

EUROPEAN COMMISSION DG Competition

Case M.8858 - BOEING / SAFRAN / JV (AUXILIARY POWER UNITS)

Only the English text is available and authentic.

REGULATION (EC) No 139/2004 MERGER PROCEDURE

Article 6(1)(b) NON-OPPOSITION Date: 27/09/2018

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EUROPEAN COMMISSION

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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 139/2004 Regulation (EC) No concerning non-disclosure of business and confidential secrets other information. The omissions are shown Where possible thus [...]. the information omitted has been replaced by ranges of figures or a general description.

To the notifying parties

Subject:Case M.8858 – Boeing/Safran/JV (Auxiliary power units)
Commission decision pursuant to Article 6(1)(b) of Council
Regulation No 139/20041 and Article 57 of the Agreement on the
European Economic Area2

Dear Sir or Madam,

(1) On 23 August 2018, the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which The Boeing Company ("Boeing", United States) and Safran S.A. ("Safran", France) acquire within the meaning of Article 3(1)(b) and 3(4) of the Merger Regulation joint control of newly created joint-venture JV LLC (the "APU JV")³ ("the Transaction"). (*Boeing* and *Safran* are designated hereinafter 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').

³ Publication in the Official Journal of the European Union No C 303, 29.8.2018, p. 22.

Commission européenne, DG COMP MERGER REGISTRY, 1049 Bruxelles, BELGIQUE Europese Commissie, DG COMP MERGER REGISTRY, 1049 Brussel, BELGIË

(2) The Transaction was initially notified to the Commission on 5 June 2018 under the simplified procedure and subsequently withdrawn on 26 June 2018. The Transaction was re-notified on 23 August 2018 under the normal procedure.

1. THE PARTIES

- (3) Boeing designs, manufactures and sells commercial jetliners and defence, space and security systems. Boeing also provides aftermarket services for the aerospace market. Its products and services include commercial and military aircraft, satellites, electronic and defence systems, launch systems, advanced information and communication systems.
- (4) Safran designs, manufactures and sells aerospace systems, aircraft and defence equipment. Its products include aircraft and space engines, electrical and wiring systems, landing systems and on-board systems for commercial, regional and business aircraft. Safran also provides aftermarket services for its equipment.

2. THE OPERATION

- (5) Pursuant to a Form Contribution Agreement and a Limited Liability Company (LLC) Agreement signed on [date], Boeing and Safran will establish a new company, the APU JV, under the laws of the State of Delaware, United States. Boeing and Safran will each contribute [initial investment amount] and grant non-exclusive licences of certain intellectual property to the APU JV.
- (6) The APU JV will design, develop, manufacture and sell auxiliary power units ("APUs") and their components as original equipment. [Intended JV scope]. The APU JV will also provide maintenance, repair and overhaul ("MRO") services and spare parts in respect to its APUs.
- (7) Each of Boeing and Safran will indirectly hold 50% of the securities in the APU JV and will have equal board representation and governance rights. The APU JV's business plan which will serve as both a budget and a business plan requires unanimous approval of the Board. The Parties will thus jointly control the APU JV pursuant to Article 3(1)(b) of the Merger Regulation.

3. FULL FUNCTIONALITY OF THE JOINT VENTURE

- (8) [Description of the timeline of the market entry of the JV and of the platforms targeted].
- (9) The parties will create a full-function joint venture within the meaning of Article 3(4) of the Merger Regulation.
 - a. As regards the APU JV's resources to operate independently on the market, the APU JV will have its own financial resources, management and staff, intellectual property rights, manufacturing plants and office premises.
 - b. As regards the scope of the APU JV's activities, the APU JV will itself engage in product development, manufacturing, and marketing of APUs and sell them on the market.

- c. As regards sales and purchase relations with the Parties, [intentions regarding sourcing of subcomponents]. Over the initial ten years of the APU JV following the supply of the first APU to Boeing, the APU JV's sales to third parties are expected to constitute [...]% of all revenues (with sales of APUs to Boeing and spare part sales to Boeing's subsidiary Aviall accounting for [...]% and [...]% of the revenues respectively). Over the projected life of the APU JV, its sales of MRO services and spare parts to third parties are projected to make up for [...]% of all revenues (with sales to Boeing and Aviall accounting for [...]% each).
- d. Finally, pursuant to the LLC agreement the JV is established for an indefinite period of time and the projected life of the JV goes up to 2060. The JV is, therefore, intended to operate on a lasting basis.

4. **EU DIMENSION**

(10) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million⁴ (Boeing EUR 82 670 million, Safran EUR 21 648 million). Each of them has an EU-wide turnover in excess of EUR 250 million (Boeing [...], Safran [...]), 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 pursuant to Article 1(2) of the Merger Regulation.

5. MARKET DEFINITION

(11) The Transaction concerns the manufacture of aircraft and of APUs used on such aircraft as well as the provision of MRO services and the supply of spare parts for APUs.

5.1. Manufacture of aircraft

- 5.1.1. Product market
- (12) Boeing is active in the manufacture of different types of aircraft. Commission precedents have generally differentiated the following main categories of aircraft: commercial aircraft (which include large commercial aircraft, regional aircraft, and business/corporate jets), military aircraft, helicopters and general aviation aircraft.⁵
- (13) Within commercial aircraft the precedents differentiated three segments:⁶
 - a. Large commercial aircraft (i.e., aircraft with more than 100 seats, a range of greater than 2000 nautical miles and a cost in excess of USD 35 million). A distinction can be drawn between:

⁴ Turnover calculated in accordance with Article 5 of the Merger Regulation.

⁵ Case M.1601, *Allied Signal/Honeywell*, paragraph 11.

⁶ Case IV/M.877, *Boeing/McDonnell Douglas*, paragraphs 15 and 16; Case M.1601, *Allied Signal/Honeywell*, paragraph 13; Case M.2220, *General Electric/Honeywell*, paragraph 10.

- i. narrow-body (or single-aisle) aircraft, which have approx. 100-200 seats and travel medium distances (2000-4000 nautical miles); and
- ii. wide-body (or twin-aisle) aircraft, which typically carry 200-850 passengers and can travel longer routes (4000 8000+ nautical miles).
- b. Regional aircraft (i.e., aircraft with approx. 30-90 seats, a range of less than 2,000 nautical miles and a cost of up to USD 30 million);
- c. Business/Corporate jets (i.e., aircraft designed for corporate activities and with a cost generally in the region of USD 3 70 million).
- (14) Following those precedents, additional aircraft were introduced to the market that fall into the 90-120 seats range that may potentially blur the previous distinction between narrow-body large commercial aircraft and regional aircraft⁷, such as the Embraer E190 or the Airbus A220-100 and A220-300 (formerly Bombardier CS100 and CS300). The Commission has therefore considered in this case a further split of the potential product market for narrow-body aircraft into (i) a segment for narrow-body aircraft with 90-120 seats and (ii) a segment for narrow-body aircraft with 120-200 seats. In any event, the sub-segmentation of the product market for commercial aircraft can be left open in this case as no serious doubts arise under either of the alternative market definitions.

5.1.2. Geographic market

(15) All markets, with the exception of military aircraft, have been considered to be worldwide in geographic scope.⁸ The market investigation in this case has not provided any reasons to deviate from those precedents. The markets for the manufacture of aircraft relevant for this case, that is to say the markets for the manufacture of regional and large commercial aircraft and their potential subsegments, are therefore considered to be worldwide in scope.

5.2. Manufacture of APUs

5.2.1. Product market

(16) An APU is a generator that provides electrical power to the aircraft's systems and devices while the engines are shut down, mainly when the aircraft is on the ground. During flight, APU generators are not normally operated continuously but can be available in emergency situations in case of engine failure, to provide back-up electrical power and help restarting the main engine.⁹

⁷ See also page 65 and Chart 14 of the Industry report 'Commercial Aerospace Primer' by Bank of America/Merrill Lynch, 04 May 2016.

⁸ Case M.2220, *General Electric/Honeywell*, paragraphs 10-34; Case M.1601, *Allied Signal/Honeywell*, paragraph 13; Case IV/M.877, *Boeing/McDonnell Douglas*, paragraphs 14-20.

⁹ Case M.8425, *Safran/Zodiac*, paragraph 33.

- (17) According to previous Commission cases, APUs constitute their own separate market.¹⁰ The precedents have however left open whether segmentations between the APU's shaft power and size or by type of aircraft are required.¹¹
- (18) The market investigation in this case provided indications that there may be a degree of supply side substitutability between APUs for various types of commercial aircraft because their functionality is essentially similar while their shaft power and size may differ significantly.¹² However, according to a market participant, the design and size of APUs for large commercial aircraft are different from the design and size of other types of aircraft: "*It is not so easy to start designing and manufacturing a very different kind of APU, because of the impact on design of power requirements for different size of APUs.*"¹³ Further, there appears to be limited demand-side substitutability between APUs designed for different types of aircraft because of the diverging technical requirements and consequently diverging price levels.
- (19) In any event, the question whether the product market for APUs should be subsegmented by type of aircraft can be left open in this case as no serious doubts arise under any alternative product market definition.
- 5.2.2. Geographic market
- (20) In terms of geographic market, the Commission has defined the markets for APUs as global as is the case for the other markets for civil aerospace systems and components.¹⁴ The market investigation in this case has not provided any reasons to deviate from those precedents. The market for the manufacture of APUs and its potential sub-segments are therefore considered to be worldwide in scope.

5.3. APU MRO and spare parts

- 5.3.1. Product market
- (21) The Commission's decisional practice has differentiated four main categories of aviation MRO services based on the part of the aircraft to be serviced and the level of service required: line maintenance, heavy maintenance, engine maintenance and component maintenance:
 - a. Line maintenance: line maintenance refers to the aircraft maintenance checks that are carried out to ensure that the aircraft is fit for flight but that do not remove the aircraft from service. Line maintenance is generally

¹⁰ Case M.6410, *UTC/Goodrich*, paragraph 57, Case M.8425, *Safran/Zodiac*, paragraphs 40.

¹¹ Case M.8425, *Safran* /*Zodiac*, paragraphs 54 and 129-134. The further distinction between AC and DC technology is not relevant for this case as no competition concerns arise even considering this narrower product market definition. The reasoning as regards the overall market for APUs of different technologies applies equally for APUs of AC technology and APUs of DC technology considered separately.

¹² See replies to question 5 of "Questions to market participants of 5 June 2018".

¹³ See reply of an airframer to question 4 of the Commission's enquiry of 24 September, 2018.

¹⁴ Case M.6410, *UTC/Goodrich*, paragraph 57, Case M.8425, *Safran/Zodiac*, paragraph 298.

performed at the different airports on the airline's route and consists of transit checks, pre-departure checks, night stops and the rectification of certain technical problems.

- b. Heavy maintenance: heavy maintenance refers to regularly scheduled detailed inspection, maintenance, preventive maintenance and alteration of the entire aircraft and its installed components that will place the aircraft out of service for a pre-determined period of time.
- c. Engine maintenance: engine maintenance is carried out either while mounted on the aircraft wing (on-wing services) or at an approved maintenance facility (off-wing).
- d. Component maintenance: component maintenance comprises inspection, test and alteration of specific equipment and components installed on an aircraft, which can be repaired and are of a significant value (component maintenance is hereinafter referred to as "component MRO").
- (22) The APU JV will only be active in component MRO, more specifically in providing MRO and spare parts for its APUs.
- (23) Further, the Commission has left open the question whether a separate market exists for spare parts from that of MRO.¹⁵
- (24) Spare parts can be sold by OEMs either as stand-alone products or as part of an MRO service. According to the Parties, it is not straightforward to single out the provision of APU spare parts from the provision of APU MRO services, as the latter necessarily involve the replacement of faulty pieces as part of the MRO services provided to the client, which are invoiced together with the provision of MRO services.¹⁶
- 5.3.2. Geographic market
- (25) As regards the geographic market, in its previous practice, the Commission considered that the potential market for component MRO is worldwide because, the location of the facility is of secondary importance and component MRO does not need to be performed at airports. The Commission found that most component MRO providers are active globally and both the service providers and customers considered that the markets for component MRO are worldwide in scope.¹⁷
- (26) As regards spare parts, the Commission has previously found¹⁸ that distribution of aerospace components took place on a worldwide level and customers were located worldwide while prices did not differ globally.¹⁹

¹⁵ Case M.4241, *Boeing/Aviall*, paragraph 10, Case M.6410, *UTC/Goodrich*, paragraphs 182-191.

¹⁶ Form CO, paragraph 125.

¹⁷ See e.g. case M.6410, *UTC/Goodrich*, paragraph 198.

¹⁸ See e.g. case M.4241, *Boeing/Aviall*, paragraph 11.

¹⁹ See e.g. case M.6410, *UTC/Goodrich*, paragraph 199.

(27) The market investigation in this case has not provided any reasons to deviate from those precedents. The Commission has therefore analysed the impact of the Transaction on the potential worldwide markets for component MRO for APUs and for the supply of spare parts for APUs while this distinction can be left open as the competitive assessment remains the same under any alternative market definition.

6. COMPETITIVE ASSESSMENT

- (28) The Transaction creates limited horizontal overlaps in (i) the production of APUs where both Safran is and the APU JV will be active and (ii) the provision of component MRO services and the sale of spare parts as Safran and Boeing are already active in MRO services for various components (for Safran including on APUs), as well as in the sale of spare parts, and the APU JV will also provide MRO services and spare parts for APUs.
- (29) Vertically affected markets arise since the APU JV will be active in the upstream production of APUs which are used in the downstream production of aircraft where Boeing is active.

6.1. Horizontal overlaps

- 6.1.1. APUs
- (30) If APUs are segmented by type of aircraft, the Transaction will not give rise to a horizontal overlap between the APU JV and the Parties. Boeing does not manufacture nor supply any APUs and Safran's APUs are not destined for [intended JV scope] where the APU JV will be active. Safran supplies APUs for military aircraft and helicopters, and is currently developing APUs for business jets. Safran's APUs have less power (< 550 shaft horse power, shp) than the APU JV's (future) APUs ([...]).
- (31) If APUs for all types of aircraft are considered to constitute a single market, Safran's volume based market share was [0-5]%²⁰ in 2017, while the APU JV's is currently 0%. According to its Business Plan, the APU JV projects to achieve a [...]% market share by 2030²¹, once it has established its presence, on an APU market encompassing all types of aircraft. Based on its internal projections, Safran expects its market share to rise to [...]% by 2030.²² The Parties' current combined share is accordingly far below 20%. Considering the future development of the APU JV's and Safran's activities, the combined market share would only slightly exceeds the level of 20% by 2030 on an overall market of all types of APUs considered.
- (32) Furthermore, Safran and the APU JV will not be close competitors, each focussing on producing APUs for different kinds of aircraft.

²⁰ In the supply of APUs for military aircraft, Safran's market share was around [5-10]% and for helicopters around [5-10]% in 2016.

²¹ See the Parties' reply to the Commission's request for information of 24 September 2018.

²² See the Parties' reply to the Commission's request for information of 24 September 2018.

- (33) Moreover, no concerns were raised in the market investigation as regards the overlap between the activities of Safran and the APU JV in the manufacture of APUs.
- (34) Therefore, the overlap between Safran and the APU JV is unlikely to result in competition concerns.

6.1.2. MRO services and spare parts

- (35) As regards component MRO and spare parts generally, the Transaction leads to a horizontal overlap since Boeing (and its subsidiary Aviall) and also Safran are active in the provision of component MRO and spare parts²³ for various different components. However, this overlap does not lead to affected markets. Boeing estimates its current market share at [...]% while Safran estimates its share at [...]%.²⁴ The APU JV currently has a market share of 0%.
- (36) The APU JV will start offering component MRO for its own APUs in the future. According to the APU JV's Business Plan²⁵, the first revenues are to be achieved as of [estimated dates of first JV MRO and OEM revenues]. However, any increment caused by the APU JV's activities is not likely to increase the Parties' combined market share above 20% on the overall market for component MRO and spare parts in the foreseeable future. The Parties estimate that, in 2030, Boeing would have a [...]% market share, Safran between [...]% and the APU JV's share would be marginal, ca. [...]% on an overall market for component MRO. Therefore the Parties' combined market share would remain below 20% by 2030.
- (37) Furthermore, Boeing, Safran and the APU JV will not be close competitors, mainly focussing on providing MRO services and spare parts for different kinds of components or for the same components but installed on different kinds of aircraft.
- (38) As concerns a narrower market by specific component, i.e. APUs, Safran provides component MRO and spare parts for its APUs, which creates an overlap with the future activities of the APU JV, which will also service its APUs once brought on the market. Boeing does not provide component MRO and spare parts for APUs. The Parties project²⁶ the APU JV to achieve a market share of [...]% and Safran of [...]% in 2030 on a market for component MRO and spare parts for all types of APU. Therefore, the Parties' combined market share would remain well below 20% by 2030.
- (39) Moreover, both Safran and the APU JV are, or will be, active in the provision of MRO services and the distribution of spare parts with regard to the APU

²³ The Parties submit that none of the Parties is able to separate the provision of maintenance services and the sale of spare parts for the purposes of defining their market shares, as these two are provided together, therefore, market shares provided include both provision of component MRO and distribution of spare parts, see Form CO, paragraphs 162 and 163.

²⁴ Form CO, paragraph 164.

²⁵ See Business Plan, Annex 5 to the Form CO.

²⁶ See the Parties' reply to the Commission's request for information of 24 September 2018.

systems supplied by Safran and the APU JV respectively and not with regard to APU systems supplied by third parties. Safran adds²⁷ that it is not active in the provision of maintenance services for APUs on large commercial aircraft [Safran's capabilities and plans]²⁸. Therefore, even if Safran's and the APU JV's activities overlap, they are not closely competing in the provision of component MRO services.

- (40) Considering a further segmentation of component MRO and sale of spare parts for APUs by type of aircraft, no overlap would arise, given that Boeing does not provide component MRO for any APUs and Safran only provides these services for APUs on helicopters and military aircraft while the APU JV will provide such services for APUs on [...] platforms of [intended JV scope].
- (41) In summary, the overlap between Boeing, Safran and the APU JV in component MRO and spare parts, including when considering separate segments for APU maintenance and APU spare parts, is unlikely to result in competition concerns for the following reasons. First, their combined market shares are low and therefore do not enable them to obtain market power. Second, the Parties will not compete closely given that they provide MRO services for different components (Boeing vs Safran and the APU JV), or for APUs installed on different types of aircraft (Safran vs the APU JV). Third, the market investigation did not raise any concern regarding the overlap between the Parties in component MRO.
- 6.1.3. Conclusion regarding horizontal overlaps
- (42) Based on the assessment in paragraphs (30) to 0, the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to the horizontal overlaps brought about by the Transaction.

6.2. Vertical relationships

- (43) The APU JV will create a future vertical relationship between the APU JV's manufacturing of APUs and Boeing's manufacturing of commercial aircraft.
- (44) As a potential new entrant, the APU JV currently has a market share of 0% and will be a new source of supply. None of the current aircraft manufacturers relies on the APU JV for any of its APU purchases. If aircraft manufacturers other than Boeing were to purchase APUs from the APU JV in the future, this would mean that they would benefit from the existence of an additional source of APU supply, extending rather than limiting their choice of APU supplier. Therefore, no input foreclosure concerns will arise in this case.
- (45) The Commission's investigation therefore focussed on potential customer foreclosure concerns and other concerns raised during the market investigation as set out in sections 6.2.1 to 6.2.3.

²⁷ Form CO, footnote 66.

²⁸ Form CO, paragraph 148.

6.2.1. Concerns raised during the market investigation

Customer foreclosure

- (46) A market participant raised concerns during the market investigation claiming that Boeing could significantly reduce its APU purchases from the merchant market as it would have an incentive to rely on its own JV for APU supplies in the future. This could mean the reduction by up to 50% of the addressable market in APU sales for large commercial aircraft for third party APU suppliers.
- (47) The complaint sets forth that such reduced customer base for third party APU suppliers is likely to lead to higher prices of APUs as research and development costs would have to be spread across a smaller number of APU units sold. Furthermore, the adaptation of an existing APU from one platform to another, i.e. creating derivatives, is less costly than the development of a new APU. Therefore, moving from one platform to the next enables the APU manufacturer to keep costs down and potentially offer better prices to the customer. With the reduction of the customer base, this advantage could be lost.
- (48) Alternatively, the potential decrease of sales could also lead to a reduction in innovation in order to keep costs down.
- (49) For the reasons set out in paragraphs (46) to (48), the market participant is concerned that this potential customer foreclosure could present a significant risk of harm to the competitiveness of third party APU manufacturers and ultimately also to manufacturers of large commercial aircraft who could be faced with higher prices and less innovation.

Access to commercially sensitive information

(50) A market participant raised concerns during the market investigation relating to the APU JV's potential access to competing APU suppliers' commercially sensitive information. According to the complainant, large amounts of third party APU manufacturers' commercially sensitive information need to be shared with the aircraft manufacturers, including with Boeing, during the bidding, design, manufacturing and testing process of APUs and for certification. The complainant fears that the APU JV could obtain access from Boeing to such commercially sensitive information of third party APU suppliers that has been transmitted to Boeing during decades of previous collaboration. The information could allow the APU JV to replicate the APUs of third party APU manufacturers, putting these at a significant competitive disadvantage, dissuading further entry and expansion and harming innovation.

Foreclosure of independent MRO providers

(51) Concerns were raised as to whether independent MRO providers would be able to service the APU JV's products. In order for such independent MRO providers to perform such maintenance, they require a licence to the intellectual property ("IP") owned by the APU manufacturer (in addition to a qualification by the relevant aviation authority). Third party MROs thus need to obtain the APU manufacturer's approval to perform the maintenance and the manufacturer is thus able to choose whether and which MRO to licence its component maintenance to.

- (52) In this context, a limited number of market participants further expressed concerns during the market investigation regarding foreclosure effects on the market for APU component MRO.²⁹ According to those market participants, Boeing plays a role in the relationship between the customers of APU component MRO, i.e., the airlines, and the suppliers of APU component MRO, i.e., the APU manufacturers, by negotiating MRO conditions with the existing APU producers in the interest of the airlines. These market participants are concerned that, after the vertical integration, Boeing would no longer assume this role in favour of the airlines as it will have a direct interest in the APU MRO market itself. Boeing would thus negotiate worse MRO provisions for APU component MRO in the future, mainly by restricting the possibility to licence-in the required intellectual property owned by the APU manufacturer³⁰ and to obtain access to spare parts.
- 6.2.2. The Parties' views

Customer foreclosure

- (53) On a general note, Boeing submits that introducing a third supplier for APUs into a market characterised by a duopoly creates a positive effect on competition.³¹ In fact, the Parties submit that the rationale for the creation of the APU JV has been the current lack of competition, stating: [Conclusion of Boeing internal document supporting the APU JV rationale].³²
- (54) [Boeing internal information on current APU market conditions in terms of prices and MRO services]^{33,34}.
- (55) As concerns Boeing's incentive to favour the JV's APUs over those of other manufacturers, i.e. Honeywell or UTC, Boeing explains that its 50% interest in the APU JV is not what drives its procurement decisions, but rather the best offer available on the market: [Boeing's general APU procurement decision criteria]³⁵.
- (56) As concerns effects of its potential in-sourcing on the APU markets, Boeing believes that even if it had an exclusivity agreement with the APU JV for the supply of APUs, the reduction of the addressable market for APU manufacturers is overestimated by the complainant. Although Boeing's share in large

³¹ Form CO, paragraphs 211-220.

- ³³ See [internal document], Form CO Annex 14.
- ³⁴ Ibid, slide 5.
- ³⁵ Form CO, paragraph 216.

²⁹ Written submission of 23 July, 2018, minutes of a call of 27 June, 2018.

³⁰ In order for a third party MRO service provider to be able to perform maintenance on any APU it needs to obtain, beyond qualification by the relevant aviation safety authority (EASA – European Aviation Safety Authority or FAA – Federal Aviation Administration), a licence to the intellectual property owned by the APU manufacturer on the technical attributes. Generally, third party MROs need to obtain the manufacturer's approval to perform the maintenance. Therefore, the OEM selects whether and which MRO to licence its component MRO to.

³² Form CO, footnote 4.

commercial aircraft is large, it is only around [50-60]% of the market. [Boeing's expectations with respect to future large commercial aircraft market shares and competition], as new entrants, such as COMAC and Irkut, expand production. Furthermore, Boeing submits that creating more competition will increase manufacturers' incentives to innovate and invest in R&D. Conversely, Boeing holds that it is the current concentrated market structure that does not incentivise innovation.

Access to commercially sensitive information

- (57) Boeing acknowledges that intellectual property ("IP") protection is one of the central issues in its supplier relations and confirms that it has a series of contractual and procedural provisions in place to protect the confidential information of third parties. [Details of Boeing's internal policies].³⁶
- (58) Boeing submits that it has stringent safeguards in place to protect the confidential information of APU suppliers during the different stages of their collaboration.³⁷ [Description of Boeing's internal safeguards during the APU bidding and development process].
- (59) [Description of Boeing's internal trainings on use of supplier data].
- (60) Boeing sets forth that third-party proprietary information is also protected through contractual terms in each agreement and [contractual clauses of Boeing for the protection of confidential information].³⁸ [...],³⁹ Boeing confirms that it does not share this third-party proprietary information with prospective APU providers for future aircraft and will maintain this policy with respect to the APU JV.
- (61) [Description of Boeing's information sharing and storing policy, including with respect to the APU JV].
- (62) Boeing adds that it is against Boeing's business interest to misuse or appropriate suppliers' intellectual property or any other confidential information as it could lead to a loss of trust. A deterioration of cooperation between Boeing and its suppliers would interfere with Boeing's efforts to develop the new aircraft that are key to its continuing commercial success. Any gains that Boeing might theoretically realise via its 50% ownership interest in the APU JV from obtaining access to the IP of third-party APU manufacturers are very unlikely to exceed the long-run costs that Boeing would incur if it developed a reputation for being an unreliable partner of component suppliers in the development of new aircraft.
- (63) Finally, Boeing argues that the information shared by the APU manufacturers with Boeing does not include the IP rights required to develop a competing

³⁶ [Details of Boeing's internal practices and policies].

³⁷ Form CO, paragraphs 200- 203.

³⁸ Boeing also submits examples of its contracts in Annexes 38 to 44 of the Form CO.

³⁹ The text reads: [quoted excerpt from a standard agreement with an APU provider].

APU. The information provided by the APU manufacturer to Boeing is a component maintenance manual ("CMM") which, in essence, is a large diagram of the APU so that, in the event of an APU malfunction or customer query, Boeing is able to identify the potential problem component or area. The CMM, however, does not provide the details necessary to actually repair (or explain how to repair) or develop the malfunctioning part, let alone an entire APU. Such information is closely held by the APU supplier. [Details of Boeing APU design requirements].

Foreclosure of independent MRO providers

- (64) The Parties submit that the Transaction will not have any negative effects on the market for APU MRO services. [Boeing's rationale for the proposed JV].
- (65) [Information on the APU JV's strategy in the provision of MRO services].⁴⁰
- (66) [Information on the APU JV's strategy in the provision of MRO services].⁴¹
- 6.2.3. The Commission's assessment

Concentration levels

(67) The market for APUs for large commercial aircraft where the APU JV will be active⁴² is characterised by high concentration levels: Market leader Honeywell holds a very high market share, indicating that it holds significant market power, with an estimated [70-80]% of all installed APUs as of 2017, while UTC follows with [20-30]%. In this respect, Boeing notes⁴³ [Boeing understanding of APU supplier activities]. The market for APUs for large commercial aircraft is therefore characterised by a duopoly of suppliers, one of which – Honeywell – may be holding a dominant position.

⁴⁰ Form CO, footnote 23.

⁴¹ Response to the Commission's Pre-Notification RFI RFI 5, question 13.

⁴² The activities of the APU JV will be limited to selling APUs for [intended JV scope] while Boeing' activities are limited to selling large commercial aircraft. Since there is, therefore, only a vertical with respect to the sale of APUs for large commercial aircraft (upstream) and the sale of large commercial aircraft (downstream), the Commission's assessment will focus on this link. Any effects of the Transaction on other and/or broader markets will be more limited than the effects assessed in this decision while the more pronounced links already do not lead to serious doubts for the reasons set out in this decision.

⁴³ Form CO, paragraph 172.

	Large Commercial Aircraft	Regional	Business Jets	Helicopters	All segments
HONEYWELL	[70-80]%	[40-50]%	[90-100]%	[5-10]%	[60-70]%
UTC/P&W	[20-30]%	[50-60]%	[0-5]%	[40-50]%	[20-30]%
MOTOR SICH	[0-5]%	[0-5]%	[0-5]%	[40-50]%	[5-10]%
SAFRAN POWER UNITS	[0-5]%	[0-5]%	[0-5]%	[5-10]%	[0-5]%
PRNVI BRNENSKA STROJIRNA	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
AEROSILA	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
KLIMOV	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
OTHER	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

Market shares in terms of number of APU units, 2017⁴⁴

- (68) As regards the manufacture of large commercial aircraft above 90 seats, Airbus and Boeing held market shares of [40-50]% and [50-60]%, respectively in terms of number of aircraft deliveries in 2017.⁴⁵ Embraer's market share amounted to [0-5]% while no other participants had a material market presence in this segment.
- (69) If regional aircraft with less than 90 seats are included in the market definition, Boeing's market share amounts to [40-50]%, in terms of number of aircraft deliveries in 2017 with Airbus, Embraer and Bombardier accounting for [40-50]%, [5-10]% and [0-5]% respectively.⁴⁶
- (70) In the segment of large commercial aircraft of more than 120 seats, Boeing's market share amounts to [50-60]%, with Airbus accounting for the remaining [40-50]% in terms of number of aircraft deliveries in 2017. Finally, in the subsegment of wide-body commercial aircraft of 200 seats or more, Boeing held a market share of [50-60]% in terms of number of aircraft deliveries in 2017, with Airbus accounting for [40-50]%⁴⁷.

Customer foreclosure

(71) As concerns customer foreclosure, the Commission observes the following on Boeing's **ability** to foreclose competing APU manufacturers:

⁴⁴ Form CO, paragraph 142.

⁴⁵ Response by Parties of 29 August 2018 to RFI 1.

⁴⁶ Response by Parties to RFI 2 of 5 September 2018, question 1. The market share presented by Boeing does not account for 26 regional aircraft deliveries by COMAC and United Aircraft Corporation (Sukhoi) in 2017.

⁴⁷ Response by Parties of 29 August 2018 to RFI 1.

- (72) First, Boeing has a market share of [50-60]% in the sale of large commercial aircraft above 90 seats and of [50-60]% in the sale of large commercial aircraft above 120 seats in terms of number of aircraft deliveries in 2017 and a market share of [0-5]% in the sale of regional aircraft, leaving around [50-60]% of demand for APUs for large commercial aircraft and all of the demand for APUs for regional aircraft unaffected by the Transaction.⁴⁸ Third party APU suppliers will thus continue to be able to sell their APUs to a significant part of the market.
- (73) Second, it is unlikely or at least highly uncertain that the APU JV will be able to serve all or most of Boeing's demand for APUs going forward, leaving also at least part of Boeing's demand for APUs unaffected by the Transaction.
- (74) In the first place, the APU JV has no sales of APUs yet and is expected to develop its presence only gradually over a period of [timing estimates] years. The first APU sales are expected to generate turnover in [timing estimates] only. Therefore, any potential foreclosure effects could be expected to materialise only in the medium term and only gradually, adding significant uncertainty to any assessment of foreclosure effects. This also provides third party APU manufacturers with time to adjust to the new competitive environment and improve their offering.
- (75) In the second place, according to Boeing's Business Plan⁴⁹ the APU JV targets the development of APUs for [specific JV-targeted platforms], platforms⁵⁰. Boeing estimates⁵¹ that by maturity, in 2030, the APU JV will achieve a market share of [...]% of all anticipated APUs for large commercial aircraft in operation. Furthermore, according to Boeing's calculations, the targeted platforms represent only [...] of at least twelve large commercial platforms, including five Boeing platforms, with existing orders⁵². Therefore, a large portion of the addressable market, including on Boeing aircraft, would remain available for third party APU suppliers.
- (76) In the third place, Boeing has not entered any exclusivity arrangements with the APU JV and, in principle, remains open to purchase APUs from third party APU suppliers, in particular if their offers are superior to the offers from the APU JV.
- (77) In the fourth place, market participants indicated that the development of an APU is a difficult technological development, which will take years to complete. The development is associated with uncertainties and execution risks. It is

⁴⁸ Boeing has announced its intention to acquire aircraft manufacturer Embraer which manufactures mainly regional aircraft: http://boeing mediaroom.com/2018-07-05-Boeing-and-Embraer-to-Establish-Strategic-Aerospace-Partnership-to-Accelerate-Global-Aerospace-Growth. Since no binding acquisition agreement has been signed and the regulatory approvals have not been received, the Commission will treat Boeing and Embraer as separate entities for the purposes of this decision.

⁴⁹ See Business Plan, Annex 5 to the Form CO.

⁵⁰ Form CO, paragraph 17.

⁵¹ Form CO, paragraph 173.

⁵² Form CO, footnote 72.

therefore unclear whether the APU JV will ultimately be successful in the future and thus whether Boeing will be able to rely to a large extent on the APU JV.⁵³

- (78) Third, the production of large commercial aircraft has increased significantly over the past 10 years and is expected to continue growing rapidly during the decade to come.⁵⁴ Therefore, any reduction of the addressable merchant market could be counterbalanced by general market growth.
- (79) Fourth, present APU suppliers have long term contracts⁵⁵ on existing aircraft platforms. Large commercial aircraft platforms have a lifetime of potentially several decades, 25-30 years, so that OEM sales of third party suppliers are likely to continue for a number of years. In addition, existing third party APU suppliers will be able to continue making MRO sales on the aftermarkets with MRO sales on the aftermarkets representing the bulk of the APU revenues for some decades after the sale of the platforms is discontinued.
- (80) As concerns Boeing's **incentive** to foreclose alternative APU suppliers, the Commission finds the following:
- (81) First, although the prime objective of the APU JV is to supply [...] Boeing platforms with APUs resulting in incentives for Boeing to purchase APUs from the APU JV at least for those [...] platforms Honeywell and UTC are long standing APU suppliers. Honeywell and UTC and Honeywell in particular in the large commercial aircraft segment are very strong APU suppliers and may offer superior technology or quality and have a price advantage over the products of the APU JV. It is therefore uncertain whether Boeing would have incentives to forego buying from the two established players in the market altogether.
- (82) Second, according to Boeing⁵⁶, the decision concerning the choice of the APU for future platforms will [Boeing's general APU procurement decision criteria]. Boeing has incentives to make cost efficient choices. Following the logic whereby creating derivatives of an existing APU for a next platform is significantly more cost effective than developing a new APU from scratch,⁵⁷ incumbent APU suppliers are expected to enjoy a significant cost and thus competitive advantage over the APU JV.

⁵³ See with an airline 27 June, 2018 and also the press minutes on https://www.flightglobal.com/news/articles/analysis-how-will-boeing-safran-venture-shake-up-ap-449234/.

⁵⁴ See e.g. page 89 and Chart 28 of the Industry report 'Commercial Aerospace Primer' by Bank of America/Merrill Lynch, 04 May 2016, see also Form CO and see also forecasts of Airbus and Boeing, at Global Market Forecast 2018- <u>https://www.airbus.com/aircraft/market/global-market-forecast.html</u> and also transcript of a speak of Boeing CEO at Morgan Stanley Laguna Conference on 12 September, 2018, page 2.

⁵⁵ E.g. Honeywell's supply contract for the [platform] runs until [timing details]. See Form CO, Footnote 7.

⁵⁶ Form CO, paragraph 216.

⁵⁷ See an APU manufacturers' reply to question 6 of "Questions to market participants of 5 June 2018".

- (83) Third, the price of APU per aircraft represents less than [0-5]% on the list price of the respective aircraft in the case of the most sold Boeing aircraft.⁵⁸ The potential profits for Boeing generated via the JV are also proportionally small. Therefore, Boeing will primarily have incentives to optimise the competitiveness of its aircraft by selecting the best available APU, rather than opt for the APUs of the APU JV, at all cost. This more so the case, because the profits of the APU JV are shared with Safran and would only partially flow to Boeing, whereas any foregone profits from revenues lost in the sale of aircraft would be fully absorbed by Boeing.
- (84) As concerns the **impact** of Boeing's potential foreclosure of alternative APU suppliers, the Commission finds the following:
- (85) First, the APU JV represents a new entrant on a very concentrated, two player APU market: Boeing's stated objective is not only the self-supply of APUs but also the introduction an alternative commercial offer on the merchant market for third party aircraft manufacturers.⁵⁹
- (86) Second, the APU JV is developing a new APU from scratch, meaning that an alternative technology could become available in a market with currently few alternatives, with a potential to boosting innovation.⁶⁰ In fact, contrary to a situation of backwards integration, the Transaction brings about the creation of a new entrant in the upstream market.
- (87) Third, shifting purchases from a third party supplier to in-house sourcing does not in itself and automatically amount to customer foreclosure. Such shifts would only be anticompetitive if the move to in-house production harms the competitive viability of an upstream rival. [Conclusion of Boeing internal document supporting the APU JV rationale]^{61,62}.
- (88) Fourth, several market participants responding to the market investigation highlighted the lack of competition on the APU market and market participants welcome the perspective that an additional APU supplier may appear, potentially offering more choice.⁶³ They noted, however, that due to risks and the long time horizon, their ability to make predictions at this stage was limited.⁶⁴ Furthermore, responding market participants do not predict price increases or reduction of innovation as a result of the Transaction.⁶⁵

⁵⁸ The Parties' reply to the Commission's RFI Nr.2, question 5, on 12 September 2018.

⁵⁹ Form CO, paragraph 17.

⁶⁰ See replies to questions 2 and 3 of the Commission enquiry of 24 August 2018, minutes of a call with an aircraft manufacturer on 29 June, 2018.

⁶¹ See also [internal document], Form CO – Annex 14.

⁶² See [internal document], Form CO, Annex 12. [Internal document].

⁶³ See replies to question 3 of the Commission enquiry of 24 August 2018.

⁶⁴ See e.g. minutes of a call with an airline on 27 June, 2018.

⁶⁵ See replies to question 3 of the Commission enquiry of 24 August 2018.

- (89) Fifth, APUs represent a relatively small input to the production of large commercial aircraft. In terms of cost, APUs represent less than [0-5]% of the cost of the final aircraft.
- (90) Sixth, Airbus is a strong competitor in the downstream market for the sale of large commercial aircraft and in the purchasing of APUs. Should a potential customer foreclosure strategy negatively affect Airbus, it cannot be excluded that Airbus could decide to support third party APU suppliers in their business development or may ultimately decide to insource the manufacture of APUs itself.
- (91) Seventh, as concerns the potential reduction in innovation, APUs seem to be one of the less R&D intensive products where development is currently rather slow and gradual. A market participant explained during the market investigation that APUs were "not a particularly innovative area", with "IP developed continuously and an adaptation of the technology",⁶⁶ indicating that improvements occur gradually, in an incremental manner. This appears to be confirmed by an innovation activity log submitted to the Commission,⁶⁷ displaying four major technical advances between 1998 and 2017. Industry reports share this view:⁶⁸ "It [APU] is not as much of a differentiating factor as an avionics suite and so, it has not benefited from much product improvement effort by manufacturers. APUs are not at the center of the race for ever-greater aircraft efficiency."
- (92) For the reasons set out in paragraphs (71) to (91), the Commission considers that the Transaction does not raise customer foreclosure concerns.

Access to commercially sensitive information

- (93) Paragraph 78 of the Commission's Non-Horizontal Merger Guidelines notes the possibility that, by vertically integrating, the merged entity may gain access to commercially sensitive information on the upstream or downstream activities of non-integrated rivals. As a result, competitors may be put at a competitive disadvantage thereby dissuading them to enter or expand in the market.
- (94) As regards the application of those principles to the present case, the Commission notes, first, that several of the arguments discussed in paragraphs (71) to (91) also argue against significant adverse effects on the relevant markets of the sharing of confidential information. For instance, (i) significant demand for APUs in a growing market is likely to remain available for third party APU manufacturers even if they reduce their sales to Boeing due to the risk of disclosing confidential information to the APU JV; (ii) Boeing is expecting to continue to rely on third party manufacturers in the purchasing of APU for years to come giving it incentives to find mutually satisfactory agreements with the APU manufacturers regarding their confidential information; (iii) the APU JV represents a new entrant on a concentrated market, offering more choice and potentially boosting innovation also from incumbent

⁶⁶ See minutes of a call with an aircraft manufacturer on 29 June 2018.

⁶⁷ See submission on 31 August 2018.

⁶⁸ <u>https://www.mro-network.com/engineering-design/apus-getting-more-attention-mro-providers.</u>

APU manufacturers; and (iv) Airbus is likely to have means to react if adverse effects materialise or risk materialising on the APU markets.

- (95) Second, business confidential information that is critical for the design, development and manufacture of an APU can be protected under IP rights legislation. IP rights protection is enforceable in court and it confers a protection against any potential misappropriation of sensitive information. Third party APU suppliers can therefore have recourse to IP law to safeguard their IP rights and protect sensitive information.
- (96) Third, the exchange of confidential information related to the purchasing of APUs by Boeing is covered by NDAs as set out in paragraph (60), which will prohibit the sharing of confidential information of competing APU manufacturers with the APU JV and which can be enforced through litigation. Boeing has safeguards in place to limit the circulation of the confidential information and to implement the NDA provisions as outlined in paragraphs (58) to (61).
- (97) Fourth, other market participants did not express a similar concern regarding the disclosure of commercially sensitive information to the APU JV.
- (98) Fifth, the market investigation confirmed Boeing's statement that the information obtained from the APU suppliers during bidding, design and certification would be insufficient to empower an aircraft manufacturer to start manufacturing APUs. This view is shared by another aircraft manufacturer who also adds "the APU OEM itself restricts access to the most necessary information that is required for the assessment of the compliance with [...] specifications, quality requirements and how the equipment interfaces with the other equipment on the aircraft."⁶⁹
- (99) Sixth, Boeing's internal documents also reflect that Boeing was looking for a JV partner with some experience in APUs, indicating that it would not have been able to manufacture an APU on its own even though third party APU manufacturers had provided it with certain information in the past.
- (100) Seventh, insofar as the complainant refers to recent Commission precedents,⁷⁰ addressing concerns about the misappropriation of confidential information, the Commission notes that the market in APUs is highly concentrated and that the APU JV is a new market entrant. Furthermore, the relative negotiation power of the APU suppliers vis-à-vis Boeing concerning provisions protecting sensitive information is unlikely to be unbalanced in favour of Boeing. In fact one market participant considers that one of the APU producers has as "of today, [...] a dominant position and the JV LLC would be positive unless Boeing makes of the JV LLC their only supplier". Boeing will have to rely on third party APU suppliers going forward, and at least until the APU JV would be able to produce APUs, provided that the APU JV is successful, Boeing is unlikely to be in a

⁶⁹ Minutes of a call with an aircraft manufacturer on 29 June 2018.

⁷⁰ Case M.8314, *Broadcom/Brocade*, paragraphs 104-112., case M.7724, *ASL/Arianespace*, paragraphs 197-230.

position to negotiate confidentiality clauses in agreements with APU suppliers to their advantage in a disproportionate manner.

(101) For the reasons set out in paragraphs (93) to (100), the Commission considers that the Transaction does not raise concerns due to Boeing's access to confidential information of third party APU manufacturers.

Foreclosure of third party MRO providers

- (102) As regards the potential foreclosure of third party MRO providers from APU component MRO and spare parts markets, the concern fundamentally relates to APU suppliers' alleged practice of limiting third party MRO providers from servicing their APUs. Around [Boeing's internal estimate of MRO services revenues]%⁷¹ of revenues of APU suppliers are achieved through component MRO on the aftermarket.⁷² APUs are usually sold to aircraft manufacturers at lower margins in order to recoup investments on the aftermarket. Such recouping is achieved partly through licencing requirements.
- (103) The Commission finds the following in this regard:
- (104) First, as set out above, the APU JV will start from an APU market share of 0%, gradually increasing its presence over the years, making it unlikely or at least highly uncertain that the Transaction will have significant foreclosure effects in the provision of component MRO in APUs in the foreseeable future.
- (105) Second, whereas some market participants took note of the allegedly foreclosing practices of existing APU suppliers, a number of third party MRO providers replying to the market investigation did not express foreclosure concerns related to the creation of the APU JV. To the contrary, some MRO providers expect the Transaction to have a positive impact. As one respondent⁷³ put it "Conditions will not worsen, however they could improve if JV LLC grant licenses to third party MROs to repair their APUs".
- (106) Third, whereas the practice of foreclosing MRO services are generally a concern for market participants, the Commission notes that to date, only one third of the APU MRO market is served by the APU manufacturers.⁷⁴
- (107) Fourth, as reflected in its internal documents⁷⁵, Boeing's primary objective in setting up the APU JV is to support the competitiveness of its aircraft via a better APU offer, including MRO provisions that are attractive to airlines. For example, Boeing identifies as one of the value drivers of the APU JV [Boeing

⁷¹ As for the APU JV, over its lifetime until 2060, around [Parties' estimates]% of revenues are expected to derive from MRO services and spare parts.

⁷² MRO revenues represents [Parties' estimates]% of the total revenues for APUs for large commercial aircraft, according to Safran internal estimates.

⁷³ Respondent representing several airlines, reply to question 1 of the Commission's follow up enquiry on 5 September.

⁷⁴ Form CO paragraphs 158 and 159 based on third party independent industry analysis.

⁷⁵ Response by Parties dated 17 August 2018 to Commission's questions of 6 August 2018, question 18.

value drivers] and [Boeing value drivers].⁷⁶ Accordingly, Boeing's internal documents indicate that the Parties are planning to [Parties' plans with respect to the JV]. Generally, the Commission considers that Boeing's 50% share of the potential profits from the APU JV's MRO services will not affect its basic incentive, which is to increase sales of its aircraft. Boeing thus has every incentive to provide competitive terms for its own APU MRO services.

- (108) Finally, in relation to the concern expressed by certain market participants that Boeing would, post-Transaction, no longer have an incentive to negotiate competitive terms with other APU manufacturers on behalf of airlines, the Commission notes the following. Such negotiations do not appear to have been very effective in the past. [Information from Boeing internal documents about current APU market conditions]⁷⁷ This is also reflected in Boeing's goal, as stated in an internal document, [...]⁷⁸. In any event, in view of maintaining its competitive position versus Airbus which also negotiates MRO terms with APU suppliers, Boeing appears unlikely to stop trying to negotiate competitive terms with other APU manufacturers as a result of the Transaction.
- (109) Therefore, competition concerns are ultimately unlikely to arise given the lack of concrete evidence of a deterioration of current MRO market dynamics.
- (110) For the reasons set out in paragraphs (104) to (109), the Commission considers that the Transaction does not raise concerns related to any foreclosure from APU MRO markets.
- 6.2.4. Conclusion regarding vertical relationships
- (111) Based on the assessment in paragraphs (67) to (110), the Commission concludes that the Transaction does not raise serious doubts as to its compatibility with the internal market with respect to the vertical relationships brought about by the Transaction.

7. CONCLUSION

(112) 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

⁷⁸ Ibid.

⁷⁶ Ibid, question 3.

⁷⁷ Ibid, question 18.