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***Case No COMP/M.7538 -  
KNORR BREMSE /  
VOSSLOH***

Only the English text is available and authentic.

**REGULATION (EC) No 139/2004  
MERGER PROCEDURE**

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Article 6(1)(b) NON-OPPOSITION  
Date: 14/09/2015

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## EUROPEAN COMMISSION

Brussels, 14.9.2015  
C(2015) 6379 final

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus [...]. Where possible the information omitted has been replaced by ranges of figures or a general description.

PUBLIC VERSION

MERGER PROCEDURE

### To the notifying party

Dear Sirs and Madams,

**Subject: Case M.7538 – KNORR BREMSE / VOSSLOH  
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004<sup>1</sup> and Article 57 of the Agreement on the European Economic Area<sup>2</sup>**

- (1) On 10 August 2015, the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which the undertaking KB Holding GmbH ('KB Holding', Germany), the holding company of Knorr-Bremse AG (Germany), acquires within the meaning of Article 3(1)(b) of the Merger Regulation sole control of Vossloh AG ('Vossloh', Germany), by way of acquisition of shares. KB Holding is hereinafter referred to as 'the Notifying Party' while KB Holding and Vossloh are together referred to as 'the Parties'.
- (2) Previously on 13 April 2015, KB Holding notified its intention of acquiring sole control of Vossloh by way of a public bid. For the reasons stated in the Article 6(1)(a) decision of 21 May 2015, the Commission concluded that the transaction

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<sup>1</sup> OJ L 24, 29.1.2004, p. 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.

<sup>2</sup> OJ L 1, 3.1.1994, p. 3 ('the EEA Agreement').

notified on 13 April 2015 did not confer KB Holding control over Vossloh and therefore fell outside the scope of the Merger Regulation.

- (3) The transaction notified on 10 August 2015 is similar to the one notified on 13 April 2015, save that control will be acquired through the acquisition of shares rather than through a public bid.

## 1. THE PARTIES AND THE OPERATION

### 1.1. The Parties

- (4) **KB Holding** is the holding company of Knorr-Bremse AG ('KB'). KB is mainly a manufacturer of braking systems for rail and commercial vehicles. It also produces other subsystems for trains, such as door systems and heating, ventilating and air conditioning ('HVAC') systems, as well as electronic control and driver assistance systems for commercial vehicles. KB Holding is ultimately indirectly controlled by Mr Heinz Hermann Thiele.
- (5) **Vossloh** is a publicly listed company that manufactures rail infrastructure and rail technology. It produces locomotives and local trains, fastening systems, switch systems and electrical systems. It also provides rail supporting services<sup>3</sup>.

### 1.2. Structure of the transaction

- (6) KB Holding currently holds a minority stake of 30.21% in Vossloh. That shareholding consists of (i) the 0.22% of shares in Vossloh acquired by KB Holding through the public bid announced by KB Holding on 20 January 2015<sup>4</sup> (this being the subject of the notification of 13 April [...]\*), and of (ii) the minority stake of 29.99% that KB Holding held in Vossloh before the public bid. The acquisition of the 29.99% minority shareholding in Vossloh by KB Holding was cleared by the German and Austrian competition authorities in 2012.<sup>5</sup> The Commission found that the current minority stake of 30.21% in Vossloh does not confer control to KB Holding.<sup>6</sup>
- (7) On 4 August 2015, KB Holding entered into a Framework Agreement with Deutsche Bank ('DB') providing for a total return swap relating to 744 367 shares in Vossloh that correspond to approximately 5.59% of the share capital of Vossloh. On 4 August 2015, DB acquired 744 367 shares in Vossloh under the Framework Agreement. Pursuant to the Framework Agreement, the swap will be settled either by way of physical delivery of the shares or cash settlement. Physical delivery will take place if the transaction is cleared under the Merger Regulation. In case of physical delivery, KB Holding's shareholding in Vossloh will rise to 35.8%.

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<sup>3</sup> Vossloh offers modernisation services for traction control systems for rail vehicles.

<sup>4</sup> The offer document was published on 16 February 2015.

\* Should read: 2015.

<sup>5</sup> FCO's decision B 9 – 166/11 of 15 March, 2012, para. 52-61.

<sup>6</sup> Article 6(1)(a) decision of 21 May 2015.

### 1.3. De facto control of Vossloh

- (8) A minority shareholder may be deemed to have sole control over on a de facto basis. This is in particular the case where the shareholder is highly likely to achieve a stable majority at the shareholders' meetings, given the level of shareholding and the evidence resulting from the presence of shareholders in the shareholders' meetings in previous years.<sup>7</sup>
- (9) The attendance in Vossloh's general meetings during 2013–2015 is described in Table 1.

**Table 1 - Attendance in Vossloh's general meetings**

<b>Year</b>	<b>Attendance rate in annual general meeting</b>	<b>Percentage of total votes required for majority</b>
<b>2012</b>	48.03%	24.02%
<b>2013</b>	79.43%	39.72%
<b>2014</b>	59.95%	29.98%
<b>2015</b>	56.13%	28.07%

*Source: The Notifying Party*

- (10) The shareholding of 35.8% would have given KB Holding a stable majority in Vossloh's general meetings in 2015, 2014 and 2012 but not in 2013. KB Holding would also have acquired control on the basis of the average attendance rate during the last four 2012–2015 (60.89%, majority requiring 30.45% of votes) as well as during the last three years 2013–2015 (65.17%, majority requiring 32.59% of votes).
- (11) The attendance rate in the 2013 general meeting appears to have been higher than in the meetings before and after it. According to the Notifying Party, that high attendance rate in 2013 meeting was influenced on the one hand by a [...] matter discussed in the meeting and, on the other hand, by the Vossloh family holding approximately 22% of all shares in Vossloh at that time. The Vossloh family has since sold its shareholding. Moreover, attendance rate appears to since have been decreased despite significant matters, such as the strategy for Vossloh having been discussed in the subsequent meetings.

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<sup>7</sup> See, Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings, OJ C 95, 16.4.2008, p. 1, paragraph 59.

- (12) Currently KB Holding is by far the largest shareholder with its 30.21% stake, to be further increased to up to 35.8% following the implementation of the proposed transaction. According to the Notifying Party, the remaining shareholding is relatively spread with the second largest shareholder Franklin Mutual Advisers holding 5.68% of shares in Vossloh, followed by Ethenea (4.88%), Iskander Makhmudov (3.08%), Franklin Templeton Investment Funds (3.05%) and Lazard Frères Gestion (3.01%).<sup>8</sup>
- (13) Acquiring the majority of votes in the general meeting would also enable KB Holding to decide on the members of the board and influence the decisions of the board members because of the possibility of revoking their appointment.
- (14) Moreover, the clear intent of Mr Thiele, who indirectly controls KB Holding, is to acquire control. This is evidenced by the attempt to do so through the public bid and following the failure to acquire control through that bid, the current proposed share acquisition.
- (15) In light of the above and based on the evidence available to it, the Commission concludes that it is highly likely that KB Holding will acquire a stable majority in the future general meetings of Vossloh following the implementation of the proposed transaction. KB Holding thus acquires de facto sole control of Vossloh.
- (16) The notified transaction therefore constitutes a concentration pursuant to Article 3(1)(b) of the Merger Regulation.

## **2. UNION DIMENSION**

- (17) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million<sup>9</sup> (KB Holding: EUR [>5 000] million; Vossloh: EUR 1 324 million). Each of them has a Union-wide turnover in excess of EUR 250 million (KB Holding: EUR [...] million; Vossloh: EUR [...] million), but they do not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified operation therefore has a Union dimension.

## **3. COMPETITIVE ASSESSMENT**

### **3.1. Framework of the assessment**

- (18) Both KB and Vossloh produce and sell (i) HVAC systems for rail vehicles, (ii) train control management systems ('TCMS'), (iii) auxiliary converters for rail vehicles and (iv) battery chargers for rail vehicles. The only horizontal overlap leading to affected markets relates to the supply of HVAC systems.
- (19) The transaction gives rise to several vertical links between KB's activities as a supplier of components and subsystems for rail vehicles and Vossloh's activities in the downstream market as a manufacturer of locomotives and LRVs.

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<sup>8</sup> In addition, Carmignac Gestion held 5.00% of the shares until 7 August 2015 when DB acquired the shares from Carmignac Gestion for the purposes of the Framework Agreement with KB Holding.

<sup>9</sup> Turnover calculated in accordance with Article 5 of the Merger Regulation.

- (20) Another intended acquisition potentially affecting the same markets, namely the acquisition by Wabtec of Faiveley, was publicly announced before the notification of the present case.<sup>10</sup> That transaction has not been notified to the Commission at present. A market participant nonetheless submitted during the market investigation that the Commission should review the present transaction taking into account the announced intension of Wabtec to acquire Faiveley.<sup>11</sup>
- (21) For the reasons explained in paragraphs (22) to (26) and consistent with its previous practice,<sup>12</sup> the Commission has assessed the present transaction according to the priority principle and without taking into account the announced intention of Wabtec to acquire Faiveley.
- (22) The assessment of the competitive effects of a proposed transaction under the Merger Regulation involves a comparison of the competitive conditions that would result from the notified merger with the conditions that would have prevailed in absence of the merger. In principle, the competitive conditions existing at the time of notification constitute the relevant framework for evaluating the effects of a transaction.<sup>13</sup> However, in some circumstances the Commission may take into account future changes to the market that can reasonably be predicted.<sup>14</sup>
- (23) The Commission takes the view that it is inherent in the general system of the Merger Regulation that a party that is the first to notify a concentration which, assessed on its own merits, would not significantly impede effective competition in the internal market or in a substantial part thereof, is entitled to have its operation declared compatible with the internal market within the time limits set in the Merger Regulation. It is neither necessary nor appropriate to take into account future changes to the market conditions resulting from transactions that are subsequently notified to the Commission.<sup>15</sup>
- (24) The Commission takes the view that the priority principle, based on the date of notification, is the only one that ensures sufficient legal certainty, transparency and objectivity and respects the other provisions and aims of the Merger Regulation. The Commission recalls that ensuring legal certainty is one of the primary aims of the Merger Regulation.<sup>16</sup>

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<sup>10</sup> Wabtec's press release of 27 July 2015, [http://www.wabtec.com/upload/pressrelease/Wabtec%20Plans%20To%20Acquire%20Faiveley%20Transport\(2\).pdf](http://www.wabtec.com/upload/pressrelease/Wabtec%20Plans%20To%20Acquire%20Faiveley%20Transport(2).pdf).

<sup>11</sup> Submission of a competitor on 17 August 2015.

<sup>12</sup> See, e.g. the recent cases M.6214 – *Seagate / HDD Business of Samsung* and M.6203 – *Western Digital Ireland / Viviti Technologies*.

<sup>13</sup> See, e.g. T-342/99 *Airtours v Commission*, paragraph 82. See also T-2/93 *Air France v Commission*, paragraphs 70–72; T-374/00 *Verband der freien Rohrwerke and Others v Commission*, paragraph 170 as well as T-279/04 *Editions Odile Jacob v Commission*, paragraph 327.

<sup>14</sup> Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p. 7 ('Non-Horizontal Guidelines', paragraph 6, and Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 31, 5.2.2004, p. 3 ('Horizontal Guidelines'), paragraph 9.

<sup>15</sup> Similarly, see e.g. M.6214 – *Seagate / HDD Business of Samsung*, recital 14.

<sup>16</sup> See, e.g. T-251/00 *Lagardère and Canal+ v Commission*, paragraph 97.

- (25) Under the scheme of the Merger Regulation, the date of notification is the only basis for applying the priority principle. It is a clear and objective criterion, determined in all cases in accordance with the rules of Article 5 of Commission Regulation (EC) No 802/2004 of 7 April 2004 implementing Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings<sup>17</sup> which lays down a notification-based system of merger control. Other criteria, such as the signing of a binding agreement or the moment that a proposed transaction is made public, are irrelevant and, in any case, very difficult to apply in an objective and transparent manner because they can also lead to uncertainty and arbitrary results.<sup>18</sup>
- (26) The Commission has previously applied the priority principle in a situation where there was only one day between the actual notifications to the Commission.<sup>19</sup> In the present case, the potential Wabtec / Faiveley transaction has not been notified to the Commission, nor has Wabtec publicly announced whether it has been able to reach a binding agreement based on its intentions. Therefore, it is not certain whether the intention of Wabtec to acquire Faiveley constitutes a notifiable transaction under the Merger Regulation or when it would be notified.
- (27) In light of the above, the present transaction should be assessed in the light of the competitive situation that prevailed at the time of its notification. Therefore, the starting point in the Commission's assessment is a market structure where Wabtec and Faiveley are independent.

## **3.2. Relevant markets**

### *3.2.1. Original equipment manufacturer market ('OEM') and independent after-market ('IAM')*

- (28) Both Parties are active in the supply of components and subsystems for rail vehicles in the original equipment manufacturers ('OEM') market as well as in the independent after-market ('IAM'). Customers in the OEM market are rail vehicle manufacturers such as Alstom, Siemens and Bombardier, while the IAM concerns sales of parts to railway operators (private or public) such as Deutsche Bahn and SNCF or rolling stock owners.
- (29) In the OEM market, rail vehicle manufacturers procure equipment at the design or development phase of the relevant vehicle by soliciting bids from multiple subsystem suppliers.<sup>20</sup> In the IAM, railway operators procure parts from the subsystem suppliers. Generally, the sales in the IAM tend to be made by the same supplier who sold the subsystem at the OEM level. The service and maintenance of trains is either performed by the railway operators themselves, the OEMs or

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<sup>17</sup> OJ L 133, 30.4.2004, p. 1.

<sup>18</sup> Similarly, see e.g. M.6214 – *Seagate / HDD Business of Samsung*, recital 16.

<sup>19</sup> M.6214 – *Seagate / HDD Business of Samsung* and M.6203 – *Western Digital Ireland / Viviti Technologies*.

<sup>20</sup> In this initial business, the vehicle and its subsystems are developed at a parallel time and in close cooperation between the OEM and the system supplier. If the end customer (railway operators, rolling stock owners, local transport authorities) then decides to purchase further vehicles of the same type, that comprises a follow-up or optional business. However, in such cases, the choice of a different manufacturer for the sub-system is practically limited by the need to redesign a competitors' brake system to replace the original sub-system.

outsourced to third parties. Rail vehicle manufacturers sell their products directly to the railway operators. Because of the long product life of locomotives and trains (30 years or more), the IAM can have a greater economic significance than the OEM market.

- (30) In previous decisions, the Commission has considered a distinction between rail vehicle manufacturers as OEMs and deliveries to the IAM. Customers in the IAM are public railway operators, municipal operators of the rail sector and smaller private rail operators. Unlike in the OEM market where complete systems are ordered (in this particular precedent brake systems), in the IAM individual components are essentially demanded.<sup>21</sup>
- (31) In its analysis of the acquisition of the minority stake of KB Holding in Vossloh, the German Federal Cartel Office ('FCO') considered that, as on other components markets, a distinction must be made between the OEM market and the IAM, based on the different customer bases and other market circumstances. However, in particular regarding brakes and HVAC systems, the FCO considered that there is no need for a separate examination of the IAM, given that the IAM is determined by the circumstances of, and thus mirrors, the OEM market. Also, in the OEM area, complete air conditioning systems are generally sold and the delivery of partial systems plays no role.
- (32) During the course of the market investigation<sup>22 23 24</sup>, the majority of the rail vehicle manufacturers and subsystem suppliers indicated that for each subsystem, rail vehicle manufacturers usually have one or two preferred suppliers from whom they tend to purchase. Many rail vehicle manufacturers consider it important to maintain long-term strategic relationships with suppliers which go beyond a bid for a particular project. Rail vehicle manufacturers usually distribute their specifications for a given project to potential suppliers via a so called Request for Quotation and ask them for their best offer. Technical information has to be shared before the supplier has been selected. After a selection process with potential rounds of negotiation the rail vehicle manufacturer selects the supplier.
- (33) The majority of the respondents to the market investigation indicated that railway operators have an important role in the selection of subsystem suppliers. On top of the regulatory requirements, which vary across the EEA, the railway operators have their own technical specifications also at subsystem level. Railway operators usually select rail vehicle manufacturers through tenders, where technical characteristics and price are the main criteria. For the initial OEM business, the vast majority of the railway operators would consider each of the potential suppliers.
- (34) Regarding the subsystem suppliers for the subsequent optional OEM business, since the design is usually already constrained by the use of existing infrastructure, the choice of a subsystem supplier is limited or even non-existing. It may be the

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<sup>21</sup> M.1629 – *Knorr Bremse / Mannesmann*, paragraph 17.

<sup>22</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 33–36, 42 and 43.

<sup>23</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 47–49, 57 and 58.

<sup>24</sup> Replies to Q3 – Questionnaire to railway operators, questions 18–20, 28 and 29.



case that only one supplier is able to fulfil the relevant requirements. Also, for certification reasons, it may be more convenient to keep the same supplier as for the initial business.

- (35) As to the IAM<sup>25</sup> <sup>26</sup>, railway operators have explained that spare parts for repair and maintenance are often supplied by the subsystem suppliers or the rail vehicle manufacturers. Many railway operators have indicated that their supply contracts for rolling stock usually contain provisions concerning the aftermarket. The feasibility of supplying aftermarket support by non-OEM suppliers depends on the subsystem. In particular doors and brake systems are difficult to integrate and get approved. Some railway operators consider it preferable that the OEM of the rolling stock provides also the aftermarket support. Also, the vast majority of subsystem suppliers have indicated that they usually provide railway operators with parts of the subsystems they have previously supplied in the OEM market.
- (36) Therefore, for the purposes of this decision it can be assumed that the IAM largely depends on, and will mirror, the OEM market. The competitive assessment will therefore focus on the effects of the merger in the OEM market. Moreover, as the Parties' market shares and the Parties' market position in the distinct IAM market are similar, or even lower (see for instance Table 2), than those on the OEM market, the outcome of the competitive assessment would not be different if OEM and IAM was looked at together or, indeed, if looking at the distinct IAM market.

### 3.2.2. *Upstream market: supply of HVAC systems for rail vehicles*

#### 3.2.2.1. Product market definition

- (37) HVAC systems for rail vehicles serve to optimize the freshness and temperature of the air in the driver's cabin and in the passenger compartments. The Commission has in its previous decisional practice<sup>27</sup> analysed the market for cooling and air-conditioning systems. The Commission has considered a potential further segmentation of the market for air-conditioning systems on the basis of (i) on-road applications (automotive vehicles including trucks) and (ii) off-road applications<sup>28</sup> (such as rail vehicles and aircraft). The Commission also found that a separate market for components exists. Ultimately, the Commission left the exact product market definition open, including the possibility of further segmenting the off-road applications market into more specific applications (such as rail vehicles).
- (38) In its analysis of the minority shareholding acquisition of KB Holding in Vossloh, the FCO considered the market for the supply of air conditioning systems for rail vehicles to vehicle manufacturers in the EEA as the relevant market<sup>29</sup>. The FCO envisaged a sub-segmentation of the market into supply of (i) air conditioning systems for high-speed trains (over 140 km/h) and (ii) for other rail vehicles. However, this potential segmentation was left open by the FCO. As to a potential

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<sup>25</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 36.

<sup>26</sup> Replies to Q3 – Questionnaire to railway operators, questions 36 and 37.

<sup>27</sup> M.5862 – *Mahle/Behr/Behr Industry*, paragraph 12.

<sup>28</sup> Off-road applications include, among others, rail and special vehicles, ships, buses, construction and agricultural machinery, aircraft, large motors and generators.

<sup>29</sup> FCO decision B 9 – 166/11 of 15 March, 2012, paragraphs 52–61.

further segmentation according to the nature of the non-high speed rail vehicle (this is, regional trains, light rail vehicles [‘LRVs’] and metros), the FCO considered that there is supply-side substitutability in HVAC systems for non-high speed trains and, therefore, it cannot be assumed that the markets must be more narrowly defined.

- (39) The vast majority of the respondents to the market investigation<sup>30 31</sup> indicated that there are technical and/or commercial differences between HVAC systems for high and non-high-speed rail vehicles. According to market participants, the technical requirements for HVAC systems for high-speed rail vehicles are more complex (for example with respect to pressure compensation) and more expensive. The speed threshold would lie between 160 km/h and 200 km/h. As to supply-side substitutability for high speed and non-high-speed HVAC systems, it appears that usually HVAC suppliers producing high-speed HVAC systems produce also non-high speed ones. On the contrary, companies producing non-high-speed systems do not necessarily produce high-speed ones. Regarding a potential further segmentation per type of non-high-speed vehicle<sup>32 33</sup>, the majority of the respondents have indicated that there are technical or commercial differences depending on the type of vehicle. The technical and price differences depend on the volumes of the vehicles to be air-cooled or heated versus the gradient of temperature between the inside and the outside of the vehicle. However, the vast majority of respondents indicated that HVAC suppliers are not specialised per type of non-high-speed rail vehicles and most produce HVAC systems suitable for all types of non-high-speed rail vehicles.
- (40) Therefore, the Commission considers it is likely that HVAC systems for rail vehicles constitute a distinct product market and that a further sub-segmentation between HVAC systems for high-speed rail vehicles and for non-high-speed rail vehicles could be considered. However, it is not necessary to conclude on the exact product market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative product market definition.

#### 3.2.2.2. Geographic market definition

- (41) In previous decisional practice, the Commission has considered the market for cooling and air-conditioning systems to be at least EEA-wide in scope<sup>34</sup>. The same approach has been followed by the FCO<sup>35</sup>. The Notifying Party agrees with this geographic market definition.
- (42) The vast majority of the respondents to the market investigation<sup>36 37</sup> considered that (i) the suppliers of HVAC systems for rail vehicles are essentially the same in each

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<sup>30</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, question 8.

<sup>31</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 13.

<sup>32</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 9.

<sup>33</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 14.

<sup>34</sup> M.5862 – *Mahle/Behr/Behr Industry*, paragraph 15.

<sup>35</sup> FCO decision B 9 – 166/11 of 15 March 2012, paragraph 62.

<sup>36</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 26–28.

EEA country, (ii) suppliers can easily supply subsystems throughout the EEA, and (iii) the price conditions are essentially the same across the EEA. Moreover, the supply pattern of HVAC systems of the majority of the respondents is worldwide. Although some national homologation procedures are required, the process of homologation concerns the entire rail vehicle and not the component or subsystem separately<sup>38</sup>. From the demand-side perspective, the majority of respondents indicated that they do not have national preferences, although some of them do prefer national suppliers in case they have the same quality, price and reliability as foreign competitors.

- (43) Therefore, the Commission considers it is likely that the market for HVAC systems for rail vehicles is at least EEA-wide in scope. However, it is not necessary to conclude on the exact product market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative product market definition.

### 3.2.3. *Upstream market: supply of brake systems for rail vehicles*

#### 3.2.3.1. Product market definition

- (44) In its previous decisional practice, the Commission has considered the market for braking systems for rail vehicles, with a potential sub-segmentation by type of brake and of rolling stock: (i) pneumatic brake systems for locomotives and trailers, (ii) pneumatic brake systems for trainsets (such as trams), and (iii) hydraulic brake systems for trainsets. The product market definition was ultimately left open. The Commission indicated that there is limited demand-side substitutability between hydraulic and pneumatic brakes, based on different technical characteristics and sizes. Even though it noted that between 80% and 90% of brakes are ordered as complete systems, the Commission left open the possibility of a further product market segmentation encompassing different parts of the brake system (bogie equipment, brake control, air compressing system).
- (45) More recently the FCO distinguished between (i) service/friction brakes, (ii) magnetic brakes and (iii) dynamic brakes. Within service/friction brakes, the FCO assumed that there are separate markets for (i) pneumatic braking systems and (ii) hydraulic braking systems, based on different technical characteristics and market structure. However, no further breakdown according to the type of vehicle appeared to be relevant. The Notifying Party agrees with the FCO's assessment.
- (46) All respondents to the market investigation<sup>39 40</sup> were of the view that (i) the service/friction brake system, (ii) the magnetic track brake system, and (iii) the dynamic brake system of the drive train have different technical characteristics and cannot be replaced by each other. According to the respondents, dynamic brakes are used to enhance energy efficiency since they can transfer brake energy into electrical power, but they are not used as emergency brakes. Service/friction brake

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<sup>37</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 35.

<sup>38</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, question 27 and replies to Q3 – Questionnaire to customers of rail vehicle manufacturers, question 26.

<sup>39</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, question 10.

<sup>40</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 15.

systems serve as a main brake and as an emergency brake (in some cases the only one). Magnetic brakes, that offer the highest deceleration, are used as auxiliary emergency brakes in order to enforce the brake power. Magnetic brakes are mainly used for passenger transport (LRVs, metros, Electrical Multiple Units<sup>41</sup> ('EMUs'), Diesel Multiple Units ('DMUs'), high-speed trains and passenger coaches)<sup>42</sup>. As to supply-side substitutability<sup>43 44</sup>, the majority of the respondents indicated that suppliers tend to specialise in (i) service/friction brake systems, (ii) magnetic track brake systems, or (iii) dynamic brake systems.

- (47) As regards a further segmentation of service/friction brakes into (i) pneumatic brake systems and (ii) hydraulic brake systems<sup>45 46</sup>, the majority of respondents considered that, given their technical characteristics, pneumatic brake systems and hydraulic brake systems cannot be replaced by each other. According to market participants, hydraulic brake systems are more compact and therefore are especially used in LRVs due the limited space available, while pneumatic brakes can be used for all types of vehicles. As to supply-side substitutability, the majority of respondents indicated that friction/service brake system suppliers are usually able to provide both pneumatic and hydraulic brake systems; although it was pointed out that there are some specific suppliers for hydraulic brakes. As to a potential further segmentation per type of train, the majority of the respondents considered that there are technical and/or commercial differences between pneumatic brakes for different types of rail vehicles; the higher the speed, the more complex the system becomes. However, all major suppliers appear to be able to supply all different types of pneumatic brake systems. Regarding hydraulic brakes, market participants indicated that they are only used for LRVs.
- (48) Therefore, the Commission considers it likely that friction/service brake systems for rail vehicles constitute a distinct product market, separate from other types of brakes such as magnetic and dynamic, and that a further segmentation of friction/service brake systems between (i) pneumatic and (ii) hydraulic brake systems is applicable. However, it is not necessary to conclude on the exact product market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative product market definition.

#### 3.2.3.2. Geographic market definition

- (49) In previous decisions the Commission, as well as the FCO<sup>47</sup>, has considered the geographic market for the manufacturing and supply of braking systems for rail

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<sup>41</sup> Electrical multiple units are multiple unit trains consisting of several passenger carriages, using electricity as motive power. No locomotive is used as electric traction motors are incorporated within one or a number of carriages.

<sup>42</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 17.

<sup>43</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, question 11.

<sup>44</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 16.

<sup>45</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 14–15.

<sup>46</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 19–24.

<sup>47</sup> FCO decision B 9 – 166/11 of 15 Marc 2012, paragraph 49.

vehicles as EEA-wide.<sup>48</sup> The Notifying Party refers to these precedents without taking a final position on the matter.

- (50) The vast majority of the respondents to the market investigation<sup>49 50</sup> considered that (i) the suppliers of brake systems for rail vehicles are essentially the same in each EEA country, (ii) suppliers can easily supply subsystems throughout the EEA, and (iii) the price conditions are essentially the same across the EEA. Although some national homologation procedures are required, the process of homologation usually concerns the entire rail vehicle and not the component or subsystem separately<sup>51</sup>. Moreover, the supply pattern of brake systems of the majority of the respondents is at least EEA-wide. From the demand-side perspective, the majority of the respondent indicated that they do not have national preferences, although some of them do prefer national suppliers in case they have the same quality, price and reliability as foreign competitors.
- (51) Therefore, the Commission considers it is likely that the market for brake systems for rail vehicles is at least EEA-wide in scope. However, it is not necessary to conclude on the exact product market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative product market definition.

#### 3.2.4. *Upstream market: supply of door systems for rail vehicles*

##### 3.2.4.1. Product market definition

- (52) Door systems are used in rail vehicles to allow passenger access to rail vehicles such as metros, LRVs, passenger coaches and high-speed trains. Depending on the type of rail vehicle, door systems need to meet different requirements such as different air pressure (distinction between pressure-tight doors and non-pressure-tight doors is done by the operator or car builder) and frequency of use (general distinction between mass transit operation and mainline operation).
- (53) The Commission has not previously analysed the potential market for door systems for rail vehicles.
- (54) According to the Notifying Party, there is a single market for door systems for all rail vehicles given that all door system manufacturers offer a broad range of door systems and there is sufficient supply-side substitutability in the market. There is no manufacturer who focuses on single market segments per type of vehicle. However, the Notifying Party submits that the exact definition may ultimately be left open because the proposed transaction would not raise any competition concerns under any possible relevant market definition.

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<sup>48</sup> M.1629 – *Knorr-Bremse/Mannesmann*, paragraph 18 et seq. and M.818 – *Cardo/Thyssen*, paragraph 22 et seq.

<sup>49</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 26–28.

<sup>50</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 35.

<sup>51</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, question 27, replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 54 and replies to Q3- Questionnaire to customers of rail vehicle manufacturers, question 26.

(55) According to the results of the market investigation, not all door systems can be used for all types of rail vehicles due to different technical requirements. For instance, high-speed trains require advanced high speed doors due to resistance to pressure changes. In locomotives, the doors are served manually absent of safety mechanisms whilst the automatic passenger doors require integration of an anti-pinch protection. However, the majority of suppliers offer a complete product portfolio as it is more commercially viable, in particular for high-speed trains segment which cannot be maintained as a stand-alone business.<sup>52</sup> Therefore, in light of all the above and the other available evidence, for the purpose of this decision, the Commission considers that the relevant market is the market for all door systems.

#### 3.2.4.2. Geographic market definition

(56) The Notifying Party submits that the market for door systems for rail vehicles is at least EEA-wide in scope.

(57) The vast majority of the respondents to the market investigation<sup>53</sup> considered that (i) the suppliers of door systems for rail vehicles are essentially the same in each EEA country, (ii) suppliers can easily supply subsystems throughout the EEA, and (iii) the price conditions are essentially the same across the EEA. Moreover, the supply pattern of door systems of all of the respondents is at least EEA-wide. From the demand-side perspective, the majority of the respondents indicated that they do not have national preferences, although some of them do prefer national suppliers in case they have the same quality, price and reliability as foreign competitors.

(58) Therefore, the Commission considers it is likely that the market for door systems for rail vehicles is at least EEA-wide in scope. However, it is not necessary to conclude on the exact geographic market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative market definition.

#### 3.2.5. *Downstream market: supply of rail vehicles (locomotives and LRVs)*

##### 3.2.5.1. Product market definition

(59) In previous decisions<sup>54</sup>, the Commission distinguished between mainline trains, regional trains and local trains and categorised the market for railway transport technology into (i) high speed trains (250 km/h), (ii) electrical and diesel locomotives, (iii) electrical and diesel multiple units for intercity transport, (iv) electrical and diesel multiple units for regional transport, (v) passenger coaches and freight wagons, (vi) trams and light rail vehicles and (vii) underground vehicles.

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<sup>52</sup> Replies to Q1– Questionnaire to suppliers of subsystems, questions 21 and 22 and replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 27 and 28.

<sup>53</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 26–28 and replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 35.

<sup>54</sup> M.580 – ABB/Daimler-Benz, M.2139 – Bombardier/Adtranz, and M.5754 – Alstom Holdings/Areva T&D.

- (60) The FCO considered a separate market for diesel locomotives and added that segmentation between mainline and shunting locomotives<sup>55</sup> could make sense. The FCO also distinguished a market for local trains including LRVs, metros and tram-trains. However, the FCO did not consider it necessary to analyse the effects on this market in detail.
- (61) The Notifying Party submits that the precise market definition can be left open.
- (62) The vast majority of respondents to the market investigation consider that the previous decisional practice of the Commission with respect to the aforementioned sub-segmentation of the market by vehicle type is correct. With respect to a distinction between mainline and shunting locomotives, the majority of respondents indicated that there are significant technical differences between the two (e.g. speed, track security devices) and suppliers indicated that they tend to specialise in either shunting or mainline locomotives. A few suppliers however manufacture both types of rail vehicles, such as Alstom and Stadler.<sup>56</sup> Therefore, in light of all the above and the other available evidence, for the purpose of this decision, the Commission considers that mainline locomotives and shunting locomotives belong to separate markets.

#### 3.2.5.2. Geographic market definition

- (63) The Commission has previously left open whether the high-speed train market is EEA-wide or worldwide, while for electrical multiple units, the Commission left the geographic market definition open even if the market investigation pointed towards an at least EEA-wide market.<sup>57</sup> In a previous decision, the Commission concluded that the markets for regional trains, LRVs and metros, as well as for underground trains are national in scope. The FCO found that the market for diesel locomotives is EEA-wide.<sup>58</sup>
- (64) The Notifying Party submits that the market for locomotives and local trains is EEA-wide since the technical and regulatory requirements are to a very high degree comparable within the EEA while, on the other hand, products for the EEA-market cannot be used in other markets.
- (65) According to the results of the market investigation, manufacturers can supply rail vehicles throughout the EEA, although some technical adaptations and national homologations must be considered.<sup>59</sup> All major suppliers are active all over Europe and compete on an EEA if not on a worldwide basis. Indeed, the majority of rail operators indicated that they source rail vehicles on an EEA-wide basis, one even

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<sup>55</sup> Shunting locomotives are low-speed locomotives that are used for instance for shunting, that is for the process of organising train cars into complete sets of trains or for parking of train cars.

<sup>56</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 9 and 10 and replies to Q3 – Questionnaire to customers of rail vehicle manufacturers, questions 6–8.

<sup>57</sup> M.5754 – *Alstom Holdings/Areva T&D*, paragraphs 39 and 43.

<sup>58</sup> M.5754 – *Alstom Holdings/Areva T&D*, paragraph 39, M.2139 – *Bombardier/Alstom*, paragraph 23. FCO's decision B 9 – 166/11 of 15 March, 2012, paragraphs 52–61.

<sup>59</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 31 and 32, and replies to Q3 – Questionnaire to customers of rail vehicle manufacturers, questions 8 and 9.

sourcing on a worldwide basis<sup>60</sup>. With respect to trams and light rail vehicles, the majority of rail manufacturers supply them on a national or EEA basis.<sup>61</sup>

- (66) However, the Commission considers that it is not necessary to conclude on the exact geographic market definition as the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market under any alternative geographic market definition.

### 3.3. Horizontal effects

- (67) The proposed transaction leads to a horizontally affected market only in relation to HVAC systems. Horizontal overlaps also arise in the markets for (i) auxiliary converters, (ii) battery chargers for rail vehicles, (iii) switches and other electronic equipment for rail vehicles, and (iv) TCMS, but since these overlaps are limited and do not lead to affected markets, they will not be further discussed in this decision.

#### 3.3.1. HVAC systems

- (68) With respect to a market for all types of HVAC systems for rail vehicles, the Parties' combined market share at EEA level in 2014 in the OEM market was [20-30]% (market size of EUR [120-170] million) with an increment of [5-10]% brought about by Vossloh.<sup>62</sup> The Parties' main competitors for HVAC systems at EEA level in the OEM market are Faiveley ([20-30]%), Liebherr ([10-20]%) and Thermoking ([5-10]%).<sup>63 64</sup>
- (69) While KB supplies HVAC systems for both high-speed and non-high-speed rail vehicles, Vossloh is only active in the supply of HVAC systems for non-high-speed rail vehicles. In this narrower segment, the Parties' combined market share at EEA level is [20-30]% (market size of EUR [90-140] million) with an increment of [10-20]% brought about by Vossloh. Main competitors are Faiveley ([20-30]%), Liebherr ([10-20]%) and [...] ([50-60]%)<sup>65</sup>.
- (70) According to the market investigation, the merging parties are not close competitors<sup>66 67</sup>. While suppliers of HVAC systems for non-high speed rail vehicles considered KB as their closest or second closest competitor, Vossloh was placed either as the fourth closest competitor or not even within the closest four

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<sup>60</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 33, replies to Q3 – Questionnaire to customers of rail vehicle manufacturers, question 11.

<sup>61</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 34.

<sup>62</sup> In the IAM market, the Parties achieved combined market share of [20-30]% (market size of EUR [50-100] million) with a very small increment of [0-5]% from Vossloh.

<sup>63</sup> The remaining competitors represent in total [20-30]% of the market.

<sup>64</sup> The corresponding market shares of the main competitors in the IAM market are Faiveley ([5-10]%), Wabtec ([0-5]%) and Liebherr ([0-5]%).

\* Should read: Thermoking.

<sup>65</sup> The remaining competitors represent in total [20-30]% of the market.

<sup>66</sup> Replies to Q1 – Questionnaire to suppliers of subsystems, questions 29–30.

<sup>67</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, question 35.



competitors. As regards customers of HVAC systems, none of the respondents have mentioned both KB and Vossloh within their top four suppliers. The vast majority of respondents were of the view that neither KB nor Vossloh have any particular advantage in the supply of HVAC systems for rail vehicles<sup>68</sup> and the supplier base is more diverse than for many other subsystems (such as brakes).<sup>69</sup>

- (71) Given (i) the limited combined market shares of the Parties post-merger, (ii) the presence of other strong competitors in the market, and (iii) the fact that the merging parties are not particularly close competitors, the proposed transaction is unlikely to raise competition concerns in the market for HVAC systems for non-high-speed rail vehicles.
- (72) In light of the above and on the basis of the evidence available to the Commission, the Commission concludes that the proposed transaction does not give rise to serious doubts as to its compatibility with the internal market on the market for HVAC systems for non-high-speed rail vehicles.

### **3.4. Vertical effects**

#### *3.4.1. Competition effects of a vertical merger*

- (73) A vertical merger may potentially give rise to input foreclosure or customer foreclosure.
- (74) Input foreclosure arises where, post-merger, the new entity would be likely to restrict access to the products or services that it would have otherwise supplied absent the merger, thereby raising its downstream rivals' costs by making it harder for them to obtain supplies of the input under similar prices and conditions as absent the merger.<sup>70</sup> Customer foreclosure may occur when a supplier integrates with an important customer in the downstream market. Because of this downstream presence, the merged entity may foreclose access to a sufficient customer base to its actual or potential rivals in the upstream market (the input market) and reduce their ability or incentive to compete. In turn, this may raise downstream rivals' costs by making it harder for them to obtain supplies of the input under similar prices and conditions as absent the merger.<sup>71</sup>
- (75) In order for input or customer foreclosure to be a concern, three conditions need to be met post-merger: (i) the merged entity needs to have the ability to foreclose its rivals; (ii) the merged entity needs to have the incentive to foreclose its rivals; and (iii) the foreclosure strategy needs to have a significant detrimental effect on competition on the downstream market (input foreclosure) or on consumers

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<sup>68</sup> One customer referred to the fact that Vossloh is able to supply the corresponding amount of products for both small and big projects.

<sup>69</sup> One customer indicated that it sources HVAC (and door) systems not only from EEA manufacturers, but also from Chinese and Mexican ones. Respondents to the market investigation have also pointed [...].

<sup>70</sup> See, for instance Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p. 6 ('Non-Horizontal Guidelines'), paragraph 31.

<sup>71</sup> See, for instance Non-Horizontal Guidelines, paragraph 58.

(customer foreclosure). In practice, these factors are often examined together since they are closely intertwined.<sup>72</sup>

### 3.4.2. Affected markets and the Parties' market shares

- (76) The transaction gives rise to a vertical link between the supply of locomotives and LRVs, where Vossloh is active, and the manufacture of a number of inputs used in the production of locomotives and local trains (e.g. HVAC systems, brake systems, etc) where KB is active.

**Table 2: Market shares by value (2014) in vertically affected markets in relation to rail vehicles at EEA level**

<b>Upstream markets</b>	<b>KB</b>		<b>Vossloh</b>
Brake systems	[60-70]% OEM ([30-40]% IAM)		n/a
	Pneumatic brakes	Hydraulic brakes	n/a
	[60-70]%	[50-60]%	
Door systems	OEM	IAM	n/a
	[30-40]%	[20-30]%	
HVAC systems for non-high speed trains <sup>73</sup>	[10-20]%		[10-20]%
TCMS	[10-20]%		captive only
Auxiliary converters	[10-20]%		[0-5]%
Battery charges	[5-10]%		[5-10]%
<b>Downstream markets</b>	<b>KB</b>		<b>Vossloh</b>
Locomotives	n/a		[10-20]%
			Mainline locomotives
			Shunting locomotives
		[10-20]%	[90-100]%
Local trains (LRVs+metro)	n/a		[0-5]%

Source: Form CO

<sup>72</sup> See, for instance Non-Horizontal Guidelines, paragraphs 32 and 59.

<sup>73</sup> The Notifying Party has indicated in the Form CO that HVAC systems for high-speed trains produced by KB are not related to the locomotives and trains produced by Vossloh. The Parties' combined market share in all HVAC systems (for high-speed and non-high-speed trains) was [20-30]% in 2014.

**Table 3 The Parties and their competitors' market share (by value) for subsystems in 2014 at EEA level**

	<b>KB</b>	<b>Vossloh</b>	<b>Combined</b>	<b>Market size (million EUR)</b>	<b>Competitors</b>
<b>HVAC systems for non-high speed trains</b>	[10-20]%	[10-20]%	<b>[20-30]%</b>	<b>[90-140]</b>	Faiveley([20-30]%), Liebherr ([10-20]%), Thermoking ([5-10]%), Others ([20-30]%)
<b>Door systems (OEM)</b>	[30-40]%	n/a	<b>[30-40]%</b>	<b>[150-200]</b>	Faiveley ([20-30]%), Gebr.bode ([20-30]%), Wabtec ([0-5]%), Others ([10-20]%)
<b>Door Systems (IAM)</b>	[20-30]%	n/a	<b>[20-30]%</b>	<b>[120-170]</b>	Faiveley ([10-20]%), Gebr.bode ([5-10]%), Wabtec ([0-5]%), Others ([50-60]%)
<b>Battery chargers</b>	[5-10]%	[5-10]%	<b>[10-20]%</b>	<b>n/a</b>	SMA ([10-20]%), ABB ([20-30]%)
<b>Auxiliary converters</b>	[10-20]%	[0-5]%	<b>[10-20]%</b>	<b>n/a</b>	SMA ([5-10]%), ABB ([0-5]%), Medcom ([5-10]%), Sepsa ([0-5]%)

*Source: Form CO*

- (77) As shown in the table, the vertical link with the highest market shares arises between KB's activities in brake systems (market share of up to [60-70]%) and Vossloh's activities in shunting locomotives ([90-100]%).

#### *3.4.2.1. Downstream market for locomotives and LRVs*

- (78) Vossloh estimates that its market share for locomotives in the EEA was less than 15% in each of the last three years. Vossloh is active in the supply of mainline and shunting locomotives. In the potential market for mainline locomotives, Vossloh would have an EEA market share of [10-20]%. In the potential market for shunting locomotives Vossloh would have a market share of [90-100]%. The market for shunting locomotives is relatively small (EUR [<100] million). Therefore, according to the Notifying Party, the sale of only a few new shunting locomotives in a year may lead to a significant market share. The Notifying Party adds that most customers do not buy new shunting locomotives but refurbished ones. Vossloh does not offer such services for locomotives as smaller manufacturers from Eastern Europe have already entered this market in a very competitive manner.
- (79) Vossloh faces competition in shunting locomotives from Gmeinder ([5-10]%) and Alstom Stendal ([0-5]%). Vossloh's main competitor, Voith Turbo, which had a market share of [40-50]% in 2013, has exited the market in 2014, resulting in a considerable increase of Vossloh's market shares from [50-60]% in 2013 to [90-100]% in 2014. The Parties expect a revival of smaller shunting locomotive manufacturers following Voith Turbo's exit from the market.

- (80) Regarding LRVs, Vossloh has a market share at EEA level of [0-5]%. If national markets were considered in relation to LRVs, Vossloh's market share in each national market within the EEA would be significantly lower than 30%<sup>74</sup>.

#### 3.4.2.2. *Upstream market for brake systems*

- (81) According to the Parties' estimates, in 2014, the overall EEA market for brake systems was EUR [350-400] million. KB's market share at EEA level was [60-70]%. It competes mainly against Faiveley ([10-20]%), but smaller suppliers such as Dako ([0-5]%), Wabtec ([0-5]%) and others ([5-10]%) are also active on the market.
- (82) The market for pneumatic brakes represents [80-90]% of the total market for brake systems, while hydraulic brakes accounts for [10-20]% of the total market. In the hypothetical market for pneumatic brakes, the competitive conditions would remain similar, with KB being the market leader ([60-70]%), followed by its main competitor Faiveley ([20-30]%), Dako ([0-5]%) and Wabtec ([0-5]%). In the hypothetical market for hydraulic brakes, KB would have a market share of [50-60]%. Its main competitor would be Hanning & Kahl ([10-20]%), followed by Dako ([5-10]%), Faiveley ([0-5]%) and others ([20-30]%).

#### 3.4.3. *Brake systems (upstream) – Locomotives (downstream)*

##### 3.4.3.1. Input and customer foreclosure

- (83) With respect to input foreclosure, the Notifying Party submits that KB will not be able to strengthen its position on the market for brakes post-merger by shifting the majority of its sales to Vossloh.
- (84) First, KB's sales of pneumatic and hydraulic brakes to Vossloh were small. In 2014, KB's sales of pneumatic brakes to Vossloh amounted to approximately EUR [...] million. KB's total sales of pneumatic brakes amounted to EUR [...] million. As such, KB's sales to Vossloh correspond to only [0-5]% of KB's total supply and [0-5]% of the total demand of pneumatic brake systems within the EEA. Moreover, Vossloh's purchases from KB represent about [70-80]% of Vossloh's total purchases. In 2014, KB's sales of hydraulic brakes to Vossloh amounted to approximately EUR [...] million. KB's total sales of hydraulic brakes amounted to EUR [...] million. As such, KB's sales to Vossloh correspond to only [10-20]% of KB's total supply and [5-10]% of the total demand of hydraulic brake systems within the EEA. Moreover, Vossloh's purchases from KB represent about [70-80]% of Vossloh's total purchases.
- (85) Second, if KB were to restrict access to braking systems, rail vehicle manufacturers could sanction KB by reducing their purchases of braking systems or other products (such as HVAC systems or door systems) and buying these products from KB's competitors.
- (86) Third, brake systems (as well as other components and subsystems) are low-value components that represent only [...] % of the total locomotive cost. Therefore the

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<sup>74</sup> Vossloh's market shares for LRVs at national are [10-20]% in Germany, [5-10]% in Austria and [5-10]% in the UK.

total cost of production of a locomotive cannot be influenced to a significant extent by price variations in the brake systems.

- (87) With respect to customer foreclosure, the Notifying Party submits that the merger will not result in KB foreclosing its upstream rivals by restricting access to an important customer. This is because Vossloh's total demand for pneumatic and hydraulic brakes constitutes only [0-5]% and [5-10]% respectively of the total market demand and it cannot therefore be considered a significant customer. In addition, Vossloh already procures approximately [70-80]% and [70-80]% of its demand for pneumatic and hydraulic brakes respectively from KB.
- (88) During the course of the market investigation, a rail vehicle manufacturer raised concerns ('the complainant') that the concentration leads to input and customer foreclosure which may create or strengthen a dominant position by the Parties. According to the complainant, KB would already have a dominant position in pneumatic brake systems and would at least enjoy collective dominance (together with Faiveley and Hanning & Kahl) in hydraulic brake systems. This alleged dominance of KB would be increased post-transaction by further requests for brakes from Vossloh as a supplier of locomotives.
- (89) The complainant put forward that KB will have post-merger ability and incentive to foreclose suppliers of locomotives, LRVs and other vehicles by not selling braking systems to them or selling them at higher prices. According to the complainant, there is no risk that major customers would switch to other brake systems suppliers given that (i) Faiveley cannot replace KB in all geographic markets, (ii) Faiveley could suffer capacity constraints if its demand were to increase, and (ii) there are high barriers to entry into this market segment. Moreover, given the high buyer power of the railway operators, a price increase by KB would have to be borne by the rail vehicle manufacturers. The complainant also raised customer foreclosure concerns.
- (90) According to the complainant, KB would grant Vossloh preferential prices for brake systems and other components post-transaction. Those discounts would make Vossloh's vehicles more competitive. The complainant estimates that KB has the ability to do so since on one hand (i) KB Holding will acquire control over Vossloh and therefore will be able to instruct Vossloh to purchase from KB and, on the other hand (ii) KB could discount the profit it makes with brakes from the price to be paid by Vossloh for this product. Moreover, Vossloh would also have preferential access to innovations by KB. As to incentives, the complainant assumes that Vossloh requests brake systems only to a minor extent from KB, meaning that KB would have the incentive to increase supplies to Vossloh. Also, more sales with Vossloh would lead to higher revenues for KB, with an additional profit return via KB's shareholding in Vossloh.
- (91) No other rail vehicle manufacturer raised any input foreclosure concerns.
- (92) First, the Commission notes that, according to the Non-Horizontal Guidelines<sup>75</sup>, vertical and conglomerate mergers provide substantial scope for efficiencies. A characteristic of vertical mergers and certain conglomerate mergers is that the

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<sup>75</sup> Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p. 6 ('Non-Horizontal Guidelines'), paragraph 13.

activities and/or the products of the companies involved are complementary to each other. The integration of complementary activities or products within a single firm may produce significant efficiencies and be pro-competitive. In vertical relationships for instance, as a result of the complementarity, a decrease in mark-ups downstream will lead to higher demand also upstream. A part of the benefit of this increase in demand will accrue to the upstream suppliers. An integrated firm will take this benefit into account. Vertical integration may thus provide an increased incentive to seek to decrease prices and increase output because the integrated firm can capture a larger fraction of the benefits. This is often referred to as the ‘internalisation of double mark-ups’. By this token, if KB would post-transaction reduce their upstream margin (in brake systems) to decrease prices and increase output in the downstream market (locomotives), this would constitute pro-competitive behaviour.

- (93) Second, as regards input foreclosure, given that Vossloh is a small player, whose total purchases account for only [0-5]% of the EEA market for pneumatic brakes and [5-10]% of the EEA market for hydraulic brakes, there is clearly no incentive on KB to stop supplying other rail vehicle manufacturers with its braking systems. Moreover, market participants generally do not consider a price rise likely as a result of the merger and consider in particular Faiveley and Hanning & Kahl to be a viable alternative supplier.
- (94) Third, as regards customer foreclosure, given that Vossloh already procures approximately [70-80]% and [70-80]% of its demand for pneumatic and hydraulic brakes respectively from KB and that Vossloh’s purchases represent only [0-5]% and [5-10]% of the EEA market for pneumatic and hydraulic brakes respectively, any customer foreclosure concerns are remote,<sup>76</sup> even considering the vertical supply of pneumatic brake systems for shunting locomotives. Therefore, an increase in Vossloh's purchases of brake systems from KB would not increase KB's market position to any significant extent. Furthermore, given Vossloh's market share of [0-5]% at EEA level in LRVs, it cannot be considered as a significant customer for hydraulic brakes.
- (95) Therefore, the Commission considers that given (i) Vossloh's limited share of purchases of braking systems; (ii) the high share of Vossloh's needs already covered by KB; (iii) the existence of alternative suppliers of braking systems, such as Faiveley and Hanning & Kahl; and (iv) the existence of alternative competitors in the supply of shunting locomotives, the merged entity is unlikely to have the ability or incentive to engage in input or customer foreclosure related to brake systems and locomotives and LRVs.<sup>77</sup> In light of the above and of the other available evidence,

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<sup>76</sup> One brake supplier raised concerns regarding the potential loss of Vossloh as a customer.

<sup>77</sup> Some market participants raised concerns as regards the risk of transmission of confidential information of customers between KB and Vossloh. For example, KB could have access through Vossloh to important technical and price related information of KB's competitors in the supply of subsystems or Vossloh would have access through KB to technical information of Vossloh's competitors in the supply of rail vehicles. However, given that it is important for KB to maintain its other customers, and that it is highly unlikely that customers would stand for this type of behaviour but rather move their business to other competitors, such a risk seems remote. Moreover, market participants have also explained that (i) there exists already a platform for exchange of such information in the framework of the bidding negotiations, (ii) the situation will remain unchanged post-transaction since both KB and Vossloh will be operated independently, and (iii) KB never leaked customer information to date. Market participants have also referred to the fact that Vossloh is a small competitor/customer and this would limit even more their concerns about a potential leak

the Commission concludes that the transaction does not give rise to serious doubts in relation to the vertical relationship between the brake systems and the locomotives markets.

3.4.4. *HVAC systems, door systems, other products (upstream) – Locomotives (downstream)*

- (96) In the narrow segment of HVAC for non-high-speed rail vehicles, the Parties' combined market share at EEA level is [20-30]% (market size of EUR [90-140] million) with an increment of [10-20]% brought about by Vossloh. Main competitors are Faiveley ([20-30]%), Liebherr ([10-20]%) and Thermoking ([5-10]%)<sup>78</sup>.
- (97) KB's market share for door systems at EEA level was [30-40]%. According to the Parties' estimates, the total EEA market for door systems was EUR [...] million in 2014. Its main competitors on this market are Faiveley ([20-30]%), Gebr.bode ([20-30]%) and Wabtec ([0-5]%).
- (98) As to the supply of TCMS, KB has a market share at EEA level of [10-20]%, while Vossloh produces TCMS for captive use only. However, Vossloh supplies TCMS in as part of an integrated electrical system such as the E-System<sup>79</sup>. Vossloh's hypothetical market share in each of the last three years amounted to less than 5%<sup>80</sup>.
- (99) Regarding auxiliary converters for rail vehicles, battery charges for rail vehicles, switches and other electrical equipment for rail vehicles, the Parties' combined market share at EEA level would not reach 20% according to the Notifying Party. Moreover, even considering hypothetical national markets, the Parties combined market share would remain below 30% in each of the countries within the EEA.

3.4.4.1. Input foreclosure

- (100) As regards input foreclosure whereby KB would restrict supplies of HVAC systems, door systems, or other subsystems such as TCMS, auxiliary converters, batteries and switches or supply them at worse conditions than pre-merger, the Notifying Party submits that post-transaction strong competitors will remain in each of the relevant markets.
- (101) As regards HVAC systems, the Commission considers that the Parties' combined market shares are limited and, moreover, KB faces competition from several suppliers (Faiveley ([20-30]%), Liebherr ([10-20]%) and Thermoking ([5-10]%). Therefore rivals in the downstream markets will have sufficient alternative sources of supply. Moreover, the total value of purchases of HVAC systems made by Vossloh in 2014 amounted to approximately EUR [...] million out of a total market

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<sup>78</sup> The remaining competitors represent in total [20-30]% of the market.

<sup>79</sup> According to Vossloh, the E-system comprises the following parts: traction converter, pantographs, traction motors, gear box, on-board power supply, TCMS, passenger information system, driver's desk control, HVAC, signalling, radio, and diagnostic systems.

<sup>80</sup> Vossloh generated sales in relation to E-systems for rail vehicles and busses amounting to approx. EUR [...] million in 2014, approx. EUR [...] million in 2013 and EUR [...] million in 2012. Vossloh estimates that approx. [...] % thereof are attributable to TCMS.

of EUR [90-140] million. As such, KB's ability and incentives to engage in input foreclosure are severely limited by Vossloh's small total demand.

- (102) As regards door systems, the Commission considers that KB faces strong competition from Faiveley ([20-30]%), Gebr.bode ([20-30]%) and Wabtec ([0-5]%) so customers in the downstream markets will have sufficient alternative sources of supply. Moreover, the total value of purchases for door systems made by Vossloh in 2014 amounted to EUR [...] million out of a total market of EUR [150-200] million. As such, KB's ability and incentives to engage in input foreclosure are severely limited by Vossloh's small total demand. Given the Parties' market shares in the supply of TCMS, auxiliary converter, battery charges, switches and other electrical equipment, rivals in the downstream markets will have sufficient alternative sources of supply. Moreover, the majority of KB's sales are to customers much larger than Vossloh and it is highly unlikely that KB would forgo sales to these customers to the benefit of Vossloh given Vossloh's limited purchases.

#### 3.4.4.2. Customer foreclosure

- (104) As regards customer foreclosure in respect of supplies of HVAC systems, door systems, or other subsystems such as TCMSs, auxiliary converters or switches, the Notifying Party submits that the merger does not raise such foreclosure concerns since Vossloh is not an important customer for any of these subsystems. For instance, KB has delivered HVAC systems to Vossloh only on very limited occasions, amounting to sales of EUR [...] million in 2012.<sup>81</sup> In 2014, the total value of purchases of HVAC systems made by Vossloh amounted to approximately EUR [...] million out of a total market of EUR [90-140] million.
- (105) As regards door systems, KB's main customers for door systems are Bombardier, AnsaldoBreda, Alstom, Stadler and Siemens. In 2014, KB supplied door systems to Bombardier of a value of EUR [...] million (representing [20-30]% of KB's total sales of door systems), whereas the value of door systems supplied by KB to Vossloh was only EUR [...] million (representing [0-5]% of KB's total sales of door systems). Given that in 2014 the total value of purchases for door systems made by Vossloh amounted to EUR [...] million out of a total market of EUR [150-200] million, it can be concluded that Vossloh does not constitute a sufficiently significant customer to raise customer foreclosure concerns with respect to the upstream market for door systems.
- (106) Similarly for TCMS and auxiliary converters, Vossloh's purchases represent only [0-5]% and [0-5]% respectively out of total market for TCMSs and auxiliary converters.<sup>82</sup> Vossloh's demand for electrical equipment constitutes less than [0-5]% of the total EEA-wide market demand for such equipment.

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<sup>81</sup> This was also only because Vossloh [...].

<sup>82</sup> The total value of Vossloh's purchases of TCMS in 2013 was approximately EUR [...] million out of a total market of EUR [50-100] million. Similarly, for auxiliary converters, Vossloh made insignificant purchases (EUR [...] million, including captive sales) compared to the total size of the market (EUR [300-350] million).



- (107) In view of the small purchases made by Vossloh in these markets, it can be concluded that Vossloh does not constitute a significant customer in respect of any subsystem.
- (108) The merged entity is therefore unlikely to have the ability or incentive to engage in customer foreclosure in respect of any of HVAC systems, door systems, or other subsystems such as TCMSs, auxiliary converters or switches. In light of the above and of the other available evidence, the Commission concludes that the transaction does not give rise to serious doubts in relation to the vertical relationship between the HVAC systems, door systems, other products and the locomotives markets.

### **3.5. Conglomerate effects**

- (109) According to the Non-Horizontal Guidelines<sup>83</sup>, conglomerate mergers are mergers between firms that are in a relationship which is neither purely horizontal (as competitors in the same relevant market) nor vertical (as supplier and customer). In practice, the focus is on mergers between companies that are active in closely related markets (e.g. mergers involving suppliers of complementary products or of products which belong to a range of products that is generally purchased by the same set of customers for the same end use). It is acknowledged that conglomerate mergers in the majority of circumstances will not lead to any competition problems.
- (110) The main concern in the context of conglomerate mergers is that of foreclosure. The combination of products in related markets may confer on the merged entity the ability and incentive to leverage a strong market position from one market to another by means of tying or bundling or other exclusionary practices. Tying and bundling as such are common practices that often have no anticompetitive consequences. Companies engage in tying and bundling in order to provide their customers with better products or offerings in cost-effective ways. Nevertheless, in certain circumstances, these practices may lead to a reduction in actual or potential rivals' ability or incentive to compete. This may reduce the competitive pressure on the merged entity allowing it to increase prices.
- (111) In assessing the likelihood of such a scenario, the Commission examines, first, whether the merged firm would have the ability to foreclose its rivals, second, whether it would have the economic incentive to do so and, third, whether a foreclosure strategy would have a significant detrimental effect on competition, thus causing harm to consumers. In practice, these factors are often examined together as they are closely intertwined.

#### *3.5.1. Commercial bundling*

- (112) The Notifying Party puts forward that the proposed transaction would not result in any bundling of products by KB and Vossloh. Given its wide portfolio, KB is already in the position to bundle some of these products and offer discounts to buyers if they purchase subsystems offered by the KB group together. However, KB submits that the various products are produced, marketed and distributed by different business units and different subsidiaries of the KB group. [...].

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<sup>83</sup> Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p. 6 ('Non-Horizontal Guidelines'), paragraphs 91–94.

Furthermore, competitors such as Faiveley would be able to react to such bundling by adopting a similar behaviour they also produce a wide range of subsystems. In any event, such bundling is possible subject to limitations because the market position of KB in the different segments of the market is modest (with the exception of brakes), such as for HVAC systems for non-high-speed trains.

- (113) The Notifying Party adds that it is not to be expected that a market-dominating position will arise after the concentration as a result of an ability by the Parties to bundle braking systems of KB (and possibly further subsystems from the KB group such as door/entry systems) with HVAC systems of Vossloh. Given that the decision on the purchase of the HVAC and the braking system will generally be taken at about the same time, it appears reasonable to assume that the vehicle manufacturers will, in negotiations with those suppliers who offer more than one subsystem, demand an additional discount if more than one system is to be purchased from the same seller. However, such transfer of market power is rather unlikely due to the high number of competitors in the HVAC market.
- (114) The vast majority of rail vehicle manufacturers<sup>84</sup> indicated that they see advantages in sourcing different components and subsystems from the same provider and that in those cases they usually get better package prices. Also the vast majority of subsystems suppliers<sup>85</sup> are of the view that it is advantageous to supply different components and subsystems to the same rolling stock manufacturer, given for example the optimisation of transport and sales costs.
- (115) During the market investigation some market players raised concerns regarding KB's wide portfolio pre-merger and the fact that it will be expanded post-transaction. Those market participants are concerned that they will be faced with forced bundling of products by the merged entity. However, other market participants referred to the strong competitive pressure that Faiveley exerts over KB that would prevent unfair commercial practices and to the fact that Vossloh is a rather small player.<sup>86</sup>
- (116) The Commission notes that KB already has a wide portfolio and could have already pursued a commercial bundling strategy in order to transfer its strength in brakes to other subsystems such as HVAC or doors. However, this has not been the case. The market investigation revealed no evidence that KB has pursued such a strategy in the past and the addition of Vossloh's subsystems to KB's portfolio appears not to be of such significance as to change KB's incentives.

### 3.5.2. *Technical bundling*

- (117) The Notifying Party puts forward that technical bundling of the braking system with other subsystems (such as the HVAC system) is not possible because of safety reasons (i.e. emergency braking system). Therefore, the braking system has to be constructed as a completely independent subsystem.

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<sup>84</sup> Replies to Q2 – Questionnaire to customers of subsystems manufacturers, questions 50 and 51.

<sup>85</sup> Replies to Q1 – Questionnaire to subsystems suppliers, questions 37.

<sup>86</sup> Non-confidential minutes of a call with a rail vehicle supplier, 26 March 2015; and non-confidential minutes of a call with a subsystems supplier, 26 March 2015.

- (118) Some market participants have claimed that the Parties may have an advantage post-transaction in developing a technically bundled offer of different subsystems or parts thereof. However, it appears that the addition of Vossloh's business to that of KB would not significantly change the market situation as the addition of Vossloh to KB will not significantly increase the latter's market position in any of the sub-systems in question. Moreover, integrated equipment manufacturers and train integrators are increasingly looking into such possibilities and Siemens already has its own integrated systems<sup>87</sup>, so that it is not likely that the merged entity would have any special or otherwise particularly strong position compared to other market participants in this respect.

3.5.3. *Conclusion*

- (119) In light of the above and of the other available evidence, the Commission concludes that the transaction does not give rise to serious doubts in relation to the possible conglomerate effects of the Transaction.

**4. CONCLUSION**

- (120) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

*For the Commission*

*(signed)*

*Margrethe VESTAGER*

*Member of the Commission*

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<sup>87</sup> Non-confidential minutes of a call with a rail vehicle supplier, 26 March 2015.