in the UK rail network.

(1253) This analysis is supported by the market investigation. […]submit that they do not believe the Merged Entity would continue to supply access to interlockings at reasonable prices post-Transaction.[1086] [...] notes, however, that pre-Transaction "*[t]here is no material issue with regards to access to legacy technologies in the UK market at this time, although negotiation to access some proprietary technologies e.g. Westlock can take extended periods of time that can impact on the ability to bid for work effectively*".[1087]

1082 [...]' response to Q8 – Mainline signalling – Questionnaire to competitors, question E.13.2 (ID6143).

1083 […].

1084 [...] response to the Commission's request for information RFI 112, question 9 (ID6145).

1085 […].

1086 […]'s response to Q9 – Mainline signalling – Questionnaire to customers, question 61.3 (ID2427); [...]response to Q8 – Mainline signalling – Questionnaire to competitors, question E.2.3 (ID6143).

1087 [...] response to Q8 – Mainline signalling – Questionnaire to competitors, question E.2.3, E.2.3.1 (ID6143).

(1254) […] also states, in relation to the […].[1088]

(1255) […] concerns that the Merged Entity will become increasingly independent and therefore unwilling to provide access to its interlocking technology to smaller competitors. […] explains that there will be "*less need for smaller suppliers to work on specialist elements of projects*" and "[i]*ncentives of the Parties to licence will be lower post merger, e.g. previously some instances where Siemens or Alstom not bidding for a contract, may be prepared to licence interlocking technology in order to allow smaller firms to compete against Alstom (Siemens)*".[1089]

(1256) Third, the past behaviour of both Siemens and Alstom shows they have already tried to frustrate the ability of competitors to bid for mainline signalling projects in the UK. [...], notes that "*Siemens, in particular, has used its dominance to buy internally, squeeze competitors' margins and deny access to interface protocols or interface equipment that connect to their downstream signalling systems. Or make such access very expensive or high commercial risk. These companies have commercially leveraged their vertically integrated closed systems in the conventional signalling market. There is no reason to believe that they will not do so in the emerging and ETCS signalling market*".[1090] This concern equally applies to the Parties' likely future conduct versus downstream rivals for standalone interlocking projects.

(1257) […] a UK supplier that declined to bid for certain projects tendered by Network Rail in CP5 "*due to the time and costs involved in obtaining access to the merging Parties' technology*", explaining that "*for two large relock signalling contracts tendered in CP5, it was unable to access […] at a price that would enable it to return profit. This essentially left* […] *one supplier in each case: the incumbent*".[1091]

(1258) The Merged Entity has the ability and incentive to engage in similar behaviour post-Transaction, except that the anticompetitive effect of such behaviour would be much worse post-Transaction since the Merged Entity will be in a monopoly position as regards supplies of interlocking equipment in the UK. Whereas before the Transaction competitors without their own interlocking technology could leverage the competitive tension between the Parties to obtain a price at reasonable levels allowing such players to place a competitive bid, post-Transaction that competitive constraint would be gone and the Merged Entity would be able and would have the incentive to price its upstream products very highly. Such a tactic could be so unprofitable for a competing bidder, such as Atkins, that it could force it out of the downstream market altogether. This would reduce further the limited competition remaining on the downstream market for standalone interlocking projects in the UK and result in a likely increase in prices for such projects in the UK.

(C) Conclusion

(1259) The Commission considers that the Merged Entity would have the ability and incentive to engage in an input foreclosure strategy with the likely impact of increased prices on the downstream market for standalone interlocking projects in the UK. The Transaction would therefore lead to a significant impediment to effective competition in the market for standalone interlocking projects in the UK as a result of its non-coordinated vertical effects.

1088 […].

1089 […].

1090 [...]'s response to Q8 – Mainline signalling – Questionnaire to competitors, question F.1.1 (ID1888).

1091 […].

6.6. Conclusion on signalling

(1260) For the reasons set out in recitals (836)-(1224), and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition due to horizontal non-coordinated effects, in relation to the following mainline signalling markets:

- ETCS OBU projects in the EEA;
- Legacy OBU projects in Belgium;
- Standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK;
- ETCS ATP wayside overlay projects in the EEA;
- ETCS ATP wayside re-signalling projects in the EEA; and
- Interlocking equipment in the UK.

(1261) For the reasons set out in recitals (1232)-(1259), and in light of the results of the investigation, the Commission considers that the Transaction would also cause a significant impediment to effective competition due to non-horizontal effects, namely:

- non-coordinated vertical effects, in relation to the market for standalone interlocking projects in the UK.

7. EFFICIENCIES

(1262) The Notifying Party claims that the Transaction will generate a number of synergies in a period of four years.[1092] These efficiencies primarily relate to cost savings in the following areas: procurement (reduced procurement costs because of increased buyer power), indirect expenses (mostly related to overheads), selling and bidding, R&D, and industrial synergies (mostly related to the optimisation of production capacity).

(1263) The Notifying Party claims that synergies will enable the Merged Entity to offer lower prices to its customers, as well as participate in tenders where the Parties would have not participated.

(1264) In addition, the Notifying Party claims that the combined portfolio of products it would benefit from increases the likelihood that the product solutions offered will be closer to specific customer requirements.

(1265) The claimed synergies are not verifiable, neither as regards their realisation and sufficiency nor in the time frame over which the efficiencies are claimed to materialise, as in the Notifying Party's own words "*[t]he expected synergies of EUR 470 million are based on a preliminary and high-level assessment that was done by the Parties prior to the announcement of the Proposed Transaction. Due to the limited time available, this assessment was necessarily a high-level one*".[1093] Moreover, a large part of the claimed efficiencies relates to fixed costs that are unlikely to be passed-on to customers in the form of more aggressive bidding behaviour. Finally, it is unclear whether all of the claimed efficiencies would be merger-specific.

1092 Form CO, Chapter G, Section 9, paragraph 1.

1093 Form CO, Chapter G., Section 9, paragraph 3.

(1266) A more detailed analysis of the efficiency claims is developed in the following recitals.

(1267) As regards the savings in **procurement costs**, the Notifying Party claims that the Merged Entity's increased scale of procurement (generated by the consolidation of the Parties' respective orders) would allow the Merged Entity to obtain further discounts and hence savings in procurement costs.

(1268) Procurement costs are composed of direct procurement costs and indirect procurement costs. Direct procurement costs relate to input production materials (doors, breaks, electronic equipment) and are therefore likely to include costs that are directly related (and can be largely allocated) to specific projects. Indirect procurement costs are largely outsourced consulting costs (engineering services, translation services and other project-related administrative and legal services). Also the indirect procurement costs may in principle include costs that may be attributable to a specific project.

(1269) Some of the direct procurement costs are not sunk at the time at which the bid price is set. Therefore, savings in direct procurement costs could in principle be passed to a certain extent to consumers in the form of a lower bid price.

(1270) Some of the indirect procurement costs may not be sunk at the time at which the bid price is set. Therefore, savings in indirect procurement costs could in principle also be passed to a certain extent to consumers in the form of a higher incentives to participate in tenders.

(1271) These savings however are based on very high level assumptions and limited information has been provided by the Parties. As such, these savings are not verifiable. The Parties would need to show that increasing scale generates volume discounts from suppliers and that the Transaction would generate material additional volume discounts compared to the discounts already obtained by the Parties absent the merger (especially in light of the already considerable size of Siemens and Alstom). Finally, it is also not clear whether these savings could not be obtained via alternative means to the merger (e.g. joint purchasing agreements).

(1272) Savings in **indirect expenses** (i.e. overheads) largely relate to fixed and sunk costs at the time of any given tender. As a result, savings in these costs appear unlikely to affect the price of the bid or the incentive to participate in the bid.

(1273) **Selling and bidding costs** savings relate to the cost of preparing bids (bidding costs) and to the sales process in case a bid is won (selling costs).

(1274) As regards bidding costs, these costs are generally sunk by the time the bid price is determined (as these are incurred in the period leading to the final bid) and hence a change in these costs is not expected to change the final price set by the bidding supplier (since at the time of the bid those bidding costs have been incurred anyway, whether the bid is won or lost). Bidding costs may however affect the incentives for a supplier to participate in additional (marginal) tenders. The size of this incentive would depend on the importance of the bidding costs and on the size of the cost synergy. In addition, it appears that the claimed savings relate to the elimination of the duplication of bidding in those tenders in which both parties would have participated pre-merger. As such, the cost saving appears to relate more to the loss of competition between the merging parties than to a genuine reduction in the bidding cost per company in any given tender.

(1275) As regards the costs of selling, some of these costs are incremental in case a bid is won. As a consequence, a reduction in these costs may induce a certain reduction in

the bid price. At present, the Notifying Party does not appear to have explained why these costs would decrease post-merger and why they could not be reduced without the merger.

(1276) As regards **R&D costs**, these appear to be savings related to the elimination of duplicative R&D projects (i.e. projects on which both parties would have competed). As such, it is unclear why this reduction would benefit consumers. To the contrary, the elimination of duplicate R&D projects may reflect a loss of innovation competition between the Parties (in tenders where consumers would have had both of the Parties pre-merger and would instead have only the product of one of the Parties post-merger).

(1277) The Notifying Party also claims that following the merger some engineers who would have worked pre-merger on duplicative projects would be re-deployed to projects that would not have been pursued before the merger. In the Notifying Party's view, this would spur additional innovation and customers could then benefit from new product developments.

(1278) The Commission disagrees with this argument for a number of reasons.

(1279) First, the merger specificity of this alleged efficiency is unclear: the Parties have not provided evidence of the existence of concrete projects that would have been profitable to pursue pre-merger but which could not be targeted because of capacity constraints and, in any case, if there were valuable R&D projects pre-merger, the Parties could have engaged additional R&D staff and resources to pursue these additional projects.

(1280) Second, the claimed efficiency does not represent a net increase in R&D activities by the Parties post-merger (compared to the sum of Siemens and Alstom pre-merger) but a mere re-allocation of resources. This re-allocation may allow the Merged Entity to conduct R&D on projects on which Siemens and Alstom would not have conducted research pre-merger (although this is unclear based on the available evidence), but this would likely come to the detriment of consumers. Indeed, in those markets/tenders for which both Siemens and Alstom would have conducted R&D independently, customers would likely face after the Transaction a loss of variety (to the extent that the R&D efforts of the Parties were differentiated) or, in any event, the loss of one independent competitor.

(1281) As regards **industrial synergies**, these are savings that relate to a reduction in fixed costs of underutilised production sites. In principle, a merger may increase the scope for consolidation and re-location of production sites. However, this category of costs is largely fixed, in the sense that costs are not incremental to any particular tender, and as such they are not likely to be passed on or otherwise bring benefits to consumers. Moreover, such savings are unlikely as the Parties have committed not to downgrade or close down production sites, particularly in Germany and France.[1094]

(1282) The Notifying Party also claims that the **combined portfolio of products** increases the likelihood that the product solutions offered will be closer to specific customer requirements, therefore allowing (in some cases) for lower project specific engineering costs than those the Parties would incur on a standalone basis. Such savings in development cost would allow the Merged Entity to bid lower prices. The Commission considers that the Notifying Party has not provided any specific information on what proportion or category of tenders this synergy would benefit,

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[1094] Alstom's internal 5.4 document […]

what would be the source of this synergy and its magnitude. In any event, the Commission's view is that already absent the Transaction European customers have access to whatever product within Siemens or Alstom's portfolios best fits their requirements. The Transaction as presented would simply consist of bringing the products in the portfolio of Siemens and Alstom under the same ownership. As a result, after the Transaction consumers would have access to the same products as absent the Transaction (even assuming that both product lines of Siemens and Alstom are retained by the Merged Entity in the longer run), with the downside that the two sets of products are now controlled and priced by the same entity. Therefore, the Commission considers that the Notifying Party's claims should be dismissed.

(1283) In summary, the Commission considers that neither the cost savings claimed, nor the arguments in relation to product portfolio improvements can be accepted as efficiencies generated by the proposed Transaction and counteracting the negative effects of the Transaction on competition in the relevant markets as described in this Decision.

8. CONCLUSION

(1284) For the reasons set out in Sections 5 and 6, and in light of the results of the investigation, the Commission considers that the Transaction would cause a significant impediment to effective competition as a result of horizontal and/or non-horizontal non-coordinated effects, in relation to the following markets:

(1) High-speed and very high-speed rolling stock, including the potential narrower market of very high-speed rolling stock in the EEA and on a worldwide basis (excluding China, Japan and South Korea);

(2) ETCS OBU projects in the EEA;

(3) Legacy OBU projects in Belgium;

(4) Standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK;

(5) ETCS ATP wayside overlay projects in the EEA;

(6) ETCS ATP wayside re-signalling projects in the EEA;

(7) Interlocking equipment in the UK.

9. COMMITMENTS

9.1. Analytical framework

(1285) When a concentration raises competition concerns, the merging parties may seek to modify the concentration in order to resolve those competition concerns and thereby obtain clearance for the merger.[1095]

(1286) Under the Merger Regulation, the Commission has the burden of showing that a concentration would significantly impede effective competition in the internal market or in a substantial part of it. In contrast, it is for the Notifying Party to the concentration to propose appropriate commitments to eliminate the competition

[1095] Commission Notice on remedies acceptable under the Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (OJ C 267, 22.10.2008, p. 1-27), paragraph 5.

concerns identified by the Commission.[1096] The Commission only has the power to accept commitments that are deemed capable of rendering the concentration compatible with the internal market so that they will prevent a significant impediment to effective competition in all relevant markets in which competition concerns were identified.[1097]

(1287) Under the Merger Regulation, the Commission can only accept such commitments which are *sufficiently clear* so that it can be expected that they can be implemented and enforced by the Commission without further problems, notably without creating a manifest risk of diverging interpretations of main elements of the commitments.[1098] Since any delay in the implementation of the commitments which may be caused by problems of interpretation or even by litigation can have severe consequences for the affected customers, the commitments must provide a sufficient degree of legal certainty as concerns their content and must be "*fully workabl*e".[1099]

(1288) The commitments must eliminate the competition concerns entirely and must be comprehensive and effective in all respects. The commitments must also be proportionate to the competition concerns identified.[1100] Furthermore, the commitments must be capable of being implemented effectively within a short period of time as the conditions of competition on the market will not be maintained until the commitments have been fulfilled.[1101]

(1289) The Commission also recalls that the Commission Notice on remedies acceptable under the Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004[1102] (the "Remedies Notice"), sets out that "*commitments which are structural in nature, such as the commitment to sell a business unit, are, as a rule, preferable from the point of view of the Merger Regulation's objective, inasmuch as such commitments prevent, durably, the competition concerns which would be raised by the merger as notified, and do not, moreover, require medium or long-term monitoring measures*".[1103]

1096 Remedies Notice, paragraph 6.

1097 Remedies Notice, paragraph 9.

1098 See e.g. paragraph 6 of the Remedies Notice: "[...] *the parties are required to show clearly, to the Commission's satisfaction in accordance with its obligations under the Merger Regulation, that the remedy restores conditions of effective competition in the common market on a permanent basis*" (emphasis added).

1099 See Remedies Notice, paragraph 40: *"*[…] *to ensure that the commitments are fully workable*" (emphasis added). See also CFI in Case T-210/01 General Electric v Commission of 14 December 2005, (2005), p. II-5575, at paragraph 555: "*It must be noted that under Regulation No 4064/89 the Commission has power to accept only such commitments as are capable of rendering the notified transaction compatible with the common market* […]. *It must be held in that regard that structural commitments proposed by the parties will meet that condition only in so far as the Commission is able to conclude, with certainty, that it will be possible to implement them and that the new commercial structures resulting from them will be sufficiently workable and lasting to ensure that the creation or strengthening of a dominant position* […]" (emphasis added).

1100 Recital 30 of the Merger Regulation. The General Court set out the requirements of proportionality as follows: "*the principle of proportionality requires measures adopted by Community institutions not to exceed the limits of what is appropriate and necessary in order to attain the objectives pursued; when there is a choice between several appropriate measures recourse must be had to the least onerous, and the disadvantages caused must not be disproportionate to the aims pursued*" (T-177/04 *easyJet v Commission* [2006] ECR II-1931, paragraph 133).

1101 Remedies Notice, paragraphs 9, 10-11 and 63-64.

1102 OJ C 267, 22.10.2008, p. 1-27.

1103 Remedies Notice, paragraph 15.

(1290) The Remedies Notice states that "*the question of whether a remedy and, more specifically, which type of remedy is suitable to eliminate the competition concerns identified, has to be examined on a case-by-case basis. Nevertheless, a general distinction can be made between divestitures, other structural remedies, such as granting access to key infrastructure or inputs on non-discriminatory terms, and commitments relating to the future behaviour of the Merged Entity*".[1104]

(1291) The Remedies Notice further sets out that "*divestitures are the best way to eliminate competition concerns resulting from horizontal overlaps and may also be the best means of resolving problems resulting from vertical or conglomerate concerns*".[1105] Divestitures "*are the benchmark for other remedies in terms of effectiveness and efficiency. The Commission therefore may accept other types of commitments, but only in circumstances where the other remedy proposed is at least equivalent in its effects to a divestiture*",[1106] and other structural commitments "*may be suitable to resolve all types of concerns if those remedies are equivalent to divestitures in their effects*" whilst commitments relating to the future behaviour of the Merged Entity "*may be acceptable only exceptionally in very specific circumstances*".[1107]

(1292) In divestiture commitments, the divested activities must consist of a viable business that, if operated by a suitable purchaser, can compete effectively with the Merged Entity on a lasting basis and that is divested as a going concern. The business must include all the assets, which contribute to its operation or which are necessary to ensure its viability and competitiveness, and all personnel which are presently employed or which are necessary to ensure the business' viability and competitiveness.[1108]

(1293) Personnel and assets, which are currently shared between the business to be divested and other businesses of the parties but which contribute to the operation of the divested business or which are necessary to ensure its viability and competitiveness, must also be included. Otherwise, the viability and competitiveness of the business to be divested would be endangered.[1109]

(1294) Normally, a viable business is a business that can operate on a stand-alone basis, which means independently of the merging parties as regards the supply of input materials or other forms of cooperation other than during a transitory period.[1110]

(1295) The business to be divested has to be viable as such. Therefore, the resources of a possible or even presumed future purchaser are not taken into account by the Commission at the stage of assessing the remedy. The situation is different if already during the procedure a sale and purchase agreement with a specific purchaser is concluded whose resources can be taken into account at the time of the assessment of the commitment[1111] (the so-called "fix-it-first" remedy).

(1296) The intended effect of the divestiture will only be achieved if and once the business is transferred to a suitable purchaser in whose hands it will become an active competitive force in the market. The potential of a business to attract a suitable

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1104 Remedies Notice, paragraphs 16-17.
1105 Remedies Notice, paragraph 17.
1106 Remedies Notice, paragraph 61.
1107 Remedies Notice, paragraph 17.
1108 Remedies Notice, paragraphs 23-25.
1109 Remedies Notice, paragraph 26.
1110 Remedies Notice, paragraph 32.
1111 Remedies Notice, paragraph 30.

purchaser is an important element of the Commission's assessment of the appropriateness of the proposed commitment.[1112]

(1297) The Commission also recalls that it has the legal duty to ensure, when assessing the remedies proposed by the merging parties, that such remedies are effective. Paragraph 13 of the Remedies Notice states that in order for the commitments to remove the competition concerns entirely and to be comprehensive and effective, there has to be an effective implementation and ability to monitor the commitments. Whereas divestitures once implemented do not require any further monitoring measures, other types of commitments require effective monitoring mechanisms in order to ensure that their effect is not reduced or even eliminated by the parties. Otherwise such commitments would have to be considered as mere declarations of intentions by the parties and would not amount to any binding obligations, as, due to the lack of effective monitoring mechanisms, any breach of them could not result in the revocation of the decision according to the provisions of the Merger Regulation.

(1298) Paragraph 14 of the Remedies Notice further provides that where the parties submit remedy proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted.[1113] The Commission may reject such remedies in particular on the grounds that the implementation of the remedies cannot be effectively monitored and that the lack of effective monitoring diminishes, or even eliminates, the effect of the commitments proposed.

(1299) In terms of timing, pursuant to Article 19(2) of the Commission Regulation (EC) No 802/2004,[1114] the commitments in Phase II have to be submitted in a timely fashion, that is, no later than 65 working days after proceedings were initiated, to allow for an adequate assessment and for proper consultation of Member States.[1115] The Commission is under no obligation to accept any potential improvements to the commitments after the expiry of that deadline.[1116] If the Commission nevertheless voluntarily agrees to assess such commitments, they will only be accepted where it can clearly be determined – on the basis of the Commission's assessment of information already received in the course of the investigation, including the results of prior market testing, and without the need for any other market test – that such commitments, once implemented, fully and unambiguously resolve the competition concerns identified and where there is sufficient time for proper consultation with Member States. The Commission will normally reject modified commitments that do not fulfil those conditions.[1117]

(1300) Based in particular on these principles, the Commission assessed the Commitments put forward by the Notifying Party in the present case.

1112 Remedies Notice, paragraph 47.

1113 See Case T-87/05 *EDP v. Commission*, [2005] ECR II-3745, paragraph 102.

1114 Commission Regulation (EC) No 802/2004 of 21 April 2004 implementing Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the "Implementing Regulation").

1115 Remedies Notice, paragraph 94.

1116 Implementing Regulation, Article 19(2).

1117 Remedies Notice, paragraph 94.

9.2. Procedure

(1301) In order to remove the serious doubts identified by the Commission in the Statement of Objections issued on 29 October 2018, the Notifying Party submitted commitments on 12 December 2018 (the legal deadline to formally submit commitments) pursuant to Article 8(2) of the Merger Regulation (the "First Commitments"). The Notifying Party did not offer commitments during the Phase I investigation.

(1302) The Commission launched a market test of the First Commitments on 17 December 2018 (the "Market Test"). The deadline for market participants to provide feedback was 20 December 2018. Several market participants requested extensions of the time period to respond which the Commission granted up until 3 January 2019 (and one respondent up until 7 January 2019). The market test questionnaires were sent to (i) suppliers of rolling stock and signalling solutions in the EEA as well as associations of suppliers and trade unions representing the employees at rolling stock and signalling suppliers, (ii) customers of rolling stock and signalling solutions in the EEA, and (iii) national rail regulators (for example, ORR in the UK). In addition, the national competition authorities of the EEA Member States as well as the national competition authorities of Australia, Brazil, Israel, South Africa and the USA were given the opportunity to comment on the Notifying Party's proposal.

(1303) On 21 December 2018, the Commission informed the Parties of the preliminary results of the Market Test during a telephone conference call. On the same date, the Commission granted the Parties access to non-confidential responses to the Market Test received until then.

(1304) On 4 January 2019, the Commission had a further call with the Parties to report on the further results of the Market Test received since 21 December 2018. On the same date, the Commission granted the Parties access to non-confidential responses to the Market Test received since 21 December 2018.

(1305) On 7 January 2019, the Commission and the Parties met during a state-of-play meeting to discuss the First Commitments in light of the feedback from the Market Test.

(1306) On 9 January 2019, the Notifying Party formally submitted a modified version of the First Commitments (the "Second Commitments"). The Second Commitments were not market tested.

(1307) Throughout January 2019, the Parties received non-binding offers and indications of interest from a number of market participants including […].

(1308) On 25 January 2019, the Notifying Party formally submitted a modified version of the First and Second Commitments (the "Final Commitments"). The Final Commitments were not market tested.

(1309) The First, Second and Final Commitments (together referred to as the "Commitments") included in particular measures aimed at solving the competition concerns identified by the Commission in relation to the markets for high and very high-speed rolling stock (the "Very High-Speed Rolling Stock Commitments") and for mainline signalling (the "Mainline Signalling Commitments").[1118]

[1118] The First Commitments, Second and Final Commitments also included a set of undertakings aimed at solving the competition concerns identified by the Commission in the Statement of Objections in relation to CBTC urban signalling for metro systems ("CBTC Commitments"). However, the

(1310) The Notifying Party also submitted commitments to address the Commission's objection regarding urban signalling. In particular, the Notifying Party offered to divest Siemens' Digisafe business. Subject to further adjustments, the Commission considers that this commitment would, in principle, be capable of removing the Commission's concerns in the urban signalling markets in respect of which the Commission raised objections (Metro CBTC, OCTYS and SACEM). However, it is not necessary to come to a final view on the adequacy of the commitments in these markets as this would not affect the compatibility of the Transaction with the internal market. Thus, the urban signalling commitment offered by the Notifying Party will not be discussed in this Decision in any further detail.

9.3. Description of the Very High-Speed Rolling Stock Commitments

(1311) The Very High-Speed Rolling Stock Commitments consist of two alternative packages: (i) commitments relating to Siemens' Velaro business as described in Section 9.3.1.1. (the "First Velaro Commitment") and Sections 9.3.2 (the "Second Very High-Speed Commitments") and 9.3.3 (the "Final Very High-Speed Commitments"); and (ii) commitments relating to Alstom's Pendolino business as described in Section 9.3.1.2 (the "Pendolino Commitment").

9.3.1. The First Very High-Speed Rolling Stock Commitments

9.3.1.1. The First Velaro Commitment

(1312) The First Velaro Commitment consisted of (i) the transfer of the right to develop, improve, manufacture and commercialise the third generation of Siemens' Velaro platform (the "Velaro 3G Transfer"), and (ii) a technology transfer of the core technology bricks of Siemens' Velaro Novo concept (the "Velaro Novo Licence"), which would be made available to the purchaser under certain conditions.

(A) The Velaro 3G Transfer

(1313) The commitment consisted in the non-transferrable right to develop, improve, manufacture and commercialise the Velaro 3G, in its three existing various platforms (Velaro D, e320 and TR at the option of the purchaser) which would be available to the purchaser for exclusive use in very high-speed applications (the "Velaro 3G Divestment"). The commitment covered the transfer of the following main items, at the option of the purchaser:

(1) IP rights, documentation and know-how;

(2) Procurement specifications for externally sourced components and software;

(3) Procurement specifications for internally sourced components or a supply agreement for these components.

(1314) The Merged Entity would retain the right or benefit from a back-licence to use Velaro 3G rights, know-how and documentation (i) to comply with its backlog obligations, (ii) in the context of the […], (iii) in the context of high or very high-speed rolling stock tenders […] and (iv) for non-VHS applications globally (the "Retained Velaro 3G Rights").

(1315) In addition, at the option of the purchaser, the Merged Entity would use commercially reasonable efforts to:

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assessment of the CBTC Commitments has no bearing on the Commission's final conclusion in the present Decision. Therefore, the CBTC package is not discussed further in this Decision.

(1) Enter into 1-year transitional service agreements (maximum duration) to provide technical engineering assistance for (i) understanding the content of the Velaro 3G platform, (ii) the platform's TSI upgrade and (iii) the first bid after closing relying on the Velaro 3G platform;

(2) Provide technical assistance to ensure the replacement of the currently[1119] obsolete Velaro 3G's train control and monitoring systems ("TCMS") with the purchaser's own TCMS or with the Merged Entity's Agate 3 TCMS system (together with a supply agreement for the necessary hardware) ("TCMS Upgrade");

(3) Subject to third party rights, transfer Siemens' current technical support and spares supply agreement ("TSSSA") with Eurostar ("Eurostar maintenance backlog") and all Eurostar maintenance-related Siemens personnel;[1120]

(4) Transfer currently employed engineering personnel that are necessary to maintain the viability and competitiveness of the Velaro 3G of up to 31 key personnel ("Velaro 3G Key Personnel").

(1316) The Velaro 3G Divestment did not include the first and second generations of the Velaro platform, any product assets, manufacturing units or R&D facilities, any order backlog other than the Eurostar maintenance backlog or the Velaro brand and associated trademarks.

(B) The Velaro Novo Licence

(1317) Under the First Velaro Novo Licence, the core technology bricks of Siemens' Velaro Novo concept were made available to the purchaser under the following conditions:

(1) For use in the EEA only for very high-speed applications;

(2) On an exclusive basis for 5 years (until the end of 2023), after which period the licence would have become non-exclusive;

(3) The exclusivity would have not applied to: (i) the ongoing tender organised by […]; (ii) non-very high-speed applications globally; and (iii) very high-speed applications outside of the EEA.

(1318) Accordingly, the Merged Entity would remain free to use the Velaro Novo technology (i) in the context of the […], (ii) for non-very high-speed applications globally and (iii) for very high-speed applications outside of the EEA.

(1319) The licence would cover the following "technology bricks": (i) carbody, (ii) bogie, (iii) traction concept, (iv) train control and IT, (v) interior, and (vi) specifications in their status for the procurement of third party components (The "Velaro Novo Technology Bricks").

(1320) In addition, the Merged Entity committed to use its best efforts to provide engineering support to the purchaser during its first bid relying on the Velaro Novo Technology Bricks.

(1321) The Velaro Novo Licence did not include any product assets, manufacturing units or R&D facilities or the Velaro brand and associated trademarks.

1119 In the context of the present description, "currently" means at the time of the commitments proposal.

1120 Absent customer consent, the Merged Entity will continue to execute the Eurostar maintenance backlog and transfer the profit of the technical support and spares supply agreement to the purchaser upon agreed conditions.

9.3.1.2. Commitments relating to the Pendolino Commitment

(1322) The Pendolino Commitment consisted in the divestment of Alstom's Pendolino platform (the "Pendolino Divestment"), […], including the following main assets and items:

(1) The exclusive right to develop, improve, manufacture and commercialise, including IP, know-how, documentation and procurements specifications as defined in Schedule 3 of the First Very High-Speed Rolling Stock Commitments, all versions of the tilting and non-tilting Pendolino platform ([…]) as well as previous versions at the option of the purchaser and the Pendolino-specific references to the platform;

(2) The transfer of all existing high-speed rolling stock backlog and follow-on contracts related to the Pendolino ("Pendolino Backlog"), subject to customer consent;

(3) The transfer of all existing and follow-on maintenance and refurbishment contracts ("Pendolino Maintenance Backlog"), subject to customer consent.[1121]

(1323) The Pendolino Commitment also comprised:

(1) The transfer of know-how and documentation […];

(2) The transfer of the ongoing bid placed with […] and related rolling stock and maintenance backlog if the contract was awarded to Alstom and subject to customer consent;

(3) The transfer of know-how and documentation […] and as existing at the date of the Decision.

(1324) The Pendolino Commitment further comprised, at the option of the purchaser, the following supply and transitional agreements: (i) the supply of existing key in-house components for the high-speed and […]; (ii) a transitional service agreement for technical assistance; and (iii) a transitional service agreement for project engineering support.

(1325) In addition, the Pendolino Commitment included the following measures at the option of the purchaser:

(1) Access to and right to use the Alstom's Pendolino maintenance-specific facilities in […] and […] as well as Alstom's best efforts to obtain access to […] maintenance facilities in […] and […] to the extent related to the Pendolino;

(2) The transfer of Pendolino-specific documentation and Pendolino maintenance-specific Alstom personnel;

(3) Alstom's entire Pendolino-specific R&D, engineering, industrialisation, manufacturing, testing, commissioning, validation and certification, supply, and procurement capacity carved-out (through transfer or exclusive right to use) at Alstom's […], as well as Pendolino-specific personnel engaged in one of the functions, up to […] full-time equivalents ("FTEs").

[1121] Absent customer consent, the Merged Entity will continue to execute these contracts and transfer the net profit of these contracts to the purchaser upon agreed conditions.

(1326) The proposed remedy also provided for a Pendolino-specific tilting technology licence-back obligation allowing Alstom to use the technology in non-Pendolino products (the "Pendolino back-licence").

(1327) The Pendolino Commitment did not include, among others:

(1) any order backlog (with the exception of the Pendolino Backlog, the Pendolino Maintenance Backlog, and Alstom's existing […] bid if awarded to Alstom);

(2) Alstom's supply agreements relating to non-critical, commodity, non-rolling stock specific components.

9.3.2. The Second Very High-Speed Rolling Stock Commitments

(1328) The Second Very High-Speed Rolling Stock Commitments consist in a revised version of the First Velaro Commitment. It included, but did not modify, the Pendolino Commitment.

(1329) Under the Second Commitments:

(1) The scope of the Velaro 3G transfer was modified to extend rights transferred in order to allow the purchaser to use them for high-speed applications in addition to very high-speed applications (i.e., for speeds of 250 km/h and above). As a result, the Merged Entity would no longer retain the right to use the Velaro 3G for high-speed applications, except in instances expressly specified in the Final Commitments. These exceptions consist in future […] and the Parties' rolling stock business other than the Velaro 3G platform and the Velaro Novo technology bricks (the "Rolling Stock Retained Businesses");

(2) The scope of the "Retained Velaro 3G Rights", which were not to be transferred, was extended to include components, sub-components, software and aftermarket services related to the "Rolling Stock Retained Businesses";

(3) The scope of the Velaro Novo Licence was clarified to expressly include a non-exclusive licence for very high-speed applications outside of the EEA (excluding China, Japan and South Korea).

(1330) Other provisions in the Very High-Speed Rolling Stock Commitments remained unchanged.

9.3.3. The Final Very High-Speed Rolling Stock Commitments

(1331) The Final Very High-Speed Rolling Stock Commitments consist in a revised version of the Second Velaro Commitment. They include, but do not modify, the Pendolino Commitment.

(1332) Under the Final Very High-Speed Rolling Stock Commitments:

(1) The duration of the exclusivity licence granted to the purchaser for the Velaro Novo is extended to 10 years (instead of 5 years);

(2) Exclusive rights remain limited to the EEA but exclude very high-speed projects in Germany, in addition of the other exclusions already provided for in the First and Second Very High-Speed Rolling Stock Commitments. The Velaro Novo License would therefore be non-exclusive for projects in Germany.

(1333) Other provisions in the Very High-Speed Rolling Stock Commitments remain unchanged.

9.4. Results of the market test on the First Very High-Speed Rolling Stock Commitments

9.4.1. Market feedback in relation to the clarity of the First Very High-Speed Rolling Stock Commitments

(1334) Not a single respondent to the market test considered the First Very High-Speed Rolling Stock Commitments sufficiently clear so as to allow their effective implementation.[1122] Competitors observed that the First Very High-Speed Rolling Stock Commitments lack detailed information required for effective implementation, including on (i) the content and state of development of technologies being transferred or licensed, (ii) the means of transfer of technologies, (iii) the precise scope of IP rights being back-licensed to the Merged Entity, (iv) the functions of key personnel to be transferred to the purchaser, (v) the content of transitional service agreements, (vi) which components are covered by various provisions in the commitments, (vii) the terms of supply agreements.[1123]

(1335) Uncertainty as to the precise content of the First Very High-Speed Rolling Stock Commitments has also prevented interested purchasers from formulating clear valuations in non-binding offers submitted to the Parties.

(1336) In its 2 January 2019 letter of interest, […] stated that "[…]".[1124]

(1337) Consequently, the vast majority of respondents consider that the First Very High-Speed Rolling Stock Commitments' lack of clarity entails implementation risks.[1125] Specifically, in relation to the First Velaro and Pendolino Commitments, respondents have noted that the definition of transferred or licensed IP rights and know-how are not set out in detail and contain no description of their state of development, relying instead on generic terms as to their "*current status*" or "*as existing as the Effective Date*" which do not allow for understanding their content. Respondents also note that the proposal relies on imprecise distinctions of exclusive and non-exclusive rights. In addition, they consider that the proposed remedies fail to determine whether changes made to the technology transferred or licensed will be owned by the purchaser or licensee and also fail to properly define the scope of the rights retained by the Merged Entity.[1126]

9.4.2. Market feedback in relation to the First Velaro and Pendolino Commitments under the First Very High-Speed Rolling Stock Commitments

9.4.2.1. Market feedback on the First Velaro Commitment

(1338) The overall results of the Market Test in relation to the First Velaro Commitment are negative. The majority of respondents consider that, even if they were transferred to a suitable purchaser, the IP rights, documentation, know-how and software included in the Velaro 3G transfer together with the Velaro Novo Licence, would not be

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1122 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 4.

1123 [...], […] and [...]'s responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 4.1 (ID8187, ID8015 and ID8224).

1124 […]'s letter in Relation to […], dated 2 January 2019 (ID8537).

1125 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 5.

1126 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 6-8.

sufficient to replicate Siemens' competitive constraint in the markets where the Commission has identified concerns.[1127]

(A) Comments on the Velaro 3G Transfer

(1339) Respondents consider that the Velaro 3G Transfer constitutes an inadequate and ineffective remedy for four main series of reasons.

(1340) First, market participants consider that the proposal lacks sufficient assets (such as manufacturing facilities) and personnel (in particular engineers).

(1341) The majority of respondents explain that the transfer of intellectual property rights and know-how does not amount to the divestment of a viable standalone business. According to the market test results, the proper transfer of the Velaro business would necessarily require the divestment of production, R&D and engineering assets and facilities allowing the full production of the Velaro Platform on a standalone basis.[1128]

(1342) In addition, respondents submit that the proposed commitment to transfer […] Key Personnel is insufficient to guarantee the continued viability of the platform. […] considers that "[t]*he transfer of personnel should also include personnel related to the entire business and going concern related to the Velaro 3G, allowing a full production capability on a stand-alone basis*".[1129] This includes engineering, quality, safety and homologation, commercial, project management, maintenance engineering and labour, testing and commissioning personnel. [...] also confirms that the number of personnel transferred is insufficient and indicates that engineering resources typically required for a project includes around 100-150 engineers.[1130]

(1343) Second, market participants observe that the transfer of the Velaro business should also comprise the platform's maintenance backlog as this element would (i) constitute the sole source of immediate revenues and thus support the commitment's viability and competitiveness and (ii) provide the purchaser with knowledge of the platform. Consequently, for most competitors and customers, the limitation of the transfer to Eurostar's maintenance backlog is insufficient to the extent that it fails to cover the entirety of the Velaro 3G backlog.[1131]

(1344) Even the transfer of Eurostar's maintenance backlog could not be guaranteed. […]. Furthermore, […].[1132]

(1345) Accordingly, […].[1133] As an alternative to the transfer of the TSSSA and at the option of the purchaser, the First Velaro Commitment provides that the Parties would

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1127 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 26.

1128 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 10-11.

1129 […]'s Response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 17.2 (ID8015).

1130 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 11.1 and 17.2 (ID8187).

1131 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 16.1 and 16.2.

1132 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 16.1 (ID8366)

1133 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, Non-confidential Annex 1, p. 6 (ID8368). […].

commit to transmit the profits generated by Siemens' performance of the TSSSA to the purchaser. However, […].[1134]

(1346) Third, the majority of respondents consider that the Retained Velaro 3G Rights have an adverse effect on the viability and competitiveness of the Velaro 3G Transfer.

(1347) In respect of back-licences retained by Siemens in relation to the […] and the […], respondents observe that Siemens retains the right to use the Velaro 3G platform in all key upcoming very high-speed rolling stock opportunities.[1135] In the context of those tenders, even if Siemens shares its technology with the purchaser, it will have a decisive advantage when bidding for the project. As [...] explains, "*when facing two bids based on the same platform the customer will always favor the bid of the supplier that has developed the platform because this bid entails much less uncertainty in terms of cost and delays. This is key because, given the low frequency of VHS projects, it will not be possible for the purchaser to participate to tenders in the short to medium term*".[1136]

(1348) In particular, most competitors consider that rights retained by the Merged Entity in relation to the […] should be part of the Velaro 3G Transfer, given the importance of […] future order for very high-speed rolling stock suppliers over the next 5 years.[1137] Nevertheless, [...] observes that bids for the […] tender will be submitted in […] and that, therefore, even assuming that the commitment is implemented, no supplier would have sufficient time to submit a credible offer on the basis of the Velaro 3G. In fact, [...] considers that "*the purchaser will lack any plausible chance to obtain customers references using the Velaro 3G or the Velaro Novo in the EEA in the next 5 years*".[1138] [...] thus suggests that "*in order to ensure the viability of the Divestment Business, it needs to be ensured that the purchaser can obtain a customer reference, for instances by including an undertaking of the Combined party to subcontract to the purchaser the manufacture of a number of complete trains if the Combined entity is awarded* […].[1139]

(1349) […].[1140]

(1350) Similarly, competitors submit that the upcoming […] constitutes, together with the […], the most significant tender foreseen in very high-speed rolling stock in the next few years. Therefore, like for […], the purchaser would have to bid in the […] on the

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1134 Eurostar's response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, Non-confidential Annex 1, p. 4 (ID8368).

1135 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.

1136 [...]'s Response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2 (ID8187).

1137 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.2.

1138 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.2.1 (ID8224).

1139 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.2.1 (ID8224).

1140 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.2.1 (ID7989).

basis of Siemens' technology in direct competition with Siemens.[1141] In addition, as [...] points out, it appears that a requirement of […].[1142]

(1351) In relation to the limitation of the right to use the Velaro 3G technology only for very high-speed applications, respondents consider that this would prevent the purchaser to use the licensed technology for synergies across its activities (and generate economies of scope and scale). This would further limit the purchaser's incentive/ability to invest in the licensed technology and compete effectively. Competitors submit that demand is higher for non-very high-speed applications and that the Velaro 3G may be more competitive for high-speed than for very high-speed applications.[1143]

(1352) Fourth, optional measures included in the Velaro 3G Transfer, in the form of 1-year transitional service agreements ("TSAs") for the Merged Entity to provide technical engineering assistance for (i) the manufacture of the platform, (ii) the platform's TSI upgrade and (iii) bid design by the purchaser are generally deemed necessary by respondents, but insufficient in terms of the scope as defined in the First Commitments.[1144] Market participants consider that (i) the TSAs' duration (1 year) is insufficient in the context of the rail industry and that (ii) they should become available upon the award or start of a new project.[1145]

(B) Comments on the Velaro Novo Licence

(1353) Competitors consider that a licence of core technology bricks of Siemens' Velaro Novo concept is necessary for the purchaser to compete effectively with the Merged Entity on a lasting basis. Although respondents observe that they have limited information as to the underlying technology, they estimate that access to Siemens' most recent developments of its Velaro platform is a necessary addition to the First Velaro Commitment.[1146]

(1354) However, most respondents consider that the conditions of the licence are insufficient to support the purchaser's viability and competitiveness.

(1355) First, for reasons similar to those explained in relation to the Velaro 3G transfer at recital (1351), the majority of respondents consider that limiting the licence to very high-speed rolling stock applications threatens the purchaser's viability.[1147]

(1356) Second, most respondents consider that the duration of the Licence's exclusivity (5 years) is insufficient.[1148] As [...] explains, "[a] *much longer duration would be required and the Merged Entity should not retain any rights during that period.*

1141 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.3.

1142 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.3.1 (ID8224).

1143 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.

1144 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 15.

1145 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 15.

1146 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 19.

1147 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 20.

1148 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.

Taking into account the ramp-up time required for the purchaser to expand its production capacity and invest in specific production assets, it will take the purchaser a very significant time (most likely between 3 to 5 years) to bring the Velaro Novo solution on the market. Given the low frequency of VHS projects, and given that the Merged Entity retains the Velaro Novo rights for the […]*, the purchaser will most likely not have a single project where it will not face the Merged Entity bidding with its more advanced Velaro Novo platform (the Merged Entity will be able to bid with the full Velaro Novo solution and not merely with the technology blocks covered by the licence). The Parties' Velaro Novo platform will thus be a better product*".[1149] In the same vein, […] and […] consider that a duration of at least 7 to 10 years would be required.[1150]

(1357) This view is also confirmed by customers, which consider that 5 years is too short to allow a supplier to become a credible supplier of high-speed and very high-speed rolling stock capable of exercising a competitive constraint comparable to the one exercised by the Parties before the Transaction.[1151]

(1358) Third, a large proportion of respondents, including almost all competitors, consider that the geographic limitation of the exclusive Velaro Novo Licence to the EEA (outside of which territory the Merged Entity will be free to use and compete on the basis of the Velaro Novo technology) would impair the purchaser's ability to run a viable business able to compete effectively with the Merged Entity on a lasting basis.[1152] Respondents observe that this limitation of the Licence's geographic scope is inconsistent with the worldwide market and would impede the purchaser from achieving sufficient scale, in particular in light of the fact that (very) high-speed rolling stock tenders are infrequent. In this context, respondents explain that, with the exclusion of the […] in the EEA, hindering the possibility for the purchaser to bid for other meaningful opportunities in the rest of the world (in particular the US and Asia) would prevent it from competing effectively.[1153]

(1359) Fourth, for reasons similar to those presented in relation to the Velaro 3G transfer at recital (1348), most respondents consider that the exclusion of the […] from the Velaro Novo Licence will adversely impact the viability and competitiveness of the First Very High-speed Rolling Stock Commitments.[1154] In practical terms, respondents consider that this exclusion deprives the 5-year exclusive licence of much of its interest, since the […] is the main very high-speed rolling stock tender expected in the EEA in this time period.[1155]

1149 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1 (ID8187).

1150 […]'s and […]'s responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1 (ID8015 and ID7889).

1151 […]' and[…]'s responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1 (ID7986 and ID8366).

1152 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 22.

1153 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 22.1.

1154 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 23.

1155 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 23.1.

9.4.2.2. Market feedback on the Pendolino Commitment

(1360) The overall results of the Market Test in relation to the Pendolino Commitment are negative.

(1361) Respondents generally do not consider that the divestment of the Pendolino platform, a high-speed train, can enable to restore competition in very high-speed rolling stock. They consider that […]. Finally, various aspects of the First Very High-Speed Rolling Stock Commitments have been criticised as too narrow in scope or unclear. Consequently, the purchaser would remain dependent on the Merged Entity in operating and developing the Pendolino Commitment.

(A) The Pendolino Commitment is not suitable to remedy competition concerns in very high-speed rolling stock

(1362) The majority of respondents to the Market Test consider that the Pendolino Commitment would not enable the purchaser to operate a viable business that can compete effectively with the Merged Entity on a lasting basis.[1156]

(1363) Respondents emphasise that the Pendolino platform is […]. Therefore, the Pendolino Package, even if purchased by a suitably qualified purchaser would not successfully exercise an effective competitive constraint on the Merged Entity.[1157]

(1364) For instance, […] pointed to the fact that the Pendolino platform will not "*directly enable the purchaser to run a viable business in the VHS market.* […] *Therefore, the divestment of the Pendolino Platform does not solve the concerns*".[1158]

(1365) [...] explained that "*the package does not enable the purchaser to compete effectively with the Merged Entity as it only allows the purchaser to compete in the bottom end of the high-speed market*. [...] [It] *allows the Pendolino to compete occasionally for the very low end of the high-speed market* […] [and is] *not a credible alternative to compete effectively in the very high-speed market*".[1159] As [...] explains, the Pendolino platform can only compete for high-speed application but would not be competitive in very high-speed tenders.

(B) The Pendolino Commitment cannot be easily upgraded to very high-speed

(1366) The majority of respondents consider that […].[1160]

(1367) First, […], [...] explained that it "[…].[1161] Therefore, "*[...] is not able to express an informed opinion about the viability of the Pendolino Package*".[1162] […]also highlights that it is not […].[1163]

1156 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.

1157 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1.

1158 […]s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 27.1 and 27.3 (ID8181).

1159 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1 (ID8187).

1160 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 28.

1161 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1 (ID8224).

1162 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 29.1 (ID8224).

(1368) Several respondents go further and list the hurdles that the Pendolino platform would encounter […]. Respondents mention the lack of commercial references.[1164] Moreover, according to […], the […].[1165]

(1369) In the same vein, [...] explains that the Pendolino platform "*will always be perceived as the* […]. According to [...], additional hurdles consist in changing the Pendolino platform's […], among other adaptations. [...] thus explains that "*VHS customers have very specific* […]. *In addition, the Pendolino's* […]. *Another key hurdle relates to the* […]. *Major adaptions would also need to be brought in terms of passenger comfort (in particular* […].[1166]

(1370) […] concludes that the "*transfer does not enable the Purchaser to run a viable VHS business*".[1167]

(1371) Second, when asked to estimate what would be necessary to successfully upgrade the Pendolino to a very high-speed platform able to effectively compete with the Merged Entity, respondents list the high investment required amounting to "*a total of cost comparable to that of the development of a new very high-speed platform*".[1168]

(1372) […] also consider that the Pendolino platform's […] requires know-how in various key components and specific technical ability. These elements are however not a guarantee of success as the Pendolino platform has been conceived and designed for high-speed applications.[1169]

1163 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 29.1 (ID8181).

1164 In its response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 29.1, [...] explained "*In any event, the Alstom's Pendolino* […] (ID8224); see also [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1 in which [...] explained that […] (ID8187).

1165 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 28.1 (ID8181).

1166 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1 (ID8187).

1167 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 27.1 (ID8015).

1168 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 28.1 (ID8187).

1169 See […]'s response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 28.1 (ID8296): "*The possibility of bringing the Pendolino platform to more than 300 km/h is first of all subject to the total know how availability of bogies, traction motors, auxiliaries, etc. and to the technical possibility to carry them at VHS level. These factors will condition the technical feasibility. More generally, the technical feasibility cannot be guaranteed, since the Pendolino platform has been intrinsically designed as a high-speed train, and not VHS. The physical and environmental constraints constitute a significant gap between VHS and HS. This is why few manufacturers in the world have mastered the VHS techniques. The Pendolino platform has been designed to set up HS under conventional lines of existing networks, and may, by extension, be used on HS or VHS lines without its tilting technology (for example, the Pendolino Lanzaderas in Spain). It should be noted that TGV was operated at 260 km/h when it was put into service in 1978; The first high-speed trains to run at 300 km/h was the TGV Atlantique from 1989; The TGV from 320 km/h to km/h came only long after the 2000s. This slow development, which is the result of many changes, was made possible only on account of the fact that the TGV was reflected from the outset for very high speeds. The Pendino does not fall within this design framework, it is reflected to make the high speed, above all conventional tracks*." (courtesy translation).

(1373) Overall, respondents to the market test estimate that the cost to achieve the upgrade would range from around EUR 50 million to an amount equivalent to that of developing a new platform.[1170] They consider that […].[1171] […].[1172]

(1374) Third, market participants were asked whether the transfer of Alstom's […]was necessary to ensure the viability and competitiveness of the Pendolino Divestment.

(1375) Respondents are divided on whether the transfer of Alstom's […] would be necessary.[1173] Overall, respondents focused on the characteristics and issues linked to […] rather than on how this […] would affect the scope of the Divested Business. Several points were raised:

(1) Firstly, [...] noted that the liberalisation of the […] market effectively opening train operations to private companies has been delayed and therefore doubted […]. According to [...], Alstom's […] therefore has little value;[1174]

(2) Secondly, other respondents stated that while […].

(1376) Respondents also doubt that a third party could successfully upgrade the Pendolino platform for […]. Respondents indicated that upgrading the VHS Pendolino would also […] developed and manufactured in other Alstom sites but […]. Finally, other respondents explained that the transfer of […] would be necessary but not sufficient to […] as this upgrade requires additional features.

(1377) More importantly, […] explained that, […].[1175] Consequently, the transfer of […] would likely not materialise. Consequently, Alstom's […].

(C) Additional issues with the Pendolino Commitment

(1378) First, with regard to manufacturing capacity, Alstom would commit to provide access to Pendolino-specific maintenance facilities in its sites in […] as well as use its best efforts to obtain access to […] Pendolino-related maintenance facilities […]. The majority of respondents consider that such access is necessary to enable the purchaser to run a viable business that can compete effectively with the merged entity on a lasting basis.[1176] However, respondents point to practical difficulties in granting adequate access to these facilities. They note that […] can hardly be shared as it is also the manufacturing site of Alstom's […]. As for the […], they observe that the site's setting does not allow for its division in two as it would block the rolling

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1170 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 28.1.

1171 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 29.

1172 See […]'s response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 29.2 (ID8296): "*Le VHS n'est pas une "option" supplémentaire qui s'installe sur un train HS, en ajoutant un composant acheté. C'est le concept complet du train qui doit être orienté VHS*".

1173 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 30.

1174 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 30.

1175 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 30.1.

1176 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32 and 32.1, see e.g. [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.1 (ID8187): "*Access to those sites is important for the purchaser to run the order backlog, which is turn is key for the viability of the proposed remedy*".

stock movements.[1177] This "*co-existence of different maintainer in the same depot*" has also been pointed out as an issue by […], especially as the site is considered to be saturated and "*does not allow significant spares for maintaining Pendolino trainset,* [without] *specific investment by Alstom that remain the owner of the depot*".[1178]

(1379) In addition, respondents pointed out that the terms and conditions of the usage of the depot are not well defined in the First Very High-Speed Rolling Stock Commitments,[1179] "*thus leading to a sure unsuccessful co-existence of different maintainers in the same site. For the reasons above, the issue of the maintenance sites is not enabling the purchaser to run a viable business*".[1180]

(1380) Second, with regard to the personnel to be divested, […] explains that the "*commitment is not clear enough, because it addresses* […] *which doesn't reduce the risk of an inadequate technical level after the hand over* […] *the Pendolino Package* [provides] *Alstom will use its "commercial reasonable effort"* [rather than "Best Efforts" as in the First Velaro Commitment] *to do so: this latter obligation is much weaker and this affects significantly the ability of the Pendolino Package to properly address and solve the competitive concerns raised by the merger*".[1181]

(1381) Finally, Market Test respondents qualify the Pendolino specific documentation and maintenance specific personnel as very important, key or necessary[1182] and consider that the proposed terms of transfer should be clearer on which components are included or excluded in the Pendolino Commitment.[1183]

1177 See […]'s response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.1 (ID8296): "*Oui, l'accès est nécessaire pour la compétitivité future, mais difficile à réaliser à la fois sur Savigliano et sur le dépôt de Nola. Dans le cas du site de Nola en raison de la proximité de travail avec le train AGV et donc de deux sociétés en concurrence sur le même site avec une proximité des travailleurs, ce qui est illégal en Italie. Dans le cas du site de Savigliano, compte tenu de la structure du site, il ne serait pas possible de diviser le site en deux, car cela bloquerait le mouvement du matériel à l'intérieur ; s'y ajouterait la proximité de travail entre deux entreprises en concurrence, quelque chose d'interdit en Italie*."; see also [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.1 (ID8224): "*The purchaser would need access to maintenance facilities in order to execute the backlog associated with these maintenance agreements*".

1178 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.1 (ID8181)

1179 See […]'s response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.2 (ID7889): "*It is not well defined and need to make clear accessibility to all technical data, maintenance data, facilities and resources without limitation*"; see also [...]'s response to the questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.2 (ID8224) in which it listed the below uncertainties: "*The proposed terms of access to Pendolino specific maintenance facilities are not sufficiently defined. The following aspects need to be clarified in order to ensure the Pendolino Divestment's viability: • Who is in charge of the maintenance of the machinery and the cleaning of the facilities? • Whether there is a fee for the use of the maintenance facilities. • Who is in charge of the movements of the trains? • Who pays for the costs of electricity, water and gas? • Access conditions to the maintenance facilities. • Who is in charge of the security of the maintenance facilities*?"

1180 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 32.1 (ID8181).

1181 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 33 (ID8181).

1182 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 34 and 34.1.

1183 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 34.2 (ID8187).

9.4.3. Comments from National Competition Authorities and Rail Regulators

9.4.3.1. Comments from National Competition Authorities

(1382) In addition to the replies to the Market Test, the Commission received spontaneous submissions from various National Competition Authorities ("NCAs") commenting on the proposed remedies. On 20 December 2018, the Commission received a joint letter from the UK, Belgian, Spanish and Dutch NCAs (namely the Competition and Markets Authority, the Belgian Competition Authority, the Comisión Nacional de los Mercados y la Competencia and the Netherlands Authority for Consumers and Markets).[1184] The four NCAs first explain that they share the Commission's competition concerns related to the Transaction[1185] and note that "[i]*t is clear, however, that the remedies ultimately offered by the Parties fall far short of what would be required to address all concerns to the required standard*".

(1383) Further, the four NCAs are particularly concerned with the shortcomings of the First Very High-speed Rolling Stock Commitments and state that "[c]*oncerns of such a grave nature require a very substantial remedy, typically the full divestment of one or other of the merging parties' overlapping businesses to a suitable buyer who could recreate the competitive rivalry lost through the merger. However, the Parties' offer in this case seems to fall short of that standard, as well as suffering from a number of other defects liable to undermine its effectiveness in practice. The remedy proposed is therefore unlikely to eliminate the competition concerns identified by the Commission and will leave the Parties' combined businesses facing insufficient competition in ongoing and future tenders*".

(1384) In the same line, […] submitted similar concerns to the Commission explaining it had "*serious doubts as to whether the remedies proposed by the Parties are sufficiently suitable to solve the competition problems identified by the Commission*".[1186] […] in particular notes that the "*proposed commitments are, in our current assessment, not appropriate to address these concerns*".

(1385) First, […] considers that the Pendolino Commitment "*does not address the real problem as the "Pendolino" platform does not cover the important area of "very high-speed" (VHS)*". Therefore, "*a potential buyer of the "Pendolino" package would not be able to cover this extremely important area (VHS) and would not be able to compete with the merging parties on this market*".

(1386) Second, while […] acknowledges that the First Velaro Commitment also covers very high-speed, it firstly considers that "*the construction of the proposed commitment using a licence solution does not seem to be promising in this market. As a matter of principle, divestment commitments that address structural changes* […] *are preferable to other types of remedies*". Also, […] notes that Siemens excluded

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1184 The letter, addressed to Commissioner Vestager is co-signed by Andrea Coscelli (Chief Executive, Competition and Markets Authority), Prof. em. Dr. Jacques Steenbergen (President, Belgian Competition Authority), José María Marín Quemada (President, Comisión Nacional de los Mercados y la Competencia) and T.M. Snoep (Chairman, The Netherlands Authority for Consumers and Markets). See: https://www.acm.nl/sites/default/files/documents/2018-12/siemens-alstom-open-letter-to-com.pdf

1185 Ibid, page 2: "*The Commission's investigation has found that the Parties are, and have been for some time, by far the two largest suppliers of very high-speed rolling stock in the EEA, with both holding and maintaining a broad product portfolio and significant customer base, and competing very closely for tenders. Barriers to entry and expansion for new or emerging players are very significant and customers have little bargaining power that could protect them against price rises. It is clear, therefore, that this is a market in which the merger raises very serious and extensive competition concerns*."

1186 Letter from […] , addressed to the case team, dated 21 December 2018 (ID8079).

[…] and the […] from the First Velaro Commitment. However, these projects have very large volumes and will shape the very high-speed market in Europe. Finally, the five years limitation of the licence is considered as being "*far too short*" in view of "*the long planning horizons in this industry and the fact that major orders ('lumpy orders') are only put out to tenders at longer intervals*".[1187]

(1387) Finally, […] also provided standalone comments on the Notifying Party's proposed remedies.[1188] […] considers that "*the concerns identified by the Commission are of such a grave nature that they could only possibly be addressed, to the required legal standard, by very substantial remedies, such as the full divestment of one or other of the merging parties' overlapping businesses to a suitable buyer who could recreate the competitive rivalry lost through the merger*". However, […] notes that the remedies offered by the Parties "*fall far short of this standard*", while also suffering from a "*number of defects liable to undermine their effectiveness in practice*".

(1388) To summarise, […] concludes that, at best, either the First Velaro or the Pendolino Commitments would provide only a partial solution to the very serious concerns established by the Commission's investigation. Neither package of assets forms an existing stand-alone business (raising significant threshold questions around the viability and competitiveness of either commitment).

(1389) First, […] considers that the Commission's investigation establishes that the Parties' competitive strength derives, in part, from the diverse portfolio of platforms that they are able to offer and from their well-established track record with customers. It considers that the Commission's investigation also highlights that there are important links between successive generations of platforms that mean that the transfer of the First Velaro Commitment or the Pendolino Commitment in isolation would not come close to enabling the purchaser to replicate the constraint exercised by each of the Parties at present.

(1390) Second, […] considers that either remedies package would be seriously defective in achieving its intended aim. In particular, […] notes that there is an untenable risk that the First Velaro Commitment, as a technology transfer remedy, would not be effective (in particular because of the significant time and cost that it would take a purchaser to be able to deploy this technology in practice). This risk is exacerbated by the plainly inadequate scope of the intangible assets that are to be transferred (for example, because certain technology would be licensed on a nonexclusive basis or only for a limited period of time).

9.4.3.2. Comments from National Rail Regulators

(1391) […],[1189] considers that neither of the Notifying Party's proposals in relation to rolling stock would be adequate to address the loss of one of the two key competitors for major rolling stock procurements.[1190]

(1392) First, with regard to the Pendolino divestment business, […]submits that it would not be sufficient to address the Commission's concerns. As "*the life cycle of the Parties' key rolling stock families*" has to be taken into account in the assessment. However,

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1187 Letter from […], addressed to the case team, dated 21 December 2018 (ID8079).

1188 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 34 (ID8094).

1189 […].

1190 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018, paragraph 14 (ID8096).

"*Alstom's TGV du future is expected to supersede… earlier models*". It follows that the Pendolino Commitment "*does not have the potential to maintain the status quo*".

(1393) Moreover, […] notes that the buyer will be significantly dependent on the Parties because (i) the Merged Entity would have incentive to deny access to the purchaser to certain Alstom's sites and, (ii) the Pendolino Commitment will significantly rely on the Parties "*for a number of 'key' physical components*".

(1394) Finally, […] submits that the Pendolino Commitment will not help the purchaser to compete in the […], even if the purchaser were to be one of the prequalified bidders. As the existing version of the Pendolino is incapable of reaching very high-speeds, […] considers that any purchaser would not be able to use the Pendolino Commitment to modify its existing bid because an "[…]. Moreover, it would require "*very significant modifications*" to the offers made during prequalification, which would "*certainly be unacceptable to* […]".

(1395) Second, with regard to the First Velaro Commitment, […] considers the acceptance of this remedy "*would contradict the Commission's merger guidelines and recent decisional practice*" mainly because the Velaro 3G divestment business is an access remedy, which does not include any manufacturing capability.

(1396) […] further notes that the buyer would rely on the Parties for both "*intellectual property rights but also spans a wide range of key physical components*".

(1397) […] considers that the First Velaro Commitment would offer the buyer a "*very narrow window of opportunity to compete*". Indeed, the First Velaro Commitment would not enable the buyer to compete in rolling stock tenders at least […], while the exclusivity period for the Velaro Novo Licence would expire by the end of 2023. For the same reasons as the Pendolino Commitment, the First Velaro Commitment would not help the purchaser to compete in the […].

(1398) […] submits that restrictions contained in the Velaro Novo's exclusivity provision show that this is "*clear that the intention of the merged Parties would be to bid for some VHS contracts*, […]". […] contends that, if the Merged Entity were to win those tenders, it would gain "*a significant incumbency advantage*" in the […], making it "*very difficult*" for any competitor to develop a competing product.

9.5. The Commission's assessment of the Very High-Speed Rolling Stock Commitments

(1399) As set out in Section 5.3, in rolling stock, the Transaction gives rise to a significant impediment of effective competition due to horizontal non-coordinated effects on the overall market for high-speed and very high-speed trains in the EEA and worldwide (excluding China, Japan and South Korea), in particular because of the close competition between the Parties as regards very high-speed rolling stock. The Commission also found that the Transaction gives rise to a significant impediment of effective competition due to horizontal non-coordinated effects on the narrower market for very high-speed trains in the same geographies. Under both conceivable market definitions, the loss of competition resulting from the Transaction stems from its impact in very high-speed rolling stock tenders. Accordingly, regardless of the exact definition of the relevant product market retained (i.e., all trains running at maximum speeds at or above 250 km/h or very high-speed trains only), in order to effectively eliminate competition concerns, remedies in the present case must concern very high-speed rolling stock.

(1400) The following sections assess the suitability of the First, Second and Final Commitments to address the Commission's concerns, and analyse in particular the

scope, viability and effectiveness of the Final Commitments, as well their complexity and the timing of their submission.

9.5.1. The Commission's assessment of the First Very High-speed Rolling Stock Commitments

9.5.1.1. The Commission's assessment of the First Velaro Commitment

(A) Type of remedy proposed

(1401) As described in recitals (1289), structural commitments and, in particular, divestitures are the best way to eliminate competition concerns.

(1402) The First Velaro Commitment however consists of two technology transfers. In relation to the Velaro 3G, the Notifying Party describes its commitment as the "Velaro 3G Divestment Business". However, no business would be divested under the First Velaro Commitment. Instead, the Notifying Party proposes to transfer the "*right to develop, improve, manufacture and commercialise*" its third generation Velaro platform while, at the same time retaining the right to use its platform to comply with its backlog obligations, […] and to pursue its activities in non-very high-speed applications.

(1403) The First Velaro Commitments therefore consists in a technology transfer, rather than a divestiture. The Notifying Party would retain all of its production assets and existing Velaro business other than that resulting from Eurostar's spare parts and technical support agreement. However, as stated by Eurostar in response to the Market Test, […].

(1404) For the avoidance of doubt, the Notifying Party has included in its proposal a comprehensive list of items excluded from its commitment. These items include, *inter alia*, (i) any order backlog, (ii) any production assets, manufacturing units or R&D facilities, (iii) any personnel not included in the commitment.

(1405) In relation to the Velaro Novo, the Notifying Party clearly describes its proposal as a licence of its technology. […], it contains no exclusion of existing business. However, under its proposal the Notifying Party would retain the right to use its technology in relation to the […].

(1406) As a result, the First Velaro Commitment cannot be characterised as a structural remedy. Rather, the First Velaro Commitment consists in granting access to Siemens' Velaro 3G and Velaro Novo technologies.

(1407) As stated in the Remedies Notice, the divestiture of a standalone business is the preferred remedy in order to address competition concerns resulting from horizontal effects. Whilst the Remedies Notice does not exclude the adoption of other types of measures, divestitures are the benchmark for other remedies in terms of effectiveness and efficiency. The Commission therefore may accept other types of commitments, but only in circumstances where the other remedy proposed is at least equivalent in its effects to a divestiture.[1191]

(1408) Specifically, the Remedies Notice explains that "[d]*ivestitures of a business generally appear preferable to the granting of licences to IP rights, as the granting of a licence involve more uncertainties, will not enable the licencee to compete immediately in the market, requires an on-going relationship with the parties which may allow the licensor to influence the licencee in its competitive behaviour and may*

[1191] Remedies Notice, paragraph 61.

give rise to disputes between the licensor and the licencee over the scope and the terms and conditions of the licence. The granting of a licence will therefore generally not be considered appropriate where a divestiture of a business seems feasible".[1192]

(1409) The First Velaro Commitment departs from these principles. The Notifying Party provides no justification for proposing a technology licence instead of the divestiture of a standalone business. In any event, no factor appears to impede the feasibility of the divestiture of a business, as shown by the alternative Pendolino Commitment.

(B) Scope of the First Velaro Commitment

(1410) As stated in recital (1288), commitments have to eliminate the competition concerns entirely and have to be comprehensive and effective from all points of view.[1193]

(1411) The aim of the First Velaro Commitment is to restore the loss of competition as regards very high-speed rolling stock resulting from the Transaction by putting a suitable purchaser in a sufficient position to replicate the pre-merger competitive constraint. However, the First Velaro Commitment is unclear and contains multiple restrictions which prevent it to achieve this objective.

(B.i) The scope of the First Velaro Commitment lacks clarity

(1412) The First Velaro Commitment refers to various assets and items that are the object of the technology transfer or licence. Many of these assets and items remain undefined or lack detailed descriptions that would allow to understand the precise scope of the Commitment.

(1413) In relation to the Velaro 3G Transfer, the Notifying Party proposes to grant access to "*IP rights, know-how and software*" as well as "*documentation*" which are summarily described in table form.[1194] In terms of intellectual property rights, the First Commitments include a list of patents that would be licensed to the purchaser. For other items, the descriptions provided in the First Commitment list hardware, software, components, documentation and manufacturing equipment to which the Notifying Party proposes to grant access via licences, rights to use, supply agreements, copies and access to drawings. Other than the summary generic designation of items covered by the transfer, the First Velaro Commitment does not rely on any comprehensive description of the underlying technology concerned.

(1414) In relation to the Velaro Novo Technology Bricks, the First Velaro Commitment provides a short description of the sub-systems ([…]) that are concerned by the Velaro Novo developments, but does not describe the underlying developments. As pointed out by the Market Test, the First Velaro Commitment describes the Notifying Party's commitment as providing a licence to the underlying technology "*at the current development stage on the Effective Date*"[1195] without providing any indication as to what that development stage is. Instead, the Velaro Novo Licence relies on a patent list[1196] and a summary table overview of hardware and components covered by the licensed Velaro Novo Technology Bricks. This imprecision has made it challenging for prospective purchasers to understand the content of the Commitment.

1192 Remedies Notice, paragraph 38.

1193 Remedies Notice, paragraph 9.

1194 12 December 2018 Commitments, Schedule 1, The Velaro 3G Divestment Business, paragraph 2.1 and tables 1 and 2.

1195 12 December 2018 Commitments, Schedule 2, The Velaro Novo Technology Bricks, paragraph 3.

1196 12 December 2018 Form RM – Annex 11.

(1415) As a result, the Commission's assessment confirms the results of the Market Test. The Commission considers that the First Velaro Commitment lacks clarity as to the content and precise scope of the technologies being transferred. This casts considerable doubt as to whether the First Velaro Commitment is capable of being implemented effectively within a short period of time.

(B.ii) The geographic and temporal scope of the First Velaro Commitment are insufficient

(1416) In terms of technologies covered, the First Velaro Commitment includes both the latest version of Siemens' Velaro platform in operation as well as developments made by Siemens to bid in future tenders. Although the Notifying Party describes the Velaro 3G as a state-of-the-art platform, respondents to the Market Test consider that it is, in fact, outdated and likely no longer competitive in future very high-speed rolling stock tenders.[1197]

(1417) The results of the market investigation are more nuanced. In the course of the Phase II market investigation, the Notifying Party explained that the development of the Velaro Novo was aimed at […].[1198] Siemens therefore intended to use […]. The Velaro Novo (previously called "[…]") is thus described in Siemens' internal documents as […].[1199]

(1418) The purpose of the proposed remedy is to enable a suitable purchaser to compete effectively with the Merged Entity on a lasting basis as regards very high-speed rolling stock. In order to replicate the competitive constraints lost as a result of the Transaction, the purchaser should be placed in a situation equivalent to that of either Party absent the Transaction in the context of future very high-speed rolling stock tenders. This requires the purchaser to be able to bid with technologies developed by the Parties to compete in future tenders. […], the inclusion of that technology is a necessary part of the remedy.

(1419) However, the geographic and temporal scope of the First Velaro Commitment is significantly restricted, especially in relation to the Velaro Novo Licence. Restrictions included in the remedy proposal would allow the Merged Entity to retain the right to use the transferred or licensed technologies to bid in very high-speed rolling stock tenders to a significant extent and this despite a commitment to grant "exclusive" rights to the relevant technology. Thus, in those situations where the Merged Entity retains its rights, the purchaser would be bidding against the Merged Entity using the same technology. Given the competitive advantage of Siemens due to prior Velaro references and to its expertise having developed the underlying technology, the credibility of the potential purchaser as a competitive bidder would be, at best, significantly undermined.

(1420) The restrictions in the First Velaro Commitment enabling the Merged Entity to continue using the Velaro platform are extensive:

(1) The Velaro 3G Transfer is for exclusive use in very high-speed applications worldwide, but the Notifying Party will retain the right to use the same platform in the context of […] and in the context of […];

1197 See […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 23.1 (ID8366) and [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 10.2 and 12.2 (ID8187).

1198 Notifying Party's presentation entitled "Technical Meetings – Rolling Stock, Siemens' key developments", dated 6-7 September 2018, p. 2 (ID4879).

1199 Form CO, Chapter B.6, Annex RFI 5 Q 18.

(2) The Velaro Novo Licence is limited to the EEA, with an exclusivity period of 5 years. During that period, however, the purchaser will not enjoy exclusive rights (i) in the context of the […], (ii) for non-very high-speed applications globally and (iii) for very high-speed applications outside of the EEA.

(1421) These geographic and temporal limitations preserve Siemens' ability to freely use the transferred and licensed technology in key very high-speed rolling stock projects in the foreseeable future.

(1422) First, a 5 years exclusivity period does not provide a purchaser sufficient time to use its licence in order to develop the Velaro platform and achieve a position comparable to that of Siemens prior to the Transaction. As stated by […], "[n]*ormally 5 year covers a project completion period and until that time it is not enough to obtain supply record and be successfully awarded for new business*".[1200] This view has been confirmed by both customers like […] and […], and competitors like […] and [...].[1201] [...] explains that "[t]*aking into account the ramp-up time required for the purchaser to expand its production capacity and invest in specific production assets, it will take the purchaser a very significant time (most likely between 3 to 5 years) to bring the Velaro Novo solution on the market*".[1202]

(1423) Second, this is compounded by the fact that, out of the upcoming very high-speed rolling stock tenders, the purchaser would not enjoy any exclusive rights in relation to the […]. The forecasted value of the […] alone represents approximately […]% of the total value of upcoming very high-speed rolling stock tenders in the EEA in the next 5 years.[1203]

(1424) As explained in responses to the Market Test described in recitals (1347) and (1348), even assuming that a purchaser would be able to place a competing bid for […] using the Velaro 3G and/or Novo technologies, when faced with competing bids using the same technology, customers are likely to give preference to the technology's initial developer. Therefore, the Notifying Party undermines the ability of a potential purchaser to compete effectively by retaining the platform and technology that it commits to transfer and licence to a suitable competitor in key tenders. No supplier can be plausibly expected to compete with the Merged Entity on the basis of the same platform and/or technology in a market setting where Siemens will hold all prior references and will be able to put forward years of in-house development, thus providing customers the guarantee that trains will be procured from a knowledgeable company having conceived all relevant aspects of their underlying technology. The guarantees inherent with the Notifying Party's position in terms of delays and costs could not be plausibly bested by a purchaser only recently acquainted with the technology.

(1425) Furthermore, despite the inherent uncertainty in predicting future demand beyond the next 5 years, significant calls for very high-speed rolling stock tenders are expected in the EEA beyond the year 2023, at which point in time the proposed Velaro Novo Licence exclusivity period will end. […]. In the rest of the world, where the

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1200 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1 (ID7889).

1201 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1.

1202 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 21.1 (ID8187).

1203 Other tenders in the EEA in the next 5 years are forecasted to […].

purchaser would not benefit from an exclusive Velaro Novo Licence at any point in time, key very high-speed rolling stock opportunities are expected […].

(1426) Consequently, the proposed remedy will grant a suitable purchaser the right to use Siemens' latest very high-speed technology on an exclusive basis for about half of the addressable market opportunities in the EEA in the next 5 years. In all other geographies and beyond 2023, the purchaser will have to compete head-to-head with Siemens, the original developer of its platform, using the same technology. As a result, the potential purchaser of the First Velaro Commitment will not be able to replicate the competitive constraint that Siemens imposes on Alstom with the same technology.

(1427) Third, the Commission notes that the Notifying Party has provided no justification for carving-out the […] from the scope of the proposed Velaro Novo Licence exclusive period. The Remedies Notice explains that "[e]*ven though normally the divestiture of an existing viable stand-alone business is required, the Commission, taking into account the principle of proportionality, may also consider the divestiture of businesses which have existing strong links or are partially integrated with businesses retained by the parties and therefore need to be 'carved out' in those respects. In order to reduce the risks for the viability and competitiveness to a minimum in such circumstances, an option for the parties is to submit commitments proposing to carve out those parts of an existing business which do not necessarily have to be divested*".[1204] In such circumstances, "*the Commission will only be able to accept commitments which require the carve-out of a business if it can be certain that, at least at the time when the business is transferred to the purchaser, a viable business on a stand-alone basis will be divested and the risks for the viability and competitiveness caused by the carve-out will thereby be reduced to a minimum*".[1205]

(1428) In the present case, there is no objective justification for the Notifying Party to carve out the […]. Although bid submissions are scheduled to occur on […], and will therefore occur shortly after the adoption of the present Decision, […].

(1429) […] has been consulted on this issue in the course of the Phase II market investigation and stated that "*the transfer of one of the Parties' very high-speed platforms to a competitor before the final award of* […] *would constitute a material change in circumstances that would have to be submitted for* […] *approval*".[1206] […] stated that approving such a transfer would be possible but "*emphasised that the purchaser of the platform, even if it was one of the companies already pre-qualified to bid in* […] *call for tender, would have to satisfy a variety of factors to gain HS2's consent to this change. Other than the rolling stock itself, these factors would include, but not necessarily be limited to, the supplying organization's financial strength, staff, and post-award organization and also the supplier's track-record in relation to similar rolling stock and maintenance services. That is, any new or different entity would still have to show it met all of* […] *original pre-qualification criteria for being invited to tender and/or that it had access to the necessary resources and capabilities to deliver the commitments in the Tender if selected*".[1207] After the contract's award, a transfer would also be conceivable but subject to […] discretionary consent. According to […], it would also require "*the acquiring entity*

1204 Remedies Notice, paragraph 35.
1205 Remedies Notice, paragraph 36.
1206 Agreed non-confidential minutes of a call with […], 30 November 2018, p. 1 (ID7403).
1207 Agreed non-confidential minutes of a call with […], 30 November 2018, p. 1-2 (ID7403).

[…] *to comply with all factors taken into consideration when considering the approval of a pre-award change of circumstance and otherwise satisfy* […] *that it is capable of delivering the obligations of the original contracting entity*".[1208]

(1430) Furthermore, in its contribution to the Market Test, [...] suggests that "*in order to ensure the viability of the Divestment Business, it needs to be ensured that the purchaser can obtain a customer reference, for instances by including an undertaking of the Combined party to subcontract to the purchaser the manufacture of a number of complete trains if the Combined entity is awarded the* […].[1209]

(1431) The Notifying Party has explored none of these options. Instead, it provides for the outright exclusion of the […] and possible award from any exclusive rights transferred or licensed to the purchaser under its First Velaro Commitment. However, this exclusion cannot be justified either by legal constraints or by the integration or strong links of […] within Siemens, since, even in the event of a successful bid, […] contract would not materialise prior to the adoption of the present Decision. The exclusion of the […] from the scope of the Velaro Novo exclusive rights therefore does not rely on any objective justification and entails a significant adverse impact on the proposed remedy's effectiveness. As explained in recital (1423), given the size of the […], its carve-out from the scope of the First Velaro Commitment will have a significant detrimental impact on the ability of the purchaser to run a competitive business. Furthermore, as noted by […], even leaving aside the importance of the […] in itself, the Merged Entity's use of the transferred/licensed technology in the […] could have a significant adverse impact on the purchaser's credibility when bidding for other tenders because only the Merged Entity, and not the purchaser, would be able to establish a track-record of deploying this technology in practice.[1210] This is consistent with [...]'s indication in the Market Test that "*in order to achieve a valid customer reference by the purchaser, subcontracting of the manufacturing of a set of full trainsets in the eventual award to the Combined entity of the* […] *would be needed*".[1211]

(1432) It follows that the First Velaro Commitment includes an extensive number of retained rights which considerably undermine the remedy's capacity to ensure the viability and competitiveness of the purchaser and licencee of the Velaro 3G and Novo technologies.

(B.iii) Dependency of the purchaser on the Merged Entity

(1433) According to the Remedies Notice, "[n]*ormally, a viable business is a business that can operate on a stand-alone-basis, which means independently of the merging parties as regards the supply of input materials or other forms of cooperation other than during a transitory period*".[1212]

(1434) Under the First Velaro Commitment, a significant part of the operation of the purchaser's business would remain durably dependent on the Merged Entity.

1208 Agreed non-confidential minutes of a call with […], 30 November 2018, p. 2 (ID7403).

1209 […] Response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 12.2.1 (ID8224).

1210 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 22(b) (ID8094).

1211 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 36.1 (ID8224).

1212 Remedies Notice, paragraph 32.

(1435) First, by definition, the Velaro Novo remedy relies on a licensing model rather than a divestment model. It will remain under Siemens' ownership and, due to multiple limitations in the scope of the proposed remedy, to the Merged Entity's concurrent use of the same technology.

(1436) As explained in the Remedies Notice, "*the granting of a licence* […] *will not enable the licensee to compete immediately in the market, requires an on-going relationship with the parties which may allow the licensor to influence the licensee in its competitive behaviour and may give rise to disputes between the licensor and the licensee over the scope and the terms and conditions of the licence. The granting of a licence will therefore generally not be considered appropriate where a divestiture of a business seems feasible*".[1213]

(1437) These difficulties are more acute in the case of the Velaro Novo Licence, which contains limited exclusive rights and thus allows the Merged Entity to use the licensed technology concurrently and in head-to-head competition with the purchaser in very high-speed rolling stock opportunities, both during the 5 years exclusive period (in […]) and once the licence becomes non-exclusive. When competing against the purchaser, regardless of the type of technology used, the Merged Entity will have an incentive to adversely impact the licensees' competitive position through the implementation of the licence.

(1438) Second, in relation to the Velaro 3G Transfer, the Merged Entity will retain control over key areas such as the supply of key components, technical assistance, project engineering or TSI upgrade.

(1439) In particular, the Notifying Party proposes to commit to "*offer to enter into supply agreements with the Purchaser*" for components sourced internally "*at the at that time applicable rates in sufficient volumes, allowing the Purchaser to successfully maintain and develop the Velaro 3G Divestment Business*".[1214] The terms of such supply agreements, as concerns pricing, volumes, time and conditions for delivery are undefined. This creates significant dependency of the purchaser on the Merged Entity's acceptance of competitive rates and conditions. The purchaser would also depend on the proper and timely performance of the Merged Entity under the relevant supply contracts. In sum, the purchaser's ability to compete would be dependent on the acceptance and implementation by the Merged Entity of various contractual rights and obligations, despite the Parties' having no incentive to improve the purchaser's competitive position.

(1440) In addition, the purchaser will depend on the provision of technical service agreements ("TSAs") by the Merged Entity in order to "*understand the content of the Velaro 3G Divestment Business*", to upgrade its engineering design to "*comply with the TSI 2014 requirements*" and to conceive its "*first bid* […] *which relies on the Velaro 3G Platform*".[1215] The proposed remedy is for 1-year agreements, to be provided at no additional cost to the purchaser.

(1441) The vast majority of respondents to the Market Test that expressed an opinion considered that technical service agreements were necessary to manufacture the platform, to upgrade its TSI compliance and to design its first bid. No supplier

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1213 Remedies Notice, paragraph 38.

1214 12 December 2018 Commitments, Schedule 1, The Velaro 3G Divestment Business, paragraph 2.4.

1215 12 December 2018 Commitments, Schedule 1, The Velaro 3G Divestment Business, paragraph 2.4(b).

considers the proposed 1-year duration to be sufficient.[1216] The TSAs' starting date is not defined in the proposed Commitment and may therefore start from the first day following the transfer. Market Test responses show that, in order to ensure that the TSAs adequately support the purchaser's business, the starting date should rather be fixed from the date of the purchaser's first award using the Velaro 3G. More importantly, however, the 1-year duration is deemed wholly insufficient. Respondents submit that it should be linked to the duration of a specific project[1217] or cover 30 months.[1218]

(1442) This means that, at the expiration of TSAs deemed insufficiently long by the Market Test, the purchaser will entirely depend on the Merged Entity for the performance of technical support, outside the scope of the Commitments.

(1443) Third, the First Velaro Commitment […]. Although Siemens has a state-of-the-art TCMS (called "Agate 3"), it does not propose to commit to transfer the Velaro 3G including a TCMS upgrade. Instead, the First Velaro Commitment offers the purchaser the option of integrating its own TCMS in the platform, with the Notifying Party's technical assistance, or to enter into a supply agreement for the necessary hardware. The terms of these technical support or supply agreements are not defined, and would instead be set "*in accordance with a work plan to be agreed upon*".[1219]

(1444) As a result, the purchaser will entirely depend on the Merged Entity's good will to set the terms and conditions of technical support or supply conditions for the platform's TCMS. This creates significant risks that the purchaser's competitiveness be undermined. Competitors and customers have stated in response to the Market Test that TCMS systems are key elements of rolling stock and that the adequate integration of an up-to-date system was of crucial importance to the platform's competitiveness.[1220] In this context, […] wondered "[h]*ow* […] *the new entity* [could] *effectively compete, if for a key component the support of* [its] *competitor is needed?*".[1221] This element is of such importance that […] considers that, given the purchaser's dependency on the Merged Entity, the proposed remedy constitutes an "[i]*nsufficient measure for true competition*".[1222]

(1445) Furthermore, even if the proposed measure was deemed acceptable, its conditions are insufficiently defined to provide sufficient support to the purchaser. As [...] explained, "*integrating* [the purchaser's] *proprietary TCMS system in the Velaro 3G technology will prove very challenging as it entails significant risks in terms of delay and will place the purchaser at a significant disadvantage compared to other suppliers that have TCMS systems that were designed for their trains. The technical assistance by the Merged Entity would somewhat facilitate this integration, although the fact that the purchaser's TCMS system was not designed to function with the 3G*

1216 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 15.

1217 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 15.2.1 (ID8187).

1218 […]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 15.1.2 (ID7889).

1219 12 December 2018 Commitments, Schedule 1, The Velaro 3G Divestment Business, paragraph 2.5.

1220 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 18.1 and 18.2.

1221 […] response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 18.2 (ID7986).

1222 […] response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 18.2 (ID7986).

technology will remain a key disadvantage. Obsolescence issues are critical for TCMS systems. For this reason, [in the absence of a transfer of an up-to-date TCMS system,] *TCMS integration support should be granted for the entire lifetime of the train rather than just for one year.*"[1223]

(1446) It follows that the First Velaro Commitment will make the purchaser dependent on the Merged Entity for a considerable period of time, which would significantly undermine the purchaser's ability to compete effectively on a standalone basis.

(C) Viability of the Divestment Business and effectiveness of the Commitments

(1447) According to the Remedies Notice, a suitable remedy "*has to include all the assets* […] *which are necessary to ensure its viability and competitiveness and all personnel which is currently employed or which is necessary to ensure the business' viability and competitiveness*".[1224] Even in the context of a technology transfer, assets and personnel required for the proper implementation of the licensed technology may be necessary to ensure the suitability of the remedy.

(1448) In this respect, the First Velaro Commitment does not fully ensure that a suitable purchaser would be able to run a viable business as it contains considerable limitations both in terms of potential applications of the transferred or licensed technologies and in terms of assets transferred to the purchaser.

(1449) First, the First Velaro Commitment restricts the manner in which the transferred or licensed technologies may be used by the purchaser as the Velaro 3G Transfer and the Velaro Novo Licence would be provided only for very high-speed applications. However, both the Velaro 3G and the Velaro Novo operate or have been developed for applications other than (and in addition to) very high-speed rolling stock. As the Notifying Party explained, "[t]*he patents, documents and know-how that are used in, and in the case of patents applicable to, the Velaro 3G and the Velaro Novo are not exclusively used in, respectively applicable to these platforms, their fields of use are broader and cover multiple rolling stock segments*".[1225]

(1450) Nonetheless, under paragraph 23 of the Remedies Notice, for the "[divested] *business to be viable, it may also be necessary to include activities which are related to markets where the Commission did not identify competition concerns if this is required to create an effective competitor in the affected markets*". Accordingly, in the present case, for the purchaser's investment to be viable, it should be placed in a similar position vis-à-vis the Velaro 3G and Novo technologies to that of Siemens before the Transaction. Therefore, even considering the Transaction's impact on the sole very high-speed rolling stock market, the purchaser should be placed in a situation similar to Siemens' and therefore be able to benefit from synergies generated from the use of the Velaro 3G and Novo technologies in multiple types of rolling stock. For instance, […].[1226] Otherwise, as pointed out by respondents to the Market Test, the inability of prospective purchasers to derive economies of scale and scope from the use of the technology is likely to limit their incentives to invest in the technology ex-ante or to further develop it after having acquired it or being licensed to it. This gives rise to significant doubts as to the viability and effectiveness of the remedy.

1223 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 18.1 (ID8187).

1224 Remedies Notice, paragraph 25.

1225 12 December 2018 Form RM, paragraph 72.

1226 Parties' 21 November 2018 presentation entitled "Velaro Novo – Technical Meeting".

(1451) Second, the First Velaro Commitment only contains intangible assets. The Velaro 3G Transfer does not include "*any production assets, manufacturing units, or R&D facilities*".[1227] Similarly, the Velaro Novo Licence excludes "*any production assets, manufacturing units, or R&D facilities*".[1228] The proposed remedy therefore supposes that a purchaser could run a viable and lasting business and restore competition by relying on its own, pre-existing production and manufacturing assets.

(1452) The Market Test has shown that this approach is not viable. Market participants, including competitors and trade unions, have submitted that intangible assets do not constitute a viable business on their own and that a transfer or licence of very high-speed technology devoid of production assets was not suitable to enable the purchaser to run a viable activity able to compete effectively with the Merged Entity on a lasting basis.[1229]

(1453) A number of competitors have expressed an interest in investing in the First Velaro Commitment:

(1) on 2 and 10 January 2019, […] submitted a letter of interest concerning the Velaro Commitment;[1230]

(2) on 2 January 2019, […] submitted a letter of interest concerning the Velaro Commitment followed by a non-binding offer on 3 January 2019;[1231]

(3) on 3 January 2019, […] submitted a letter of interest towards the Velaro Commitment followed by a non-binding offer on 15 January 2019;[1232]

(4) […] also submitted a letter of interest towards the Velaro Commitment, followed by a non-binding offer on 9 January 2019.[1233]

(1454) Nevertheless, the mere existence of such expressions of interest does not necessarily indicate that competitors have sufficient production capacity to replicate Siemens' position in manufacturing the Velaro platform. Furthermore, the Commission cannot assess a commitment proposal assuming that prospective purchasers will hold adequate production and manufacturing assets. As stated in paragraph 30 of the Remedies Notice, "[t]*he business to be divested has to be viable as such. Therefore, the resources of a possible or even presumed future purchaser are not taken into account by the Commission at the stage of assessing the remedy*".

(1455) The Remedies Notice further states that "[t]*he situation is different if already during the procedure a sale and purchase agreement with a specific purchaser is concluded whose resources can be taken into account at the time of the assessment of the commitment*".[1234] However, the Notifying Party has not put forward a specific purchaser in this case. Although the Notifying Party has communicated non-binding offers and letters of intent from several competitors, none of these documents are legally binding. Furthermore, the First Velaro Commitment does not identify a

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1227 12 December 2018 Commitments, Schedule 1, The Velaro 3G Divestment Business, paragraph 2.9.

1228 12 December 2018 Commitments, Schedule 2, The Velaro Novo Technology Bricks, paragraph 5.

1229 Responses to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 10.2 and 14.

1230 […].

1231 […].

1232 […].

1233 […] raised the following issues: "*the Velaro 3G needs to be amended as follows (non-exhaustive): - No regional marketing restrictions (excl. […]) - No marketing restrictions for the use for VHS applications only*"; […].

1234 Remedies Notice, paragraph 30.

specific purchaser. Therefore, the Notifying Party's proposal does not allow the Commission to assess the extent of a prospective purchaser's resources in relation to those excluded from the First Velaro Commitment.

(1456) The Velaro 3G Transfer includes the transfer of up to […] Velaro 3G Key Personnel, in roles including rolling stock engineering, validation and homologation, as well as all Eurostar maintenance-related personnel which the purchaser may require to continue executing the Eurostar maintenance backlog. No personnel transfer is included in the Velaro Novo Licence which, instead, provides for the temporary secondment of engineering support personnel for a maximum number of […] engineering hours.

(1457) The Market Test revealed that such transfer would fall short of supporting a viable business on the basis of the technologies transferred or licensed. Respondents have submitted that, for the remedy to be viable, all personnel related to the Velaro business should be transferred. Furthermore, the limited number of personnel provided for under the First Velaro Commitment is inconsistent with the scale required for very high-speed projects in the industry. For example, [...] stated that engineering resources typically required for a project includes around 100-150 engineers.[1235] The Commission takes those comments into account and considers that the transfer of […] engineering personnel falls short of the number necessary to ensure the continued viability of the Velaro platform in the hands of the purchaser.

(C) Conclusion

(1458) For these reasons, the Commission considers that the First Velaro Commitment is not suitable to remedy the identified competition concerns in high and very high-speed rolling stock, including the narrower market of very high-speed trains in the EEA and on a worldwide basis (excluding China, Japan and South Korea).

9.5.1.2. The Commission's assessment of the Pendolino Commitment

(A) Scope of the Pendolino Commitment

(1459) As stated in recital (1288), the commitments have to eliminate the competition concerns entirely and have to be comprehensive and effective from all points of view.[1236]

(1460) The Pendolino Commitment consists of the divestiture of the Pendolino […].

(1461) Further, as per recitals (1368) to (1373), the Market Test largely confirmed that […], is not sufficient to conclude that the Pendolino platform could […].

(1462) The Commission, therefore, considers that the Pendolino platform is a […]. With regard to the potential […].

(1463) First, as raised during the Market Test, […].

(1464) Reference is made to recitals (83) to (87), […].[1237] […].

(1465) Respondents also raised other issues that would prevent a successful upgrade of VHS Pendolino:

1235 [...]'s response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, questions 11.1 and 17.2 (ID8187).

1236 Remedies Notice, paragraph 9.

1237 Pendolino Remedy – Technical meeting, 10 December 2018 (ID8807).

(1) Some key components […] and will likely not be divested as part of the Pendolino Commitment;

(2) VHS Pendolino may always be perceived by customers as […];

(3) Numerous key elements of the platform would have to be re-designed and/or reconfigured, including the platform's […];

(4) Investment costs for this upgrade could amount to a total of cost comparable to that of the development of a new very high-speed platform;

(5) An entire concept and design of the train would be required, not just an upgrade.

(1466) Second, […], and does not comprise any "*best endeavours*" obligation on Alstom. As explained during the Market Test, […].[1238] […].

(1467) Third, the Pendolino Commitment also provides for […]. However, the divestment of the Pendolino platform would have no impact on competition for […] because of the constraint of the […] and the work required to […].

(1468) The Commission therefore considers that the Pendolino Commitment is insufficient in scope as it does not address the competitive concerns identified by the Commission on both the overall market for high-speed and very high-speed, as well as on the narrower market for very high-speed rolling stock.

(B) Viability and effectiveness of the Pendolino Commitment

(B.i) Uncertainty as to the viability of certain assets

(1469) According to the Remedies Notice, and as explained in recital (1447) in the context of the First Velaro Commitment, a suitable remedy "*has to include all the assets* […] *which are necessary to ensure its viability and competitiveness and all personnel which is currently employed or which is necessary to ensure the business' viability and competitiveness*".[1239]

(1470) The Commission notes that the Pendolino Commitment does not ensure that the purchaser will obtain the entirety of the assets used in the supply of the Pendolino platform. Some transfers remain subject to third party or customer rights, making it unforeseeable at this stage whether they will actually be transferred as part of the Divested Business.

(1471) First, the extent to which the purchaser will actually be able to obtain the Pendolino Backlog and the Pendolino Maintenance Backlog is uncertain. The right of the purchaser to acquire the Pendolino Backlog and to have access to third party facilities necessary to the Pendolino Maintenance Backlog (such as […]) and Piaseczno (Poland)) is subject to third-party consent. This creates significant uncertainty as to whether the purchaser will actually have sufficient access to infrastructure and personnel to successfully pursue the ongoing contracts. However, without these backlogs it is uncertain whether the Pendolino Commitment will still be considered attractive for a purchaser or will constitute a viable business capable of exerting an effective competitive constraint.

1238 […] response to questionnaire on commitments offered by Siemens – Very High-speed Rolling Stock Market Test, question 30.1 (ID7844).

1239 Remedies Notice, paragraph 25.

(1472) Moreover, although the results of the Market Test show that access to Alstom's sites in […] would be necessary to enable the purchaser to run a viable business, the purchaser's access to these sites appears to be more difficult to organise in practice than presented in the Commitments. The Commission notes that there are significant risks as to whether the […] can, in practice, be shared since it is also the manufacturing site of other Alstom platforms. As for the […], the Commission also takes into account the uncertainty highlighted during the market test as to whether the site can be separated in two. Respondents, among which […], raised issues on the […] infrastructure and the impracticability of splitting the site in two.

(1473) Furthermore, the ownership of the relevant sites will not be transferred to the purchaser and the Pendolino Commitment does not specify the conditions under which the purchaser would be granted access to those sites. In the Commission's view, this increases the risk that the Merged Entity could artificially limit the access of the purchaser and therefore the viability of the Divested Business.

(1474) Second, the transfer of Alstom's […] appears extremely unlikely. Such transfer would be subject to […], thus reducing the viability of the Divested Business.

(1475) Third, as stated during the Market Test (see recital (1380)), the Pendolino Commitment comprises "*Pendolino-specific personnel currently engaged in one of the functions, up to* […]". The addition of the term "*up to*" makes it unclear how many full-time equivalents would be actually transferred, thus preventing the Commission from ascertaining the viability of the Divested Business.

(1476) The effectiveness of the Commitments is further undermined due to risks related to the various carve-outs envisaged in the Pendolino Commitment. Indeed, certain assets used in the production of Pendolino trains may not be divested to the purchaser but could be retained by Alstom or require Alstom's good will (especially for the maintenance facilities). Therefore, the Pendolino Commitment does not appear sufficiently clear-cut and straightforward to be considered viable.

(1477) Finally, the lack of viability of the Divested Business is further illustrated by the fact that no potential purchaser has demonstrated a specific interest in the Pendolino Commitment. Although […] initially submitted a letter of interest on 3 January 2019 for both the Velaro and Pendolino Commitments, it finally submitted a non-binding offer on 15 January 2019 for the sole First Velaro Commitment.[1240] Other interested purchasers did not show any interest in the Pendolino Commitment.

(B.ii) Dependency of the purchaser on the Merged Entity

(1478) The Remedies Notice states that "[t]*he Commission will only accept such arrangements if they do not affect the independence of the divested business from the parties*".[1241] However, certain elements from the Pendolino Commitment do not appear to be transferred on a stand-alone basis but would require a significant degree of continued interaction between the merged entity and the purchaser.

(1479) For instance, the supply of existing Alstom in-house key components for high-speed and very high-speed applications, and transitional service agreements for technical assistance and project engineering support, "*will be negotiated with the purchaser but will be entered into on terms that ensure the competitive independence of the*

1240 […].

1241 Remedies Notice, paragraph 28.

Purchaser".[1242] Also, with regard specifically to the project engineering support TSA, the Parties commit to use "*their commercially reasonable efforts*" to provide such support to the purchaser. These provisions are vague and do not guarantee that such agreements will materialise.

(1480) Moreover, as per these provisions, ongoing commercial relationships after the divestment of the Pendolino platform will require a continuous relationship between the purchaser and the Merged Entity and are likely to undermine the independence of the potential purchaser.

(1481) It follows that the purchaser would remain dependent on the Merged Entity for a considerable period of time, which would significantly undermine the purchaser's ability to compete effectively on a standalone basis.

(D) Conclusion

(1482) For these reasons, the Commission concludes that the Pendolino Commitment is not suitable to remedy the identified competition concerns in the overall market for high and very high-speed rolling stock, including the potential narrower market of very high-speed trains, in the EEA and on a worldwide basis (excluding China, Japan and South Korea).

9.5.2. The Commission's assessment of the Second and Final Very High-speed Rolling Stock Commitments

9.5.2.1. Timing of submission of the Commitments

(1483) The Second and Final Very High Speed Rolling Stock Commitments were submitted on 9 January 2019 and 25 January 2019 respectively, that is 12 and 24 working days after expiry of the deadline for submitting commitments established by Article 19(2) of Regulation (EC) No 802/2004, and hence at a very late stage of the proceedings.

(1484) As regards commitments submitted after that deadline ("late commitments"), the Remedies Notice provides, that the Commission can only accept such modified commitments "*where it can clearly determine – on the basis of its assessment of information already received in the course of the investigation, including the results of prior market testing, and without the need for any other market test – that such commitments, once implemented, fully and unambiguously resolve the competition concerns identified and where there is sufficient time to allow for an adequate assessment by the Commission and for proper consultation with Member States*".[1243]

(1485) The case law of the Court of Justice of the European Union confirms this stricter legal standard for the assessment of late commitments. The General Court stated that "[i]*t is clear from reading Article 8 of the Merger Regulation in conjunction with Article 18 of Regulation No 447/98 that the regulations on concentrations impose no obligation on the Commission to accept commitments submitted after the deadline. That deadline is to be explained primarily by the requirement of speed that characterises the general structure of the Merger Regulation*". In addition, the General Court ruled that two cumulative conditions must be fulfilled so that commitments which were submitted out of time can be taken into account: "*namely, first, that those commitments clearly, and without the need for further investigation,*

1242 12 December 2018 Commitments, Schedule 3, The Pendolino Divestment Business, paragraph 8.1.

1243 Remedies Notice, paragraph 94.

resolve the competition concerns previously identified and, second, that there is sufficient time to consult the Member States on those commitments".[1244]

(1486) This means that the Commission cannot accept the Final Commitments if, due to significant uncertainties about their actual implementation or effects, it is not able to clearly determine that, once implemented, they will fully and unambiguously resolve all the competition concerns identified.

(1487) Based on the assessment in Section 9.5.2.2, the Final Commitments do not allow the Commission to conclude that they would fully and unambiguously resolve the competition concerns identified in this Decision without a further need for investigation. Consequently, the Commission rejects the Final Commitments.

9.5.2.2. Assessment of the Second Very High-Speed Rolling Stock Commitments

(A) Modifications brought to the First Very High-Speed Rolling Stock Commitments

(1488) As described in Section 9.3.2, the Second Very High-speed Rolling Stock Commitments modify the Notifying Party's initial proposal in three ways.

(1489) First, the Second Very High-Speed Rolling Stock Commitments extend the scope of the Velaro 3G Transfer. Whereas that transfer was previously limited to very high-speed applications, the Second Commitments extend the transfer's application to all high-speed applications, which is all rolling stock with a maximum speed equal to or above 250 km/h.

(1490) Second, the Second Very High-Speed Rolling Stock Commitments clarify that the Notifying Party's proposal does not include the transfer of any components, sub-components, software and aftermarket services related to the Notifying Party's retained rolling stock business. That business is defined all rolling stock business (therefore including high and very high-speed rolling stock) other than the Velaro 3G platform and the Velaro Novo Technology Bricks.

(1491) Third, the Second Very High-Speed Rolling Stock Commitments clarify the scope of the Velaro Novo Licence. It thus provides that the Velaro Novo Licence includes a licence to use the Velaro Novo Technology Bricks for very high-speed applications on a non-exclusive basis outside of the EEA.

(1492) The Second Very High-Speed Rolling Stock Commitments contains no modification of the Pendolino Commitment.

(B) The Second Very High-Speed Rolling Stock Commitments contains limited and insufficient modifications

(1493) The modifications contained in the Second Very High-Speed Rolling Stock Commitments are very limited.

(1494) The only material addition to the Notifying Party's proposal is the extension of the Velaro 3G Transfer to high-speed applications. This contributes to addressing the proposed remedy's lack of viability in so far as it related to the purchaser's inability to use the transferred Velaro 3G technology and benefit from synergies generated from its application to other rolling stock, as explained in recital (1450).

(1495) However, the modifications brought in the Second Commitments fail to address the same – and more substantial – shortcoming in relation to the Velaro Novo Licence or, more fundamentally, any other deficiency in the Notifying Party's proposal.

[1244] Case T-87/05 *EDP v Commission* [2005], EU: T:2005 :333, paragraphs 161 and 163.

(1496) Indeed, the Second Commitments provide for little additional measures to improve the potential purchaser's ability to compete against the Merged Entity. In particular, the Second Commitments extend the scope of the Velaro Novo License to include a non-exclusive worldwide licence limited to very high-speed applications. However, the Velaro Novo License, even thus extended, does not provide sufficient rights to any hypothetical purchaser since, as explained in recitals (1416) to (1432), no supplier can be plausibly expected to effectively compete with the Merged Entity on the basis of the same technology in a market where Siemens will be able to put forward years of in-house development, thus providing customers the guarantee that trains will be procured from a knowledgeable company having conceived all relevant aspects of their underlying technology. The advantage inherent with the Notifying Party's position as the technology's initial developer could not be plausibly bested by a purchaser only recently acquainted with the technology. Consequently, the Second Commitments do not provide for any material addition to the proposed Velaro Novo Licence and instead consists in a mere textual clarification.

(1497) Finally, other modifications consist in further exclusions of components, software and services from the scope of the Velaro 3G Commitment.

(1498) For the reasons set out in Section 9.5.2.2 and despite the Commission's willingness to consider a clear cut remedy after the expiry of the deadline for submitting remedies, the Final Commitments submitted by the Notifying Party do not fulfil the conditions mentioned. They do not constitute a clear-cut remedy, which could be accepted without a further need for investigation.

9.5.2.3. Assessment of the Final Very High-Speed Rolling Stock Commitments

(1499) The Final Very High-Speed Rolling Stock Commitments extend the duration of the exclusivity of the Velaro Novo Licence to 10 years. However, the Final Very High-speed Rolling Stock Commitments exclude Germany from the scope of application of that exclusivity. They contain no additional modifications to the Velaro Novo Licence. No changes are proposed in relation to the Velaro 3G Transfer and the Pendolino Commitment.

(1500) Feedback obtained from respondents to the Market Test set out in Section 9.4 clearly indicated that an extension of the Velaro Novo Licence's exclusivity period would not suffice to consider that the proposal constitutes an effective and clear-cut remedy. This is because the results of the Market Test showed that the First Very High-Speed Commitments presented several shortcomings not limited to the Velaro Novo License's duration, which, in combination, failed to provide a suitable remedy. Moreover, both NCAs and market participants have indicated that a mere technology transfer falls short of the type of measure that could be deemed adequate to restore competition in very high-speed rolling stock. Furthermore, both customers and competitors took issue with the combined limiting effect of the various restrictions on the scope of the proposed Very High-speed Rolling Stock Commitments in terms of geography and retained business (in addition to the limited duration).

(1501) In this context, the Commission notes the following.

(1502) First, although the Final Very High-Speed Rolling Stock Commitments extend the duration of exclusive rights granted to a remedy taker, those exclusive rights would remain limited by several exceptions, namely the […] and any tender for very high-speed rolling stock occurring in […].

(1503) The exclusion of any tender in […] significantly restricts the scope of the Final Very High-Speed Rolling Stock Commitments. As indicated in recital (283), the Notifying Party does not foresee that any very high-speed rolling stock project […]. The

proposed exclusion of […] nevertheless would preserve the Merged Entity's ability to use the Velaro Novo technology in the event that any tender, not foreseen at the time of the present Decision, would materialise by the end of the year 2029. Furthermore, the exclusion of […] in the Final Very High-Speed Rolling Stock Commitments also reduces the scope of remedies previously offered by the Notifying Party, since the First and Second Very High-Speed Rolling Stock Commitments did not include such exclusion.

(1504) No justification has been provided by the Notifying Party for this exclusion. […], the Commission considers that nothing justifies excluding the territory of […] from the scope of the remedy which would be required to restore effective competition in very high-speed rolling stock.

(1505) Second, the Final Very High-Speed Rolling Stock Commitments do not contain any additional improvements. Therefore, all shortcomings affecting the proposal's structure (not amounting to a full divestment), scope, dependency on the Merged Entity and viability in terms of clarity, insufficient geographic scope, large carve-outs of retained business, dependency on supply and technical assistance agreements with the Merged Entity, as well as lack of sufficient assets and personnel are not addressed by the Final Very High-Speed Rolling Stock Commitments.

(1506) As indicated in Section 9.5.1.1 and 9.5.2.2, these shortcomings are very significant. For instance, the Final Very High-Speed Rolling Stock Commitments include no provision allowing for a purchaser to use the Velaro Novo technology on an exclusive basis to compete in very high-speed rolling stock tenders outside of the EEA, thus casting significant doubt that the purchaser, bidding against the Merged Entity on the basis of the same technology, would be able exercise a material competitive constraint on the worldwide market for high and very high-speed rolling stock; it includes no provision modifying, clarifying or extending the terms of agreements that would have to be entered into between the purchaser and the Merged Entity for the supply of key components, technical assistance, project engineering or TSI upgrade agreements thus leaving intact contractual links creating a significant dependency on the Merged Entity; it leaves intact the Commitment's provision excluding any non-very high-speed applications from the scope of the Velaro Novo Licence, thus barring any multi-product synergies the technology was initially developed for and limiting the purchaser's incentive to invest in developing the Velaro Novo technology; it provides for no transfer of tangible assets, facilities or personnel, thus casting significant doubt on the proposed remedy's viability.

(1507) As a result, the Final Very High-Speed Rolling Stock Commitments remain insufficient to allow any purchaser to compete on a standalone and lasting basis with the Merged Entity.

9.5.2.4. Conclusion

(1508) In light of all the considerations set out in Section 9.5.2, in particular the significant shortcomings of the Final Very High-Speed Rolling Stock Commitments, the Commission concludes that the Final Very High-Speed Rolling Stock Commitments do not eliminate all the competition concerns identified by the Commission in respect of the overall market for high-speed and very high-speed rolling stock, including the narrower market for very high-speed rolling stock, in the EEA and worldwide (except China, Japan and South Korea).

9.6. Description of the Mainline Signalling Commitments

(1509) On 12 December 2019, the Notifying Party submitted two packages as part of the commitments relating to the mainline signalling business: (i) commitments relating

to Siemens' ETCS OBU business ("First ETCS OBU Commitments") and (ii) commitments relating to Alstom's ETCS ATP wayside and interlockings business ("First ETCS Wayside and Interlockings Commitments").

(1510) On 9 January 2019, the Notifying Party submitted revisions to the first two packages, referred to as the "Final ETCS OBU Commitments" and the "Second ETCS Wayside and Interlocking Commitments".

(1511) On 25 January 2019, the Notifying Party submitted revisions to the Second ETCS Wayside and Interlocking Commitments, referred to as the "Final ETCS Wayside and Interlocking Commitments".

9.6.1. The First ETCS OBU Commitments

(1512) The First ETCS OBU Commitments include access to Siemens' ETCS OBU technology via a transfer of Siemens' generic application (EBSO), and a licence and a supply and service agreement ("SSA") and/or sourcing from third parties for the software and hardware that comprises the Simis platform on which the EBSO application runs.

(1513) The proposal includes a transfer of Siemens' TBL+-STM application, which delivers legacy OBU functionality in Belgium via a transfer of the application and a licence and SSA and/or sourcing from third parties for the software and hardware that comprises the underlying Simis platform on which the TBL+-STM application runs.

(1514) The Siemens Simis platform is to be made available to the purchaser through a licence and SSA (the "ETCS OBU Platform Licensing Arrangements") on the condition that its use is limited to purposes relating to the mainline OBU divestment business.

(1515) The duration of the licence and SSA depends on the function for which the platform is required: (i) where the platform is used to support maintenance of on-going contracts related to the installed base and contracts in expiration, then the term will be until the installed base and order backlog are phased out and as long as the spare parts and repairs are available; (ii) where the platform is used to bid for new projects, the term is for a period of four years during which the purchaser will migrate the applications to its own platform with a commitment by Siemens to continue to supply the platform for delivery of new contracts until 2031 and to provide spare parts and repairs either for 20 years or until the installed base or order backlog in connection with new contracts are phased out and as long as spare parts and repairs are available.

(1516) Other main assets included in the package that comprises the First ETCS OBU Commitments are:

(1) A non-exclusive, royalty-free, fully paid-up and irrevocable licence and an SSA, at cost, for the supply of Siemens' Class B Specific Transmission Modules ("STMs")[1245] wholly owned by Siemens and any existing IP to interface Class B STMs with rolling stock until each STM becomes obsolete or discontinued by Siemens;

(2) Project engineering data is included to the extent that it is predominantly used for the operation of the Siemens ETCS OBU project business worldwide and

[1245] STM is an interface necessary to run a train equipped with ERTMS system but not with a fully flagged legacy or national system (defined as "class B"). In the case that a train has an ETCS OBU, an STM provides the functionality of a legacy OBU.

for the legacy OBU business in Belgium, and otherwise the project engineering data will be licensed to the purchaser;

(3) A licence to key know-how and a licence to software that is used by the Siemens mainline OBU business that is shared with parts of the retained business. Software that is used predominantly by the mainline OBU divestment business is transferred to the purchaser;

(4) Testing equipment located in […];

(5) Personnel comprising at least […] personnel and […] key personnel, subject to required consents (the "ETCS OBU Personnel");

(6) Transfer of pipeline projects related to ETCS OBUs and OBUs in Belgium;

(7) A transitional support agreement, at the purchaser's request, for the supply of certain products and services by Siemens for a period of up to 12 months after closing extendable for a further 12 months subject to the purchaser providing notice of 3 months and subject to the opinion of the monitoring trustee.

(8) (the intangible assets included in the commitments are called the "ETCS OBU Intangible Assets")

(1517) Assets relating to Siemens' ETCS OBU business that are excluded from the package include but are not limited to:

(1) Siemens sites and other assets, including IP, that are also used in other parts of Siemens' business.

(2) Employees responsible for centralised functions (e.g., purchasing, assembly, contract management, legal, human resources);

(3) The "Trainguard" brand;

(4) Class B systems;

(5) All STMs apart from the TBL+-STM;

(6) Personnel responsible for the development of legacy STMs;

(7) KBS software component (communication stacks);

(8) Siemens' […] printed circuit boards ("PCBs") needed for ETCS OBUs and TBL1+ for which the Notifying Party proposes a non-exclusive licence to use Siemens' PCBs developed and produced in its facility in […];

(9) Siemens' […] balise antenna that is used with Siemens' ETCS OBU and […]. The Notifying Party proposes, on the request of the purchaser, to enter into an SSA for the supply of Siemens' […] balise antenna;

(10) Siemens' […] sensors and actors for which the Notifying Party proposes a non-exclusive licence and SSA to use Siemens' […] sensor and actors that are installed in the installed base and a supply agreement for spare parts.

(1518) The First ETCS OBU Commitments as submitted on 12 December 2018 included a right for the Merged Entity to retain a reverse licence to use all transferred software for its own business. On 19 December 2018, after the Commission raised this item with the Parties in a technical meeting on 18 December 2018, the Parties clarified that that part of the First ETCS OBU Commitments should be re-phrased to read that the Merged Entity's right to a reverse licence to use any IP that is transferred to the purchaser applies only where that IP is shared with the retained Siemens business.

9.6.2. The Final ETCS OBU Commitments

(1519) The Final ETCS OBU Commitments consist of revisions to licensing arrangements and the addition of the right to be supplied Alstom's Class B STMs.

(1520) Under the Final ETCS OBU Commitments:

(1) The time that the purchaser will have a right to bid for new projects using the Siemens Simis platform provided under licence to the purchaser is extended from 4 years to 6 years. The amendment means that the purchaser will have an extra 2 years to migrate the OBU application software to its own platform (or to develop a platform that can support the OBU application software) before it loses the right to bid for OBU projects using the Siemens Simis platform.

(2) The purchaser has a right to be supplied also with Class B STMs wholly owned by Alstom, pursuant to an SSA, at commercially negotiated rates, and to any existing IP used to interface those STMs with rolling stock, until each STM becomes obsolete or is discontinued by Alstom.

9.6.3. The First ETCS Wayside and Interlockings Commitments

(1521) The main technology included in the package comprises a mixture of transfer of ownership and licensing arrangements for technology used by the Alstom ETCS wayside and interlockings businesses, specifically:

(1) Alstom's ETCS Level 1 and Level 2 software applications ([…][1246] […];

(2) A mixture of a transfer of technology (licence with access to drawings, designs, code etc.)[1247] and licence to Alstom's main interlocking technology installed in the EEA ([…])[1248]. The Merged Entity reserves the right to compete outside of the EEA with […]. The package does not include […].

(3) A mixture of transfer of ownership,[1249] transfer of technology (licence with access to drawings, designs, code, etc.)[1250] and licensing[1251] of Alstom's interlocking technology used in, and the technology under homologation for use […]. Alstom's legacy interlocking technology that has an installed base in the EEA but is no longer offered is also included in the package.

(1522) (Together called "The Wayside and Interlocking Technologies").

(1523) Other main assets included in the package that comprises the First ETCS Wayside and Interlockings Commitments are:

(1) Test benches and dedicated moveable tangible assets;

(2) Certain sites located in the […] used predominantly to operate the Alstom ETCS wayside business;

(3) At the option of the purchaser, a supply agreement for the supply of Alstom's balises for a period of four years at cost with terms to be agreed with the purchaser with the supervision of the monitoring trustee;

1246 "Pending tenders" is defined as tenders for which a Request for Proposal (RFP) has been issued.

1247 Transfer of Technology means an agreement consisting of […].

1248 The commitments contemplate in relation to […]. In addition, where necessary, and at conditions to be determined with the purchaser approved by the monitoring trustee, Alstom would deliver to the purchaser […].

1249 The commitments contemplate a transfer of ownership of […].

1250 The commitments contemplate a transfer of technology, in relation to […].

1251 The commitments contemplate a licence for licence and SSA for the […].

(4) Customer contracts relating to the ETCS wayside business worldwide except for […];

(5) Customer contracts relating to the interlockings business in […];

(6) Customer contracts in […] are split between the Merged Entity and the purchaser, such that the Merged Entity retains the non-ETCS portion of the contract and the ETCS wayside portion is divested (e.g., the portion relating to interlockings, OCS or OBUs) (subject to customer consents).

(1524) Personnel proposed to be transferred as part of the First ETCS Wayside and Interlocking Commitments comprises potentially […] key personnel and […] personnel predominantly […], subject to necessary consents (the "Wayside and Interlocking Personnel").

(1525) The interlocking technology included in the First ETCS Wayside and Interlocking Commitments is largely the subject of licensing arrangements, therefore ownership (for the most part) is retained by the Parties while the Parties undertake not to compete with the purchaser pursuant to a non-compete clause. The non-compete clause provides that the Parties undertake not to compete with the purchaser in mainline signalling using the Alstom interlockings applications included in the First ETCS Wayside and Interlocking Commitments, throughout the EEA except for in […]; however, the Parties retain the right to compete in the EEA using the platforms on which the interlocking applications run (the "Wayside and Interlocking Non-Compete").

(1526) The purchaser has the right to use the interlocking technologies that are included in the package for mainline signalling applications globally but not for other non-mainline signalling applications (for example urban signalling applications).

(1527) Assets relating to Alstom's ETCS wayside and interlocking business that are excluded from the package include but are not limited to:

(1) Alstom's ETCS wayside backlog and […] and the assets and personnel required to execute those projects and Alstom's interlocking project business in […] as well as all tangible assets required to operate the retained interlocking business together and ownership of all patents that are shared with the retained business (the "Geographic Carve-Out");

(2) All Alstom sites other than those specific sites located in the […] that are included in the First ETCS Wayside and Interlocking Commitments. Exclusions include Alstom's sites in […] (the "Wayside and Interlocking Sites");

(3) Ownership of all platforms (including R&D projects) on which the ETCS applications and interlockings operate, all of which are supplied to the purchaser pursuant to different kinds of licensing arrangements;

(4) Ownership of all technology relating to […], which Alstom also uses for the retained business;

(5) Ownership of all technology relating to the […] other than the application software and, in the case of […] by the divestment business and for which ownership will be transferred to the purchaser;

(6) Ownership of all patents used also by the retained business and licensed to the purchaser.

9.6.4. The Second ETCS Wayside and Interlockings Commitments

(1528) The Second ETCS Wayside and Interlocking Commitments revise the treatment of discrete items proposed in the First ETCS Wayside and Interlocking Commitments. They do not change the general mix and match of assets, mix of forms of transfers of ownership, transfer of technology and licensing arrangements, retention of manufacturing capability and pipeline R&D, and carve-outs contemplated under the First ETCS Wayside and Interlocking Commitments.

(1529) Under the Second ETCS Wayside and Interlockings Commitments:

(1) The […] on which the ETCS applications and certain interlockings operate[1252] is subject to a transfer of technology[1253] instead of an SSA including licence. Tangible assets used predominantly in relation to the platforms are excluded, according to clarifying text.

(2) Alstom commits to transfer […], with a support agreement and licence back for a limited (but unspecified) time of those personnel involved in delivering the backlog in […] (backlog which is retained by the Merged Entity);

(3) Pending tenders for ETCS wayside projects in […] (previously excluded from the First ETCS Wayside and Interlockings Commitments) are included in the package;

(4) Patents used exclusively for ETCS wayside projects in […] are included in the package.

9.6.5. The Final ETCS Wayside and Interlocking Commitments

(1530) The Final ETCS Wayside and Interlocking Commitments amend the treatment of the ETCS backlog in France and Italy. They do not change the general mix and match of assets, mix of forms of transfers of ownership, transfer of technology and licensing arrangements, nor the retention of manufacturing capability and of pipeline R&D (e.g., ETCS Level 3).

(1531) Under the Final ETCS Wayside and Interlocking Commitments:

(1) ETCS backlog in […] is included in the remedy package.[1254]

(2) An additional […] personnel to execute the transferred backlog is included in the remedy package.[1255] The number of R&D personnel remains unchanged.

(3) Certain undefined tangible assets in […] required to execute the ETCS backlog may be included in the remedy package.[1256] Sites […] are not to be transferred.

1252 Namely, […].

1253 Developments on the platform completed before October 2019 are included in the transfer of technology. Transfer of Technology means an agreement consisting of […].

1254 The estimated value of the ETCS backlog in […] has been reduced by EUR […] due to the exclusion of a trackside contract that was previously included in the calculation of the value of the backlog.

1255 The total number of personnel to be transferred is […] under the Final ETCS Wayside and Interlocking Commitments ([…] personnel under the Second ETCS Wayside and Interlcoking Commitments).

1256 The Commission's view in this respect is based on the amendments to Annex 1 of Schedule 5 of the Final ETCS Wayside and Interlocking Commitments, in which sites in […] are added to the list and next to those sites is indicated "Transfer of divested activity to another site" and the deletion of following text from the description of the retained business at section 2.3: "*Any tangible assets* […] *predominantly used by the Retained Business which are required to execute the ETCS Wayside backlog in France or Italy.*"

9.7. Market feedback on the First Mainline Signalling Commitments

9.7.1. The First ETCS OBU Commitments

(1532) Overall, the responses to the Market Test on the First ETCS OBU Commitments were negative albeit to a lesser degree than the responses to the First ETCS Wayside and Interlocking Commitments. A large proportion of mainly customer respondents replied "I did not know" in response to the Commission's questions about the package. Some respondents stated that they lacked sufficient information to respond to the question whereas others stated they are not involved in the relevant area or lack the expertise to reply to the question. Competing signalling suppliers were mostly able to express a view on the questions asked.

Table 45: Overview of the market test on results on the suitability of the First ETCS OBU Commitments

Question	Response		
	No	**Yes**	**I do not know**
Do you consider that the On-board Commitment Package will be sufficient to restore competition in ETCS OBU projects in the EEA and legacy OBU projects in Belgium, after the transaction if the Package was transferred to a suitable purchaser?	6	3	31
Do you consider that the On-board Commitment Package in the hands of a Purchaser is sufficient to replicate Siemens' competitive constraint in the EEA?	7	4	29

Source: Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, questions 54 and 55.

9.7.1.1. Clarity of the First ETCS OBU Commitments

(1533) The responses to the Market Test produced mixed results on the clarity of the First ETCS OBU Commitments. Of those respondents who were able to answer the Commission's questions about the clarity of the First ETCS OBU Commitments, the majority considered the First ETCS OBU Commitments were sufficiently clear as to enable them to form a view about their content.[1257] However, less than half of the respondents said that the First ETCS OBU Commitments are clearly drafted as to reduce to a minimum the risks linked to their implementation.[1258] When asked specifically about the scope of the commitments, the majority of respondents stated that the scope of the retained business including the scope of intangible assets retained, were not sufficiently clear.[1259] More than half of respondents considered that the First ETCS OBU Commitments were not drafted clearly enough as to reduce to a minimum the risks linked to their implementation.[1260]

(1534) [...] notes that the First ETCS OBU Commitments are more straightforward than the First ETCS Wayside and Interlocking Commitments but considers that the First

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1257 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.

1258 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 51; statistics based on those who were able to answer yes or no to the question.

1259 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52; statistics based on those who were able to answer yes or no to the question.

1260 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 51; statistics based on those who were able to answer yes or no to the question.

ETCS OBU Commitments still "*fail to provide sufficient information on certain aspects*" such as the scope of products and software.[1261]

(1535) […] considers that on the technical side the package is sufficiently clear but expresses concern that what is not clear is the allocation of responsibility between the Merged Entity and the purchaser as regards the performance of the platform and in case of obsolescence and modifications to the OBUs.[1262]

(1536) [...] identifies a number of items that are unclear including a lack of information on the location of the personnel to be divested and how obsolescence management will be handled in the case of elements for which the Merged Entity will retain and supply to the purchaser only through a licence.[1263] [...] also identifies a lack of clarity around the personnel to be included in the First ETCS OBU Commitments.[1264]

(1537) Several competitors and customers consider that information is lacking about the scope of intangible assets.[1265] […] notes that it is not clear which hardware is licensed under the SSA since the hardware version of the ETCS OBU (in use at the time of its reply to the Market Test) is in its view obsolete.[1266] [...] considers that "*a key concern regarding the scope definition is the insufficient differentiation between the application scope …and platform scope*" whereas the platform will be retained by the Merged Entity.[1267] [...] considers that the intangible assets to be retained or licensed back are "*not sufficiently described, ambiguous, and complex*".[1268] [...] also considers that the scope of the products and software included in the First ETCS OBU Commitments is unclear.[1269]

(1538) On the other hand, [...] considers that the specific intangible assets included in the First ETCS OBU Commitments are clearly defined but further information on the content of the rights that will be transferred to the purchaser is necessary.[1270] [...] also considers that the scope of the non-exclusive reverse licence for the Merged Entity to use the transferred software is unclear and further information about the content of the licence is needed.[1271]

1261 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.1 (ID8211).

1262 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.1 (ID8184).

1263 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.1 (ID8205).

1264 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.1 (ID8217).

1265 [...]'s and […] responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 49.1 (ID7959 and ID8196); [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 50.1 (ID8193).

1266 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 50.1 (ID7959).

1267 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52.1 (ID8193).

1268 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52.1 (ID8193).

1269 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52.1 (ID8211).

1270 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52.1 (ID8217).

1271 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 52.1 (ID8217).

(1539) Overall, the Market Test reveals fewer concerns as to the clarity of the First ETCS OBU Commitments when compared with the First ETCS Wayside and Interlocking Commitments. However, several respondents, and mostly main signalling competitors in addition to certain customers express concerns in particular around the scope and form of intangible assets included in the First ETCS OBU Commitments.

9.7.1.2. The ETCS OBU Platform Licensing Arrangements

(1540) The First ETCS OBU Commitments contemplate the licensing of the Siemens Simis platform to the purchaser for a period the Notifying Party considers long enough to enable the purchaser to migrate the OBU software applications to its own platform. One of the Commission's objectives in conducting the Market Test was to determine whether such a migration was feasible and whether the divestment business would be able operate independently and competitively within a reasonable time.

(1541) No signalling supplier except for one considered that they would be able to feasibly migrate Siemens' software applications for ETCS OBUs and the TBL+-STM (used in Belgium) to their own platform in a reasonable time to bid for new projects using the migrated application on their own platform.[1272] This includes interested purchasers such as […], who also considered that they could not carry out the migration in a reasonable time to bid for new projects.[1273]

(1542) [...] noted that while such a migration would be "*technically feasible, it would economically not be viable*" and that a migration would not be possible in a short period of time and without "*substantial additional investments*".[1274] [...] considered that the migration would involve "*large dependency on the Merged Entity*". It is unlikely, according to [...], that a purchaser would be operational within a short timeframe, meaning that it could not bid using the assets included in the package in the short term.[1275]

(1543) […], agrees with [...] that the migration is "*in principle*" feasible but that given the complexity of the process would require more information about the technical specificities of the Siemens' Simis platform in order to evaluate the risks, effort and costs of migration.[1276]

(1544) […], said that "[m]*igration is not a simple issue*" and that given differences between different safety platforms, it may even be necessary for a purchaser to develop a new platform (in the case that it already has its own platform) in order to manage the migration.[1277] […] considers that given "*the risks that the platform migration entail* […], […] *considers that the scope of the intangible assets included in the On-board Commitment Package is not sufficient to replicate Siemens' competitive constraint in the EEA*".[1278]

1272 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 78; only […] answered 'yes' to the question (ID8284).

1273 […]

1274 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 78.1 (ID8193).

1275 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 78.1 (ID8193).

1276 […] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 78.1 (ID8205).

1277 […] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 57.1 (ID8217).

1278 […] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 57.1 (ID8217).

(1545) […] considers that "*ETCS is a complex SW and one cannot migrate the complex ETCS on a new HW platform*", and recognises the difficulties of migrating platforms.[1279] [...] notes the large parts of an ETCS OBU solution that the purchaser would still need to develop despite the transfer of the application software included in the First ETCS OBU Commitments, namely "*[p]arts of the Application SW for ETCS OBU namely (KBS) is also under SSA and licence is valid for 4 years. With this purchaser has to redevelop within 4 years at least 50% of the ETCS OBU system*".[1280]

(1546) No respondent considered that the terms on which the Siemens platform would be licensed were sufficiently clear and acceptable to enable a purchaser to migrate the Siemens application to its own platform.[1281]

9.7.1.3. The ETCS OBU Intangible Assets

(1547) Overall, the Market Test responses on the adequacy of the ETCS OBU Intangible Assets included in the First ETCS OBU Commitments were neutral in some respects and negative in others. The majority of respondents were unable to provide a view of the First ETCS OBU Commitments (answered "I do not know"). Of respondents who were able to provide a reply, more than half considered that the scope of the intangible assets included in the ETCS OBU Commitments were insufficient.[1282]

(1548) In relation to STMs, the ETCS OBU Commitments propose a licence and supply and service agreement to Siemens' Class B STMs and existing IP to interface Class B STMs with rolling stock. More than half of those who were able to reply considered that this arrangement was insufficient to replicate the competitive position of Siemens in ETCS OBU projects in the EEA.[1283]

(1549) [...] notes that the licensing of STMs "*at cost*" could put the purchaser in an uncompetitive position vis-à-vis the Merged Entity as the cost of the STMs (that would be determined with the Merged Entity) may be higher than their actual value and too high for the purchaser to develop a viable business.[1284]

(1550) Other respondents also consider that the licensing arrangement as included in the First ETCS OBU Commitments would not put the purchaser in the same competitive position as Siemens. For example, […], [...], and [...], consider that further detail on the precise terms including cost of the STMs should be outlined in greater detail.[1285]

(1551) [...] considers that the licensing of Siemens' STMs is insufficient to guarantee the viability of the divestment business because the Merged Entity "*will have full access*

1279 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 78.1 (ID7959).

1280 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 51 (ID7959).

1281 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 79.

1282 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 57.

1283 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 58.

1284 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 58.1 (ID8211).

1285 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 58.1.

to all Class-B STMs from both Alstom and Siemens".[1286] [...] considers that the Merged Entity can use funds from any disposal of those STMs to further develop its own STM business. The Commission notes that the First ETCS OBU Commitments do not contemplate a disposal (i.e., transfer of ownership) of STMs but a licence to use those STMs with the price ("at cost") and other terms to be determined at a future date. The purchaser would also need to source certain STMs through consortia that Siemens has with other suppliers.[1287]

(1552) The Commission also sought to determine under the Market Test whether, in addition to the licensing of STMs, any other intellectual property of Siemens would be necessary put the purchaser in an equivalent competitive position as Siemens when it comes to integrating the Siemens ETCS OBUs with rolling stock. The results of the Market Test are mixed.

(1553) The majority of the respondents who were able to answer consider that access to Siemens IP in addition to STMs (e.g., designs for Siemens' rolling stock or other interfaces) are necessary to put the purchaser in the same position as Siemens when integrating OBUs with Siemens rolling stock. The explanations provided by the market are less clear.[1288] For example, […] considers that there is no need because Siemens does not have knowledge of other suppliers' rolling stock.[1289] However, Siemens does have knowledge of its own rolling stock and access to the designs for that rolling stock for the purpose of integrating the Siemens ETCS OBUs with that rolling stock are not, according to the Commission's understanding of the First ETCS OBU Commitments, included in the divestment package.

(1554) On the other hand, the customer […] considers that the First ETCS OBU Commitments do not include "*essential interfaces*". Based on its understanding of the First ETCS OBU Commitments, they only include interfaces as between the ETCS OBU software on the one hand and the legacy OBU (Class B system) of Siemens rolling stock on the other. The following interfaces are missing according to […] : EVC – DMI (monitor); EVC – odometer; EVC – EDOR (data radio); EVC – Teloc/JRU; EVC – CMD (Cold Movement Detection). […] reinforces that the First ETCS OBU Commitments ought to include "*all necessary interfaces…to enable the Purchaser to develop an independent ETCS OBU product*". […] concludes that it is therefore uncertain whether the First ETCS OBU Commitments would put the purchaser in a position to develop and offer a competitive ETCS OBU product.[1290]

(1555) Another customer, […], agrees with the position expressed above in recital (1554) by […] . It states that without access to Siemens IP that is needed to integrate ETCS OBUs with Siemens' rolling stock "*the buyer can't intervene on the Siemens' rolling stock without the intervention of Siemens. Who will be responsible for the integration of the OBU in the rolling stock?*".[1291] [...]also considers that it is necessary to "*transfer all information with free licence to use concerning all projects executed (all*

1286 [...]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 11 (ID8135).

1287 Form RM for the First ETCS OBU Commitments, paragraph 58.

1288 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 59.

1289 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 59.1 (ID7815).

1290 […] 's observations on the commitments offered by Siemens, submitted by e-mail on 3 January 2019, page 7 (ID8277).

1291 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 59.1 (ID8184).

documentation established during the project dealing with train interfaces and installation)".[1292]

9.7.1.4. The ETCS OBU Personnel

(1556) The overwhelming view from the Market Test is that insufficient information has been provided about the personnel to be included in the divestment business.[1293]

(1557) Almost 100% of respondents replied 'I do not know' to the Commission's question about whether the personnel included in the First ETCS OBU Commitments is sufficient from a R&D perspective in order to avoid an adverse effect on the viability and competitiveness of the package.[1294]

(1558) An overwhelming majority of respondents were not able to assess whether the ETCS OBU Personnel is sufficient from a bidding, project, installation, product testing and product design perspective.[1295]

(1559) No information about key personnel, including no information about their role or expertise (that the Commission considers could have been provided in a manner as to protect the individual identity of the personnel proposed to be transferred), was made available by the Parties for the Market Test. This made it impossible for the Commission to test the adequacy of the key personnel to be transferred. The Market Test responses overwhelmingly show that details of at least the expertise of key personnel to be transferred is important to assessing the adequacy of the First ETCS OBU Commitments.[1296]

(1560) The responses to the Market Test show that the majority of respondents consider that personnel responsible for the development of legacy STMs should be transferred as part of the ETCS OBU Commitments.[1297] Personnel responsible for the development of Class-B systems and STMs are part of the business that the Merged Entity will retain.[1298]

(1561) The results of the Market Test demonstrate that, of those who were able to reply, the majority considered that local teams related to the execution of ETCS OBU projects or OBU projects in Belgium should be included in the commitments to enable the purchaser to replicate Siemens' competitive constraint in the EEA.[1299] Respondents also stated that they did not have a clear view as to the geographic distribution of personnel to be included in the First ETCS OBU Commitments.[1300] The Commission notes that under the First ETCS OBU Commitments, all of the personnel proposed to

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1292 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 59.1 (ID8205).

1293 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, questions 69, 70-74.

1294 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 70.

1295 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 72.

1296 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 73.

1297 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 71.

1298 Schedule 4 of the ETCS OBU Commitments, paragraph 6.

1299 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 75.

1300 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 69.

be transferred are located in two Member States, and predominantly only in one (Germany).[1301]

9.7.1.5. Sites related to Siemens' ETCS OBU business

(1562) The ETCS OBU Commitments do not include the transfer of any Siemens sites yet of those respondents who were able to provide a reply (answered yes or no), 100% considered sites should be included in the package to avoid adverse effects of implementing the package or to ensure the viability and competitiveness of the package.[1302]

(1563) The respondents who answered 'yes' are mostly mainline signalling suppliers. [...] considers that excluding sites from the package risks that personnel working at those sites will not be transferred with the divestment business which "*can constitute a problem as there will be a risk of losing some key experts who will not be able to be transferred on the Purchaser's sites*".[1303] [...] considers that the First ETCS OBU Commitments do not provide sufficient information about the transfer of sites but in any case "*transferring personnel only in* […] *seems limited as a lot of development work and project execution appears to be completed in* […].[1304] […] notes the […] site is not included in the commitments yet it has been used by Siemens for some development of ETCS OBUs.[1305]

(1564) Several respondents consider that the First ETCS OBU Commitments are insufficiently clear or lack detail about the Siemens sites relevant to the ETCS OBU business in order to assess the impact of the exclusion on the viability of the divestment business.[1306]

9.7.1.6. Other assets excluded from the ETCS OBU Commitments

(1565) According to the ETCS OBU Commitments, the Merged Entity will retain ownership of the KBS software component (communication stack) which will be licensed to the purchaser pursuant to a SSA.[1307]

(1566) The Commission's understanding is that these communication stacks are important to communication between the wayside and on-board units. [...] states that the KBS is "*very important piece for ETCS L2 operation*".[1308] The information provided by the Parties about KBS communication stacks does not alter the Commission's understanding of their importance based on the Market Test and publicly available information.

1301 See Confidential Annex OBU.8 of the ETCS OBU Commitments.

1302 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 66.

1303 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 66 (ID8205).

1304 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 66 (ID8193).

1305 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 66.1 (ID7904).

1306 See, for e.g., […]'s, […]'s, [...]'s, [...]'s, [...]' and [...] responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 66.1 (respectively ID8284, ID8199, ID8217, ID8135, ID7940 and ID8196).

1307 Schedule 4 of the ETCS OBU Commitments, paragraphs 5 and 6. The SSA includes a non-exclusive licence to use Siemens' […] software for communication stacks (KBS software).

1308 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 54.1 (ID7959).

(1567) […] considers that the ETCS OBU Commitments package will not restore competition in the markets in which the Commission raises concerns because key technologies, including KBS communication stacks, are licensed (as distinct from a divestment).[1309] [...] explains that the licensing of this technology will mean the purchaser is dependent on Siemens.[1310]

(1568) As regards testing equipment, the vast majority of respondents replied they did 'not know' whether the ETCS OBU Commitments include all necessary testing equipment, including all mainline signalling suppliers except for one who stated that the package does not include all necessary testing equipment.[1311] Several respondents, notably mainline signalling suppliers, consider that the First ETCS OBU Commitments included insufficient information about the testing equipment to enable them to answer the question.[1312] Three respondents considered the package included all necessary testing equipment.[1313]

9.7.2. The First ETCS Wayside and Interlockings Commitments

(1569) Overall, the responses to the Market Test on the First ETCS Wayside and Interlockings Commitments were negative and pointed to several areas of concern. The responses expressed concerns around the contours of the package (i.e., which assets are included and which assets are excluded or carved-out), the form in which the assets were proposed to be transferred (e.g., transfer of ownership or licence) as well as general concerns around the effectiveness and viability of the package, considering it does not comprise the divestment of a standalone business.

(1570) In addition to concerns around the substance of the package, respondents submitted that the description of the business to be divested was not adequately clear or information was missing to enable them to properly assess certain parts of the package in order to form a view on aspects of the package that the Commission wished to test with the market.

(1571) A majority of respondents (of those who were able to reply yes or no to the question) argued that the package would not replicate Alstom's competitive constraint in the ETCS wayside and interlocking markets in which the Commission has raised concerns, and that the package would not restore competition in those markets (twelve out of sixteen).

1309 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 54 (ID7959).

1310 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 54 (ID7959).

1311 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 65.

1312 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 65.1.

1313 […]'s, […]'s and […]'s responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 65 (ID7815, ID8178 and ID8184).

Table 46: Overview of the market test on results on the suitability of the First ETCS Wayside and Interlockings Commitments

Question	Response		
	No	Yes	I do not know
Do you consider that the Wayside Divestment Package will be sufficient to restore competition in ETCS wayside projects (including re-signalling and overlay projects) and standalone interlocking projects in the EEA, after the transaction, if the Package is transferred to a suitable purchaser?	12	4	27
Do you consider that the Wayside Commitment Package in the hands of a Purchaser is sufficient to replicate Alstom's competitive constraint in the markets where the Commission has identified concerns?	12	4	27

Source: Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, questions 10 and 11.

9.7.2.1. Lack of clarity and complexity of the First ETCS Wayside and Interlocking Commitments

(1572) A large number of respondents to the Market Test expressed concern that the First ETCS Wayside and Interlocking Commitments lack clarity, which has made it difficult to determine the exact scope of assets included or excluded from the package. Both customers and competitors consider that the package as described in the First ETCS Wayside and Interlocking Commitments is insufficiently clear.

(1573) More than ten respondents, including mainline signalling suppliers such as […], [...] and […], consider that the package is not sufficiently clearly defined so as to enable them to form a view on its content.[1314] While [...] considers that the package is sufficiently clear to obtain a general view as to its content it notes that the detail as to what is included in the package is "*ambiguous, complex and convoluted*".[1315] Some customers also find the description of the divestment package to be unclear. For example, […] considers that the "*commitments are insufficiently clear to have an accurate view of their content*".[1316] […] explains that while there is clarity from a "*strictly formal perspective*", the description of the retained business could give rise to misunderstandings and the clarity of the First ETCS Wayside and Interlocking Commitments could be improved.[1317]

(1574) The Market Test demonstrates that the First ETCS Wayside and Interlocking Commitments lack clarity across a range of areas and that the problem is not isolated to a specific part of the commitments. Respondents identify the lack of clarity in the technology licensing arrangements, the identity of sites to be divested, the personnel to be transferred and the scope of the technology included in the package.

(1575) For example, […] considers that it is not clear which Alstom ETCS technology the merging parties intend to divest and that the First ETCS Wayside and Interlocking

1314 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.

1315 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8193).

1316 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8211).

1317 […] 's observations on the commitments offered by Siemens, submitted by e-mail on 3 January 2019, Section C (ID8277).

Commitments lack detail around the sites and other assets to be divested or retained.[1318]

(1576) As regards personnel, [...] considers that the First ETCS Wayside and Interlocking Commitments should identify clearly that all personnel relevant to the development of the ETCS wayside products and interlocking applications should be included in the package.[1319] [...]also notes the uncertainty around the treatment of personnel who work on complex bundled projects given that some personnel will be retained by the Merged Entity to address projects in […].[1320][…] suggests that it would need to identify and confirm key personnel needed to maintain and develop the business.[1321] [...]notes that information on human resources to be transferred is insufficient.[1322]

(1577) […] notes that details of the sites and personnel to be divested are not provided and if certain Alstom sites are not included in the package the package would be insufficient to allow the divested business to operate as a viable business.[1323] […], notes that the "*level of redactions and complexity*" in the Parties' attempt to distinguish between the retained and divested business, in their view, makes it "*entirely unclear how the proposals could be effectively implemented*".[1324]

(1578) In response to the Commission's question asking whether the scope of the ETCS Wayside Commitments was sufficiently clearly defined, in particular as regards the intangible assets to be transferred, almost all respondents indicated 'no' (i.e., that the scope was not sufficiently clearly defined) or answered 'I do not know'.[1325] [...]indicates that "*we have not been provided with the Annexes to the Commitment, and it is therefore difficult to have a view on the perimeter of the tangible and intangible assets…*".[1326]

(1579) Some respondents stated that further information is required in the First ETCS Wayside and Interlocking Commitments in order to avoid integration issues. [...]notes that the retained business in […] prevents a clean transfer of know-how and gives rise to "*a large risk (financial, industrial, social) for the future implementation of the Commitments*" unless the issues are addressed upfront for which further information is required.[1327] [...] also identifies risks associated with carving out parts of a business and does not consider that the First ETCS Wayside and Interlocking Commitments are drafted in a sufficiently clear manner as to ensure a swift

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1318 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8211).

1319 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 7.1 (ID8217).

1320 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 6.1 (ID8205).

1321 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8284).

1322 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8205).

1323 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 6.1 (ID8260).

1324 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 6.1 (ID8260).

1325 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 8.

1326 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8205).

1327 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8205).

implementation having regard also to the lack of certainty around the scope of the business, the allocation of assets and personnel between the divested and retained business.[1328]

(1580) Overall, the Market Test shows that for a majority of respondents (other than those who answered they did not know) the manner in which the First ETCS Wayside and Interlocking Commitments have been drafted will not allow the effective implementation of the commitments or minimising implementation risks.[1329] [...] explains further in its response that a purchaser may suffer unforeseen costs unless further clarification is provided in the First ETCS Wayside and Interlocking Commitments. In [...] view certain assets being transferred are "*obsolete*" and will involve extra costs and maintenance for the purchaser, which need to be clarified.[1330]

9.7.2.2. The Wayside and Interlocking Platform Licensing Arrangements

(1581) Overall, the Market Test responses were negative regarding the licensing of Alstom's ETCS and interlocking platforms to the purchaser of the divestment business. Alstom's platforms are used to support the software applications for Alstom's ETCS wayside and interlocking businesses. Under the proposed licensing arrangements, the Merged Entity would retain ownership of the platforms, which are also used for the retained business. The purchaser would need to migrate the Alstom application software to its own platform so that it can bid for projects using its own platform before the term of the licence to use Alstom's platform expires.

(1582) The Market Test shows that the platforms, on which the software applications operate, have an important function to the operation of the overall ETCS wayside or interlocking solution. [...] considers that the platforms are "*an important factor for competition in terms of innovation, performance and functionality*".[1331] [...] considers that platforms are a "*key asset*".[1332] It considers that adaptations of the product are not only done at the application software level but also at the level of the platform that underpins the application software.[1333] […] considers that a "*purchaser will need to have unfettered use of these platforms to allow it to develop software and hardware adaptations and to manufacture products…in order to remain a credible bidder for future work*".[1334] […] also considers that control over the platform is important to providing a credible solution to customers, noting that if the platform is only licensed to (and not owned by) a supplier, "*it may cause issues in case of technical fault of the platform since it would not be properly escalated*".[1335]

1328 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 7.1 (ID8211).

1329 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, questions 6 and 7; more than half of the respondents indicated 'I do not know' in reply to the questions.

1330 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8205).

1331 [...]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018 (ID8100).

1332 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 13.1 (ID8211).

1333 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 13.1 (ID8211).

1334 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 12.1 (ID8260).

1335 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 13.1 (ID8272).

(1583) An overwhelming majority of respondents expressing an opinion (either yes or no) considered that the form of transfer of the ETCS wayside technology would not ensure the viability and competitiveness of the divestment business. Only a negligible proportion of all respondents (including those that answered that they did not know) considered that the viability and competitiveness of the divestment business would be ensured.[1336]

(1584) When asked the equivalent question in relation to interlockings, results were almost identical. An overwhelming majority of respondents expressing an opinion (either yes or no) considered that the form of transfer of the interlockings technologies would not ensure the viability and competitiveness of the divestment business. Again, only a negligible proportion of all respondents (including those that answered that they did not know) stated that the viability and competitiveness of the divestment business would be ensured.[1337] Responses received separately via e-mail do not change this overall view.

(1585) None of the respondents to the Market Test considered that the terms on which the Alstom platform will be licensed and the support that Alstom will provide under the SSA are sufficiently clear and acceptable to enable a purchaser to migrate the transferred applications to its own platform within a reasonable time and to bid for new projects using its own platform. While almost all competitor respondents submitted that those terms were not sufficiently clear, most customer respondents were unable to express an opinion on this query.[1338]

(1586) Several respondents considered that the licensing of Alstom's platforms would impair the competitiveness and viability of the divestment business. [...] notes that "*especially the licensing of the platform…significantly diminishes viability and competitiveness*" by creating a dependency on the Merged Entity to develop the platform which cannot be done independently by the purchaser and also by limiting the purchaser's ability to bid in consortia without the cooperation of the Merged Entity.[1339] […] considers the licensing arrangement "*wholly inadequate*" because a supplier needs to have "*unfettered use of these platforms to allow it to develop software and hardware adaptations and to manufacture products… in order to remain a credible bidder for future work*".[1340] [...] considers that a transfer of ownership or a transfer of technology would be necessary to avoid integration risks and ensure there are no unnecessary dependencies on the Merged Entity.[1341]

(1587) Other respondents are of the view that a licence to the platform will enable the purchaser to service contracts included in the divestment business but the purchaser

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1336 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 13: a negligible proportion of respondents answered "yes", more than half answered "I do not know" and the rest answered "no".

1337 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 18; a negligible proportion of respondents answered "yes", more than half answered "I do not know" and the rest answered "no".

1338 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 40: no respondent answered "yes", more than half answered "I do not know" and the rest answered "no".

1339 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 18.1.

1340 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 12.1 (ID8260).

1341 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 18.1 (ID8217).

will lack the underlying technology that will enable it to be competitive in the future[1342] or will reduce the incentive of the Merged Entity to invest in the licensed platform thereby adversely affecting its competitiveness.[1343] In this respect, [...] notes that the main attraction of the ETCS Wayside and Interlocking Commitments is that they provide the purchaser with access to a market (as distinct from access to products themselves) via the installed base of Alstom through which a purchaser could then try to sell some of its own products.[1344]

(1588) Respondents also express concerns around the viability and competitiveness of the divested business if a purchaser were to undertake a migration of the application software to the purchaser's own platform. As outlined at recital (1581), the purchaser will have access to Alstom's platforms under licence for a limited duration of time after which the purchaser will need to run the applications on its own platform. Major signalling suppliers such as […] and [...], as well as smaller players like [...], answered that they did not consider that they could feasibly migrate Alstom's software applications for ETCS wayside and interlockings to their own platform such that they could bid for projects using the Alstom application on their own platform.[1345] All other respondents indicated that they did not know whether they could undertake such a migration with one exception only.[1346]

(1589) […] considers that migrating applications from Alstom's platform to its own platform would be "*risky and expensive*".[1347] […], among the largest mainline signalling supplier in the EEA together with the Parties, said that it thought it could carry out the migration but that "*the number of products transferred is large and porting each of them will be complex*".[1348] [...] recognises that "*migration is not a simple issue*" and that a supplier with *"enough technical capabilities and expertise"* would be able to do it but that such a migration involves integration risks. [...] considers that "*unnecessary*" risks could be avoided if there were a transfer of technology for the platform.[1349]

(1590) Respondents also raised concerns around the vagueness of language used to explain the support that would be provided to a purchaser to facilitate a platform migration. [...] considers the wording of the First ETCS Wayside and Interlocking Commitments "*extremely vague*" and provide "*no concrete indication of the 'reasonable' hourly rates that would be charged to the purchaser for assistance of technical personnel*" and how long it would take to migrate, all risks that lie with the purchaser. Similarly, [...] notes that contractual terms and conditions need to be

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1342 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 36 (ID8094).

1343 [...]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018 (ID8100).

1344 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39 (ID8205).

1345 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39.

1346 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39 (ID8284).

1347 […]' response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39 (ID8272).

1348 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39 (ID8205).

1349 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 39.1 (ID8217).

clarified in "*many aspects*" including time to deliver, time to correct bugs, safety responsibility in the case of problems on the platform etc.[1350]

(1591) As regards the R&D implication of retaining the platforms, the […] notes that based on its reading of the First ETCS Wayside and Interlocking Commitments (which lack sufficient detail) "*Alstom's R&D capability appears to be more or less explicitly excluded from the scope of the offering*" referring to paragraphs 3.9 and 3.10 of the First ETCS Wayside and Interlocking Commitments. Those parts of the First ETCS Wayside and Interlocking Commitments refer, among other things to the retention by Alstom of certain technologies as well as all R&D efforts and results relating to the platforms that Alstom will retain including pipeline.[1351]

9.7.2.3. The Wayside and Interlocking Technologies

(1592) Overall, the Market Test responses on the Wayside and Interlocking Technologies were negative. Responses were negative on both the scope of the technology included in the package as well as the form of transfer. A large proportion of respondents answered that they 'did not know' in answer to questions about the scope of the technology included in the package.

(1593) First, two-thirds of the respondents expressing an opinion (either yes or no) in the Market Test considered that the scope of technology included in the First ETCS Wayside and Interlocking Commitments is insufficient to replicate Alstom's competitive constraint in the market pre-Transaction.[1352] Respondents who had a negative view on the scope of the technology included in the First ETCS Wayside and Interlocking Commitments include [...], [...], […] and [...], […] and […][1353] as well as customers such as […][1354] and national competition authorities like […].[1355]

(1594) Respondents raise concerns that the newest technology or technology in development and important to ensuring the competitiveness of the divestment business will be retained by the Merged Entity. [...] states that […], which is excluded from the package and therefore the purchaser will face significant disadvantage when competing against the Merged Entity's new platform using an old or obsolete platform.[1356] [...] also notes that the exclusion […] solutions from the package will limit the purchaser's ability to compete for tenders where this technology is required in the coming years.[1357]

(1595) Second, as regards the exclusion of country-specific adaptations for interlockings in […], two-thirds of respondents expressing an opinion (either yes or no) in the Market Test considered that the excluded technology is necessary to ensure the viability and

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1350 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 40.1 (ID8205).

1351 […]

1352 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 12.

1353 [...] considers that the transferred technology seems to be obsolete. See [...] Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 5.1 (ID8205).

1354 See, for e.g., […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018 (ID8959).

1355 See, for e.g., […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 38 (ID8094).

1356 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 18 (ID8193).

1357 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 10.1 (ID8193).

competitiveness of the divestment business, including the main competitors [...] and [...], but also the smaller competitor [...].[1358] [...] notes that there are significant future opportunities for the roll-out of ETCS in these countries and the exclusion of specific adaptations for interlockings for these countries are necessary for viability and competitiveness.[1359] […] considers that in view of the necessary investments, a large addressable market is required.[1360] [...] considers that without the adaptations for interlockings in France, Italy and Denmark, the purchaser will be at a significant disadvantage and will not be able to replicate Alstom's competitive constraint.[1361]

(1596) The Market Test also shows that two-thirds of respondents expressing an opinion (either yes or no) consider that country specific adaptations for interlockings […] are necessary to replicate Alstom's competitive position in ETCS wayside projects in the EEA, including the infrastructure manager in […] and […], as well as the main competitors […], [...] and also [...].[1362] Most respondents expressing an opinion (either yes or no), including [...], as well as [...] and [...], also consider that the country-specific adaptations should be included in the First ETCS Wayside and Interlocking Commitments also for other reasons, such as to reduce overall integration risk ([...]) or to ensure the independent and effective operation of the divestment business ([...]).[1363]

(1597) Third, the Market Test also revealed a negative view or uncertainties around the form of transfer of the Wayside and Interlocking Technologies, not limited to the licensing arrangements for the platforms (on which see Section 9.7.2.2). [...]states that the "*various forms of transfer (mixture of transfer of ownership, transfer of technology or SSA) considered in the Commitments are very complex to implement and raise a lot of uncertainties. In light of these complexities and the asymmetry of information between the parties and the prospective Purchaser, the Wayside Commitment Package needs to be very precisely detailed in this respect*".[1364]

(1598) Fourth, the majority of respondents who were able to answer (yes or no) consider that the limitation on the purchaser from using the licensed interlocking technology for non-mainline signalling applications will adversely affect the viability and competitiveness of the divestment business.[1365] [...] considers that in light of increasing convergence between ETCS and CBTC, the limitation means the purchaser is likely to be unable to respond to the client's future needs in a cost-efficient manner.[1366]

1358 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.1.

1359 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.1 (ID8193).

1360 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 16.1 and 17.1. (ID8205).

1361 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.1 (ID8217).

1362 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.2.

1363 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.3.1.

1364 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 18 (ID8205).

1365 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 41.1.

1366 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 41 (ID8211).

(1599) While [...] considers that the limitation would not have an impact on the viability and competitiveness of the divestment business, in a separate submission [...] recognises that there are "*synergies in the transversal development and operation of urban and mainline signalling solutions*".[1367] [...] also considers that in order to preserve the purchaser's "*innovation capacities*" a divestment package should include both mainline and urban signalling solution.[1368] [...] considers the limitation does adversely affect the viability of the divestment business since "*there are various synergies to use interlocking technology in mainline and urban signalling*".[1369]

(1600) [...] suggest the limitation and the form of transfer of the technology will adversely affect the purchaser's incentive to invest: "[l]*ess profit, equals less to invest. But I suspect the purchaser's R&D will be adversely affected by the non-transferable nature of the licence*".[1370]

9.7.2.4. The Wayside and Interlocking Personnel

(1601) The Market test results show that insufficient detail about the personnel proposed to be transferred makes it difficult for respondents (and prospective purchasers) to assess whether adequate personnel, including R&D capability, is included in the First ETCS Wayside and Interlocking Commitments.[1371]

(1602) Almost all respondents said that they 'do not know' whether the geographic distribution of personnel will ensure the viability and competitiveness of the package. Those respondents who provided reasons for their answer submitted that the First ETCS Wayside and Interlocking Commitments included insufficient information about personnel that would be transferred.[1372]

(1603) The Market Test shows that some respondents consider the retention of staff in […] could have negative implications for the operation of the divestment business. [...] said that "*given the fact that* […], *which are excluded from the Commitment Package, it is unlikely that a transfer without these key personnel can ensure viability and competitiveness of the Wayside Commitment*".[1373] [...] also comments on the retention of personnel in […], noting *"The geographic distribution is part of the complexity of this business, since local teams are needed for the completion of current backlog*" and emphasises the importance that the package include "*all personnel linked* […] *to the development of ETCS Wayside products and interlockings, as well as local teams and personnel dedicated to the different phases of on-going projects*".[1374]

1367 [...]'s observations on the proposed remedies, submitted by e-mail on 12 December 2018, paragraph 2.15 (ID8042).

1368 [...]'s observations on the proposed remedies, submitted by e-mail on 12 December 2018, paragraph 2.15 (ID8042).

1369 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 41.1 (ID7959).

1370 's response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 41.2 (ID7977).

1371 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, questions 31 and 32.

1372 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 31.

1373 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 31 (ID8193).

1374 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 31.1 (ID8217).

(1604) The Market Test shows that the First ETCS Wayside and Interlocking Commitments are not sufficiently clear to assess whether sufficient R&D personnel are included in the package, to ensure the viability and competitiveness of the divestment business.[1375] [...] emphasises the importance of innovation in the signalling business – referring to Alstom's slogan "*innovation drives our growth*" – for which R&D teams constitute an essential asset.[1376] […] also comments on the importance of having the right personnel to allow the divested business to innovate and undertake adaptations to enable it to be a long-term credible competitor.[1377] [...], […], [...], […], […], and […] among others consider that insufficient information on personnel has been provided in the First ETCS Wayside and Interlocking Commitments to properly assess the adequacy of personnel to be transferred.[1378]

(1605) Based on the limited information available, some respondents nevertheless take the view (having regard to overall figures and their own market intelligence) that insufficient R&D personnel is included in the First ETCS Wayside and Interlocking Commitments. For example, […] considers that the package "*seems to include only* […] *local project delivery as opposed to centralised manufacturing, R&D and associated personnel*".[1379]

(1606) […], notes that pursuant to its conversation with the Parties that although the First ETCS Wayside and Interlocking Commitments contemplate the transfer of Alstom's […], the First ETCS Wayside and Interlocking Commitments do not include all personnel associated with Alstom's […] and personnel associated with R&D activities would be retained by the Merged Entity. […] clarifies that the First ETCS Wayside and Interlocking Commitments would "*not be a full transfer of know-how and that the Merged Entity will keep qualified personnel with a detailed knowledge of the product of* [the] *divested business*".[1380]

(1607) […] says that the package is "*insufficient in clearness … however, since the retained part for* […] *will require key resources from the Merged Entity it is highly likely that the Purchaser will not get all the required resources/knowledge*".[1381]

(1608) Overall, the Market Test demonstrates that information is lacking in order to properly assess whether adequate personnel are included in the business to be divested or that the personnel, including R&D personnel, is inadequate to ensure the competitive operation of the business.

9.7.2.5. The Wayside and Interlocking Non-Compete

(1609) Overall, the Market Test responses on the Wayside and Interlocking Non-Compete were very negative. Almost none of the respondents stated that the terms of the non-

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1375 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 32.

1376 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 32 (ID8211).

1377 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 32 (ID8260).

1378 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 32.

1379 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018, Section 4 (ID8956).

1380 […] observations on the proposed remedies submitted by e-mail on 12 December 2018, paragraph 2.9 (ID8042).

1381 […]s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 33.1 (ID7953).

compete are sufficiently clear and effective to prevent the Merged Entity competing with the remedy taker using the Alstom interlockings in the markets where the Commission has identified competition concerns. Respondents either did not know or indicated that the terms were insufficient for that purpose.[1382]

(1610) [...], for instance, explains that while the non-compete may be sufficiently clear, it is not effective, as "*the non-compete only includes the divested application, but not the underlying platforms*" leading to two options for the Merged Entity to leverage, namely using the same underlying platform but a different application (for example using the Parties' "[…] *to compete in the defined markets against their simpler potentially divested applications*)" or using a different platform and different application (including the use of Alstom's newer platforms currently under development).[1383]

9.7.2.6. The Geographic Carve-Out

(1611) Overall, the responses to the Market Test were negative as regards the exclusion of […] from the scope of the divestment business and its retention by the Merged Entity. Almost all respondents who were able to reply to the question (i.e., answered yes or no) consider that the geographic scope of the interlockings business included in the package is not sufficient to ensure the viability and competitiveness of the First ETCS Wayside and Interlocking Commitments.[1384]

(1612) […] considers the countries carved out of the Alstom interlocking business are "*an important part of its interlocking business*" in the EEA and would mean that "*the purchaser of the divestment business will be unlikely to emerge into an effective competitor of the combined entity. This holds true both for the ETCS package, which reserves for Alstom the pending contracts and tenders in key geographic areas, as well as the interlocking package, which excludes key geographic areas from the package altogether*".[1385]

(1613) A majority of respondents, of those who were able to reply, consider that country-specific adaptations for interlockings in […] would be required to ensure the viability and competitiveness of the divestment business.[1386]

(1614) [...] considers "*that the market adaption for* […] *are based on a different software version, which are more suitable for the respective markets and future opportunities in those countries. Given this understanding and the significant size and future potential within those markets, such market adaptions would be necessary to guarantee viability and competitiveness across the entire EEA (and specifically competitiveness in those key markets*)".[1387]

1382 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 42.

1383 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 42.2 (ID8193).

1384 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 16.

1385 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 16 (ID8211).

1386 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.

1387 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17 (ID8193).

(1615) [...] considers that without the inclusion of Alstom's country-specific interlockings in […] "*the purchaser will be in a clear disadvantage in these countries and will not be able to replicate Alstom's competitive constraints. Furthermore, it should be noted that, pursuant to the current drafting of the ETCS Wayside Divestment Business, [...] has also doubts about whether this package includes all country and network-specific adaptation in interlockings*".[1388]

(1616) Two-thirds of respondents who were able to reply (answered yes or no) consider that country-specific interlockings are needed to replicate Alstom's competitive position in ETCS wayside projects in the EEA.[1389] [...] notes that interlockings in […] are relevant to re-signalling projects in those countries in addition to standalone interlocking projects.[1390]

(1617) More than half of respondents who were able to reply (answered yes or no) consider that the retention of the backlog in […]as well as outside of the EEA may negatively impact the viability of the divestment business.[1391] [...], who answered 'I do not know' in any case suggests that by reducing the addressable geographic scope for the divested interlocking technology, the associated fixed costs may not be amortised over a large enough basis.[1392]—Several respondents consider that insufficient information is provided in the First ETCS Wayside and Interlocking Commitments to assess the impact of the carve-out on the viability and competitiveness of the divestment business.

(1618) All respondents who were able to provide a reply consider that the retention by the Merged Entity of know-how and personnel to bid for pending tenders for ETCS wayside projects in […] will adversely affect the competitiveness and viability of the divestment business.[1393] [...] notes that there are likely to be lucrative ERTMS contracts in these Member States in the coming years and "[e]*specially investments in ETCS are foreseen and in many cases these will be combined with Interlocking*".[1394]

(1619) Respondents also raise concerns about the viability of the divestment business having regard to the carve-out and retention by the Merged Entity of the Alstom ETCS backlog and pending tenders in […]. [...]considers the exclusion is broad and raised too many uncertainties that impact the viability of the divestment business.[1395] [...] also considers the exclusion involves viability risks for the divestment business if people retained (for those pending tenders) are relevant to the development of the

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1388 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.1.1 (ID8217).

1389 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.1.

1390 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 17.2 (ID8193).

1391 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 42.

1392 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 42 (ID8205).

1393 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 45.

1394 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 45 (ID8211).

1395 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 45 (ID8205).

divestment business but are not transferred.[1396] [...] questions why the Merged Entity is disposing some business but at the same time retaining the right to compete against the purchaser with retained technologies.[1397]

9.7.2.7. The ETCS Wayside and Interlocking Sites

(1620) No respondent to the Market Test considers the scope of sites to be transferred is sufficient to enable the purchaser to compete viably and competitively using the ETCS Wayside and Interlocking Commitments.[1398] Some customers and signalling suppliers consider that key Alstom sites in […] should be included in the package.[1399] Others consider that further information about those sites, in particular in […], should be provided.[1400]

(1621) The Market Test responses show that the commitment provided insufficient information in order to assess the adequacy of the sites proposed to be transferred. For instance, mainline signalling suppliers including interested purchasers consider the information is "*not sufficient*" or "*not clear*" or lacks "*information and details*".[1401]

(1622) Several respondents consider that to be effective the divestment business must include manufacturing capability as well as engineering and design. […] considers that the sites at […] and […] "*are responsible for, respectively, the hardware design and manufacturing, and the software design of the global product, for interlocking projects and equipment including Alstom's* […]*; the design of standalone ETCS ATP wayside overlay projects; and the design of Alstom's Atlas trackside solution product for ETCS ATP wayside re-signalling projects. These sites are also responsible for some innovation. Given their different but complementary functions, both sites would therefore be a necessary part of any divestment*".[1402]

(1623) […] considers that manufacturing capability is an important 'building block' for a successful competitor and the outsourcing of manufacturing "*seriously undermines the credibility of the divested business*".[1403] […] considers that while out-sourcing is an option, the divestment business would not be as competitive as the Parties are at present: out-sourcing would "*lose the 'under one roof' quality control that both parties currently enjoy*". […] also notes that outsourcing would involve significant delay for the purchaser and would likely adversely affect its ability to bid for the next

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1396 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 45 (ID8217).

1397 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 45 (ID7959).

1398 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 25.

1399 See [...]'s and [...]'s responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 25.1 (ID8211 and ID8193).

1400 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 25.1 (ID8217).

1401 See, for e.g., […] 's, [...]'s, […]s, [...]'s, [...], […], […] […], [...]'s and […]'s responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 25.1 (respectively ID8199, ID7953, ID8217, ID8205, ID7860, ID7950, ID8193, ID7913).

1402 […]'s observations on the commitments offered by Siemens, submitted on 20 December 2018, paragraph 4.1 (ID8956).

1403 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018, paragraphs 9-10 (ID8096).

round of work in the UK whereby framework contractors are selected for the next control period.[1404]

(1624) […] considers that the scope of the mainline signalling remedy is "*plainly inadequate, in particular because it appears to exclude significant parts of Alstom's existing manufacturing and R&D that are used to support its UK operations at present*".[1405]

9.7.2.8. Other assets relevant to the Alstom ETCS wayside and interlockings business

(1625) Some respondents also submit that the exclusion from the commitment of Alstom's balises and other proprietary products are likely to have a detrimental effect on the competitiveness of the divestment business. [...] considers that certain Alstom products (e.g., […]) are key cost drivers for some projects which will create dependencies on the Merged Entity as the purchaser will need to source the products from the Merged Entity who will be a primary supplier of components.[1406] [...]considers that "*balises are a distinct and successful operating product. Siemens and Alstom are absolutely dominant on this product market…*".[1407] Some respondents state that the retention of balises will "*create a huge dependency between any Purchaser and the Merged Entity. Besides, the commitment only holds for* […] *initially. Given the long-term horizon of ERTMS roll-out, also in the Netherlands, this proposal is would be too little too short*".[1408] Other respondents, such as [...] and [...] consider it is not necessary to transfer Alstom balises to have a viable package.[1409]

9.7.2.9. Future competitiveness of the First ETCS Wayside and Interlockings Commitments

(1626) Some key customers and competitors, competition authorities and rail regulators have concerns that having regard to the overall package, the First ETCS Wayside and Interlocking Commitments would not secure the future competitiveness of the divestment business and that the divestment business in the hands of a purchaser would not be able to compete effectively in the future.

(1627) […] notes that the scope of the remedy is plainly inadequate, in particular because it excludes significant parts of Alstom's existing manufacturing and R&D that are used to support its […] operations.[1410] […] refers to the retention of Alstom's centre of excellence in […] and the retention of ownership of platforms that underpin applications that would enable a purchaser to address contracts that would be transferred to the purchaser, but would limit its ability to compete for future tenders. The Commission understands that […] refers to the licensing arrangement under the First ETCS Wayside and Interlocking Commitments whereby the purchaser will

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1404 […]'s observations on the commitments offered by Siemens, submitted on 20 December 2018, paragraphs 10-11 (ID8096).

1405 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraphs 34-45 (ID8094).

1406 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 29.1 (ID8193).

1407 [...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 29.1 (ID8205).

1408 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 29.1 (ID7953).

1409 [...]'s and [...]'s responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 29.1 (ID8217 and ID8211).

1410 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 34 (ID8094).

have a licence to use the Alstom platforms for a limited time after which it will need to migrate the ETCS wayside and interlocking applications to the purchaser's own platform. As outlined in Section 9.7.2.2, a number of other respondents to the Market Test also consider that a transfer of ownership or least a transfer of technology of the platforms is needed to enable the purchaser to develop the platforms independently to ensure the future competitiveness of the divestment business.

(1628) […] considers it insufficient that the divestment business is not equipped with IP and know-how other than that which is used exclusively to operate the interlockings business. This means that IP and know-how that is shared with the retained business remains with the Merged Entity. […] considers that access to IP and know-how under a transfer of technology agreement consisting of a non-exclusive licence limits the ability of the purchaser to develop the software of the Alstom platforms used to operate the ETCS wayside divestment business.[1411] Overall, […] considers that the First ETCS Wayside and Interlocking Commitments will not solve the reduction of competition resulting from the merger.

(1629) […] also raises concerns about the ElectroLogIXS technology licensed by Alstom to other mainline signalling suppliers in the EEA including Atkins. […] considers that post-merger the Merged Entity will not have an incentive to continue to licence the ElecroLogIXS technology to suppliers that compete more directly with Siemens than with Alstom's signalling business in the EEA.[1412]

(1630) Respondents to the Market Test also raise concerns that the purchaser of the divestment business will, post-merger, be dependent on the Merged Entity because of exclusions and retention of assets and personnel used by Alstom to operate the ETCS wayside and interlocking business. For example, […] notes that the retention of the ownership of platforms will "*preclude the possibility, without co-operation from the Parties, of any form of product innovation by the buyer*".[1413] […] considers that the purchaser will have a "*high degree of dependence on Alstom, which would have a detrimental effect on the attractiveness of the purchaser's offering for customers*".[1414] [...] considers that the First ETCS Wayside and Interlocking Commitments should include a transfer of technology of the relevant platform or a solution that would enable the purchaser to develop the platform independently in the future.[1415]

9.7.2.10. Implementation risks of the First ETCS Wayside and Interlockings Commitments

(1631) Several respondents to the Market Test argue that significant implementation risks arise because of the lack of clarity in the way the First ETCS Wayside and Interlocking Commitments are described, the fact that they do not constitute a standalone business and involve a mix and match of assets and carve-outs with retention of technology, personnel, sites and IP by the Merged Entity. Respondents indicate that these risks are particularly acute and could adversely affect the

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1411 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 38 (ID8094).

1412 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 43 (ID8094).

1413 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018, paragraph 15 (ID8096).

1414 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 45 (ID8094).

1415 [...]'s observations on the proposed remedies, submitted by e-mail on 12 December 2018, paragraph 2.5 (ID8042).

competitiveness of the business given that safety is an important factor for customers in the railway industry.

(1632) [...] raises concerns about the implementation of the remedy and how a purchaser could protect the value of the transferred business. [...] refers to the risk of losing experienced personnel that are included in the transferred business. [...] raises concerns that the organisational structure is distributed in different countries (Spain, Romania, Australia, and so forth) which could hamper the practical operation of the business in the short or mid-term and therefore adversely affect the credibility of the purchaser.[1416]

(1633) [...] notes that "[*a]ssuring that the multiple carve outs of this divestment can work as an independent business is an extremely important issue that may make the difference between creating a new competitor in wayside signalling or not*". [...] considers that further follow up with the Parties is needed about the content of the package in order to ensure that a purchaser acquiring the assets becomes in the future a credible bidder.[1417] In the next paragraph in the same observations, [...] notes that pursuant to a call it had with the Parties, it learned that not all qualified personnel associated with the development of […] would be transferred to the purchaser and that "*there would not be a full transfer of know-how and that the merged entity will keep qualified personnel with a detailed knowledge of the product of divested business*".

(1634) In a joint letter from the national competition authorities of the UK, Belgium, Spain and the Netherlands, the First ETCS Wayside and Interlocking Commitments are described as suffering from "*serious defects that may materially undermine their effectiveness*". The authorities submit that many signalling markets are characterised by strong incumbency advantages which make the risks around the carve-out and transfer of a divestment package particularly significant. The fact that the commitments involve the retention in part or in whole of key assets relating to the existing business, will according to the authorities, exacerbate these existing implementation risks.[1418]

(1635) The four national competition authorities consider that because of the behavioural nature of the commitments any purchaser would have difficulty in operating those assets with the same competitive force that the Parties do at present.[1419] The authorities note that behavioural aspects of remedies, such as technology transfers, are also difficult to monitor, and therefore give rise to particularly acute risks in markets (such as those within the signalling sector) that can be susceptible to the abuse of dominance by established incumbents that refuse to appropriately grant access to critical technology.[1420]

(1636) […] has separately also further communicated its concerns that "*very significant risks*" are associated with the carve-out of Alstom's signalling business. […] notes that the First ETCS Wayside and Interlocking Commitments comprise a "*pick and mix*" approach that may result in "*complex implementation issues liable to undermine*

1416 [...]'s observations on the proposed remedies, submitted by e-mail on 12 December 2018, paragraphs 2.6-2.8 (ID8042).

1417 [...]'s observations on the proposed remedies, submitted by e-mail on 12 December 2018, paragraph 2.8 (ID8042).

1418 National Competition Authorities' letter to the Commissioner, 21 December 2018 (ID8718).

1419 National Competition Authorities' letter to the Commissioner, 21 December 2018, page 2 (ID8718).

1420 National Competition Authorities' letter to the Commissioner, 21 December 2018, page 2 (ID8718).

the viability" of the First ETCS Wayside and Interlocking Commitments. Specifically, […] raises concerns with the following:

(1) The exclusion of Alstom's ETCS wayside contracts in […] and of interlocking contracts in […];

(2) The fact that the transfer of all customer and maintenance contracts part of the First ETCS Wayside and Interlocking Commitments are subject to applicable consents and mandatory provisions of law including public procurement rules;

(3) The cumbersome process set out for the transfer of bundled contracts that include activities retained by the Merged Entity; and

(4) The transfer of sites used predominantly to operate the ETCS wayside business is subject to necessary consents.[1421]

(1637) In relation to bundled contracts, the First ETCS Wayside and Interlocking Commitments provide that the transfer of all contracts is subject to applicable consents (including customer consent) and all applicable provisions of law including public procurement law.[1422] If the customer does not agree to the transfer of part of a bundled contract, Alstom will retain the contract and sub-contract the portion relation to the divestment business.[1423]

(1638) […] considers that in the case of a dispute between the purchaser and the Merged Entity about which part of the contract would be retained and which would be transferred, the Merged Entity would likely sub-contract the parts related to the divestment business which would result in the purchaser having an ongoing commercial relationship with and dependency on the Merged Entity.[1424]

(1639) The Commission considers that even absent a dispute between the purchaser and the Merged Entity, if a customer has reservations about splitting out a bundled contract and withholds its consent or if the separation of a bundled contract is not possible under public procurement (or other) law, then the Merged Entity will continue to retain the contract, placing the purchaser as sub-contractor in an on-going commercial relationship with the Merged Entity.

9.7.3. *Criteria to be a suitable purchaser*

(1640) According to the Remedies Notice, the purchaser must be "*independent of and unconnected to the parties*", it must "*possess the financial resources, proven relevant expertise and have the incentive and ability to maintain and develop the divested business as a viable and active competitive force in competition with the parties and other competitors*". The acquisition of the business by the proposed purchaser must "*neither be likely to create new competition problems nor give rise to a risk that the implementation of the commitments will be delayed*".[1425]

(1641) The majority of respondents to the Market Test, of those who were able to answer (yes or no), consider that the purchaser of the divestment business should be an

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1421 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 44 (ID8094).

1422 Schedule 5 of the First ETCS Wayside and Interlocking Commitments, paragraphs 2.14.

1423 Schedule 5 of the First ETCS Wayside and Interlocking Commitments, paragraphs 2.17.

1424 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 44 (ID8094).

1425 Remedies Notice, paragraph 48.

existing signalling supplier with a presence in the EEA and a proven track record.[1426] […] clarifies that the purchaser should have relevant experience in the EEA meaning "*experience with ETCS in the strict sense. Chinese or other similar systems cannot be taken into account, because, in […]'s view, the systems cannot be compared*".[1427]

(1642) Respondents, both customers and competitors, identify the following specific characteristics relevant to the mainline signalling industry, which they consider likely to be necessary for a purchaser to be able to operate the divestment business.

(1643) Regarding the level of appropriate experience, […] considers the purchaser should have "*deep safety and signalling experience*", otherwise "*the existing customer will not be served appropriately*".[1428] Similarly, [...] considers the purchaser should have "*established relationships with customers, as well as proven expertise managing critical signalling safety platforms and implementing complex signalling projects*".[1429]

(1644) Regarding R&D and innovation, [...] considers the purchaser should "*be a credible competitive force in terms of innovation in signalling*" and must have the R&D capacity to develop the products and drive innovation efforts at the EU industry level.[1430]

(1645) Regarding personnel, [...] considers that a "*strong and permanent local establishment*" is necessary from "*a technological point of view, including knowledge of the network, existing signalling systems, national rules, etc., as* [well as] *for the operational control and execution of the signalling contract*".[1431] […] considers the purchaser should have "*project teams for on-going project and sales, bids and business development teams to develop the business and maintain customer intimacy*".[1432] […] considers the purchaser needs an "*understanding of the local / regional context / standards*".[1433]

(1646) Regarding the financial resources of the purchaser, [...] considers the purchaser should be "*a sizeable company, disposing of sufficient funds to bridge the launch period, to fund the migration of the applications to the purchaser's own platform (which may, in itself, render the divestment business unviable) and to immediately invest in R&D activities and product development*".[1434] [...] also considers the

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1426 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 84.3.1.

1427 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 58.1 (ID8211).

1428 […][...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 84.1.1 (ID8205).

1429 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 84.1.1 (ID8217).

1430 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 84.1(ID8217).

1431 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 84.2 (ID8211).

1432 […][...] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 85.2 (ID8205).

1433 […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 85.3 (ID8024).

1434 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 85.4 (ID8211).

financial size of the purchaser is important to a purchaser's ability to compete effectively against the Merged Entity.[1435]

9.8. Commission's assessment of the Mainline Signalling Commitments

9.8.1. The First ETCS OBU Commitments

(1647) The following sections assess the suitability of the commitments to address the Commission's concerns, and analyse in particular the scope, viability and effectiveness of the commitments, as well their complexity and the timing of their submission.

9.8.1.1. Scope of the First OBU Commitments

(1648) As stated in recital (1288), commitments have to eliminate the competition concerns entirely and have to be comprehensive and effective from all points of view.[1436]

(1649) The commitments do not meet this standard. As outlined in Section 9.7.1.1 and Section 9.7.1.3, there remain several areas of uncertainty around the scope of the assets included in the divestment business. Based on the responses to the Market Test and explanations provided therein, the Commission can conclude that the scope of assets in the ETCS OBU Commitments is likely to be insufficient to ensure the competitive operation of the business.

(1650) First, the First ETCS OBU Commitments are not sufficiently clear as to understand whether the technology that underlies the performance of the Siemens ETCS OBU business is divested or retained by the Merged Entity. The results of the Market Test show that there is uncertainty as to how the functionality of the technology is separated as between the software application that is transferred to the purchaser and the platform that is retained and licensed (see Section 9.7.1.1). Without a clear understanding of whether the transferred technology will enable the purchaser to undertake all necessary developments and adaptations to bid for projects, the viability of the divestment business cannot be guaranteed.

(1651) Second, of those respondents who were able to assess the adequacy of the package the majority consider that assets important to ensuring the viability and competitiveness of the business are missing or insufficient information about those assets is provided in order to assess the impacts on the viability and competitiveness of the business. As outlined in Section 9.7.1, this concerns the exclusion of manufacturing sites, the inadequate licensing arrangements as regards STMs, the retention of KBS communication stacks, R&D capability including personnel, local teams required for project execution and the exclusion of the Siemens Simis platform (made available to the purchaser via a licensing arrangement of limited duration). Therefore, it cannot be concluded that the First ETCS OBU Commitments are comprehensive.

(1652) Third, the Siemens Simis platform is not transferred but provided to the purchaser via a licence for four years. Almost all respondents to the Market Test considered that a platform migration would not be feasible in a reasonable time (see Section 9.7.1.2) and many expressed concerns for the competitiveness of the business. In light of these concerns, the Commission considers that the exclusion of the transfer

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1435 [...]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 86.1 (ID8217).

1436 Remedies Notice, paragraph 9.

of the Siemens Simis platform gives rise to risks for the competiveness and viability of the divestment business.

(1653) Fourth, the Market Test shows that the platform is an important part of the overall ETCS OBU solution and different platforms have different levels of performance. […] considers that "*the mere On-Board software application transfer is not enough, since most of the core technologies and characteristics that make an On-board solution competitive, like performance, compactness, I/O interfaces and manufacturing costs rely on the hardware*".[1437]

(1654) Fifth, the content of the rights to be transferred to the purchaser are not clearly defined. If the licensed Simis platform is important to the functionality of the ETCS OBU or legacy OBU for Belgium, the purchaser will likely need to be able to make adaptations in a timely manner in order to compete for projects at least in the period until the applications have been migrated to the purchaser's own platform. However, the terms of the licensing arrangement do not make it clear that the purchaser will be able to carry out any necessary adaptations in order to remain competitive in upcoming bids, which means that the divestment business risks losing its competitiveness from day one after its transfer to the purchaser. Siemens will retain ownership of the platform and will be able to exploit it to the benefit of the Merged Entity, against which the purchaser will be competing.

(1655) Sixth, absent a clean transfer of the Siemens Simis platform there remains uncertainty that key technologies relevant to the effective operation of the business are either excluded or effective access is not guaranteed. As outlined in Section 9.7.1.1, there are uncertainties as regards the functionality and status of assets such as the OBU application software which will be part of the divestment business on one hand and the functionality of the underlying platform, which will be retained by the Merged Entity and made available only via a licence.

(1656) Seventh, all Siemens sites relevant to the operation of its ETCS OBU business in the EEA and its legacy OBU business in Belgium are excluded from the First ETCS OBU Commitments. Based on the responses to the Market Test and the lack of information provided by the Parties as to why those sites are not important for the effective operation of the Siemens OBU business, the Commission cannot conclude that the exclusion of those assets will not adversely affect the competitive operation of the divestment business.

(1657) Eighth, the Commission also considers that the retention by Siemens of ownership of all Class B STMs and other STMs and the retention of personnel related to the development of those STMs would likely mean that the purchaser will be less competitive than Siemens is at present. The purchaser will have to purchase STMs from the Merged Entity at terms that are not sufficiently clearly outlined in the Commitments. This ongoing relationship which would likely negatively affect its competitiveness, in particular when bidding for OBU projects against the Merged Entity.

(1658) Ninth, there remain uncertainties as to the scope of personnel included in the Commitments and therefore the adequacy of personnel to ensure the competitive operation of the divestment business in the markets in which the Commission has raised concerns. Uncertainties around the scope of personnel included in the

[1437] […]'s response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 54 (ID8272).

commitment relate the adequacy of local teams for project execution. Respondents also raise concerns about the adequacy of R&D staff related to the ETCS OBU business. Based on information provided by the Parties, the Commission is able to ascertain that the divestment business includes staff in three permanent locations ([…]), who would all be transferred as part of the divestment business. As regards local staff, the Parties submit that […] and that a potential railway signalling supplier would likely have its own local execution staff.[1438] However, based on the available information, the Commission is not in a position to confirm that the exclusion of local staff from the ETCS OBU Commitments can be compensated by any local staff that any potential interested purchaser may have (considering also no fix-it-fist solution has been provided by the Parties). Moreover, some respondents consider that personnel relevant to the development of STMs should be included in the divestment business (those personnel are retained by the Merged Entity).

(1659) The Commission therefore considers that the First ETCS OBU Commitments are insufficient in scope to alleviate the competition concerns in (i) ETCS OBU projects in the EEA; (ii) legacy OBU projects in Belgium.

9.8.1.2. Viability of divestment business and effectiveness of the First ETCS OBU Commitments

(1660) According to the Remedies Notice divested activities must consist of a "*viable business that, if operated by a suitable purchaser, can compete effectively with the Merged Entity on a lasting basis and that is divested as a going concern*".[1439]

(1661) The bench-mark for an acceptable remedy is the divestment of a standalone business. However, the "*Commission may also consider the divestiture of businesses which have strong links or are partially integrated with businesses retained by the parties*".[1440] However, the standard in relation to carve-out business is higher: the "*Commission will only be able to accept commitments which require the carve-out of a business if it can be certain that, at least when the business is transferred to the purchaser, a viable business on a stand-alone basis will be divested and the risks for the viability and competitiveness caused by the carve-out will thereby be reduced to a minimum*".[1441] In the present case the Commission considers that the ETCS OBU Commitments do not involve the divestment of a viable and competitive business let alone reduce the risks associated with the carve-out to a minimum.

(1662) First, as outlined in Section 9.8.1.1, the ETCS OBU Commitments are insufficient in scope and at the very least uncertain in scope. It cannot be ascertained whether the purchaser will have in its possession all necessary technology in order to execute product developments in relation to ETCS OBUs and legacy OBUs.

(1663) Second, even if all necessary technology is included within the scope of the First ETCS OBU Commitments (which is not the case), the Commission considers that the platform licensing arrangement is insufficient to ensure the viability and competitiveness of the divestment business. The purchaser will have to undertake a costly, time intensive and resource intensive migration to transfer the application software to its own platform (if it has a platform) and otherwise will need to develop an entire new platform. The results of the Market Test demonstrate that a purchaser

1438 Parties' response to the Commission's request for information RFI 178, question 2.
1439 Remedies Notice, paragraph 23.
1440 Remedies Notice, paragraph 35.
1441 Remedies Notice, paragraph 36.

would need to undertake significant investments which may involve having to redevelop a significant part of any existing platform. The Commission cannot conclude based on the results of the Market Test demonstrate that such a migration even if technically feasible would be viable from an economic and competitive point of view.

(1664) Third, during the time that such a migration is taking place, the purchaser will be put at a competitive disadvantage vis-à-vis other suppliers, and in particular the Merged Entity in bidding, for new projects. The purchaser will be entirely dependent on the Merged Entity for assistance in executing the migration including in proving support in the form of training the purchaser's personnel. The Merged Entity will be competing against the purchaser in bids for OBU projects and its incentives are unlikely to be aligned with that of the Merged Entity to ensure a low cost, timely, and thorough migration. The Commission considers that his arrangement places the purchaser in an "*on-going relationship with the parties which may allow the licensor to influence the licencee in its competitive behaviour and may give rise to disputes between the licensor and the licencee over the scope and the terms and conditions of the licence*".[1442] The Commission has doubts for example that personnel who may be needed to assist with bids or the execution of projects by the Merged Entity will be made available to support the migration process and train the purchaser's personnel. Thus, the risk of the migration will lie entirely with the purchaser.

(1665) Fourth, the risks associated with platform migration are exacerbated by the fact that the First ETCS OBU Commitments at best are uncertain and at worst exclude all personnel involved in the development of the Siemens Simis platform. The commitments include a 'commitment to provide such support under the SSA' should the purchaser require support from Simis platform personnel, but the commitments do not expressly allow for the transfer of that platform personnel.[1443]

(1666) Fifth, it is unlikely that the purchaser will be able to transition the application software to its own platform in a short time, as outlined in Section 9.7.1.2. Unless this is possible the purchaser will remain dependent on the Merged Entity and will be at a competitive disadvantage that will likely threaten the viability of the business.

(1667) The Remedies Notice provides that commitments "*must be capable of being implemented in a short period of time*".[1444] Yet no signalling supplier except for one considered that they would be able to feasibly migrate Siemens' software applications for ETCS OBUs and the TBL+-STM (used in Belgium) to their own platform in a reasonable time to bid for new projects using the migrated application on their own platform. The Commission considers that based on the results of the Market Test, very few if any signalling suppliers would be able to complete the migration within the four year period provided for under the commitments.

(1668) Sixth, the commitments do not include local teams to maintain the competitiveness and viability of the ETCS OBU business in the EEA and the OBU business in Belgium. The Parties note that […] and that a potential buyer would likely have its own local execution staff.[1445] The Commission considers that, in particular given that no fix-it-first solution has been proposed in order to assess whether a purchaser would have sufficient own local staff, that the exclusion of local staff used to execute

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1442 Remedies Notice, paragraph 38.

1443 Schedule 4 of the First ETCS OBU Commitments, paragraph 5.

1444 Remedies Notice, paragraph 9.

1445 Parties' response to the Commission's request for information RFI 178, question 2.

ETCS OBU projects in the EEA and OBU projects in Belgium will adversely affect the competiveness of the divestment business.

(1669) Seventh, sites are excluded from the remedy package yet insufficient information is provided to ensure that those exclusions would not negatively affect the viability and competitiveness of the divestment business. The results of the Market Test show that, of those who were able to respond to the question, all respondents considered that sites should be included in the package. According to the Remedies Notice, the Commission will only be able to accept exclusions of assets or personnel "*if the parties can clearly show that this does not affect the viability and competitiveness of the business*".[1446] The Commission considers that the standard has not been met.

(1670) Eighth, the Parties have not offered a fix-it-first solution which would help to reduce the implementation risks in cases such as the present where the viability of the divestment business is likely to depend on the identity of the purchaser.[1447] The identity of the purchaser is likely to be particularly important to the question of whether or not a platform migration can be carried out while preserving the competitiveness of the divestment business, considering the complexity of the migration as outlined in Section 9.7.1.2. The Commission considers that the First ETCS OBU Commitments are insufficient as to enable any signalling supplier to economically execute the migration while being able to compete against the Merged Entity. Even if this were not the case, it cannot be said that any signalling supplier would be able to carry out the migration effectively and therefore a fix-it-first remedy would be required.

9.8.1.3. Suitability of the First ETCS OBU Commitments to remove the identified competition concerns

(1671) First, the First ETCS OBU Commitments are unsuitable to remove the identified competition concerns because they are inadequate in scope and do not constitute the divestment of a viable and competitive business (see Section 9.8.1.1 and Section 9.8.1.2).

(1672) Second, the First ETCS OBU Commitments are unsuitable to remove the identified competition concerns because they fall far short of the divestiture of a standalone business having regard to the mere licensing of key parts of the OBU technology, which according to the Market Test, are likely to be important to securing the future competitiveness of the business.

(1673) Third, even though normally the divestiture of a standalone business is required, the Commission, taking into account the principle of proportionality, may also consider the divestiture of a business, which has existing strong links or is partially integrated with the retained business. However, according to the Remedies Notice, where "*the parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in the market, an authorisation decision cannot be granted.. The Commission may reject such remedies in particular on the grounds that the implementation of the remedies cannot be effectively monitored and that the*

1446 Remedies Notice, paragraph 29.

1447 See Remedies Notice, paragraph 57.

lack of effective monitoring diminishes, or even eliminates, the effect of the commitments proposed".[1448]

(1674) As outlined at recital […]*, the Commission considers that the ETCS OBU Commitments are not capable of being implemented in a short period of time or in a manner that would ensure the competitive operation of the divestment business. In the four-year period during which the Siemens Simis platform is licensed to the purchaser, the purchaser will be dependent on and at a competitive disadvantage to the Merged Entity for the reasons outlined in Section 9.7.1.2.

(1675) Only after any platform migration has taken place will the purchaser have a greater degree of independence. Yet, that potential independence is foreseen only after four years, which is likely to be too late. The divestment business risks during that four-year period being stagnant in terms of technological development and having missed out on opportunities to win projects due to its dependence on the Merged Entity and customers' concerns about that dependence for the effective operation of the business.

(1676) Fourth, the Commission cannot conclude, having regard to the results of the Market Test and the exclusion or at least uncertainty as to whether the First ETCS OBU Commitments include key assets (sites, personnel, technology and IP) that "*at least at the time when the business is transferred to the purchaser, a viable business on a stand-alone basis will be divested and the risks for the viability and competitiveness caused by the carve-out will thereby be reduced to a minimum*".[1449]

(1677) Fifth, for the business to replicate the competitive pressure exerted by Siemens and to be able to compete effectively with the Merged Entity, the purchaser will need to manage the interoperability between the divested OBU business and installed Siemens rolling stock. The results of the Market Test show that customers in particular are concerned that the divestment business does not include sufficient assets to interoperate with existing Siemens rolling stock. The Commission considers this would put the business at a competitive disadvantage relative to the Merged Entity. The divestment business is therefore at risk of missing out on important contracts because it lacks necessary information. The security of rolling stock is also jeopardised, with customers expressing concerns about who will retain the responsibility for upgrading Siemens rolling stock (see recital (1535)).

(1678) Sixth, the Remedies Notice recognises that access commitments are often complex in nature and therefore "*the Commission will only be able to accept such commitments where the complexity does not lead to a risk of their effectiveness from the outset and where the monitoring devices proposed to ensure that those commitments will be effectively implemented and the enforcement mechanism will lead to timely results*".[1450] The First ETCS OBU Commitments do not propose monitoring devices that would alleviate the Commission's concerns about implementation risks and dependency on the Merged Entity.

(1679) For all these reasons, the Commission considers that the First ETCS OBU Commitments are not suitable to remedy the identified competition concerns in ETCS OBUs in the EEA and legacy OBUs in Belgium.

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* sShould read: "(1639)".

1448 Remedies Notice, paragraph 14.

1449 Remedies Notice, paragraph 36.

1450 Remedies Notice, paragraph 66.

9.8.2. The Final ETCS OBU Commitments

(1680) The Final ETCS OBU Commitments were submitted on 9 January 2019 that is 12 working days after the expiry of the deadline for submitting commitments established by Article 19(2) of Regulation (EC) No 802/2004, and hence at a very late stage of the proceedings.

(1681) As regards commitments submitted after the deadline ("late commitments"), the Remedies Notice provides (as explained in Section 10.1) that the Commission can only accept such modified commitments where it can clearly determine – on the basis of its assessment of information already received in the course of the investigation, including the results of prior market testing and without the need for any other market test – that such commitments, once implemented, "*fully and unambiguously*" resolve the competition concerns identified and where there is sufficient time to allow for an adequate assessment by the Commission and for proper consultation with Member States.[1451]

(1682) The amendments to the First ETCS OBU Commitments that have been reflected in the Second ETCS OBU Commitments do not alter the Commission's assessment of the inadequacy of the proposed remedies, which are far from the divestment of a standalone business and exclude certain key technologies in addition to manufacturing capability. The amendments relate to the extension of the duration of the licence to the purchaser for the Siemens Simis platform and to the provision of a long term supply agreement for Alstom's STMs. Even if a behavioural remedy were acceptable in this case (which, for the reasons described in recitals (1673) to (1675) is not), the amendments do not fully and unambiguously remove all of the concerns identified in Section 9.8.1.

(1683) The amendments do not alleviate the Commission's concerns as regards implementation risks, the viability of the business and its ability to compete effectively in the future, because for up to six years the purchaser will be dependent on the Merged Entity for any adaptations or product developments that relate to the Siemens Simis platform (which is merely licensed to the purchaser) and the overwhelming view from the Market Test is that it would be very challenging, expensive and risky to carry out a platform migration. The amendments do not change the fact that the purchaser will still need to migrate the Siemens OBU application software to its own platform before the expiry of the licence to the Siemens platform.

(1684) First, the extension of the term of the licence to the Siemens platform does not alleviate the Commission's concerns that without a transfer of the platform the purchaser will not be able to effectively compete using the divested business.

(1685) Second, the extension of the term of the licence to the Siemens platform does not change the Commission's view that the purchaser is likely to be dependent on the Merged Entity. The extension of the licence term is in fact likely to lead to a greater dependency on the Merged Entity since the purchaser will for up to six years rely on the Merged Entity to provide access to relevant technology and support while it is attempting to migrate the applications to its own platform. The Commission does not consider that the divestment business will be able to effectively compete for OBU projects during these six years. After any migration, the competiveness of the divestment business is also likely to have been negatively affected considering the

[1451] Remedies Notice, paragraph 94.

cost involved and potentially lost bidding opportunities (due to resources that could otherwise been dedicated to bidding investments being diverted to the platform migration).

(1686) The Commission considers that the extension of time for the platform licence, which the Commission understands was requested by an interested purchaser in order to enable them sufficient time to undertake the platform migration, reinforces its view that platform migration is a complex and risky procedure. The Commission remains very concerned about the risks to the viability and competitiveness of the divestment business, particularly given the important safety function associated with signalling equipment. Customers are also likely to be concerned about the ability of a supplier to deliver a safe and well-functioning signalling system where that supplier is dependent on a third party supplier for critical technology. These considerations will likely adversely affect the competitiveness of the divestment business.

(1687) Fourth, the inclusion of a long term supply agreement for access to Alstom's STMs does not change the fact that ownership of both Alstom and Siemens STMs will remain with the Merged Entity. The purchaser will likely be dependent on the Merged Entity for those STMs and will need to purchaser them from the Merged Entity on terms that are not clearly defined in the commitments. The arrangements will likely put the divestment business in at a competitive disadvantage relative to the competitive position of Siemens at present.

9.8.2.1. Conclusion

(1688) In light of the complexity of the commitments, their shortcomings in terms of scope, effectiveness and suitability, the difficulties relating to their effective monitoring and enforcement, as well as the late submission of the commitments, the Commission concludes that neither the First ETCS OBU Commitments nor the Final ETCS OBU Commitments eliminate all the identified competition concerns in ETCS OBU projects in the EEA and legacy OBU projects in Belgium.

9.8.3. The First ETCS Wayside and Interlocking Commitments

(1689) The following sections assess the suitability of the commitments to address the Commission's concerns, and analyse in particular the scope, viability and effectiveness of the commitments, as well their complexity and the timing of their submission.

9.8.3.1. Scope of the First ETCS Wayside and Interlocking Commitments

(1690) As stated in recital (1288), the commitments have to eliminate the competition concerns entirely and have to be comprehensive and effective from all points of view.[1452]

(1691) The First ETCS Wayside and Interlocking Commitments are limited in scope. The limitations concern the retention by the Merged Entity of key assets that are likely to be necessary to ensure the effective operation of the divestment business. The exclusion of important assets that are likely to negatively impact the ability of the divestment business to compete effectively in the markets in which the Commission raises concerns are outlined in Section 9.7.2 and include (without limitation) the following:

[1452] Remedies Notice, paragraph 9.

(1692) Technology: as outlined in Section 9.7.2.2 and Section 9.7.2.3, the Market Test shows that the First ETCS Wayside and Interlocking Commitments are missing information to properly assess the scope of the technology included in the package and otherwise respondents are predominantly of the view that the scope of the technology included in the package is insufficient. The Commission considers that the exclusion of important technology being developed by Alstom, including […], as well as other pipeline R&D projects that are not included in the First ETCS Wayside and Interlocking Commitments, risk undermining the competitiveness of the divestment business.

(1693) The First ETCS Wayside and Interlocking Commitments also exclude country specific interlockings for […] on the basis that there are no competition concerns for standalone interlocking projects in those Member States. However, unless a purchaser has its own interlockings in those countries, when competing for re-signalling projects it will need to develop a new interlocking. If a purchaser needs to develop or adapt new interlockings, it would likely be at a competitive disadvantage vis-à-vis the Merged Entity (which retains Alstom's interlockings). Some respondents to the Market Test specifically mention the link between the retained Alstom interlockings in […] and their relevance to ERTMS re-re-signalling projects not just standalone interlocking projects (see for example recital (1616)). The viability of the divestment business will in turn likely be negatively impacted considering that around half of Alstom's revenue from the ETCS wayside business in the EEA is derived from these three countries.[1453] As outlined in recital (1595), two-thirds of respondents expressing an opinion in the Market Test consider that the excluded technology is necessary to ensure the viability and competitiveness of the divestment business.

(1694) Respondents also consider that the form of transfer of technology is insufficient (e.g., many consider a transfer of ownership of platforms is required and others consider at least a transfer of technology of platforms is necessary to enable the purchaser to independently develop the platforms). The Commission considers that owing to the lack of clarity and concerns raised in the Market Test, the First ETCS Wayside and Interlocking Commitments are not sufficiently comprehensive as regards technology to enable the divestment business to compete effectively in the markets in which the Commission has raised concerns.

(1695) Personnel: as outlined in Section 9.7.2.4, the Market Test demonstrates that the First ETCS Wayside and Interlocking Commitments lack information to properly assess whether adequate personnel are included in the package and otherwise the majority of respondents consider that the transferred personnel, including R&D personnel, is inadequate to ensure the competitive operation of the business. The Remedies Notice states that "[p]*ersonnel and assets which are currently shared between the business to be divested and other businesses of the parties, but which contribute to the operation of the business or which are necessary to ensure its viability and competitiveness, also have to be included*".[1454] The commitments contemplate the transfer of […] in […] and […] from […]. It is not clear how these figures compare to the R&D personnel currently relevant to the Alstom ETCS wayside and interlocking business (even excluding the interlockings business in […]). According to the First ETCS Wayside and Interlocking Commitments, information provided by

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1453 Based on Alstom's backlog for FY 18, as provided in the Parties' response to the Commission's request for information RFI 178, question 12, Annex RFI 174 Q5.

1454 Remedies Notice, paragraph 26.

the Parties and the Market Test responses, it is unlikely that the necessary personnel in […] (let alone from any other Member States) are included in the First ETCS Wayside and Interlocking Commitments as to ensure the viability and competitiveness of the divestment business.

(1696) Sites: as outlined in Section 9.7.2.7, the Market Test responses show that the commitments provide insufficient information in order to assess the adequacy of the sites proposed to be transferred. The Remedies Notice states that "*in order to avoid any misunderstanding about the business to be divested, assets or personnel that are used within or employed by the business but that should not, according to the parties, be transferred with the divestiture, have to be expressly excluded by the parties in the commitments text…*" (emphasis added).[1455]

(1697) The Notifying Party included in a separate confidential annex a list of real estate sites to be transferred, however it is not clear to the Commission whether the list is an exhaustive list of all sites relevant to the ETCS wayside and interlocking business of Alstom. The later addition to the annex of sites in […] (see the Commission's description of the Final ETCS Wayside and Interlocking Commitments at recital (1531) and footnote 1256) suggests that the list of sites is not exhaustive. In addition, in the Market Test, the overwhelming majority of respondents were unable to provide a view on the adequacy of sites included in the package, many of whom remark on the insufficient information. The Commission considers the commitments do not therefore meet the standard required in the Remedies Notice.

(1698) Second, according to the Remedies Notice the Commission "*will only be able to accept such exclusion of assets or personnel if the parties can clearly show that this does not affect the viability and competitiveness of the business*".[1456] The Parties argue that sites are not of themselves of critical importance in signalling and that physical assets in […] and "other retained sites" can easily be resituated in nearby sites.[1457] The […] site is not included in the commitments. The site is the centre of […].[1458] The site has R&D capabilities, bidding, engineering, bid and industrial capabilities and can deliver signalling solutions for any type of signalling projects both in the same country and other countries with no equivalent capabilities.[1459] As noted, the commitments propose for the transfer of assets located at the site. However, the Parties do not show how the proposed relocation of assets and personnel currently located at the […] site would be sufficient to ensure the competitive operation of the divestment business. This is so, particularly in the short term, considering the extra costs and time involved in the purchaser establishing its own site to receive the transferred assets and personnel.

(1699) The Alstom site at […] is not included in the First ETCS Wayside and Interlocking Commitments. Based on information provided by the Parties, the Commission understands that the site is an R&D, manufacturing and testing centre that undertakes product development, manufacturing, testing and project management for the mainline and urban signalling business as well as for rolling stock. […] is also in charge of the […]. Local operational teams are located at […].[1460] The site is also

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1455 Remedies Notice, paragraph 29.

1456 Remedies Notice, paragraph 29.

1457 Form RM – ETCS Wayside and Interlocking Commitments, page 5.

1458 Parties' response to the Commission's request for information RFI 178, question 17.

1459 Parties' response to the Commission's request for information RFI 178, question 17.

1460 Parties' response to the Commission's request for information RFI 178, question 18; Parties' response to the Commission's request for information RFI 174, question 2.

used for the manufacture and assembly of elements relevant to the signalling platform.[1461] The First ETCS Wayside and Interlocking Commitments do not include the divestment of the […] site nor the transfer of personnel located at […] yet the site, together with the […], include […] personnel relevant to Alstom's ETCS wayside and interlocking business.[1462] The Commission considers that, while the […] site is used for part of the retained business, it is also relevant to the effective operation of Alstom's ETCS wayside and interlocking business, providing manufacturing and assembly functionality as well as product development and innovation relevant to the Alstom platforms used for the ETCS wayside and interlocking business.

(1700) Several respondents consider that the absence of manufacturing capability in the First ETCS Wayside and Interlocking Commitments would negatively affect the competitiveness of the divestment business, for instance, because it would undermine the credibility of the purchaser vis-a-vis customers since outsourcing would remove the quality control that both Siemens and Alstom enjoy and would continue to enjoy as the Merged Entity.[1463] In any case, a significant number of respondents consider that the First ETCS Wayside and Interlocking Commitments provide insufficient information for them to assess whether the assets proposed to be transferred instead of the sites themselves (e.g., test benches located at certain Alstom sites) would be sufficient to enable the purchaser to operate the divestment business viably and competitively.[1464]

(1701) The Parties submit that sites are not of critical importance in signalling[1465] but do not explain how the exclusion of all sites in […] (for which the Parties assert assets can be relocated from […] and a test bench moved from […]) will not adversely affect the viability and competitiveness of the divestment business. Related to the retention of sites, is also the risk that personnel employed at those sites will not consent to being transferred to a new (and possibly unknown) site, which the purchaser would need to establish unless it already has a site in the country or close to the Alstom site. The cost and time associated with establishing new sites will be borne by the purchaser, which may also negatively impact the competitiveness of the business in the short to medium term.

(1702) According to the Remedies Notice,[1466] assets that are shared between the business to be divested and other businesses of the parties, but which contribute to the operation of the business or are necessary to ensure its viability and competitiveness must be included in the divestment package. Based on the information provided by the Parties, the Commission considers that certain Alstom sites located in […] where R&D, testing and manufacturing and/or assembly is carried out, are likely to be important to the operation of Alstom's ETCS wayside and interlocking business beyond the business in the carved-out countries ([…]). In particular, the Commission

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1461 Form RM for Mainline Signalling, paragraph 63 and footnote 22.

1462 Party's response to the Commission's request for information RFI 174, question 2. The Parties did not separately indicate a split of personnel relevant to the ETCS business versus the interlockings business.

1463 […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 10 (ID8096); […]'s observations on the commitments offered by Siemens, submitted by e-mail on 20 December 2018, paragraphs 1.3 et 4.2 (ID8956); […]'s observations on the commitments offered by Siemens, submitted by e-mail on 21 December 2018, paragraph 34 (ID8094).

1464 Responses to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 27.

1465 Form RM for Mainline Signalling, page 5.

1466 Remedies Notice, paragraph 26.

refers to recitals (1698) to (1701) and the further analysis at recital (1723). The Commission considers that, based on information provided by the Parties, the exclusion of all sites where manufacturing activity and important R&D is carried out will likely adversely affect the viability of the divestment business. The risks associated with excluding these sites are heightened considering the lack of clarity of the commitments which has made it difficult to assess the adequacy of the proposed transfer of assets located at some of these sites as a replacement for a full site divestment (see for example, recital (1700) regarding the adequacy of test benches).

9.8.3.2. Viability of the Divestment Business and effectiveness of the First ETCS Wayside and Interlocking Commitments

(1703) The First ETCS Wayside and Interlocking Commitments are unlikely to create a competitor that would exert a competitive constraint on the Merged Entity similar to the one that exists between Siemens and Alstom today in (i) ETCS ATP wayside (re-signalling and overlay) projects in the EEA; (ii) standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK; and (iii) interlocking equipment in the UK.

(1704) According to the Remedies Notice, normally a viable business is a business that can operate on a stand-alone basis, which means independently of the merging parties as regards the supply of input materials or other forms of cooperation other than for a transitional period.[1467]

(1705) First, the Commission considers that the complexity of the First ETCS Wayside and Interlocking Commitments, having regard to the Parties' "salami-slicing" and "cherry picking" of assets to be retained by the Merged Entity and the licensing of access to other key technologies, will likely result in implementation risks that will undermine the viability of the divestment business. See for example responses to the Market Test at Section 9.7.2.10 that identify specific aspects of the First ETCS Wayside and Interlocking Commitments that are likely to give rise to implementation issues. The Commission further considers that there is a real risk that some of the implementation issues will be unforeseen by a potential purchaser, owing to the lack of clarity of the First ETCS Wayside and Interlocking Commitments. Unforeseen implementation risks would exacerbate the uncertainty and the risks to the viability of the divestment business.

(1706) Second, apart from implementation risks, the Commission has serious concerns as to whether the divestment business can constitute an independent and viable ongoing business even once implemented. The responses to the Market Test (see Section 9.7.2) reveal flaws with several aspects of the First ETCS Wayside and Interlocking Commitments, including licensing arrangements, country-carve outs, missing sites, R&D capability and personnel that would likely adversely affect the competitiveness of the divestment business. The Market Test feedback indicates that the way in which the commitments are drafted is not sufficiently clear. The Commission agrees that, even based on the confidential version of the commitments made available to it, the text of the commitments is not sufficiently clear to provide a precise view of the scope of the retained assets and their relevance to the divestment business.

(1707) Third, the Commission considers that these viability risks are enhanced owing to the position of the Parties in mainline signalling, being among the largest mainline signalling suppliers in the EEA and important innovators (see recitals (591) to (593),

[1467] Remedies Notice, paragraph 32.

Section 6.3.2.2(B.iii) and recitals (1150) to (1156)). The purchaser will be competing with the Merged Entity that will retain Siemens' ETCS ATP wayside and interlocking business as well as key Alstom assets that are important to the operation of the Alstom ETCS ATP wayside and interlocking business. Under these circumstances, it is unlikely that the divestment business will be able to replicate the competitive constraint exhibited by Alstom without these key resources.

(1708) Some examples of the specific inadequacies of the commitments that are likely to individually and collectively adversely affect the viability of the divestment business are set out in recitals (1709) to (1726).

(1709) Platform licensing: as outlined in Section 9.7.2.2, the Market Test shows that a large number of respondents are concerned that the licensing arrangements contemplated for all platforms on which the ETCS ATP wayside and interlockings applications operate will negatively impact the purchaser's ability to innovate without cooperation from the Merged Entity. According to the Remedies Notice, when describing the divestment business the Parties must set out the arrangements for the supply of products and services; however, "*the Commission will only accept such arrangements if they do not affect the independence of the divestment business from the parties*".[1468]

(1710) The Commission cannot conclude based on the information available to it that the licensing of Alstom's platforms used for its ETCS ATP wayside and interlockings projects business will not adversely affect the independence of the divestment business from the Merged Entity. To the contrary, the evidence suggests that the divestment business will remain dependent on the Merged Entity. Thus, the Commission considers that as a result of this likely dependence, as concerns platform development and innovation, the divestment business is not likely to be a viable business.

(1711) The Geographic Carve-Out: first, as outlined in Section 9.7.2.6, the Market Test shows that the Geographic Carve-Out is likely to have an adverse effect on the viability of business. In addition, information provided by the Parties shows that the value of the ETCS wayside and interlocking backlog to be retained in the EEA is EUR […] whereas the total value of the backlog in the EEA is EUR […].[1469] The value of the backlog retained by the Merged Entity therefore represents […]% of Alstom's ECTS wayside and interlocking backlog in the EEA. What is left will be the upper range since, as noted, the transfer of contracts to the purchaser will be subject to customer consents.[1470] In this regard, the Commission observes that customers responding to the Market Test already share the strong reservations they have about the viability of the divestment business based on the First ETCS Wayside and Interlocking Commitments the Notifying Party has proposed. The Commission is therefore concerned that several customers may withhold their consent to the transfer of contracts, which would then further undermine the viability of the divestment business.

(1712) Second, bidding for mainline signalling projects is resource intensive and the retention of a significant part of the backlog and assets needed to compete at the same level that Alstom does presently in those geographies will likely undermine the

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1468 Remedies Notice, paragraph 28.

1469 Schedule 5 of the First ETCS Wayside and Interlocking Commitments, Table 1.

1470 Schedule 5 of the First ETCS Wayside and Interlocking Commitments, paragraphs 2.14 to 2.18, and Annex 5.

divestment business' competitiveness and viability. The Parties have stated that "*competing in tenders is relatively costly*" and that "*access to additional financial and other resources can support such bidding investments*".[1471] Competitors have argued that their ability to compete effectively for mainline signalling projects is strongly dependent on their financial capacity.[1472] The Parties have also submitted that participating in tenders is relatively costly and acquisition by a large international player (e.g., the acquisition of Anslado by Hitachi) may well give access to additional financial and other resources that can support such bidding investment.[1473] The Commission also observes that only a few large signalling suppliers bid for ETCS wayside projects across the EEA (namely, the Parties, Hitachi-Ansaldo, Thales and Bombardier). Smaller players, like CAF or AZD, are bidding for ETCS ATP wayside re-signalling and overlay projects in only a few Member States. The Commission is therefore concerned that the retention of a significant part of the backlog and the retention of technologies that give Alstom a competitive advantage in a number of EEA Member States where ERTMS roll-out is expected in the coming years, will undermine the financial and bidding capacity of the divestment business.

(1713) Third, the Notifying Party has not proposed as purchaser for the divestment business, a supplier with the large financial resources (e.g., a player such as […]).[…], according to the Parties' own admission is a smaller player without the backing of a multinational company.[1474] Even if […] were to try to access additional financial resources by bidding in consortium, the fact that the platforms would only be licensed to […] (the Merged Entity retains ownership) raises risks as to […] ability to enter into cooperation agreements involving the use of those licensed platforms without the consent of (and therefore dependence on) the Merged Entity. Therefore, the viability risks associated with the Geographic Carve Out are likely to be greater if the purchaser is not already exhibiting an ability to bid across the EEA at a level similar to that of the Parties.

(1714) Fourth, the Geographic Carve-Out means not only a carve out of existing contracts, but also of personnel, R&D and all other assets associated with the carved-out business. Some of these assets are shared with the divestment business. Respondents to the Market Test raise concerns, for example, that the divested business may be dependent on resources located in […] which are retained by the Merged Entity. The Notifying Party has not shown that the carve-out and retention of these shared resources, in circumstances where those assets are used to generate around […]% of Alstom's ETCS ATP wayside and interlocking business in the EEA,[1475] and are located in sites in the carved-out Member States which constitute centres of excellence for the business, will not negatively impact the viability and competitiveness of the divestment business.

1471 Parties' response to the Commission's request for information RFI 78, question 27.

1472 [...]'s response to the Commission's request for information RFI 104, question 6 (ID5799).

1473 Parties' response to the Commission's request for information RFI 78, question 27.

1474 Parties' response to the Commission's request for information RFI 78, question 27. The Parties suggest that smaller competitors can team up with other players to form a consortium. However, it is not clear based on the fact that a purchaser will be licensing key assets from the Merged Entity under the First ETCS Wayside and Interlocking Commitments, whether it could bid using those licensed assets together with a third party who does not benefit from the licence. In any case, to date smaller suppliers like […] have not exhibited an ability to bid anywhere near the frequency and geographic spread of the Parties.

1475 See recital (1711).

(1715) Fifth, the ability for the purchaser to bid for and win ETCS re-signalling and overlay projects across the EEA, including in […] where ERTMS roll-out projects are expected in the coming years, will be negatively impacted by the Geographic Carve-Out. The Merged Entity will retain existing and pending customer contracts in those countries and therefore the customer relationship. It will also retain the specific interlocking technologies used in those geographies. The Merged Entity will therefore be at a competitive advantage vis-à-vis the divestment business from day 1. Therefore, the First ETCS Wayside and Interlocking Commitments do not put the purchaser in the position of Alstom and are not adequate to overcome the Commission's concerns that the merger would likely significantly impede effective competition in ETCS ATP wayside re-signalling and overlay projects in the EEA.

(1716) The Parties argue that the purchaser can develop or adapt its own interlockings in […] and use those to compete for ETCS ATP wayside projects. But that ignores the fact that doing so will already put the purchaser at a competitive disadvantage relative to Alstom today and especially to the Merged Entity who will retain not only Siemens' ETCS ATP wayside and interlocking business but also Alstom's interlocking business in part of the EEA. The Commission considers that this will severely jeopardise the competitiveness and viability of the divestment business.

(1717) Sixth, the parties argue that the interlocking business of Alstom in […] does not need to be divested because there are no competition issues in standalone interlocking projects in those countries. However, that view fails to consider that interlockings are also important to ETCS ATP re-signalling and overlay projects. Re-signalling projects involve the bundled supply of an ETCS ATP wayside solution and interlockings, and in fact, interlockings represent the majority of the value of the project and therefore extra costs associated with this aspect (due to carve-outs) of the project would likely put the purchaser at a competitive disadvantage relative to Alstom's position and relative to the Merged Entity. The Commission further understands that knowledge of installed interlockings will also provide a competitive advantage when bidding for ETCS ATP overlay projects.

(1718) Even if the carved-out business was not relevant to restoring competition in the ETCS ATP wayside re-signalling and overlay projects markets in the EEA (which in any case it is), it is likely to be necessary to maintaining the viability of the ETCS Wayside and Interlocking Commitments. According to the Remedies Notice, for the divestment "*business to be viable, it may also be necessary to include activities which are related to market where the Commission did not identify competition concerns if this is required to create an effective competitor in the affected markets*".[1476]

(1719) Personnel: for the reasons set out in recital (1695) and Section 9.7.2.4, the Commission considers that the scope of personnel included in the First ETCS Wayside and Interlocking Commitments is inadequate to ensure the competitiveness and viability of the business. According to the Remedies Notice, "*in order to avoid any misunderstanding about the business to be divested, assets or personnel that are used within or employed by the business but that should not, according to the parties, be transferred with the divestiture, have to be expressly excluded by the parties in the commitments text. The Commission will only be able to accept such exclusion of assets or personnel if the parties can clearly show that this does not affect the*

[1476] Remedies Notice, paragraph 23.

viability and competitiveness of the business".[1477] The First ETCS Wayside and Interlocking Commitments do not clearly and expressly identify the number or location of personnel to be retained by the Merged Entity, nor has the Notifying Party clearly shown how the exclusion of those personnel will not affect the viability or and competitiveness of the business.

(1720) After the submission of the First ETCS Wayside and Interlockings Package, when submitting the Second ETCS Wayside and Interlockings Package, the Notifying Party revised the number of personnel which it claims are located in […]. That revised figure also differs from the figure provided to the Commission in reply to a request for information (see footnote 20 of the Second ETCS Wayside and Interlocking Commitments). The fact that the Notifying Party offers to "*remain open to discussing*" the exact number of employees to be transferred does not meet the Commission's standard as outlined in the Remedies Notice. More generally, the Notifying Party has not expressly and clearly outlined in the text of the First ETCS Wayside and Interlocking Commitments the scope of the exclusion of the personnel relevant to Alstom's ETCS ATP wayside and interlocking business.

(1721) In addition, the Commission understands based on information the Parties provided in reply to a request for information,[1478] that a significant number of personnel relevant to the divestment business are located in […] and […]. The Parties note that personnel at the […]. The First ETCS Wayside and Interlocking Commitments, however, do not contemplate the transfer of personnel at the […]. The First ETCS Wayside and Interlocking Commitments, however, do not contemplate the transfer of personnel at […]. This is so despite the fact that the purchaser will be using the Alstom platforms for a transitional period and will also likely require knowledge of those platforms in order to perform a migration of the applications (that operate using the Alstom platforms) to the purchaser's own platform. The Commission considers that the promise by Alstom to hire-out to the purchaser Alstom technical personnel at hourly rates at the purchaser's cost,[1479] is likely to be an insufficient substitute, especially considering the complexities associated with platform migration (as the Market Test shows at Section 9.7.2.2) and the lack of clarity associated with the terms and precise cost under which that support will be provided in the First ETCS Wayside and Interlocking Commitments.

(1722) In general, the precise scope of the personnel to be retained by the Merged Entity that are relevant to the operation of the Alstom ETCS wayside and interlocking business is not clearly indicated in the First ETCS Wayside and Interlocking Commitments. The Commission considers, based on information provided by the Parties to the Commission that a large proportion of personnel will be retained by the Merged Entity that is relevant to the operation of the Alstom ETCS ATP wayside and interlocking business. The Commission considers that the retention of those staff is not proportionate to the scope of the retained business.

(1723) At the […] site, which is the centre of excellence for […], a total […] personnel are relevant to wayside or interlockings, yet only […] personnel ([…]%) are proposed to be transferred. Alstom submits that it needs these personnel for the retained interlocking business in […].[1480] However, the number of retained personnel is not

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1477 Remedies Notice, paragraph 26.

1478 Parties' response to the Commission's request for information RFI 174, question 2; Parties' response to the Commission's request for information RFI 178, question 17.

1479 Schedule 5 of the First ETCS Wayside and Interlocking Commitments, paragraph 2.36.

1480 Parties' response to the Commission's request for information RFI 178, question 4.

proportionate, in the Commissions' view, to the value of the interlockings business of Alstom in the retained countries based on information provided by the Parties. The value Alstom's interlocking backlog in […] and outside of the EEA except for […] is […]% of the total backlog.[1481]

(1724) Balises: as outlined in Section 9.7.2.8, several respondents consider that the retention by the Merged Entity of Alstom's balises will have detrimental effects on the divestment business. Some competitors consider that the Merged Entity will be dominant in the supply of balises, with an estimated of market share around [70-80]%.[1482] The Commission notes that the geographic scope of the share provided is not clear, but, in any case, it provides an indication that the concerns of respondents are not unsubstantiated.

(1725) The Parties argue that they have limited visibility of the market for the provision of ETCS balises as standalone products and are unable to provide market shares at the national level for ETCS balises.[1483] The Parties estimate their share of supply for ETCS balises in the EEA for 2015-2017 to be approximately [20-30]%.[1484] Even if the purchaser can access balises from other third parties and no horizontal competition concerns as regards the supply of balises arise, there are risks that the retention of Alstom's proprietary balises will create dependencies on the Merged Entity unless the purchaser can easily switch to other alternative suppliers of balises or manufactures its own balises. There is also a risk that the exclusion of Alstom's balises will adversely impact the competitiveness of the business unless the purchaser can obtain access to balises at similar terms and price which is available to Alstom as an integrated supplier.

(1726) According to the Remedies Notice, if assets relevant to the divestment business are excluded "*the Commission will only be able to accept such exclusion of assets … if the parties can clearly show that this does not affect the viability and competitiveness of the business*".[1485] Based on the information available about the Parties' balises business and given the negative responses from the Market Test, the Commission cannot be certain that the retention of ownership by the Merged Entity of Alstom's balises will not negatively affect the competitiveness and viability of the divestment business.

9.8.3.3. Suitability of the First ETCS Wayside and Interlocking Commitments to remove the identified competition concerns

(1727) First, the First ETCS Wayside and Interlocking Commitments are not suitable to remedy the competition concerns the Commission has identified in ETCS wayside projects and interlocking projects because they lack clarity and information necessary for the Commission to determine with certainty that they will constitute a viable business going forward.

(1728) According to the Remedies Notice, where "*the parties submit remedies proposals that are so extensive and complex that it is not possible for the Commission to determine with the requisite degree of certainty, at the time of its decision, that they will be fully implemented and that they are likely to maintain effective competition in*

1481 Schedule 5 of the First ETCS Wayside and Interlockings Commitments, Table 1.

1482 […] response to questionnaire on commitments offered by Siemens – Mainline Signalling Market Test, question 29.1 (ID8205).

1483 Parties' response to the Commission's request for information RFI 188, question 1.

1484 Parties' response to the Commission's request for information RFI 27, question 7.

1485 Remedies Notice, paragraph 26.

the market, an authorisation decision cannot be granted. The Commission may reject such remedies in particular on the grounds that the implementation of the remedies cannot be effectively monitored and that the lack of effective monitoring diminishes, or even eliminates, the effect of the commitments proposed".[1486]

(1729) Second, the large number of negative responses about the scope and form of the First ETCS Wayside and Interlocking Commitments in addition to the difficulties expressed about their implementation in the Market Test is indicative that the First ETCS Wayside and Interlocking Commitments are not likely to enable a purchaser to compete effectively in ETCS wayside projects or standalone interlocking projects in the geographies where the Commission has expressed concerns.

(1730) Third, the First ETCS Wayside and Interlocking Commitments do not constitute a clean transfer of a standalone business and behavioural promises are attached to several important aspects of the package (platforms, interlocking technologies, shared intangible assets and non-competes).

(1731) Even though normally the divestiture of a standalone business is required, the Commission, taking into account the principle of proportionality, may also consider the divestiture of a business, which has existing strong links or is partially integrated with the retained business. However, according to the Remedies Notice, "*the Commission will only be able to accept commitments which require the carve-out of a business if it can be certain that, at least at the time when the business is transferred to the purchaser, a viable business on a stand-alone basis will be divested and the risks for the viability and competitiveness caused by the carve-out will thereby be reduced to a minimum*".[1487]

(1732) The Notifying Party's decision to offer remedies that consist of a mix and match of Siemens' and Alstom's assets in circumstances where the different parts of a single Party's signalling business are interrelated (e.g., the ETCS wayside business shares assets with the urban signalling, ETCS OBU or interlockings businesses), has exacerbated the complexity of the First ETCS Wayside and Interlocking Commitments and the interdependencies between the retained and divested businesses.

(1733) The Remedies Notice recognises that access commitments are often complex in nature and therefore "*the Commission will only be able to accept such commitments where the complexity does not lead to a risk of their effectiveness from the outset and where the monitoring devices proposed ensure that those commitments will be effectively implemented and the enforcement mechanism will lead to timely results*".[1488] In this case, the lack of clarity and complexity of the commitments, including the inadequacy of the scope of assets included in the remedy package, gives rise to real risks that their effectiveness of the commitments be impaired from the outset.

(1734) Fourth, it is not clear from the First ETCS Wayside and Interlocking Commitments that provision for oversight by a monitoring trustee will alleviate all implementation risks or ensure timely results where access to certain assets or support is provided for subject to negotiation with the Merged Entity. The First ETCS Wayside and Interlocking Commitments are complex, unclear and the terms of licences and SSAs

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1486 Remedies Notice, paragraph 14.

1487 Remedies Notice, paragraph 36.

1488 Remedies Notice, paragraph 66.

are not precisely defined. In addition, the sheer number of items that are left for negotiation between the Merged Entity and the purchaser with the oversight of the monitoring trustee may adversely impact the operation of the divestment business during the time that those matters are being debated.

(1735) The ambiguity of the language in the First ETCS Wayside and Interlocking Commitments that will broadly define the terms of access, risks matters left for negotiation taking longer than is needed to enable the purchaser to operate the divestment business effectively. For example, for all technology to be made available by way of a 'technology transfer' arrangement,[1489] the following items will likely need to be agreed between the purchaser and the Merged Entity: (i) whether or not it is necessary that a baseline version of the technology (including drawings, designs, source code, etc.) will be provided to the purchaser; (ii) the conditions of that access will need to be determined with the purchaser and approved by the monitoring trustee; (iii) the scope of what constitutes drawings, designs, source code, technical data, manual and safety case in every given case; (iv) the terms under which training will be provided by Alstom to enable the purchaser to assimilate the know-how and know-why of the product and safety case; and (v) the duration of the 'transitional period' under which the support will be provided by Alstom, among other uncertainties.

(1736) In addition, the terms of the SSA proposed for platforms remain unclear (e.g., support from Alstom staff is provided at "*reasonable rates*" but that are also "*in line with Alstom's internal transfer prices*"). The Commission considers that there is a risk that the provision for the monitoring trustee to oversee the implementation of the First ETCS Wayside and Interlocking Commitments (per Section 4 of the First ETCS Wayside and Interlocking Commitments) will not alleviate the risks that the purchaser may have difficulties in obtaining in a timely manner the necessary technology, IP or support to operate the divestment business effectively after the merger.

(1737) For these reasons, the Commission considers that the commitments are not suitable to remedy the identified competition concerns in (i) ETCS ATP wayside (re-signalling and overlay) projects in the EEA; (ii) standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK; and (iii) the market for interlocking equipment in the UK. The Commission cannot conclude with the requisite degree of certainty that the commitments could be effectively monitored and enforced to be effective in practice.

9.8.4. The Second ETCS Wayside and Interlocking Commitments

(1738) The Second ETCS Wayside and Interlocking Commitments were submitted on 9 January 2019, that is 12 working days after the expiry of the deadline for submitting commitments established by Article 19(2) of Regulation (EC) No 802/2004, and hence at a very late stage of the proceedings.

(1739) As regards commitments submitted after that deadline ("late commitments"), the Remedies Notice provides (as explained in Section 10.1) that the Commission can only accept such modified commitments where it can clearly determine – on the basis of its assessment of information already received in the course of the investigation, including the results of prior market testing and without the need for any other market test – that such commitments, once implemented, "*fully and*

[1489] See footnote 10 of Schedule 5 of the First ETCS Wayside and Interlocking Commitments.

unambiguously" resolve the competition concerns identified and where there is sufficient time to allow for an adequate assessment by the Commission and for proper consultation with Member States.[1490]

(1740) The amendments to the First ETCS Wayside and Interlocking Commitments that have been reflected in the Second ETCS Wayside and Interlocking Commitments do not alter the Commission's assessment of the inadequacy of the proposed remedies, which are far from the divestment of a standalone business. Even if a behavioural remedy were acceptable in this case (which, for the reasons described above in Section 9.8.3.3 it is not), the amendments do not fully and unambiguously remove all of the concerns identified in Section 9.8.3.

(1741) In particular, but without limitation, the amendments do not alleviate the Commission's concerns as regards implementation risks, the viability of the business and its ability to compete effectively in the future. For example, the fact that the […] is now subject to a transfer of technology (i.e., an agreement consisting of a licence plus, where necessary and on terms to be determined, access to drawings, designs, source code, technical data, manuals, etc., for a baseline version of the technology) rather than a licence and SSA, does not resolve the Commission's concerns as to the dependency of the purchaser on the Merged Entity. The amendment does not change the fact that the ownership of the platform remains with the Merged Entity, which would likely adversely affect the purchaser's ability to independently develop the platform in order to operate with the same competitive force that Alstom does at present. This is the case having regard to the fact that all personnel (other than one individual) related to the development of the Alstom platforms are not being transferred, all manufacturing capability related to the platforms are also retained by the Merged Entity. […]. It is therefore highly uncertain whether the transfer of technology of the […] would enable the purchaser to compete effectively against the Merged Entity and other major signalling suppliers in the future.

(1742) Second, […], there remain several other platforms (e.g., platforms for object controllers, platforms for maintenance systems) which will be retained by the Merged Entity and made available to the purchaser by licence and SSA only. The Market Test shows that platforms are important to the functionality and the competitiveness of the signalling solution. According to the Remedies Notice, where a divestiture is impossible due to the nature of the business, the Commission may accept licensing arrangements but those arrangements "*will have to enable the licensee to compete effectively with the parties in a similar way as if a divestiture had taken place*".[1491] For the reasons set out in Section 9.8.1, the Commission considers that the purchaser will have insufficient autonomy to develop the platforms that remain subject to licensing arrangements.

(1743) Third, in respect of all licensed platforms, the terms under which those platforms will be licensed remain insufficiently clear to guarantee the independent and competitive operation of the divestment business. The Remedies Notice states that licences will "*normally be exclusive licenses and have to be without any field-of-use and any geographical restriction on the licensee. Where there might be uncertainty as regards the scope for the licence or its terms and conditions, the parties will have to divest the underlying IP right*".[1492] In the present case the licences are non-exclusive,

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1490 Remedies Notice, paragraph 94.

1491 Remedies Notice, paragraph 38.

1492 Remedies Notice, paragraph 38.

involve field-of-use restrictions (a purchaser cannot use the licensed technology for non-mainline signalling applications), and uncertain terms (e.g., "cost" and "fair and reasonable terms") to be determined in the future with the supervision of a monitoring trustee. The terms of those licences, as identified by respondents to the Market Test, are insufficiently clear to guarantee the independent and competitive operation of the divestment business.

(1744) Fourth, even if a behavioural solution were acceptable (which it is not in this case for the reasons explained at recitals (1731) to (1736)), the Commission considers that the commitments are not sufficiently clear as to the terms of the licence or the enforcement mechanisms needed to ensure that a purchaser could obtain access to the necessary assets and support in a timely manner to enable it to compete as effectively as Alstom does at present.

(1745) Fifth, while the amendments include the transfer of additional personnel in […], those transfers remain subject to the consent of the personnel and the site in […] remains with the Merged Entity. The full transfer of the […] site would have likely reduced risks associated with the transfer of personnel among other risks that are associated with the retention of sites relevant to the viability of a divestment business.

(1746) Sixth, the transfer of pending tenders for ETCS wayside projects in […] and of patents used exclusively for the ETCS wayside business in those countries does not alleviate the Commissions concerns as regards the likely negative impact on the competitiveness and viability of the divestment business given the: (i) retention of ETCS wayside backlog in […] (ii) retention of patents *not* exclusively used by the ETCS wayside business […] but shared with the divestment business (iii) retention of R&D personnel in […] relevant to Alstom's ETCS wayside and interlockings business.

(1747) Seventh, in cases where the identity of the purchaser is critical for the effectiveness of the proposed remedy, the Commission normally welcomes a fix-it-first solution.[1493] The Remedies Notice provides that where the parties identify and enter into a legally binding agreement with a purchaser outlining the essentials of the purchase during the Commission procedure, the Commission will be able to decide in the final decision whether the transfer of the divested business to the identified purchaser will remove the competition concerns.[1494]

(1748) In this case, the Commission has serious concerns around the effectiveness of the proposed remedy and it is not clear that any purchaser would be able to effectively implement the Second ETCS Wayside and Interlocking Commitments and/or operate the divested business in an effective and competitive manner. However, even in the hypothesis that the remedy package could be effective in the hands of a particular purchaser, the Notifying Party has not submitted a fix-it-first solution that may have been able to resolve those concerns.

9.8.5. *Final ETCS Wayside and Interlocking Commitments*

(1749) The Final ETCS Wayside and Interlocking Commitments were submitted on 25 January 2019, that is 24 working days after the expiry of the deadline for submitting commitments established by Article 19(2) of Regulation (EC) No 802/2004, and hence at a very late stage of the proceedings.

1493 Remedies Notice, paragraph 56.

1494 Remedies Notice, paragraph 56.

(1750) As regards late commitments, the Commission can only accept such modified commitments where it can clearly determine – on the basis of its assessment of information already received in the course of the investigation, including the results of prior market testing and without the need for any other market test – that such commitments, once implemented, "*fully and unambiguously*" resolve the competition concerns identified and where there is sufficient time to allow for an adequate assessment by the Commission and for proper consultation with Member States.[1495]

(1751) As described in Section 9.6.5, the change proposed by the Notifying Party in the Final ETCS Wayside and Interlocking Commitments relates predominantly to the treatment of ETCS backlog in […].[1496] The commitments now include Alstom's ETCS backlog in […] whereas that backlog was previously retained by the Merged Entity. The Notifying Party submits that the Final ETCS Wayside and Interlocking Commitments include together with the ETCS backlog in […], certain assets required to execute that backlog. The Commission has identified those assets as an extra […] personnel[1497] and potentially (though not clear) certain unspecified additional assets located in […] that are proposed to be transferred to another site.[1498] There is no change in the number of R&D personnel. For the avoidance of doubt, the amendments do not include the backlog for interlocking projects in […] in which countries the Commission has not raised concerns.

(1752) The Commission considers that the changes included in the Final ETCS Wayside and Interlocking Commitments do not address the Commission's concerns and the concerns reflected by the Market Test, about the purchaser's ability to effectively implement the commitments and to operate the business in a viable and competitive manner in order to replicate the competitive force of Alstom on the markets for ETCS wayside (overlay and re-signalling) projects and interlocking projects in the markets in which the Commission has raised concerns.

(1753) First, the transfer of contracts in […] are subject to consent of the customer and of any consortium members. However, the Notifying Party has not provided information about whether consents for the transfer of the "[…]" contract in […] are required or whether those consents have been obtained. Similarly, the Notifying Party has not provided information about whether the customer has consented to the transfer of the contract in […] ("[…]"). The Commission therefore has no indication as to whether either of these contracts will in fact be transferred. Beyond the value of these contracts, the certain transfer of these contracts would provide an opportunity for the purchaser to establish a relationship with a customer in which a significant proportion of Alstom's ETCS wayside and interlocking business is currently generated. In light of this uncertainty, the Commission retains doubts about the effect

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1495 Remedies Notice, paragraph 94.

1496 Other incremental changes, not related to the Geographic Carve Out, comprise amendments to the annexes including the deletion of sites from which the Parties previously proposed for a transfer of divested activity to another site. The Final ETCS Wayside and Interlocking Commitments do not elaborate on these deletions nor explain their impact the viability on the divestment business. The Parties have also provided further details on contracts to be transferred under the commitments, including whether those contracts require the consent of other consortium members or customers. There are several contracts for which information on consent was not available at the time the Second ETCS Wayside and Interlocking Commitments were submitted now show that consent of the customer and/or consent of other consortium members is required.

1497 One additional 'key personnel' is proposed to be transferred. It is not clear whether that personnel is included in the overall headcount figure.

1498 Schedule 5 of the Final ETCS Wayside and Interlocking Commitments, Annex 1.

of the Geographic Carve Out on the viability and competitiveness of the divestment business, as outline in Section 9.8.3.2.

(1754) Second, the Commission is not able to assess whether the transfer of an extra […] personnel in total would resolve the concerns raised by the Market Test as to the adequacy of the personnel included in the commitments. It is also not clear whether the consent of those […] personnel to be transferred has already been obtained. As the sites at which those persons are located are not being divested there remains a big risk that the personnel will not consent to being transferred.

(1755) Even if the additional personnel did consent being transferred, the results of the Market Test together with the Commission's assessment, (see Section 9.7.2.4 and recitals (1695), (1719) to (1723)), suggests that an addition of […] personnel would not be sufficient to address concerns as to the adequacy personnel to ensure the *future* competitiveness and viability of the divestment business as distinct from merely executing backlog projects. For instance, the addition of an extra […] personnel in […] does not change the overall view that around […]% of personnel at that site that are relevant to wayside/interlockings will be retained.[1499] Moreover, the amendments do not change the number of R&D personnel included in the package.

(1756) Third, the amendments do not address the integration risks and dependency that will likely result from the platform licensing arrangements, in relation to which see Section 9.8.1.2 and Section 9.8.4. The Final ETCS Wayside and Interlocking Commitments do not modify the licensing arrangements under the Second ETCS Wayside and Interlocking Commitments. The results of the Market Test were very negative as to the licensing of platforms and the Commission has not been able to satisfy itself, for instance through a subsequent market test, that the licensing 'plus' arrangement contemplated by the transfer of technology of one of the several platforms ([…]) would address all of those concerns.

(1757) Fourth, the amendments do not address the concerns raised in the Market Test and the Commissions' own assessment regarding the exclusion of the most recent technological developments ([…]). See Section 9.7.2.3, Section 9.8.3.1 and Section 9.8.4.

(1758) Fifth, the amendments do not address the concerns raised in the Market Test and the Commission's own assessment regarding the likely adverse impact on the competitiveness and viability of the divestment business as a result of the exclusion of important sites used for R&D, testing, manufacturing, and project management. The commitments do not modify the sites to be transferred (see Section 9.8.3.1).

(1759) Sixth, the amendments do not address the inherent uncertainty of the commitments which exacerbate integration risks and ultimately the viability of the business. Those uncertainties range from the scope of assets included and retained, the terms of licensing arrangements, the cost at which services and products will be supplied by the Merged Entity, the value of contracts to be transferred (many of which require the consent of customers and/or consortium partners), the number of personnel to be transferred in circumstances where sites are retained, and the impact that retaining proprietary hardware and manufacturing capability will have on the credibility of the purchaser as an effective independent competitor. All of these uncertainties and complexities give rise to real risks that the effectiveness of the commitments be

[1499] See also recital (1723).

impaired from the outset. See Section 9.8.3.3 and recitals (1698) to (1701), (1705), and (1720) to (1723).

(1760) Seventh, the Commission considers that due to these uncertainties and complexities, it is unlikely that any purchaser would be able to effectively implement the Commitments and/or operate the divested business in an effective and competitive manner. The addition of the ETCS backlog in […] does not change that position because the underlying structure of the remedy together with its inherent complications and uncertainties remains unchanged. Even in the hypothesis that the remedy package could be effective in the hands of a particular purchaser, the Parties have not submitted a fix-it-first solution.

9.8.5.1. Conclusion

(1761) In light of the late submission of the Second and Final Commitments, their complexity, their shortcomings in terms of scope, effectiveness and suitability, as well as the difficulties relating to their effective monitoring and enforcement, the Commission concludes that neither the First nor the Second nor the Final Commitments eliminate all the identified competition concerns in (i) ETCS ATP wayside (re-signalling and overlay) projects in the EEA; (ii) standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK; and (iii) interlocking equipment in the UK.

9.8.6. Suitable purchaser for the Final Mainline Signalling Commitments

(1762) The Commission doubts whether any purchaser could be considered suitable to purchase the Final ETCS Wayside and Interlocking Commitments or of the ETCS OBU Commitments, owing to the gross inadequacy of those remedy packages, as set out both in Section (3) and in this Section. Regardless of which entity purchased the package(s), the Commission considers that the viability and competitiveness of respective wayside and on-board businesses would still be at risk.

(1763) However, even if a purchaser could remedy the inadequacies of the Commitments, owning to the nature of its own existing business (which the Commission considers is not the case), the Notifying Party has not proposed a fix-it-first solution. In any case, Section 9.8.6 explains why certain purchasers who have expressed an interest in buying either or both the ETCS Wayside and Interlockings Commitments and the ETCS OBU Commitments do not meet the standard to qualify as suitable purchasers.

(1764) The standard for assessing the suitability of a purchaser is set out in the Remedies Notice, according to which the purchaser must be "*independent of and unconnected to the parties*" and it must "po*ssess the financial resources, proven relevant expertise and have the incentive and ability to maintain and develop the divested business as a viable and active competitive force in competition with the parties and other competitors*". The acquisition of the business by the proposed purchaser must "*neither be likely to create new competition problems nor give rise to a risk that the implementation of the commitments will be delayed*".[1500]

(1765) As outlined in Section 9.7.3, the responses from the Market Test show that a suitable purchaser would be an existing signalling supplier which is active in the EEA and has a proven track record. The responses also highlight the importance for the purchaser to have sufficient financial resources to support costly bidding investments, sufficient R&D capacity and a competitive force in innovation, local

[1500] Remedies Notice, paragraphs 48-49.

personnel and the ability to manage complex signalling projects. Moreover, the Commission considers that a suitable purchaser of the Final Mainline Signalling Commitments should have an existing mainline signalling business that can compensate for the exclusion from the Commitments of important assets, as outlined in this section, including its own platforms, manufacturing and assembly activities, R&D personnel, pipeline frontier technology and local execution teams.

(1766) On 10 January 2019, the Parties and […] signed a MoU pursuant to which the Parties provide […] with exclusive power to negotiate a purchase agreement for the Final ETCS Wayside and Interlocking Commitments but not the ETCS OBU Commitments.[1501] Each party to the agreement has the right to amend or waive any provision of the agreement and Siemens and Alstom also retain the right to terminate the proposed transaction without penalty under the agreement. The terms of the agreement allow […] to negotiate for the inclusion of extra assets and personnel that are not included in the Final ETCS Wayside Commitments or the Final ETCS OBU Commitments.

(1767) […].[1502][…]'.[1503] […]:

Figure 47: […]

[…]

Source: […]

(1768) […].[1504][…].[1505][…][1506][…].[1507][…].

(1769) In light of the above facts, the Commission concludes the following: First, […] is not a competitive constraint on the Parties outside of […] in mainline signalling. The Parties acknowledge that […] has never won a mainline signalling project when it has bid against Siemens or Alstom outside of […].[1508] Given the implementation risks associated with both the Final ETCS Wayside and Interlocking Commitments and the ETCS OBU Commitments, the Commission considers it is unlikely that […] will be able to grow into and become a competitive force and constraint on the major signalling suppliers, including the Merged Entity.

(1770) Second, given […] geographic footprint, the Commission is concerned that it will not be able to effectively implement the package which include geographically dispersed resources. […] itself has expressed "*concerns in relation to the implementation of this remedy and the manner in which the purchaser could protect the value transferred from an organizational structure perspective in order to avoid losing the experienced personnel transferred by the merged entity in the short run*".[1509] […] also considers that the distribution of personnel in different countries may "*hamper*

1501 Under the MoU, the Parties also agree to negotiate exclusively with […] in relation to the Very High-speed Rolling Stock Commitments and the commitments provided by the parties to resolve concerns in urban signalling markets.

1502 Notifying Part's response to the Statement of Objections, paragraph 155.

1503 Based on market shares (contestable + non-contestable) for ETCS ATP wayside re-signalling projects, ETCS ATP wayside overlay projects, ETCS OBU projects and standalone interlocking projects in the period 2008-2018 in the EEA; shares as provided in the economic annex to this decision.

1504 Form CO, paragraph 602; Parties' response to the Statement of Objections, paragraph 289; […].

1505 […].

1506 Based on the CPL.

1507 Parties' response to the Statement of Objections, paragraph 192; Form CO, paragraphs 592, 602.

1508 Parties' response to the Statement of Objections, paragraph 192; Form CO, paragraph 192.

1509 […].

the practical operation of the business in the short/mid-term and, in turn, the credibility of the purchaser as a competitive force in the market upon completion".[1510]

(1771) Third, […] lacks the engineering, R&D and project execution capacity of the Parties. As outlined in Section 6.3.2.2 and Section 6.3.2.6, the Parties are leaders in innovation in ETCS wayside and ETCS OBUs. There are only two other competitors, apart from the Parties, who have developed ERTMS Level 2 Baseline […] technology. The market investigation demonstrates that Siemens and Thales both have in delivery an ERTMS Level 2 Baseline […] wayside technology in […], while Siemens has […].[…] itself recognises that "*Siemens and Alstom are market leaders in innovation, particularly in the deployment of ERTMS baseline 3, ATO systems for mainline railways, digitalization and the use of big data*".[1511] […] on the other hand has limited R&D and engineering capabilities compared to the Parties.

(1772) The R&D investment that […] is able to undertake in mainline signalling is very small compared with that of larger suppliers, like Siemens and Alstom. Yet, the continued deployment of ERTMS in the coming years will be an important opportunity for the purchaser to maintain and develop the divestment business to compete effectively for these projects. The association of European Rail Infrastructure Mangers (EIM) considers that ERTMS is the "*cornerstone of the European Union's railway policy*" and is also an "*innovation enabler*" for signalling suppliers where today, most of the innovation in the signalling market is related to ERTMS. The purchaser will therefore need to have access to sufficient R&D personnel and know-how to undertake developments to respond to customer needs as they roll out ERTMS on their networks.

(1773) Fourth, […] will need to be able to complement the transferred assets with its own resources, given the carve-outs and exclusions from the Final Mainline Signalling Commitments of important R&D capacity, including personnel, as well as pipeline technology ([…]). For example, as stated in recital (1755) of a total […] personnel in […] relevant to wayside/interlockings, just […] personnel are proposed to be transferred meaning […]% of personnel are to be retained.

(1774) In order to compensate for these exclusions, a suitable purchaser will need to have even more of its own R&D capacity than otherwise would have been the case if the packages included all R&D personnel, pipeline and the latest technology in all Member States in which the Parties carry out the respective businesses to be divested. The Commission considers that it is unlikely, having regard to the R&D capability of […] that […] will be able to undertake the necessary investments to ensure the viability of the divestment business let alone replicate the competitive force of either Siemens or Alstom.

(1775) Fourth, […] lacks the financial resources to bid at the levels exhibited by either of the Parties and therefore lacks the ressources to maintain the level of competitive tension that currently exists in the mainline signalling markets in which the Commission has concerns. EIM notes that ERTMS requires "*heavy investments*". […].[1512][…].[1513][…]. This would likely limit the competitive force the divestment business would exert in the hands of […].

1510 […].

1511 […].

1512 Parties' response to the Commission's request for information RFI 178, question 27.

(1776) The Market Test and the Parties acknowledge that bidding for mainline signalling projects is costly. Between 2008-2018, Siemens was able to bid […] times more than […] in contestable ETCS OBU projects in the EEA. Alstom bid […] times more often than […] in contestable ETCS wayside (re-signalling and overlay) projects, and […] times the number of standalone interlocking projects.[1514] Almost the entirety of […] ETCS wayside project business and interlocking business in the EEA is located in […].

(1777) […] would therefore likely face challenges in maintaining the competiveness of the divested assets, against major signalling suppliers like the […]. The Parties are both much larger mainline signalling suppliers than […]: the Parties each represent between 20-40% of the total revenues from mainline signalling projects in the EEA, whereas […] represents a mere […]%.[1515] The carve-out of some of Alstom's most lucrative interlocking businesses, in […] (even if horizontal concerns do not arise in standalone interlocking projects in these countries), will make it even more difficult for […] to operate the divestment business at the same level as that of Alstom and Siemens do at present in terms of financial and human capacity to invest in bidding and develop products.

(1778) Fifth, the Parties argue that the exclusion of interlocking technologies in […] from the Final ETCS Wayside and Interlocking Commitments will not negatively affect the viability of the divestment business. The Parties argue that the purchaser can use or develop their own interlockings when tendering for re-signalling contracts that arise in those countries. However, although […] is not a new supplier and has been active in mainline signalling at least for ten years if not more, the fact remains that […] has no standalone interlocking business outside of […].[1516] It is therefore unlikely that […], as distinct from another purchaser, would be able to easily and cost-effectively develop interlockings in order to compete effectively against the Merged Entity in upcoming ETCS re-signalling projects. Moreover, the carved-out Member States today represent a significant proportion of Alstom's ETCS ATP wayside project business in the EEA. Accordingly, the Commission has concerns about […] ability to maintain the viability of the divestment business, let alone its ability to develop its references by winning upcoming tenders in these countries with a view to improving its competiveness for ETCS ATP wayside projects in the EEA as a whole.

(1779) Sixth, since […] existing mainline signalling activity is limited almost exclusively to […], it is unlikely to have local execution teams in the countries in which Siemens is active and which are excluded from the ETCS OBU Commitments. This would likely negatively impact […] ability to mirror the bidding constraint that Siemens exercises.

(1780) Seventh, the Commission has serious concerns about […] ability to execute the platform migration contemplated under the Final ETCS OBU Commitments while maintaining the competitiveness of the divestment business. As outlined in Section 9.7.1.2, the market test responses from larger mainline signalling suppliers ([…]) noted that while a migration may be technically feasible it would be complex and

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1513 Parties' response to the Commission's request for information RFI 178, question 27, paragraph 258.

1514 Figures are based on contestable tenders for the period 2008-2018.

1515 Based on market shares (contestable + non-contestable) for ETCS ATP wayside re-signalling projects, ETCS ATP wayside overlay projects, ETCS OBU projects and standalone interlocking projects in the period 2008-2018 in the EEA; shares as provided in the economic annex to this decision.

1516 Parties' response to the Statement of Objections, paragraph 192.

economically impractical. Even […] itself expressed reservations about the migration.[1517]

(1781) Overall, the Commission concludes that […] will likely be capacity constrained, lacks the financial and human resources to maintain the divestment business as an active and competitive force across the EEA in competition with the Parties and other mainline signalling competitors like […]. The Commission's view takes into account the inadequacy of the commitment package and the need for the purchaser to navigate implementation risks while developing the business into a competitive force in all markets in which the Commission has raised competition concerns.

9.8.7. Conclusion

(1782) In light of the above considerations, in particular the late submission of the commitments, their complexity, their shortcomings in terms of scope, effectiveness and suitability, as well as the difficulties relating to their effective monitoring and enforcement, the Commission concludes that: neither the first nor the second nor the final proposed ETCS ATP wayside and interlocking commitments eliminate all the identified competition concerns in (i) ETCS ATP wayside (re-signalling and overlay) projects in the EEA; (ii) standalone interlocking projects in Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain, and the UK; and (iii) interlocking equipment in the UK; and neither the first nor final proposed ETCS OBU commitments eliminate all the identified competition concerns in (i) ETCS OBU projects in the EEA; and (ii) legacy OBU projects in Belgium.

10. CONCLUSION

(1783) Based on the above analysis of the available evidence, the Commission concludes that the Transaction is incompatible with the internal market and the functioning of the EEA Agreement.

[1517] See recital (1544).

HAS ADOPTED THIS DECISION:

Article 1

The notified operation whereby Siemens acquires sole control of Alstom within the meaning of Article 3(1)(b) of Regulation (EC) No 139/2004 is hereby declared, pursuant to Article 8(3) of that Regulation, incompatible with the internal market and the functioning of the EEA Agreement.

This Decision is addressed to:

Siemens AG

Legal Competition

Otto-Hahn-Ring 6

D-81739 Munich,

Germany

Done at Brussels, 6.2.2019

For the Commission

(Signed)
Margrethe VESTAGER
Member of the Commission

ANNEX I: THE ECONOMIC ANALYSIS OF BIDDING DATA

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1. INTRODUCTION

1.1. Outline

(1) This Annex to the Decision presents an economic analysis of the bidding data submitted by the Parties to the Commission.

(2) The Annex is structured as follows:

a. Section 1 presents the framework and methodology used for the assessment of the bidding data;

b. Section 2 presents the Commission's analysis of bidding data for the rolling stock markets;

c. Section 3 presents the Commission's analysis of bidding data for the mainline signalling markets.

(3) The analysis presented in this Annex is based on the latest version of the bidding data received from the Parties. For rolling stock the data was received on 16 November 2018, in the Parties' Response the Statement of Objections (SO). For mainline signalling this data was received on 29 November 2018, in response to Request for Information RFI 174 (Q8). The two main datasets used for the analysis consist of the so-called Consolidated Project List (CPL), that is the comprehensive list of tender procedures that took place (to the best of the Parties' knowledge) over the period 2008-2018. The CPL consists of all tenders in which either Siemens or Alstom participated, as well as the tenders in which Siemens or Alstom did not participate (to the best of the Parties' knowledge) as regards the relevant markets for rolling stock and signalling.

1.2. Framework

(4) In this Section, the Commission sets out the main components of its bidding analysis, which have been conducted across the following rolling stock and mainline signalling markets: high and very high-speed, interlockings, wayside ATP ETCS (resignalling only), wayside ATP ETCS (overlay only), OBU.

(5) For each market, the Commission presents in this Annex results for the longest time period for which data is available (2008-2018) as well as for the last five years (2013-2018). Given the low frequency with which tenders take place, certain statistics (especially those for the 2013-2018 period) are based on a limited number of observations and hence have to be treated with caution. This is for instance the case for High-speed and Very High-speed rolling stock when the analysis is restricted to the last five years. In such instances, the Commission has placed more weight on the statistics based on the longer time span.

(6) As a second remark, throughout this annex, the Commission presents the results of its bidding analyses based on so called competitive (or contestable) tenders.[1] The information regarding the contestability status of each tender was provided by the Parties. The Parties defined a tender as contestable if to the best of their knowledge the procedure was open to competition.[2]

(7) The bidding analysis based on contestable tenders is a complement for the information provided by market shares based on contestable and non-contestable tenders.[3]

(8) Isolating the competitive tenders from the non-competitive ones is informative because it allows focussing the analysis on tenders where there was effective competitive interaction between Original Equipment Manufacturers ("OEMs"), that is, the tenders that are more likely to be affected by a potential loss of competition between the Parties.

(9) It is nevertheless informative to look at market shares based on non-contestable tenders too. First, sales resulting from such tenders may be recurrent revenues (e.g. from services) relating to the win of a previous contestable tender. Second, those sales may relate to a win in a recent non-contestable tender which, even if it was not subject to competition, contributes to a firm's revenue streams and related ability to recurrently invest in ongoing R&D efforts.

(10) As a third remark, the Commission notes that the results of the bidding analysis are presented at the EEA level in this Annex, with a number of exceptions:

a. For Very High-speed, also market shares at worldwide level (excluding China, Japan and South Korea) [4] are presented.

b. For interlockings, also market shares at national level are presented. Given the limited number of tenders often available even at the overall EEA level, bidding statistics at national level are not further discussed in this Annex.

(11) All product and geographic segmentations are in any event presented in this Annex without prejudice to the position presented in the main body of the Decision in respect of product and geographic market definition.

(12) The main components of the Commission's analysis of bidding data are the following:

a. **Market shares** (overall and based on contestable tenders only);

b. **Winning rates** (share of contestable tenders won by each player[5]);

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1 The only exception are the market shares, for which two versions are presented: based on contestable and non-contestable tenders, as well as based on contestable tenders only.

2 The Commission notes that while most of the contestable tenders in the CPL provided by the Parties feature more than one bidder, in certain markets there is a non-negligible number of contestable tenders where the only known participant was the winner (e.g. this occurs for circa 25% of contestable tenders in interlockings). The Parties explained that for certain tenders while according to their knowledge the procedure was open to competition, either only one competitor placed a firm bid or the identity of the other bidders is unknown to them.

3 See also the discussion at Section 5.3.3 of the Decision.

4 This is due, inter alia, to the argument raised by the Parties that Siemens has not won any High-speed or Very High-speed tender over the period 2013-2018 in the EEA and hence its competitive strength would allegedly have decreased over time (see discussion at Section 5.3.3 of the Decision).

5 The difference between winning rates and market shares based on contestable tenders is that winning rates are calculated based on tender counts, while market shares are calculated based on the overall value of the tenders.

c. **Participation rates** (share of contestable tenders in which each player has participated);

d. **Meeting rates** (proportion of contestable tenders in which the Parties met, compared to the proportion of contestable tenders in which the Parties met other rivals);

e. **Conditional participation and winning rates** (participation and winning rates when limited to the subset of tenders in which Siemens or participated);

f. **Average number of bidders** participating in tenders;

(13) The Commission also requested the Parties (via RFI 105) to supplement the CPL with data relating to (i) the ranking of competitors for each tender and (ii) margins, to the extent to which these data were available in the Limit of Authority ("LoA") requested via RFI 37. The Parties provided their response to RFI 105 on 18 September 2018.

(14) […]. LoAs are the internal documents produced by Siemens to support its decision to bid or not and, if bidding, what strategy (e.g. pricing) to follow.

(15) The Commission considers that for most market segments the number of tenders for which the LoAs are available does not allow the systematic generation of reliable statistics. As such, the results of the Commission's analysis of the rankings data is only presented in the Decision for ATP wayside ETCS – Resignalling projects, which is the only segment for which a reasonable number of data points is available (circa 20). Even for this market, the Commission presents the results only as an illustration because the coverage of the data in terms of proportion of contestable tenders for which the rankings information is available is limited (circa 20 out of […][6][…]).

(16) The Commission requested Siemens and Alstom to extract **margin data** from their internal documents generated in preparation for each bid in which Siemens and Alstom participated.

(17) In principle, when margin data is available for a high proportion of tenders in which the Parties participated, it is possible to assess whether measures of competition (such as the number of bidders or the presence of the other merging Party specifically) have an impact on the margin expected (or realised) by each of the Parties.

(18) However, the margin data provided (for both Siemens and Alstom) is of very poor quality in terms of (i) coverage[7] and, more importantly, (ii) quality[8]. Moreover, the Commission considers that the large heterogeneity across projects in each of the relevant markets for which data are available does not allow making meaningful comparisons of margins across projects.

Thus, the winning rates weighted by tender value are de facto the same as the market shares based on contestable tenders.

6 Siemens produces LoA documents […].

7 That is, the proportion of tenders for which the data are available. For example, focussing on Siemens, based on its reply to RFI 126, for ROS/Mainline the margin data is available for […] tenders (out of […] tenders Siemens participated in) and for […] ROS/High-Speed (out of […] tenders Siemens participated in) only while for Mainline Signalling it is available for […] Interlockings tenders (out of […] tenders in which Siemens participated) and […] Wayside ATP ETCS tenders (out of […] tenders in which Siemens participated). As noted in the response to RFI 105, "data availability is generally patchy".

8 […]. In the absence of a clear and unified measure of margins and in light of the significant heterogeneity across tenders, a meaningful comparison across tenders would require a tender-by-tender review of the information provided by the Parties. Such an exercise is not feasible within the timeframe available for review under the Merger Regulation.

1.2.1. Market shares and winning rates

(19) As a first indicator of market power, the Commission has examined the market share by value of each OEM based on (i) all tenders (i.e. competitive and non-competitive tenders) and based on (ii) competitive tenders only.

(20) The Commission has also computed the winning rates, defined as the share of competitive tenders won by each OEM based on the number (as opposed to value) of projects won. While winning rates are informative because each project constitutes one interaction between OEMs, the shares of tenders won based on sales value are more apt to capture the full extent of market power held by each OEM (for example, due to the large asymmetry in the size of different projects).[9]

(21) The markets where the Parties are active are characterized by large and infrequent tenders. For markets where the number of tenders in the CPL is very limited, the inference that can be drawn from these statistics is also limited.

(22) In addition, the margin data are available for only a limited subset of the projects in each CPL, making any conclusions from such data even less reliable. Signalling and rolling stock projects are very heterogeneous in terms of size, scope and involve different degrees of specific adaptation. As a result, the Parties' (prospective) margins are not comparable across these projects and it is not possible to draw any robust conclusions from variations in these margins.[10]

1.2.2. Participation rates[11]

(23) To further assess the importance of the Parties compared to their competitors, the Commission calculated the frequency with which each player participated in tenders in any given market.

(24) Given the significant commitment at the bidding stage (i.e., the stage when a firm bid is submitted) in terms of cost of participation, time, and resources necessary, a supplier likely only participates in tenders when it believes it has a reasonable chance of meeting the customer requirements and winning. As such, the Commission considers participation in tenders to be informative on the commitment/strength of each player in a given market.

(25) At the same time, the statistics on participation should be examined together with the corresponding statistics for winning rates. Indeed, according to the data of the Parties certain

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9 For the calculation of the winning rates, in the case of wins by consortia the Commission has attributed one win to each of the two consortia members. For this reason, there may be more winners in total than the total number of tenders. For the value-weighted winning statistics the Commission used the tender value associated for the individual consortia members. Therefore, the sensitivity analysis presented whereby the winning rates are weighted by tender value de facto coincides with the market shares based on contestable tenders only.

10 As noted by Siemens in response to RFI 57, "*The markets where the Parties are active are characterized by large and infrequent tenders. As a result, most of these markets had a very limited number of tenders in the period covered by the CPLs and it is not possible to draw any statistical inferences from these small sample sizes. In addition, the margin data are available for only a limited subset of the projects in each CPL, making any conclusions from such data even less reliable. Signaling and rolling stock projects are very heterogeneous in terms of size, scope and involve different degrees of specific adaptation. As a result, the Parties' (prospective) margins are not comparable across these projects and it is not possible to draw any robust conclusions from variations in these margins*".

11 For the calculation of participation rates, in the case of consortia, the Commission has counted each consortium member as one bidder. The Commission has also produced value-weighted participation statistics, that is, statistics for which participation is weighted by the corresponding tender value. In case of consortia, the Commission weighted the participation by each consortium member by the full tender value.

players are reported as having participated substantially, even though the corresponding winning rates are quite low.

1.2.3. Meeting rates

(26) The Commission has calculated meeting rates as the number of contestable tenders in which Siemens and Alstom have met as a proportion of the total number of contestable tenders that occurred in the market during the same period of time.

(27) These statistics are informative on the proportion of contestable tenders for which (based on ex-post information) the elimination of independent competition between Siemens and Alstom is more likely to have an effect.[12]

(28) The Commission notes that these statistics have to be considered in combination with the statistics on the conditional participation rates (see Section 1.2.4), as there may be markets in which all players happen to meet relatively infrequently (for instance due to capacity constraints inducing each company to participate only in a limited number of projects a year) but nevertheless the Parties may be the two players who meet most often. As such, a finding of a relatively low meeting rate in absolute terms between the Parties is not necessarily indicative in itself of the Parties being distant competitors. A finding that the Parties do not meet very frequently (based on meeting rates) but nevertheless meet significantly more frequently with one another than with non-merging parties (based on the conditional participation rates) would suggest that the parties are close competitors.

1.2.4. Conditional participation and winning rates[13]

(29) In order to assess the closeness of competition between Siemens and Alstom in any given market, the Commission examined (i) who are the most frequent bidders when Siemens [Alstom] participates and (ii) who are the most frequent winners when Siemens [Alstom] participates.

(30) The Commission considers these statistics to be informative because (i) the statistics on conditional participations indicate players that each merging Party meets more often in tenders and (ii) the statistics on the conditional wins indicate which players on average are more likely to have exerted a strong competitive impact on each merging Party.

2. QUANTITATIVE ANALYSIS OF BIDDING DATA FOR ROLLING STOCK

(31) This Section presents the Commission's results of its analysis of bidding data for the rolling stock markets.

(32) Given the limited number of tenders available and the long cycle for the renewal of a High and Very High-speed rolling stock fleet, the Commission considers the market shares and bidding statistics based on the full period 2008-2018 generally more informative than statistics based on the period 2013-2018. Importantly, as discussed in Section 5.3.3 of the Decision, for High-speed and Very High-speed, the Commission considers that figures for the period 2013-2018 do not

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12 The Commission notes that in cases in which the exact identity of the bidding participants is not perfectly known ex-ante (as is the case here), the meeting rates do not exactly identify the universe of tenders in which the transaction is expected to have an impact. This is because the determinant of each firm's pricing decisions is the ex-ante expectation and not the ex-post realisation of the participating rivals.

13 For the calculation of the participation or winning rates when Siemens [Alstom] bids, the Commission has not counted the participations or wins of companies bidding within a consortium with Siemens [Alstom].

allow for a robust and unbiased representation of the competitive dynamics in High and Very High-speed.

(33) Similarly, certain sensitivities presented by the Commission in the tables below (such as the ones restricting the sample of tenders to the top 50% of tenders by value) are only reported for completeness.

2.1. High and Very High-speed Rolling Stock

(34) Table 48 presents the key characteristics of each contestable tender worldwide excluding China, Japan and South Korea for the period 2008-2018. There were only […] contestable tenders in High-speed and […] contestable tenders in Very High-speed worldwide excluding China, Japan and South Korea in the last 10 years. In the EEA, there were only […] contestable High-speed and […] contestable Very High-speed tenders during that period.

Table 48. Overview of all contestable High and Very High-speed tenders worldwide, excluding China, Japan and South Korea (2008-2018)

Market	Region	Country	Year	Winner	Individual supplier	Value (EURm)	Bid 1	Bid 2	Bid 3	Bid 4	Bid 5
[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
					[…]	[…]					
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
HS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
					[…]	[…]					
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
					[…]	[…]					
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	
VHS	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	[…]	

Source: Commission analysis based on Notifying Party's Reply to the SO.
Note: SIE=Siemens, ALS=Alstom, HA=Hitachi-Ansaldo, BT=Bombardier, RoW=Rest of the World.
Note2: Tenders won by consortia are split across two lines (one line for each consortium member).

2.1.1. Market shares

(35) Table 49 presents market shares computed from the Parties' CPL.

(36) Siemens and Alstom together have won […]% of all High and Very High-speed projects (contestable and non-contestable) in the EEA and Switzerland. To investigate Siemens and Alstom's market position further, the Commission also restricted the CPL to contestable projects only (based on the Parties' definition of contestability). The combined market share based on contestable tenders is [60-70]% for the 2008-2018 period and [60-70]% for the 2013-2018 period.

(37) The competitor with the largest share after the Parties is Bombardier, a player who has never won a High-speed or Very High-speed tender outside a consortium (Hitachi/Ansaldo or Siemens).

Table 49. Market shares (EEA plus Switzerland, High and Very High-speed)

	Contestable + Non Contestable		**Contestable**	
	2008-2018	**2013-2018**	**2008-2018**	**2013-2018**
Siemens	[30-40]%	[10-20]%	[30-40]%	[0-5]%
Alstom	[30-40]%	54%	[30-40]%	[60-70]%%
Combined	**[60-70]%**	**[60-70]%**	**[60-70]%**	**[60-70]%**
Bombardier	[10-20]%	[0-5]%	[10-20]%	[0-5]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Hitachi / Ansaldo	[5-10]%	[0-5]%	[5-10]%	[0-5]%
Newag	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Pesa	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Skoda	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Stadler	[0-5]%	[10-20]%	[5-10]%	[20-30]%
Talgo	[0-5]%	[5-10]%	[0-5]%	[5-10]%
Total value [EUR million]	[…]	[…]	[…]	[…]

2.1.2. Participation and winning rates

(38) Table 50 shows the proportion of tenders in which each player has participated by placing a firm bid. For contestable tenders between 2008 and 2018, Siemens and Alstom are the two most frequent bidders with […]% and […]% participation, respectively. The next most frequent bidder is Bombardier with […]%, followed by Hitachi/Ansaldo, Talgo and Stadler with […]% each.

(39) Similarly, if participation is weighted by the corresponding tender value (to give proportionally more weight to participations in larger tenders), Alstom bid in […]%, Siemens in […]% and Bombardier in […]% of the overall tenders weighted by value.[14]

(40) A significant part of the participations by Bombardier and Hitachi / Ansaldo were not on a standalone basis but rather within a consortium.

[14] The Commission has weighted the participation by each firm by the corresponding tender value. In case of consortia, the Commission took account of the full tender value for each consortium member, that is, weighted the participation by each consortium member by the full tender value.

Table 50. Participation (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(41) While the statistics on participation are informative, they should be interpreted in light of the number and value of tenders won. If a firm bids relatively frequently but is not successful in many tenders, it is expected to be exerting a more limited competitive pressure on rivals than a firm bidding as frequently but winning more tenders.

(42) Table 51 shows that Siemens and Alstom were the most successful players. They won a total of […] contestable tenders out of the […] that took place during 2008-2018 (Alstom […] and Siemens […]) in the EEA. Bombardier won […] tenders as part of a consortium and CAF, Hitachi/Ansaldo and Talgo won […] tender each. When weighting by value, Siemens and Alstom were equally successful winning […]% each, followed by Bombardier with […]% and Hitachi/Ansaldo with […]%.[15]

[15] For the value-weighted winning statistics, in case of a win by a consortium the Commission attributed to each consortium member the portion of tender value effectively assigned to that consortium member.

Table 51. Winning rates (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

2.1.3. Closeness of competition

(43) Table 52 shows that over the period 2008 to 2018 Siemens and Alstom met in more than half of the High and Very High-speed tenders that took place. When restricting the subsample to tenders with more than one confirmed bid, the meeting rate is […]%.

Table 52. Meeting rates (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Only Alstom	[…]	[…]	[…]	[…]	[…]
Only Siemens	[…]	[…]	[…]	[…]	[…]
Both parties	[…]	[…]	[…]	[…]	[…]
None of the Parties	[…]	[…]	[…]	[…]	[…]
Total number / Value	[…]	[…]	[…]	[…]	[…]

(44) Table 53 focuses on the tenders in which Siemens was present. It displays the proportion of instances in which each rival was present. […], also Alstom was present.

Table 53. Participation when Siemens bids (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million] [16]	[…]	[…]	[…]	[…]	[…]

(45) Table 54 focuses on the tenders in which Alstom participated and presents the proportions of these tenders in which each of the rivals was present. Out of the tenders between 2008 and 2018, Siemens was the most frequent bidder with […]%, followed by Bombardier ([…]%), Hitachi/Ansaldo ([…]%) and Talgo ([…]%).

16 The market size in this case is limited to the contestable tenders in which Siemens participated.

Table 54. Participation when Alstom bids (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million] [17]	[…]	[…]	[…]	[…]	[…]

(46) In order to further assess the closeness of competition between the Parties, the Commission looked at which players won the tenders in which Siemens (respectively, Alstom) participates.

(47) Table 55 describes the winning frequency for the […] tenders in which Siemens was present. Siemens won […] of them, the other […] were won by Alstom, Stadler and Talgo respectively. The […] largest tenders in which Siemens participated (column "top 50% value sample") were won by Siemens and Alstom.

[17] The market size in this case is limited to the contestable tenders in which Alstom participated.

Table 55. Winning rates when Siemens bids (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million] [18]	[…]	[…]	[…]	[…]	[…][19]

(48) Table 56 depicts the winning frequeny for tenders in which Alstom bids. Of the […] contestable High and Very High-speed tenders in which Alstom participated, Alstom itself won […]. The second most succsessful winnner was Siemens ([…]), followed by Bombardier ([…] wins, always in a consortium). Out of the […] largest tenders in which Alstom participated (column "top 50% value sample") […] were won by either Siemens, Alstom or a consortium including Siemens and Alstom, while […] was won by a consortium of Bombardier and Hitachi-Ansaldo.

[18] The market size in this case is limited to the contestable tenders in which Siemens participated.

[19] This market size for the conditional winning rates (Table 55) is lower than the market size for the conditional participation rates (see Table 53) because there is […]. This tender is not considered for Table 55 because otherwise […].

Table 56. Winning rates when Alstom bids (EEA plus Switzerland, High and Very High-speed)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Hitachi / Ansaldo	[…]	[…]	[…]	[…]	[…]
Newag	[…]	[…]	[…]	[…]	[…]
Pesa	[…]	[…]	[…]	[…]	[…]
Skoda	[…]	[…]	[…]	[…]	[…]
Stadler	[…]	[…]	[…]	[…]	[…]
Talgo	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million] [20]	[…]	[…]	[…]	[…]	[…]

2.1.4. Number of participants

(49) Table 57 shows the average number of participants in High and Very High-speed tenders overall and restricting to the set of tenders in which both Siemens and Alstom participated.

(50) The results show that:

a. The […] tenders in High and Very High-speed over the period 2008-2017 attracted on average […] bidders. […] of these tenders attracted only two or less bidders.

b. Siemens and Alstom both bid in […] of the […] High and Very High-speed tenders and were the only two bidders in […] tenders. Therefore, for these […] out of […] tenders, Siemens and Alstom were certainly the customer's preferred (or only) options.

[20] The market size in this case is limited to the contestable tenders in which Alstom participated.

Table 57. Number of participants (EEA plus Switzerland, High and Very High-speed, 2008-2018)

Number of Bidders	Frequency		Frequency (%)	
	Overall	Both bid	Overall	Both bid
	2008-2018	2008-2018	2008-2018	2008-2018
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
6	[…]	[…]	[…]	[…]
average (including 1-6 bids)	[…]	[…]	[…]	[…]
average (including 2-6 bids)	[…]	[…]	[…]	[…]

2.2. Very High-speed

(51) Very High-speed tenders are those for trains capable of fulfilling a required speed of 300 km/h or more. Table 48 lists all contestable Very High-speed tenders worldwide during the period 2008-2018. Given the very limited number of contestable Very High-speed tenders during the period 2008-2018, the Commission's analysis of bidding data for Very High-speed is limited to presenting market shares only (Table 58 and Table 59).

(52) Considering the […] contestable and non-contestable tenders, the Parties have a combined market share of [70-80]% in the EEA and Switzerland. To investigate Siemens and Alstom's market position further, the Commission restricted the CPL to the […] contestable projects. The combined market share based on contestable tenders is [60-70]% for the 2008-2018 period. If the sample period is limited to the last five years only, the number of tenders drop to […] (contestable and non-contestable) and […] (contestable only). Despite these very few tenders, the high combined market shares are confirmed.

(53) The competitor with the largest share after the Parties is Hitachi/Ansaldo followed by Bombardier and Talgo. The Commission notes that focusing on the contestable tenders, none among Hitachi/Ansaldo, Bombardier and Talgo has won a tender on its own (that is, outside a consortium) in the last ten years, with the exception of Talgo in Spain once.

Table 58. Market shares for Very High-speed, EEA plus Switzerland

EEA plus Switzerland	Contestable + Non Contestable		Contestable	
	2008-2018	2013-2018	2008-2018	2013-2018
Siemens	[10-20]%	[5-10]%	[10-20]%	[0-5]%
Alstom	[50-60]%	[70-80]%	[50-60]%	[80-90]%
Combined	**[70-80]%**	**[80-90]%**	**[60-70]%**	**[80-90]%**
Bombardier	[5-10]%	[0-5]%	[10-20]%	[0-5]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Hitachi / Ansaldo	[10-20]%	[0-5]%	[10-20]%	[0-5]%
Newag	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Pesa	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Skoda	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Stadler	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Talgo	[5-10]%	[10-20]%	[5-10]%	[10-20]%
Value [EUR million]	[…]	[…]	[…]	[…]
Number of tenders	[…]	[…]	[…]	[…]

(54) While Table 58 solely includes tenders within the EEA and Switzerland, Table 59 examines the market shares for all […] Very High-speed tenders globally but excluding China, Japan and South Korea. The Parties have a combined market share of [60-70]% when looking at the period 2008 to 2018. Remaining suppliers only gain [5-10]% (Bombardier and Hitachi/Ansaldo, each) and [10-20]% (Talgo). CRRC has a market share of [0-5]%, Kawasaki, Nippon Sharyo both below [0-5]%. Moreover, when restricting the sample to the […] contestable tenders only the Parties' combined market share remains large with [60-70]%. Other suppliers achieve only [5-10]% (Bombardier, Hitachi/Ansaldo each) and [10-20]% (Talgo), respectively.

Table 59. Market shares for Very High-speed, Global excl. China, Japan and South Korea[21]

Global excl. China, Japan and South Korea	Contestable + Non Contestable		Contestable	
	2008-2018	2013-2018	2008-2018	2013-2018
Siemens	[10-20]%	[10-20]%	[10-20]%	[10-20]%
Alstom	[50-60]%	[60-70]%	[40-50]%	[80-90]%
Combined	**[60-70]%**	**[80-90]%**	**[60-70]%**	**[90-100]%**
Bombardier	[5-10]%	[0-5]%	[10-20]%	[0-5]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Hitachi / Ansaldo	[5-10]%	[0-5]%	[10-20]%	[0-5]%
Newag	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Pesa	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Skoda	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Stadler	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Talgo	[10-20]%	[10-20]%	[10-20]%	[5-10]%
Value [EUR million]	[…]	[…]	[…]	[…]
Number of tenders	[…]	[…]	[…]	[…]

3. QUANTITATIVE ANALYSIS OF BIDDING DATA FOR MAINLINE SIGNALLING

(55) This Section presents the Commission's analysis of bidding data for the relevant mainline signalling markets for which sufficient data is available for conducting a meaningful bidding analysis.

3.1. Interlockings

3.1.1. Market shares

(56) The Commission assessed the importance of the Parties and their competitors by analysing market shares for two different time periods, 2008-2018 and 2013-2018 and two different samples, all projects (contestable and non-contestable) and only contestable projects.

(57) Table 60 presents the EEA-wide market shares in the interlockings segment, for different time periods and samples of projects.

[21] This geographic definition also excludes "Hong Kong".

(58) The Parties combined have been awarded [60-70]% of all interlocking projects (contestable and non-contestable) in the EEA in the period 2008-2018. Restricting the sample to the more recent period 2013-2018, the combined market share increases to [70-80]%, where in both instances Siemens is the larger player. Thales is the third largest individual player with a market share of [10-20]% for the period 2008-2018 and [5-10]% for 2013-2018.

(59) In the interlocking segment, a large portion (approximately [50-60]%) of the overall market is driven by non-contestable projects or sales. To investigate Siemens and Alstom's market position further, the Commission also restricted the project sample to contestable projects only (based on the Parties' definition of contestability). Independently of the sample period, the Parties' combined market share in contestable projects is significantly reduced to [30-40]% circa. Nevertheless, while other/local players play a more prominent role based on contestable tenders only, the Parties taken together are by far the largest player in the market and their strong position is confirmed.

Table 60. Market shares (Interlockings in the EEA)

	Contestable + Non Contestable[22]		**Contestable**		**More than one bidder**
	2008-2018	**2013-2018**	**2008-2018**	**2013-2018**	**2008-2018**
Siemens	[40-50]%	[50-60]%	[20-30]%	[20-30]%%	[…]
Alstom	[10-20]%	[20-30]%	[10-20]%	[10-20]%	[…]
Combined	**[60-70]%**	**[70-80]%**	**[30-40]%**	**[40-50]%**	[…]
Thales	[10-20]%	[5-10]%%	[10-20]%	[10-20]%	[…]
Bombardier	[0-5]%	[0-5]%	[5-10]%	[5-10]%	[…]
Hitachi-Ansaldo	[0-5]%	[0-5]%	[5-10]%	[5-10]%	[…]
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[…]
Other	[10-20]%	[10-20]%	[20-30]%	[30-40]%	[…]
Value [EUR million]	[…]	[…]	[…]	[…]	[…]

(60) Table 61 presents market shares in standalone interlockings projects by country, for the countries for which the Commission considers that a significant impediment of effective competition would arise because of the Transaction (see Section 6.3.2.4 of the Decision). These are: Belgium, Croatia, Greece, Hungary, Portugal, Romania, Spain and United Kingdom.

22 As regards the market shares based on contestable and non-contestable tenders for interlockings, the Notifying Party noted in Annex C1 – E.II (1) of the Form CO and in the Reply to the Commission's Letter of Facts of 23 January 2019 that there are interlockings sales which are not captured by the CPL. To capture these additional sales, the Parties provided market shares based on the CPL plus additional data sources (such as UNIFE). While the market shares presented in this annex are based on the CPL only, the main body of the Decision reports for interlockings the "adjusted" market shares as provided by the Notifying Party. Therefore, the market shares for intelockings on which the Commission relied upon are the same shares as those advocated by the Notifying Party (such as those displayed in Annex I to the Notifying Party's Reply to the Letter of Facts of 23 January 2018).

Table 61: Market Shares for interlockings by Country[23]

Country	Type	Period	Siemens	Alstom	**Combined**	Thales	Bombardier	Hitachi-Ansaldo	CAF	Other
Belgium	All tenders	2008-2018	[0-5]%	[90-100]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[0-5]%	[90-100]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
	only contestable	2008-2018	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Croatia	All tenders	2008-2018	[40-50]%	[30-40]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[10-20]%
		2013-2018	[30-40]%	[60-70]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
	only contestable	2008-2018	[40-50]%	[30-40]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[10-20]%
		2013-2018	[30-40]%	[60-70]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Greece	All tenders	2008-2018	[0-5]%	[40-50]%	[40-50]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[50-60]%
		2013-2018	[0-5]%	[40-50]%	[40-50]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[50-60]%
	only contestable	2008-2018	[0-5]%	[40-50]%	[40-50]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[50-60]%
		2013-2018	[0-5]%	[40-50]%	[40-50]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[50-60]%
Hungary	All tenders	2008-2018	[30-40]%	[0-5]%	[30-40]%	[60-70]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[10-20]%	[0-5]%	[10-20]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
	only contestable	2008-2018	[30-40]%	[0-5]%	[30-40]%	[60-70]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[10-20]%	[0-5]%	[10-20]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Portugal	All tenders	2008-2018	[70-80]%	[0-5]%	[80-90]%	[10-20]%%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[80-90]%	[0-5]%	[80-90]%	[10-20]%%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
	only contestable	2008-2018	[80-90]%	[10-20]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[90-100]%	[0-5]%	[90-100]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

23 As regards the market shares based on contestable and non-contestable tenders for interlockings, the Notifying Party noted in Annex C1 – E.II (1) of the Form CO and in the Reply to the Commission's Letter of Facts of 23 January 2019 that there are sales which are not captured by the CPL. To capture these additional sales, the Parties provided market shares based on the CPL plus additional data sources (such as UNIFE). While the market shares presented in this annex are based on the CPL only, the main body of the Decision reports for interlockings the "adjusted" market shares as provided by the Notifying Party. Therefore, the market shares for intelockings on which the Commission relied upon are the same shares as those advocated by the Notifying Party (such as those displayed in Annex I to the Notifying Party's Reply to the Letter of Facts of 23 January 2018). See Table 30 of the main body of the Decision for Croatia, Portugal, Spain and United Kingdom, Table 33 for Greece and Romania, and Table 35 for Belgium and Hungary.

Romania	All tenders	2008-2018	[60-70]%	[0-5]%	[60-70]%	[30-40]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[50-60]%	[0-5]%	[50-60]%	[30-40]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
	only contestable	2008-2018	[60-70]%	[0-5]%	[60-70]%	[30-40]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
		2013-2018	[50-60]%	[0-5]%	[50-60]%	[30-40]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Spain	All tenders	2008-2018	[30-40]%	[10-20]%	[40-50]%	[20-30]%	[10-20]%	[0-5]%	[10-20]%	[0-5]%
		2013-2018	[20-30]%	[10-20]%	[30-40]%	[20-30]%	[10-20]%	[0-5]%	[20-30]%	[0-5]%
	only contestable	2008-2018	[30-40]%	[0-5]%	[40-50]%	[20-30]%	[20-30]%	[0-5]%	[5-10]%	[0-5]%
		2013-2018	[30-40]%	[0-5]%	[30-40]%	[20-30]%	[20-30]%	[0-5]%	[5-10]%	[0-5]%
United Kingdom	All tenders	2008-2018	[60-70]%	[10-20]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[10-20]%
		2013-2018	[60-70]%	[10-20]%	[80-90]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[10-20]%
	only contestable	2008-2018	[30-40]%	[10-20]%	[40-50]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[5 -60]%
		2013-2018	[20-30]%	[0-5]%	[30-40]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[60-70]%

3.1.2. Participation and winning rates

(61) In the interlockings segment, bidding cost for OEMs can be substantial which makes participation rates informative for assessing the competitive strength of the Parties and their competitors. This is because each bidder will participate only if it considers to have a reasonable chance of winning.

(62) Table 62 presents the bidding frequency. For the period 2008-2018 the CPL includes […] contestable tenders, Siemens is the most frequent bidder and submitted bids in […]% of all contestable tenders. Alstom submitted a bid in […]% of the tenders. Additional significant single players are Thales with […]% and Bombardier with […]% participation. In […]% of contestable tenders smaller local companies also submitted a bid. The Parties are, together with Thales and Bombardier, the most important bidders also in all other sub-samples.[24]

[24] For the value-weighted participation the Commission used the overall tender value for all consortia members. To ensure consistency it does so for all bidders, even if for these bidders the exact share in the consortia are known because they won the tender.

Table 62. Participation (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(63) While the information on participation is informative, it should be interpreted in light of the number and value of tenders won. Table 63 suggests that Siemens and Alstom were successful in approximately […]% of the […] tenders in the sample of contestable tenders between 2008 and 2018 ([…] tenders won by Siemens and […] tenders won by Alstom). In terms of rivals, Thales was the most frequent winner with a winning rate of […]% ([…] tenders), Bombardier won […]% ([…] tenders), Hitachi-Ansaldo […]% ([…] tenders), and CAF […]% ([…] tenders). It should be noted that, although in a majority of tenders local players submitted a bid, they won all or part of the tender in […]% of tenders.[25] If weighting by value, Thales' proportion of tenders won increases while the Parties' share decreases, suggesting that Thales tends to be particularly successful in larger projects.[26]

[25] Note that for contracts awarded to two firms (a consortium), each of the two firms is treated as a winner, so there are more winners than the number of tenders.

[26] For the value-weighted winning statistics the Commission used the tender value associated for the individual consortia members.

Table 63. Winning rates (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.1.3. Closeness of competition

(64) To examine closeness of competition between the Parties, the Commission investigated the frequency with which both Siemens and Alstom participated in the same tenders (their "meeting rate"). Table 64 presents meeting rates for all contestable tenders. The Commission finds that over all tenders Siemens and Alstom meet in […]% of the cases in the period 2008-2018 and […]% in 2013-2018. For tenders with more than one bidder, the meeting rate is […]%. In terms of value-weighted meeting rates, both Parties meet in […]% of the tenders.

Table 64. Meeting rates (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Only Alstom	[…]	[…]	[…]	[…]	[…]
Only Siemens	[…]	[…]	[…]	[…]	[…]
Both parties	[…]	[…]	[…]	[…]	[…]
None of the Parties	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(65) To further assess closeness of competition between the Parties, the Commission examined the distribution of participants for the tenders in which Siemens (respectively, Alstom) was present.

(66) Table 65 is based on […] contestable tenders in the period 2008-2018 in which Siemens submitted a bid and presents the proportions of those tenders in which each of its rivals was present. Alstom participated in […]% of the tenders as direct rival, Thales in […]%, Bombardier in […]% and CAF in […]%. Other participants submitted a bid in […]% of tenders. In terms of value-weighted participation Alstom was the most important single rival for Siemens' bids.

Table 65. Participation when Siemens bids (Interlockings in the EEA)

	Contestable		**More than one bidder**	**Top 50% value sample**	**Value-weighted**
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(67) Table 66 focusses on the […] contestable tenders in the period 2008-2018 in which Alstom participated and presents the proportions of those tenders in which each of its rivals was present. Siemens was present in […]%, Thales in […]% and Bombardier in […]%, Hitachi-Ansaldo in […]% and CAF in […]%. Siemens is the most frequent single rival participating in tenders in which Alstom bids.

Table 66. Participation rates when Alstom bids (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(68) In order to further assess closeness of competition between the Parties, the Commission investigated which players win the tenders in which Siemens (respectively, Alstom) participated.

(69) Table 67 displays the winning frequency for the […] contestable tenders in which Siemens was present. Siemens won the majority ([…]), while Alstom won only […]% ([…]). The most frequent winner, if Siemens did not win, is Thales with a success rate of […]% ([…]) in the period 2008-2018. The results are not qualitatively different for other subsamples.

Table 67. Winning rates when Siemens bids (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]]	[…]	[…]	[…]	[…]	[…]

(70) Table 68 reports the winning frequency for tenders in which Alstom bid. Among the […] contestable tenders, Alstom itself won […]% ([…]), while it most frequently lost to Siemens, […]% ([…]). The results are not qualitatively different for other subsamples.

Table 68. Winning rates when Alstom bids (Interlockings in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.1.4. Number of participants

(71) The average number of participants is informative on the potential effect of the merger on the competitive constraint which a market participate can expect on average. Table 69 presents the

frequency of tenders by number of bidders as well as the percentage distribution and distribution when both Parties submitted bids for the period 2008-2018.

(72) The average number of bidders across all the contestable […] interlockings tenders is […]; it is […] if only tenders with at least two bidders are considered. When both Parties submitted bids, the average number of bidders was […] (including the Parties). Given the observed distribution of other bidders in past tenders, the merger would therefore lead to a reduction to […] bidders on average on these tenders.

(73) Therefore, there appear to be few participants in the tenders and the Transaction would lead to a further reduction in possible bidders. It should be noted that, everything else equal, the Transaction would amount to a 2-to-1 merger for […]% of the past tenders in which the Parties met and to a 3-to-2 merger in a further […]% of the past tenders in which the Parties met.

Table 69. Number of participants (Interlockings in the EEA, 2008-2018)

Number of Bidders	Frequency		Frequency (%)	
	Overall	Both bid	Overall	Both bid
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
6	[…]	[…]	[…]	[…]
7	[…]	[…]	[…]	[…]
average (including 1-6 bids)	[…]	[…]	[…]	[…]
average (including 2-6 bids)	[…]	[…]	[…]	[…]

3.2. ETCS ATP Wayside resignalling projects

3.2.1. Market shares

(74) The Commission assessed the importance of the Parties and their competitors by analysing market shares for two different time periods, 2008-2018 and 2013-2018 and two different sample, all projects and only contestable projects.

(75) Table 70 presents the EEA-wide market shares in the ETCS ATP Wayside resignalling projects, given different time periods and samples of projects.

(76) The Parties have been awarded [40-50]% of all ETCS ATP Wayside resignalling projects (contestable and non-contestable) in the EEA in the period 2008-2018. Restricting the sample to the more recent period 2013-2018, the combined market share increases to [50-60]%, where in both instances Siemens is the larger player. Thales was the third largest single player with a market share of [30-40]%, or [20-30]% respectively. Remaining players have less than [10-20]%

market share, Bombardier [5-10]% ([5-10]%), Hitachi-Ansaldo [0-5]% ([0-5]%) and CAF [0-5]% ([0-5]%)

(77) In the ETCS ATP Wayside resignalling projects only a small portion of the market share is awarded in non-contestable projects/sales. Consequently, restricting the sample to contestable projects only (based on the Parties' definition of contestability), the Parties' combined market share does not materially change.

Table 70. Market shares (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable + Non Contestable[27]		**Contestable**		**More than one bidder**
	2008-2018	**2013-2018**	**2008-2018**	**2013-2018**	**2008-2018**
Siemens	[30-40]%	[40-50]%	[30-40]%	[40-50]%	[30-40]%
Alstom	[10-20]%	[10-20]%	[10-20]%	[10-20]%	[10-20]%
Combined	**[40-50]%**	**[50-60]%**	**[40-50]%**	**[50-60]%**	**[50-60]%**
Thales	[30-40]%	24%	[30-40]%	24%	[30-40]%
Bombardier	[5-10]%	[5-10]%	[5-10]%	[5-10]%	[0-5]%
Hitachi-Ansaldo	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Other	[5-10]%	[10-20]%	[5-10]%	[10-20]%	[5-10]%
Value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.2.2. Participation and winning rates

(78) Table 71 presents the frequency of participation in tenders by each bidder. Since placing a final bid is costly for OEMs, participation is informative for assessing the competitive strength of the Parties and their competitors. This is because each bidder participates only if it considers to have a reasonable chance of winning.

(79) For […] contestable tenders in the period 2008-2018, the Parties were among the most frequent bidders. Siemens was the second most frequent bidder with […]%, Alstom the third most frequent ([…]%). Only Thales participated comparably often ([…]%). Bombardier submitted a bid in […]% and Hitachi-Ansaldo in […]% of the tenders. CAF only participated in […]% of the tenders. Also in most other subsamples, Thales was the most important tender participant besides the Parties.

27 As regards the market shares based on contestable and non-contestable tenders for this market, the Notifying Party noted that there are sales which are not captured by the CPL. To capture these additional sales, the Parties provided market shares based on the CPL plus additional data sources (such as UNIFE). While the market shares presented in this annex are based on the CPL only, the main body of the Decision reports for this market the "adjusted" market shares as provided by the Notifying Party. In any event, the Commission notes that the "adjusted" market shares provided by the Notifying Party for this market do not materially differ from the ones based on the CPL: based on the period 2008-2018, the combined share of Siemens and Alstom is 50% based on the "adjusted" market shares and 49% based on the CPL. See Table 39 of the main body of the Decision.

Table 71. Participation (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(80) While the frequencies of participation are informative, they should be interpreted in light of the number and value of tenders won. Table 72 reports that Siemens was successful in […]% of the […] contestable tenders between 2008 and 2018. Thales was the second most frequent winner, […]% of tenders, followed by Alstom with […]% and Bombardier with […]%. All other players were successful in less than […]% of all contestable, independent of the time period analysed.

Table 72. Winning rates (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.2.3. Closeness of competition

(81) To examine closeness of competition between the Parties, the Commission investigated the frequency with which both Siemens and Alstom participated in the same tenders (their "meeting rate"). Table 73 presents the Parties' meeting rates. The Commission finds that considering all contestable tenders Siemens and Alstom met in […]% of the tenders in 2008-2018. For tenders with more than one bidder, the meeting rate increases to […]%. In terms of value-weighted meeting rates, both Parties met in […]% of the tenders.

Table 73. Meeting rates (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Only Alstom	[…]	[…]	[…]	[…]	[…]
Only Siemens	[…]	[…]	[…]	[…]	[…]
Both parties	[…]	[…]	[…]	[…]	[…]
None of the Parties	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(82) To further assess the closeness of competition between the Parties, the Commission reviewed the distribution of participants for the tenders in which Siemens (respectively, Alstom) was present. Table 74 is based on […] contestable tenders in which Siemens was present and presents the

proportions of those tenders in which each of its rivals was present. Alstom participated in […]% of the tenders, Thales in […]%, Bombardier […]%, Hitachi-Ansaldo in […]% and CAF in […]% of the tenders Siemens participated in. Alstom was the most frequent rival to Siemens' bids.

Table 74. Participation when Siemens bids (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ Value [EUR million]	[…]	[…]	[…]	[…]	[…]

(83) Table 75 focusses on tenders in which Alstom was present and presents the proportions of those tenders in which each of its rivals was present. Out of the […] contestable tenders between 2008 and 2018 in which Alstom submitted bids, Siemens was present in […]%, Thales in […]%, Hitachi-Ansaldo in […]%, Bombardier in […]% and CAF in […]%. Siemens was the most frequent rival participating in tenders in which Alstom submitted bids.

Table 75. Participation rates when Alstom bids (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(84) In order to further assess closeness of competition between the Parties, the Commission also analysed which players won the tenders in which Siemens (respectively, Alstom) participated.

(85) Table 76 reports winning frequencies for the […] contestable tenders in which Siemens was present. Siemens won the majority ([…]%). When Siemens did not win, Alstom, Thales and Bombardier won equally often each in […]% of the tenders Siemens participated in, but which Siemens did not win.

Table 76. Winning rates when Siemens bid (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(86) Table 77 reports the winning frequeny for tenders in which Alstom submitted a bid. Among […] contestable tenders, Alstom itself wins […]% ([…]), while it lost most frequently contracts to Siemens, […]% ([…] tenders). Thales won […]% ([…]) of the tenders in which Alstom participated.

Table 77. Winning rates when Alstom bid (ETCS ATP Wayside resignalling projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.2.4. Number of participants

(87) Table 69 presents the frequency of tenders by number of bidders as well as the percentage distribution and distribution if both Parties submitted bids for the period 2008-2018.

(88) The average number of bidders for the […] contestable tenders in ETCS ATP Wayside resignalling was […] if tenders with only one bidder are considered; it is […] if only tenders with at least two bidders are considered. When both Parties submitted bids the average number of bidders was […] (including the Parties). Given the observed distribution of other bidders in past tenders, the merger would therefore lead to a reduction to […] bidders on average in these tenders.

(89) Therefore, there appear to be few participants in the tenders and the Transaction would lead to a further reduction in possible bidders. It should be noted that, everything else equal, the Transaction would amount to a 3-to-2 merger for […]% and to a 4-to-3 merger for […]% of the tenders in which both Parties submitted bids.

Table 78. Number of participants (ETCS ATP Wayside resignalling projects in the EEA, 2008-2018)

Number of Bidders	Frequency		Frequency (%)	
	Overall	Both bid	Overall	Both bid
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
6	[…]	[…]	[…]	[…]
7	[…]	[…]	[…]	[…]
average (including 1-7 bids)	[…]	[…]	[…]	[…]
average (including 2-7 bids)	[…]	[…]	[…]	[…]

3.3. (Standalone) ETCS ATP Wayside (overlay) projects

3.3.1. Market shares

(90) The Commission assessed the importance of the Parties and their competitors by analysing market shares for different time periods, 2008-2018 and 2013-2018 and different sample, all projects and only contestable projects. Table 79 presents the EEA-wide market shares in (Standalone) ETCS ATP wayside (overlay) projects, given different periods and samples of projects.

(91) The Parties combined have been awarded [50-60]% of all (standalone) ETCS ATP wayside (overlay) projects (contestable and non-contestable) in the EEA in the period 2008-2018. Restricting the sample to the more recent period 2013-2018, the combined market share increases to [50-60]%, where in both instances Siemens is the slightly larger player. Thales was the third largest single player with a market share of [20-30]%, or [10-20]% respectively. Remaining players are Bombardier with a share of [10-20]% ([10-20]%), Hitachi-Ansaldo with [0-5]% ([0-5]%) and CAF [0-5]% ([0-5]%)

(92) In the (standalone) ETCS ATP wayside (overlay) projects, restricting the project sample to contestable projects only (based on the Parties' definition of contestability), the Parties' market share in contestable projects is comparable to the market shares for all projects, independently of the sample period.

Table 79. Market shares ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable + Non Contestable[28]		Contestable		More than one bidder
	2008-2018	**2013-2018**	**2008-2018**	**2013-2018**	**2008-2018**
Siemens	[30-40]%	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Alstom	[20-30]%	[20-30]%	[20-30]%	[20-30]%	[20-30]%
Combined	[50-60]%	[50-60]%	[50-60]%	[60-70]%	[50-60]%
Thales	[20-30]%	[10-20]%	[20-30]%	16%	[20-30]%
Bombardier	[10-20]%	[10-20]%	[5-10]%	[5-10]%	[5-10]%
Hitachi-Ansaldo	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CAF	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Other	[10-20]%	[10-20]%	[10-20]%	[10-20]%	[5-10]%
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.3.2. Participation and winning rates

(93) Bidding cost for OEMs can be substantial in (standalone) ETCS ATP wayside (overlay) projects, participation in tenders is informative for assessing the importance and competitive strength of the Parties and their competitors. Each bidder will participate only if it considers having a reasonable chance of winning.

(94) Table 80 presents the bidding frequency. For the period 2008 to 2018 the Commission analysed […] contestable tenders. In that period Siemens and Thales were the most frequent bidder with […]% participation, followed by Bombardier with […]% participation. Alstom submitted bids in […]% of all tenders, Hitachi-Ansaldo in […]%. In terms of value-weighted tenders, Siemens and Alstom are the most important bidders, followed by Thales.[29]

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28 As regards the market shares based on contestable and non-contestable tenders for this market, the Notifying Party noted that there are sales which are not captured by the CPL. To capture these additional sales, the Parties provided market shares based on the CPL plus additional data sources (such as UNIFE). While the market shares presented in this annex are based on the CPL only, the main body of the Decision reports for this market the "adjusted" market shares as provided by the Notifying Party. See Table 36 of the main body of the Decision.

29 For the value-weighted participation the Commission used the overall tender value for all consortia members. To ensure consistency it does so for all bidders, even if for these bidders the exact share in the consortia are known because they won the tender.

Table 80. Participation ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(95) While the information on participation is informative, it should be interpreted in light of the number and value of tenders won. Table 81 reports that Siemens was successful in […]% and Alstom in […]% of the […] contestable tenders between 2008 and 2018, Thales was the most successful bidder with a winning rate of […]%. Bombardier was successful in […]%. Results differ significantly if tenders are weighted by value. Siemens and Thales remain the most successful bidders but are closely followed by Alstom.[30]

[30] For the value-weighted winning statistics the Commission used the tender value associated for the individual consortia members.

Table 81. Winning rates ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.3.3. Closeness of competition

(96) To examine closeness of competition between the Parties, the Commission investigated the frequency with which both Siemens and Alstom participated in the same tenders (their "meeting rate"). Table 82 reports the Parties' meeting rates. The Commission finds that, considering all contestable tenders, Siemens and Alstom met in […]% of the cases from 2008 to 2018. For tenders with more than one bidder, the meeting rate increases to […]%. In terms of value-weighted meeting rates, both Parties met in […]% of the tenders.

Table 82. Meeting rates ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Only Alstom	[…]	[…]	[…]	[…]	[…]
Only Siemens	[…]	[…]	[…]	[…]	[…]
Both parties	[…]	[…]	[…]	[…]	[…]
None of the Parties	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(97) To further assess closeness of competition between the Parties, the Commission analysed the distribution of participants for the tenders in which Siemens (respectively, Alstom) was present.

(98) Table 83 is based on […] contestable tenders in which Siemens was present in the period between 2008 and 2018 and sets out the proportions of those tenders in which each of its rivals was present. Thales participated most frequently with […]%, Bombardier with […], followed by Alstom with […]%. Hitachi-Ansaldo submitted bids in […]% of the tenders Siemens participated in.

Table 83. Participation when Siemens bid ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		**More than one bidder**	**Top 50% value sample**	**Value-weighted**
	2008-2018	**2013-2018**	**2008-2018**	**2008-2018**	**2008-2018**
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(99) Table 84 focusses on the contestable tenders in which Alstom submitted a bid in the period between 2008 and 2018 and presents the proportions of tenders in which each of the rivals was present. Out of the […] tenders, Siemens was present in […]%, as well as Thales, Bombardier in […]% and Hitachi-Ansaldo in about […]%. In terms of value, Hitachi-Ansaldo was the most significant bidder in tenders in which Alstom submitted a bid.

Table 84. Participation rates when Alstom bid ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]]	[…]	[…]	[…]	[…]	[…]

(100) In order to further assess closeness of competition between the Parties, the Commission analysed which players won the tenders in which Siemens (respectively, Alstom) participated.

(101) Table 94 presents the winning frequency for the […] contestable tenders in which Siemens was present. Siemens won in […]% of the tenders, while Alstom won […]. Thales won in […]% of the contestable tenders Siemens participated in. Similar observations can be made for other subsamples.

Table 85. Winning rates when Siemens bids ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]]	[…]	[…]	[…]	[…]	[…]

(102) Table 95 depicts the winning frequeny for tenders in which Alstom bids. Among all […] contestable tenders, Alstom itself wins […], while it lost […] to Siemens, […] to Thales and […] to Bombardier.[31]

Table 86. Winning rates when Alstom bids ((Standalone) ETCS ATP wayside (overlay) projects in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.3.4. Number of participants

(103) Table 87 presents the frequency of tenders by number of bidders as well as the percentage distribution and distribution when both Parties submitted bids for the period 2008-2018.

(104) The average number of bidders for the […] contestable tenders in the (standalone) ETCS ATP wayside (overlay) is […] if tenders with only one bidder are considered; it is […] if only tenders with at least two bidders are considered. When both Parties submitted bids the average number of bidders was […] (including the Parties). Given the observed distribution of other bidders in past tenders, the merger would therefore lead to a reduction to […] bidders on average in these tenders.

(105) Therefore, there appear to be few participants in the tenders and the Transaction would lead to a further reduction in possible bidders. It should be noted that, everything else equal, the Transaction would amount to a merger to monopoly in about […]% of tenders, a 3-to-2 merger for […]% of tenders in which the parties met and to a 4-to-3 merger in […]% of the tenders in which the Parties met.

[31] Double counting possible due to consortia bids by Siemens and Thales.

Table 87. Number of participants ((Standalone) ETCS ATP wayside (overlay) projects in the EEA, 2008-2018)

Number of Bidders	Frequency		Frequency (%)	
	Overall	Both bid	Overall	Both bid
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
6	[…]	[…]	[…]	[…]
7	[…]	[…]	[…]	[…]
average (including 1-6 bids)	[…]	[…]	[…]	[…]
average (including 2-6 bids)	[…]	[…]	[…]	[…]

3.4. ETCS OBU projects

3.4.1. Market shares

(106) The Commission assessed the importance of the Parties and their competitors by analysing market shares for two different time periods, 2008-2018 and 2013-2018 and two different sample, all projects and only contestable projects. Table 88 presents the EEA-wide market shares in the ETCS OBU segment, given different periods and samples of projects.

(107) The Parties combined have been awarded […]% of all ETCS OBU projects (contestable and non-contestable) in the EEA in the period 2008-2018. Restricting the sample to the more recent period 2013-2018, the combined market share amounts to [70-80]%, where in both period Alstom is the larger player. Bombardier is the third largest player with a market share of [10-20]%, and [10-20]% respectively. Remaining players are Hitachi-Ansaldo with a share of [5-10]% and [0-5]%, CAF with [0-5]% and [0-5]%, and Thales with [0-5]% in both examined time periods.

(108) In the ETCS OBU segment, restricting the project sample to contestable projects only (based on the Parties' definition of contestability), the Parties' combined market share in contestable projects is comparable to the market shares for all projects, independently of the sample period with a lower combined market share for the period 2013-2018 which, nevertheless, remains above [60-70]%.

Table 88. Market shares (ETCS OBU in the EEA)

	Contestable + Non Contestable		Contestable		More than one bidder
	2008-2018	**2013-2018**	**2008-2018**	**2013-2018**	**2008-2018**
Siemens	[10-20]%	[20-30]%	[10-20]%	[10-20]%	[10-20]%
Alstom	[50-60]%	[50-60]%	[50-60]%	[40-50]%	[50-60]%
Combined	**[70-80]%**	**[70-80]%**	**[70-80]%**	**[60-70]%**	**[70-80]%**
Thales	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Bombardier	[10-20]%	[10-20]%	[10-20]%	[20-30]%	[10-20]%
Hitachi-Ansaldo	[5-10]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
CAF	[0-5]%	[5-10]%	[0-5]%	[5-10]%	[5-10]%
Other	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.4.2. Participation and winning rates

(109) Although in the ETCS OBU segment bidding cost for OEMs are not substantial but also non-negligible, participation in past tenders is informative for assessing the importance and competitive strength of the Parties and their competitors because OEMs will only participate if they believe in a positive likelihood to win. Table 89 presents the bidding frequency. For […] contestable tenders in the period 2008 to 2018, the Parties were the […], both participating in more than […]% of all tenders, followed by Bombardier with […]% participation rate. Thales submitted bids in […]% and Hitachi-Ansaldo […]% of the tenders. Also in all other subsamples, Bombardier was the most important bidder besides the Parties.[32]

[32] For the value-weighted participation the Commission used the overall tender value for all consortia members. To ensure consistency it does so for all bidders, even if for these bidders the exact share in the consortia are known because they won the tender.

Table 89. Participation (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(110) While the information on participation is informative, it should be interpreted in light of the number and value of tenders won. Table 90 shows that the Parties were successful each in approximately […]% of the […] tenders in the sample of contestable tenders between 2008 and 2018. Bombardier was the second most frequent winner with […]% of tenders, Hitachi-Ansaldo won […], Thales […] and CAF […] tenders. When weighting the tenders by value, […].[33]

[33] For the value-weighted winning statistics the Commission used the tender value associated for the individual consortia members.

Table 90. Winning rates (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.4.3. Closeness of competition

(111) To examine closeness of competition between the Parties, the Commission investigated the frequency with which both Siemens and Alstom participated in the same tenders (their "meeting rate"). In general, the larger the meeting rate between the Parties, the larger the proportion of tenders in the market that are expected to be affected by the merger.

(112) Table 91 presents the meeting rates. Considering all contestable tenders Siemens and Alstom met in […]% of the tenders from 2008 to 2018 and […]% of the tenders for the period 2013-2018. For tenders with more than one bidder, the meeting rate was […]%. In terms of value-weighted meeting rates, the Parties met in […]%.

Table 91. Meeting rates (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Only Alstom	[…]	[…]	[…]	[…]	[…]
Only Siemens	[…]	[…]	[…]	[…]	[…]
Both parties	[…]	[…]	[…]	[…]	[…]
None of the Parties	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(113) To further assess closeness of competition between the Parties, the Commission investigated the distribution of participants for the tenders in which Siemens (respectively, Alstom) was present.

(114) Table 92 is subject to […] contestable tenders in which Siemens was present and sets out the proportions of those tenders in which each of its rivals was present. Alstom participated in […]% of the tenders, Bombardier in […]% and Thales, Hitachi-Ansaldo and CAF in […]% of the tenders Siemens participated in. Alstom was by far the most frequent additional rival for Siemens' bids.

Table 92. Participation when Siemens bid (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(115) Table 93 focusses on the tenders in which Alstom was present and sets out the proportions of those tenders in which each of its rivals was present. Out of the […] contestable tenders between 2008 and 2018 in which Alstom bid, Siemens was present in […]%, Bombardier in […]% and Thales and Hitachi-Ansaldo in about […]% and […]% respectively. Siemens was by far the most frequent rival participating in tenders in which Alstom submitted a bid.

Table 93. Participation rates when Alstom bid (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(116) In order to further assess closeness of competition between the Parties, the Commission also examined which players won the tenders in which Siemens (respectively, Alstom) participated. Table 94 reports winning frequencies for the […] contestable tenders in which Siemens was present. Siemens won the majority […]% ([…]tenders), while Alstom won […]% ([…] tenders). Similar observations can be made for other subsamples. […].

Table 94. Winning rates when Siemens bid (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

(117) Table 95 reports the winning frequeny for tenders in which Alstom bids. Among all […] contestable tenders, Alstom itself won […]%, while it lost most often against Siemens in […]% of the tenders.

Table 95. Winning rates when Alstom bid (ETCS OBU in the EEA)

	Contestable		More than one bidder	Top 50% value sample	Value-weighted
	2008-2018	2013-2018	2008-2018	2008-2018	2008-2018
Siemens	[…]	[…]	[…]	[…]	[…]
Alstom	[…]	[…]	[…]	[…]	[…]
Thales	[…]	[…]	[…]	[…]	[…]
Bombardier	[…]	[…]	[…]	[…]	[…]
Hitachi-Ansaldo	[…]	[…]	[…]	[…]	[…]
CAF	[…]	[…]	[…]	[…]	[…]
Other	[…]	[…]	[…]	[…]	[…]
Total number/ value [EUR million]	[…]	[…]	[…]	[…]	[…]

3.4.4. Number of participants

(118) Table 96 presents the frequency of tenders by number of bidders, as well as the distribution if both Parties submitted bids for the period 2008-2018.

(119) The average number of bidders for […] contestable tenders in the ETCS OBU segment was […] if tenders with only one bidder are considered […] if only tenders with at least two bidders are considered. When both Parties submitted bids the average number of bidders was […] (including the Parties). Given the observed distribution of other bidders in past tenders, the merger therefore leads to a reduction to […] bidders on average in these tenders.

(120) Therefore, there appear to be few participants in the tenders and the Transaction would lead to a further reduction in possible bidders. It should be noted that, everything else equal, the Transaction would amount to a 2-to-1 merger the […] of the past tenders in which the Parties met and to a 3-to-2 merger in a further […]% of past tenders in which the Parties met.

Table 96. Number of participants (ETCS OBU in the EEA, 2008-2018)

Number of Bidders	Frequency		Frequency (%)	
	Overall	Both bid	Overall	Both bid
1	[…]	[…]	[…]	[…]
2	[…]	[…]	[…]	[…]
3	[…]	[…]	[…]	[…]
4	[…]	[…]	[…]	[…]
5	[…]	[…]	[…]	[…]
6	[…]	[…]	[…]	[…]
7	[…]	[…]	[…]	[…]
average (including 1-6 bids)	[…]	[…]	[…]	[…]
average (including 2-6 bids)	[…]	[…]	[…]	[…]