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PUBLIC VERSION

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 Where possible the information omitted has been replaced by ranges of figures or a general description.

To the notifying parties

Subject: **Case M.9185 – LG ELECTRONICS / LUFTHANSA TECHNIK / JV**
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

Dear Sir or Madam,

1. INTRODUCTION

(1) On 22 February 2019**,** the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which LG Electronics Inc. ("LG Electronics") and Lufthansa Technik AG ("Lufthansa Technik") would acquire within the meaning of Article 3(1)(b) and 3(4) of the Merger Regulation joint control of a joint venture (the "JV"). LG Electronics and Lufthansa Technik are collectively referred to as the "Parties".

1 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.

2 OJ L 1, 3.1.1994, p. 3 (the 'EEA Agreement').

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(2) This notification concerns the following undertakings:

— LG Electronics (South Korea),

— Lufthansa Technik (Germany),

— newly created joint venture ("JV", Germany).

(3) LG Electronics and Lufthansa Technik will acquire within the meaning of Article 3(1)(b) and 3(4) of the Merger Regulation joint control of the JV.

(4) The concentration is accomplished by way of a newly created joint venture.

2. THE PARTIES

(5) The business activities of the undertakings concerned are:

— for LG Electronics: production and supply of electronics, mobile communication devices and home appliances,

— for Lufthansa Technik: provision of maintenance, repair and overhaul services for aircraft, engines and components, and the development, design and supply of cabin management and in-flight entertainment systems as well as CMS and IFE components,

— for the JV: design, production, maintenance and sale of soft- and hardware for aircraft cabins, electronic equipment as well as lighting, sensor, camera and display systems (including in-flight entertainment, […], cabin management and […] systems) for commercial aircraft.

3. THE CONCENTRATION

(6) The creation of the JV constitutes a concentration in the meaning of Articles 3(1)(b) and 3(4) of the Merger Regulation.

3.1. Joint control

(7) Pursuant to a joint venture agreement dated 23 October 2018, LG Electronics and Lufthansa Technik will incorporate the JV by establishing three joint venture companies ("JVCos"). Lufthansa Technik will hold 51% and LG Electronics will hold 49% of the registered share capital in two of these JVCos. […][3].

(8) Each of the three JVCos will have its own management board, with LG Electronics and Lufthansa Technik each nominating one managing director for each of the JVCos. The two managing directors of each JVCo will be jointly responsible for the overall management of the respective JVCo and every decision would have to be taken unanimously by both directors. […][4].

[3] Form CO, paragraph 30.

[4] Form CO, paragraphs 31-32.

(9) Where a decision that requires unanimity cannot be reached, a deadlock mechanism [applies]. No shareholder has a casting vote[5].

(10) A number of matters are subject to prior shareholder approval. These include the usual minority protection rights, as well as strategic rights relating to senior management appointments and removals, and the approval of the annual business plan. […][6].

(11) For these reasons, decisions cannot be taken by one parent company without the consent of the other parent company. The JV will therefore be jointly controlled by Lufthansa Technik and LG Electronics.

3.2. Full functionality

(12) The concentration will lead to the creation of a full function joint venture.

(13) The JV will have dedicated management, workforce and assets to run its activities.[7] It will have a long-lasting and autonomous presence on the market going beyond a specific function for the Parties[8] and will maintain an arm's length commercial relationship with them.[9]

4. EU DIMENSION

(14) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million[10]. Each of them has an EU-wide turnover in excess of EUR 250 million, but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same Member State. The notified operation therefore has an EU dimension.

5. RELEVANT MARKETS

5.1. Introduction

(15) The Transaction concerns the creation of a green-field joint venture for design, development and supply of Cabin Management Systems (CMS) and In-flight entertainment (IFE) systems for commercial aircrafts.[11] CMS is an integrated system of controls for the aircraft cabin, such as temperature, lights, water level, passenger announcements, and other cabin crew functions. An IFE system provides entertainment to aircraft passengers during the flight and may include displays, video on demand service, moving–map systems, in-flight games, teleconference equipment, and visual content rights.

5 Form CO, paragraph 36.
6 Form CO, paragraph 39.
7 Form CO, paragraph 40.
8 Form CO, paragraph 41.
9 Form CO, paragraphs 42-44.
10 Turnover calculated in accordance with Article 5 of the Merger Regulation.
11 […]

(16) In the aviation industry, a distinction between supplier-furnished equipment (SFE) and buyer-furnished equipment (BFE) is traditionally made in the procurement of aircraft systems (avionics and non-avionics products).[12]

(17) SFE products are selected and purchased by the airframe OEMs at the design and development phase of an aircraft platform based on the supplier's technical compliance (the airframe OEM defining the technical requirements), cost, schedule and risk.

(18) BFE products are selected and purchased by the airlines after acquiring the aircraft. Whilst BFE suppliers need to be certified by the airframe OEM, the airline selects the BFE equipment supplier, negotiates and buys directly from the BFE supplier.

(19) As regards the procurement of CMS, which is a SFE, airframe OEMs, such as Airbus and Boeing, have major influence over the choice and functionalities of the system to be provided with the aircraft.[13] Accordingly, it is the airframe OEM that buys CMS directly from CMS manufacturers (or has in-house production)[14] and then delivers the system integrated with the aircraft to the customer. However, an airline may cooperate with the airframe OEM to have a limited level of CMS customization to match their individual needs (e.g. to adapt CMS to specific cabin layout and service procedures).[15]

(20) Conversely, as regards the procurement of an IFE system, which is a BFE, the customer of an aircraft, e.g. an airline, chooses the supplier of the IFE system and customises it to its needs (such as cabin configuration, features, price, and delivery/installation timeframe) separately from the purchase of the aircraft from the airframe OEM.[16] IFE systems have a life cycle of typically 10-15 years.[17] A change of a system on an operating aircraft requires a high capital investment, concerns complex certification and time-consuming installation, with the aircraft being offline for weeks or even months whilst installation is ongoing.[18] Accordingly, the IFE system is usually changed only during a complete cabin retrofit.

(21) Lufthansa Technik designs, produces and supplies CMS and IFE systems to customers operating business jets. Through the IDAIR, a joint venture between Panasonic and Lufthansa Technik, Lufthansa Technik supplies CMS and IFE systems for use in the (V)VIP segment.

(22) Lufthansa Technik is active in other non-avionics aerospace products, and in particular components for IFE system, such as wireless access points (WAP). Lufthansa Technik is also active to a very limited extent in cabin lighting systems[19], while one of the activities of the JV will concern the electric cabin lighting systems. Since this potential overlap does not give rise to an affected market, the Commission will not discuss it further.

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12 M.8305 – *Rockwell Collins/BE Aerospace*, recital 36 et seq.

13 Responses to RFI 4, question 7b, and RFI 8, question 3c.

14 Form CO, paragraph 102; Response to RFI 4, question 7b.

15 M.8305 – *Rockwell Collins/BE Aerospace*, recital 40; response to Commission's request for information of 15 March 2019 by a market participant.

16 Form CO, paragraphs 79-80, see also Commission decision in case M.8305 – *Rockwell Collins/BE Aerospace*, recital 39.

17 Minutes of a call of 1 March 2019 with a market participant.

18 Minutes of a call of 1 March 2019 with a market participant.

19 Lufthansa Technik has a market share of [0-5]% on the worldwide market for cabin lighting systems.

(23) There are some other components that can potentially be used for IFE/CMS systems that the JV will produce and supply, however, with the exception of one component – WAP, no affected markets would arise.[20]

5.2. Relevant product market definition

5.2.1. In-flight entertainment (IFE) systems and Cabin management systems (CMS)

(24) In previous cases, the Commission considered that both IFE systems and CMS belong to non-avionics aerospace products category.[21] The Commission considered these two systems separately and in both cases left the market definition open.[22]

(25) In a previous case,[23] the Commission explained that CMS generally cover utility control of various cabin environmental functions such as temperature, lighting, in-flight entertainment, galley services, wastewater, window shades as well as access to long-range satellite communications and internet connectivity.

(26) In the Parties' view, the relevant market for the development and supply of the IFE and CMS should be further segmented by customer type: (i) commercial aircraft, (ii) business jets, and (iii) (V)VIP jets. The Parties note that the Commission has not previously considered the latter category in relation to non-avionics aerospace products. The Parties submit that, for commercial aircraft, IFE and CMS are procured separately, however, for business jets and, in particular, for (V)VIP jets, these two systems are offered as a single integrated and largely customised system. The Parties argue that from the demand-side and supply-side perspective, the markets could potentially be segmented as follows: IFE systems for commercial aircrafts; CMS for commercial aircrafts; IFE and CMS as an integrated solution for business jets; and IFE and CMS as an integrated solution for (V)VIP jets. More generally, the Notifying Parties consider that the precise definition of the markets may be left open, as the Transaction does not give rise to competition concerns under any possible market definition.

(27) The results of the market investigation provided some indications that CMS and IFE products differ depending on whether the system is developed for a commercial aircraft, business jet or (V)VIP jets.[24]

(28) First, CMS and IFE systems for commercial aircraft may not be substitutable with the CMS/IFE systems for business jets and (V)VIP jets because of different technical requirements (e.g. aircraft's architecture) and different functionalities[25] (e.g., CMS features for customized window shades or zone temperature controls in the (V)VIP jets would not be available in a commercial aircraft).

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20 LG Electronics intends to supply display modules to the JV, however, currently it has no activities in relation to suppliers of IFE/CMS; as regards other components for the IFE, the market share of Lufthansa Technik is [0-5]% (Form CO, paragraph 173, response to RFI 8, question 2).

21 Commission decisions in cases M.1601 – *Allied Signal/Honeywell*, recital 56; M.2220 – *General Electric/Honeywell*, recitals 268 and 275; M.8305 – *Rockwell Collins/BE Aerospace*.

22 Commission decision in case M.8305 – *Rockwell Collins/BE Aerospace*.

23 See Commission decision in case M.8305 – *Rockwell Collins/BE Aerospace*.

24 Minutes of a call of 4 March 2019 with a market participant, minutes of a call of 11 March 2019 with another market participant, Response to the Commission's request for information of 12 March 2019 by a market participant.

25 Response to the Commission's request for information of 12 March 2019 by a market participant; minutes of a call of 11 March 2019 with another market participant.

(29) Second, some respondents to the market investigation also explained that certification requirements for CMS and IFE systems differ across the sectors, with the most stringent certification requirements applicable to the systems for commercial aircraft.[26] For example, an IFE system developed for a business jet may not be transferrable to a commercial aircraft because of certification requirements.[27]

(30) Third, scalability of a system may also present a challenge: "*if the system is only capable to support 20 seats, it may be difficult to scale the system up to fit more than 100 seats.*"[28] Another respondent to the market investigation has further explained the differences in competition conditions across the sectors: "*The more screens, the higher system and servers' capacity is needed. Second, in commercial aircrafts the back-seat screens concern a big up-front cost.*"[29]

(31) Fourth, in line with the Notifying Parties' view, some respondents noted that in business jets and (V)VIP jets, suppliers typically offer IFE systems and CMS as an integrated solution, while in commercial aircraft the two systems are sourced separately.[30] Furthermore, the market investigation has shown that different suppliers for CMS and IFE systems are active in each of the segments.[31]

(32) The Commission also considered whether CMS and IFE systems for commercial aircraft should be further segmented by type of a class (first, business, and coach classes). The Notifying Parties submitted that such segmentation is not warranted because IFE systems for commercial aircraft are purchased as a single package and that the system is connected to the same server and use the same central power supply, with only the components visible to the passenger being possibly different (e.g. the size of the screen).[32] The respondents to the market investigation also were of the view that within the aircraft there is one CMS and IFE system across all classes and that beyond the visual components between classes, there are no major differences.[33]

(33) As regards aircraft WAP, it is a non-avionics component used as an input for the IFE/CMS systems. Aircraft WAP is a device that allows wireless devices to connect to a wired network of the aircraft. Aircraft WAP can be used, for example, for high-speed Wi-Fi for in-flight web browsing, real-time communications, multimedia streaming. The Parties submit that the same technology of an aircraft WAP is used across the segments, irrespective of the type of the aircraft or the customer.

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26 Minutes of a call of 11 March 2019 with another market participant; response to the Commission's request for information of 12 March 2019 by a market participant.

27 See for example, minutes of a call of 1 March 2019 with a market participant.

28 Minutes of a call of 1 March 2019 with a market participant, see also minutes of a call of 11 March 2019 with a market participant.

29 Minutes of a call of 11 March 2019 with a market participant.

30 Minutes of a call of 4 March 2019 with a market participant; minutes of a call of 11 March 2019 with another market participant; Response to the Commission's request for information of 12 March 2019 by a market participant.

31 Form CO, paragraph 170 et seq.; minutes of a call of 4 March 2019 with a market participant; minutes of a call of 11 March 2019 with another market participant.

32 RFI 4, question 4.

33 Minutes of a call of 1 March 2019 with a market participant; response to the Commission's request for information of 12 March 2019 by a market participant.

(34) In light of the fact that the concentration does not give rise to competition concerns under any plausible market definition, the exact scope of market definition for IFE and CMS systems may be left open for the purposes of this decision.

5.3. Geographic market definition

(35) In line with the Parties' view, past decisional practice[34], and the results of the market investigation in the present case[35], the Commission considers that the relevant geographic markets for avionics and non-avionics products for civil aircrafts, including the CMS and IFE systems, are worldwide in scope.

6. COMPETITIVE ASSESSMENT

6.1. Legal framework

(36) The Commission Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (the "Horizontal Merger Guidelines")[36] 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.

(37) 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.[37]

(38) The Horizontal Merger Guidelines list a number of factors, which may influence the rise of substantial non-coordinated, effects 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. That list of factors applies equally if a merger would create or strengthen a dominant position, or would otherwise significantly impede effective competition due to non-coordinated effects. Furthermore, not all of those factors need to be present to make significant non-coordinated effects likely and this is not an exhaustive list.[38]

(39) Vertical mergers involve companies operating at different levels of the same supply chain. Pursuant to the Commission Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (the "Non-Horizontal Merger Guidelines"),[39] vertical mergers do not

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34 Commission decisions in cases M.2220 – *General Electric/Honeywell*, recital 240; M.8305 – *Rockwell Collins/BE Aerospace*.

35 Minutes of a call of 1 March 2019 with a market participant; response to the Commission's request for information of 12 March 2019 by a market participant.

36 OJ C 31, 5.2.2004, p. 5.

37 Horizontal Merger Guidelines, paragraph 24.

38 Horizontal Merger Guidelines, paragraph 26.

39 OJ C 265, 18.10.2008, p. 6.

entail the loss of direct competition between merging firms in the same relevant market and provide scope for efficiencies. However, there are circumstances in which vertical mergers may significantly impede effective competition. This is in particular the case if they give rise to foreclosure.[40]

(40) The Non-Horizontal Merger Guidelines distinguish between two forms of vertical foreclosure: input foreclosure, where the merger is likely to raise costs of downstream rivals by restricting their access to an important input, and customer foreclosure, where the merger is likely to foreclose upstream rivals by restricting their access to a sufficient customer base.[41]

(41) Input foreclosure arises where, post-merger, the new entity would be likely to restrict access to its actual or potential rival in the downstream market 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.[42]

(42) Customer foreclosure may occur when a supplier integrates with an important customer in the downstream market and 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 which in turn, 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. This may allow the merged entity profitably to establish higher prices on the downstream market.[43]

6.2. Horizontal effects

(43) The concentration does not give rise to any horizontal overlap between the activities of the parent companies of the JV, Lufthansa Technik and LG Electronics. Regarding the production and supply of IFE and CMS systems specifically, Lufthansa Technik is mostly active in the business jet segment and, through its participation in IDAIR, in the (V)VIP segment. Lufthansa Technik also has minimal sales of IFE to the commercial aircraft segment. LG Electronics however is currently not active in the production and supply of IFE or CMS systems.

(44) The only possible horizontal overlap to which the concentration would give rise is between Lufthansa Technik and the newly created JV itself. While it is intended that the JV will be active in the production and supply of IFE and CMS systems (albeit for commercial aircraft only), Lufthansa Technik is also active in the production and supply of IFE and CMS systems (albeit predominantly for business jets and, through its participation in IDAIR, for (V)VIP jets, as well as to a very limited extent for commercial aircraft), with an estimated market share on the overall market for the production and supply of IFE and CMS systems for aircraft (commercial aircraft, business and (V)VIP jets combined) of [0-5]% for IFE and [0-5]% for CMS.

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40 Non-Horizontal Merger Guidelines, paragraph 18.

41 Non-Horizontal Merger Guidelines, paragraph 30.

42 Non-Horizontal Merger Guidelines, paragraph 31.

43 Non-Horizontal Merger Guidelines, paragraph 58.

(45) At the level of IFE and CMS systems specifically for commercial aircraft, […], Lufthansa Technik's market share for IFE systems is very limited at ca. [0-5]%. Lufthansa Technik does not sell CMS systems to the commercial segment. […][44], […]. Finally, several significant competitors remain active in the commercial segment, in particular Thales and Panasonic.

(46) In the context of the Commission's market investigation, none of the respondents raised any concerns regarding possible horizontal effects of the concentration. On the contrary, several respondents considered that the creation of the JV would be a positive development for competition on the market. For instance, one market respondent stated: "[…] *overall there are not a lot of options for IFE systems on the market. Therefore, entry of a new player providing new features, such as the proposed JV by LG Electronics and Lufthansa Technik, would be a positive development on the market*".[45]

(47) In light of the above, the concentration does not give rise to any competition concerns in relation to a horizontal overlap.

6.3. Vertical effects

(48) The Commission's investigation has shown that the concentration will not give rise to vertical input or customer foreclosure effects.

(49) Two types of vertical relationships give rise to affected markets in this case:

a. upstream from the JV, LG Electronics produces display modules and other components, and Lufthansa Technik produces WAPs and other components, both of which the JV could at least in theory use for the production of its IFE and CMS systems for use in commercial aircraft[46];

b. downstream from the JV, one of the JV's parent companies, Lufthansa Technik, belongs to the broader Lufthansa airline group, which purchases IFE systems to be installed in its aircrafts.

6.3.1. Input foreclosure

(50) As mentioned above in recital (49)a, each of the JV's parents produces some components which the JV may use for the production of its IFE and CMS systems.

(51) First, in the future, LG Electronics may supply certain components (in particular display modules) to the JV and to other Tier 1 manufacturers of IFE/CMS systems. However, considering that LG Electronics has not previously been active in the sale of any products to customers active in the production of IFE or CMS systems[47], it is reasonable to conclude that these are not products which the merged entity would have supplied to the JV's competitors absent the merger. Therefore, there does not appear to be any scope for input foreclosure strategies in this regard.

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44 Form CO, paragraph 147.

45 Minutes of a call with a market respondent of 1 March 2019.

46 […].

47 Response to RFI 4. […].

(52) Second, Lufthansa Technik supplies some components to IFE/CMS system manufacturers[48]. In light of the available market share estimates, it would appear that there is only one component for which Lufthansa Technik would have a market share ([…]) in excess of [30-40]%, *i.e.* Wireless Access Points ("WAPs")[49], with a market share of [30-40]%[50].

(53) […]. In practice therefore, after the concentration, Lufthansa Technik will no longer be a relevant supplier of WAPs to the JV's competitors (*i.e.* manufacturers of IFE systems for the commercial segment), independently of any input foreclosure strategy.

(54) […][51]. […]. Sufficient alternative sources of supply would remain available to these customers, with Honeywell as the leading supplier with a [40-50]% market share for WAPs worldwide. Other suppliers such as Miltope ([10-20]%), Kontron ([10-20]%) and Zebra (ca. [5-10]%) will remain active on the market as well.

(55) Finally, in the context of the Commission's market investigation, none of the respondents raised any concerns regarding possible input foreclosure effects arising from the concentration[52].

(56) In light of the above, the Commission concludes that the concentration is unlikely to give rise to any input foreclosure effects.

6.3.2. Customer foreclosure

(57) In the present case, as mentioned above in recital (49), the Lufthansa Group, to which Lufthansa Technik belongs, purchases IFE systems for its aircraft (but not CMS). In line with the Parties' view, the Commission considers that it is Lufthansa's position as a buyer of IFE systems that is decisive for the assessment of potential vertical customer foreclosure concerns[53]. In that regard, the purchasing volume of the Lufthansa Group airlines represented [0-5]% of the total IFE systems market, as estimated on the basis of its share in aircraft purchases compared to rival airlines. In light of this estimate, it cannot be considered that the Lufthansa Group is a significant customer with the type of downstream market power that would enable it to engage in any sort of customer foreclosure strategy.

(58) In addition, in the context of the Commission's market investigation, none of the respondents raised any concerns regarding possible customer foreclosure effects arising from the concentration.

(59) Accordingly, the Commission concludes that the concentration is unlikely to give rise to any customer foreclosure effects.

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48 […], Form CO paragraph 140.

49 As explained by the Notifying Party in response to RFI 4, WAP technologies for commercial, business or (V)VIP aircrafts do not differ very much and WAPs can be used with minor changes for all types of aircraft.

50 Response to RFI 4.

51 Response to RFI 8.

52 The only possible issue that was raised by a market respondent regarding a possible vertical relationship arising from the concentration was based on a misunderstanding that was subsequently clarified: minutes of a call with a market respondent on 11 March 2019.

53 The Lufthansa Group's downstream market shares on individual flight routs does not appear relevant for this assessment, in particular because aircrafts (and the IFE and CMS systems they are equipped with) are not dedicated to any specific flight routes.

7. CONCLUSION

(60) 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