CMA PHASE 2
INITIAL SUBMISSION

PART I
COMMERCIAL AVIATION

CASE ME/6985/22
ANTICIPATED MERGER BETWEEN

Viasat, Inc.

and

25 November 2022

Linklaters

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Part A: Initial Submission

1 Executive Summary

1.1 Introduction

(1) This Phase 2 initial submission responds to the CMA's Issues Statement of 8 November 2022 (the "**Issues Statement**") and its Phase 1 Decision ("**P1D**") in relation to the proposed acquisition by Viasat, Inc. ("**Viasat**") of Inmarsat Group Holding Limited ("**Inmarsat**" and, with Viasat, the "**Parties**") (the "**Proposed Transaction**").

(2) Part I of the Initial Submission explains why the Proposed Transaction cannot be expected to result in a substantial lessening of competition ("**SLC**") in the global supply of broadband in-flight connectivity ("**IFC**") services to UK airlines and other commercial aviation customers in the UK.

1.2 A dynamic market with an unusually high rate of disruption and change

(3) As the CMA puts it in the P1D, the satellite industry is undergoing a "*period of major change*".[1] That change is fast and unrelenting, reflected throughout the course of the CMA process. As Intelsat's CEO remarked: "[*t]here is an announcement every day with a new antenna or with Starlink announcements*",[2] making breaking competitive developments a theme that is unusually prominent – even by the standards of tech platform and other "dynamic markets" as enshrined in current CMA merger guidelines.[3]

(4) Nor is change confined to a subset of the market. Traditional GEO players have been jostling strategically to invest and deploy capacity to tap growing broadband demand evidenced by a stream of major recent announcements as to their growth plans. Of course, the pacesetters in scale of competitive disruption are the Non-Geostationary Orbit ("**NGSO**") providers -- a set which includes SES, Telesat and Amazon Kuiper – where the furthest advanced are SpaceX, via Starlink, and OneWeb. Both have deployed massive global constellations with demonstrable strategic inroads into aviation (and the other "mobility vertical", maritime). For example:

- **Since the Site Visit:** in the last week, SpaceX successfully launched Eutelsat 10B, Eutelsat's new satellite explicitly optimised for the aviation vertical in Europe, designed in collaboration with the "anchor tenant", Panasonic.[4]
- **Since the P1D:** in the last seven weeks, Starlink Aviation has been launched – a direct-to-customer offer for both commercial and business aviation customers and whose website confirms its growing list of regulatory certifications (STCs) by aircraft type in the works (which Viasat estimate cover c. 98% of aircraft types serving commercial aviation). Starlink Aviation signals that Starlink has developed its Electronically Steered Phased Array antenna, allowing it to service its customers operationally in 2023. In addition, OneWeb has launched further satellites and announced a partnership with Panasonic, until now backed by GEO capacity. On their own respective assessments, both NGSO constellations will be operational globally for aviation use by H1 or H2 2023 **[CONFIDENTIAL TO VIASAT]**

[1] P1D, para. 7; Issues Statement, para 16.

[2] Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses, Space Intel Report, 19 October 2022, available at: https://www.spaceintelreport.com/intelsat-to-uk-regulators-viasat-inmarsat-judgment-hello-in-flight-connectivity-is-one-of-our-fastest-growing-businesses/ (attached as Annex [6]).

[3] Merger Assessment Guidelines, fn. 5.

[4] See https://www.spacex.com/launches/eutelsat-10b/. See also Successful launch of EUTELSAT 10B telecom satellite, Satellite Evolution Group, 23 November 2022, available at: https://www.satelliteevolution.com/post/successful-launch-of-eutelsat-10b-telecom-satellite.

(5) These recent developments build on earlier competitive progress by NGSOs in Q2-3 of 2022: (i) in April, Starlink won its first airline contracts with Hawaiian Airlines and JSX; (ii) in August its first cruise line contract with Royal Caribbean and in October a contract with Hurtigruten Expeditions; (ii) in July Eutelsat, a strong GEO player, announced its merger with OneWeb; and (iii) in October Starlink's inter-satellite links ("**ISLs**") became operational – a key development on Starlink's operational path to serve mobility verticals. At the same time, discussions with airlines in tenders now feature both formal and informal references to Low Earth Orbit ("**LEO**") and other NGSO competitors in a different manner than at the time the Proposed Transaction was announced on 8 November 2021.

(6) There is every reason to expect a similar pace of developments during the remainder of the Phase 2 inquiry, let alone extrapolating into the future for, say, mid-2023 to mid-2025, the typical two-year post-merger time horizon examined in CMA merger cases, and beyond.

1.3 Growing and largely untapped IFC demand has driven strategic rivalry between GEO- and NGSO-backed rivals to invest in capacity depth and coverage and expand in IFC

(7) Airline IFC in Europe remains a relatively nascent market. Inmarsat and Viasat only entered in 2016 and 2017 respectively, some three years or so prior to the interruption of the pandemic period of 2020-21, which exacerbates the usual limitations of historic data in a bidding market: even before allowing for the rapid pace of change in 2022 and beyond.

(8) Third party sources agree, however, that both globally and in Europe, the demand for IFC is growing rapidly if not exponentially, reflecting the fact that airlines' passengers have an increasing expectation of connectivity at all times. Once some airlines offer attractive, reliable on-board Wi-Fi, rival carriers can be expected to following suit to improve their own competitiveness.

(9) This projected increase in demand has two dimensions: (i) an increase in the number of connected aircraft; and (ii) an increase in the volume of bandwidth used on those aircraft. Evolution in the use of IFC has fueled end-users' demand for ever more bandwidth to support more data-intensive activities such as video-based social media (e.g. TikTok) and most critically, streaming of entertainment in flight (e.g. Netflix). Industry participants and commentators also expect a move towards airlines offering "free Wi-Fi", as has been the trend in other sectors, which will further drive bandwidth consumption.

(10) The projected growth in demand for IFC exceeds that projected in other verticals, and is in contrast to the decline in many mature regions of video broadcast, historically an important vertical for many Satellite Network Operators ("**SNOs**"). This makes IFC an attractive business opportunity in not only absolute but also relative terms. To supply the significantly increased demand which industry commentators project, SNOs have made massive capacity investments, and some have designed satellites optimised for use in IFC. The high-fixed cost low-variable cost nature of the investment creates very strong incentive to offer lower prices (whether direct to customers, or to customer-facing strategic partners such as satellite service providers ("**SSPs**")) to fill capacity and recover very high fixed investment costs while still making a margin, even with low prices, over very low variable cost. SES and Eutelsat are two major players with a stake in monetising their capacity in aviation and have done so without the need directly to participate in airline tenders, instead striking strategic partnership deals with SSPs like Panasonic and Anuvu. Investments made by SNOs therefore directly strengthen SSP partner competitiveness by improving their capacity and coverage offer.

(11) Starlink and OneWeb have both deployed NGSO constellations that, once at full operational deployment, are inherently global in coverage. Their high-fixed cost low-variable cost incentives to win at low prices are even more extreme in IFC than for GEOs due to their multiples of upfront cost and shorter satellite lifespan on the one hand, and an issue of physics, on the other. The constant motion nature of NGSO constellations means that ~80% of the satellites will be over oceans at any given time and the low orbit means this part of the constellation can only deliver service to mobility customers over

the oceans – i.e., maritime or aviation customers. This means NGSOs have extraordinarily strong incentives to service the IFC vertical so that this 80% of capacity is not idle, but instead is monetized – without any opportunity cost for land-based verticals such as fixed broadband (where Starlink has already disrupted the US market and entered the UK market).

(12) It therefore is perfectly understandable why Starlink has already won aviation and maritime contracts and is directly targeting IFC with Starlink Aviation. OneWeb has the same strong incentives in aviation but has adopted a different monetisation model. Rather than SpaceX's fully integrated go-it-alone model, OneWeb has already established itself as a strategic NGSO partner to aviation SSPs - with Panasonic, Intelsat and Gogo (Business Aviation). Its investments will strengthen these SSPs' positions in the IFC market by providing capacity / coverage and facilitating hybrid GEO/LEO offerings.

1.4 Viasat and Inmarsat will not be particularly close rivals in future capacity coverage (breadth) or bandwidth (depth) deployable for aviation

(13) Viasat and Inmarsat have distinct and contrasting heritage that has influenced their approach in relation to IFC – the former building depth of capacity incrementally, concentrating on a region at a time, and focused on the US market and fixed broadband, and the latter building (initially a minimum) layer of global capacity to serve maritime needs.

(14) Once the lens is zoomed into the aviation vertical, it is common ground that that there are superficial similarities between Viasat and Inmarsat and indeed was in initial third-party commentary at Phase 1. In essence, both are well-known SNO names, both operate in Ka-band, both have won IFC contracts, and while today only Inmarsat has global coverage, Viasat will achieve this in the fullness of time (projected to be the **[CONFIDENTIAL TO VIASAT]**).

(15) However, as will be set out in more detail in Part B below, the items on this "similarities" checklist vary from having negligible to limited relevance to the competitive effects analysis, even on the interim issue of whether the Parties are "close competitors" in the relevant sense of CMA merger guidelines, let alone the ultimate question of whether an SLC can be expected.

(16) In reality, the Parties have not been, and will not be close **strategic** rivals, relative to the strategies of third parties. Unlike Inmarsat, Viasat is a fully integrated satellite technology company that builds its own bespoke integrated hardware; its approach to IFC service has been to focus on depth of coverage primarily in the US, and incrementally by region. In contrast, due to Inmatsat's history in maritime safety, Inmarsat has prioritised building global coverage with comparatively limited depth relative to Viasat, with a model which is more similar for example to Intelsat.

(17) Viasat and Inmarsat are therefore not particularly close competitors historically or today on key metrics of capacity depth (which affects the IFC bandwidth service offers available inter alia to airlines, and affects airtime pricing) and geographic coverage (which affects which airline routes can be served with IFC). For **European** coverage, GEO competitors Eutelsat, Avanti and Intelsat each individually offer more capacity than Inmarsat. For **global** coverage, Viasat does not offer "single source" owned global GEO coverage today but relies on leased coverage for APAC. For its part, Inmarsat's depth of global coverage is considerably shallower than other players including SES and Intelsat.

(18) This will not change even assuming the successful launch **[CONFIDENTIAL TO VIASAT]** of ViaSat-3b EMEA, which will provide Viasat with significant capacity over Europe. Inmarsat – even with growth expected from future GX satellites – will remain well behind Eutelsat, SES, Intelsat and Avanti. While NGSO capacity cannot be dedicated to a single region, the sheer scale of the global capacity of Starlink and OneWeb means that both will always have a large depth of capacity over Europe. By way of illustration, per Euroconsult data, Starlink's global capacity by the end of 2024 will be more than 20x that of Inmarsat (see Table 1 below) so that the "European coverage" fraction of that capacity will still be very large. This means that, in addition to Intelsat and SSPs backed by Eutelsat, SES and Avanti

(which include Panasonic and Anuvu) Starlink and OneWeb will be formidable rivals for Europe-centric IFC demand.

(19) Assuming that ViaSat-3c APAC is launched successfully and becomes operational **[CONFIDENTIAL TO VIASAT]**, Viasat expects to achieve global (without polar) coverage of its owned satellite fleet and remove, to a large extent, its competitive disadvantage on this important dimension. However, by the time it does this, it will according to Euroconsult still be a fraction (one-sixth) the size of Starlink, and its largest peers in depth of capacity will be Starlink, OneWeb, SES, and Telesat[5] each with over a Terabit of capacity per second (>1,000 Gbps) each (see Table 1), with polar coverage. At the same time, Inmarsat will rank sixth in 2024 (and the same in 2025) and its global capacity share will not exceed 1%.

Table 1 Top 7 global commercial SNOs (Gbps and global capacity share by year)

SNO – global capacity for IFC	End 2022		End 2023		End 2024		End 2025	
	Gbps	%	Gbps	%	Gbps	%	Gbps	%
1 Starlink	11,894	71%	17,080	68%	21,537	69%	24,703	64%
2 Viasat	1,381	8%	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]
3 SES	641	4%	1,765	7%	1,922	6%	2,151	6%
4 OneWeb	201	1%	808	3%	1,067	3%	1,208	3%
5 Intelsat	126	1%	126	1%	201	1%	426	1%
6 Inmarsat	95	1%	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]
7 Telesat	66	<1%	66	<1%	66	<1%	2,952	8%

Capacity expansion relative to prior year end is marked in blue.
Source: RBB Economics, based on Euroconsult for third parties; Parties' estimates of their own capacity.

(20) As Table 1 makes clear, Starlink and SES are the "nearest"-ranked competitors to Viasat in terms of depth of capacity but this fails to capture the significant asymmetry in size of Starlink capacity relative to Viasat today and in every year going forward. **[CONFIDENTIAL TO VIASAT]**

1.5 Viasat and Inmarsat will not in any other respect be two 'strong' players, while others are 'weak'

(21) The Proposed Transaction combines the Parties' complementary businesses in complementary geographies. Aviation represents only a small portion of the Parties' businesses (accounting for only 7% of the Parties' combined revenues in 2021, and the UK portion accounted for less than 0.1%). The overlap between the Parties in aviation was a by-product of the merger, not the driver for the combination.

[5] Telesat's Aviation brochure notes that "Telesat's system will offer the lowest ratio of investment to useable capacity than any current or announced future satellite system providing airlines with important economic advantages". See https://www.telesat.com/wp-content/uploads/2020/08/Telesat-Lightspeed-IFC-whitepaper.pdf. Accessed 22 November 2022.

(22) The European market for IFC is nascent, is projected to increase in size significantly and is therefore very contestable. There are constant shifts in the parameters that airlines value as they try to meet the evolving needs of their own passengers. This is not a commodity market: the sheer diversity of airline demand means that multiple SSPs with differentiated value propositions (and "strengths" that they can push) must be treated as credible competitors and there is no identifiable subset of airlines for which both Parties are "strong" while other alternatives are "weak". This means that the merged entity could not profitably offer a worse IFC deal for some airline customers – and win – safe in the supposed knowledge that all third party bidders will be "weak" or disengaged for this customer.

(23) For example:

(i) **Intelsat** has characterised commercial aviation IFC as a *"main engine of growth for the company*", with the acquisition of Gogo's commercial aviation business enables the company to "*innovate more in the next three to five years than … ever done before*".[6] It has a very credible roadmap for future capacity and coverage increases, with several high throughput satellites set to launch over the next few years.

(ii) **Panasonic**, with its IFE heritage and first mover advantage holds a strong position in the IFC market. It recently announced a partnership with OneWeb[7] which will allow it to provide a GEO/LEO offering, and is an anchor tenant on Eutelsat's satellite 10B extreme high throughput capacity ("**XTS**") satellite, which was successfully launched earlier this week which was designed specifically to meet IFC needs of airlines.

(iii) **Anuvu** has a similar IFE heritage and is a strong IFC competitor in the European short-haul market, having won a large IFC contract with one of the largest narrow-body fleets in the region, Turkish Airlines, in May 2022 and won the Southwest Airlines contract to modernise IFC on a fleet of 350 737 aircraft in June. It has multiple industry partnerships for capacity commitments, including an agreement with Telesat on its LEO constellation. It is also looking to launch its own MicroGEO satellites for enhanced capacity and coverage.

(24) Meanwhile, the competitive threat posed by Starlink and OneWeb accelerates in intensity. As set out in Section 1.2, Starlink has recently launched its aviation offering that will be operational in mid-2023. It has also announced it is obtaining certification for key narrowbody (Airbus A321, Boeing 737 and 757) and widebody (Airbus 330, Boeing 787) airframes alike. OneWeb has partnerships with several key SSP including Panasonic and Intelsat, who intend to offer hybrid GEO/LEO solutions.

(25) **[CONFIDENTIAL TO BOTH PARTIES]**. Customer demand has also evolved in response to NGSO entry: recent RFPs have shown that airlines are specifically looking for LEO or LEO/GEO solutions, which neither Party can offer at present.

(26) Nor is the LEO threat simply a growing "noise" where it is rational to adopt a wait-and-see attitude. **[CONFIDENTIAL TO VIASAT]**

[6] Intelsat CEO David Wajsgras: 'Consolidation Makes Sense', Via Satellite, 24 October 2022, available at: https://interactive.satellitetoday.com/via/november-2022/intelsat-ceo-david-wajsgras-consolidation-makes-sense/. Accessed on 25 October 2022.

[7] The Panasonic Avionics Multi-Orbit Network Delivers World Class Connectivity Experience, Panasonic, 7 November 2022, available at: https://www.panasonic.aero/blog-post/panasonic-avionics-multi-orbit-network/; and OneWeb and Panasonic Avionics Corporation to Deliver Low Earth Orbit (LEO) Connectivity to Airlines Worldwide, Panasonic, 18 October 2022, available at: https://www.panasonic.aero/press-release/panasonic-leo/. Accessed on 3 November 2022.

1.6 Conclusion: no expectation of SLC in IFC for airlines

(27) The period of 2-3 years post-merger would span 2023 to 2025. In this period, competition will be even more intense than it already is in 2022. The Merged Entity will operate in a dynamic and innovative industry which benefits from a healthy and robust supply chain – a large and diverse number of differentiated competitor business model and surging demand from end users and their airline intermediaries.

(28) In these circumstances, it would not be rational for the Merged Entity (or indeed any competitor) to ignore an array of credible rivals, ease off on the best competitive offer they can make to airlines, and expect to win and make that a profitable strategy over time.

(29) In the remainder of this submission, the Parties will unpack in greater detail why the Proposed Transaction cannot be expected to result in an SLC in the supply of IFC to commercial aviation customers in the UK.

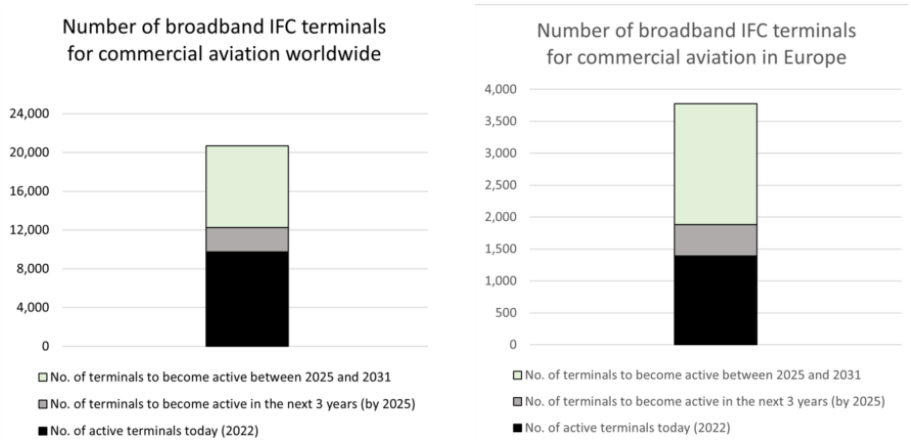
2 Increasing IFC demand gives multiple suppliers opportunity and incentive to expand

2.1 Growing demand for IFC usage and bandwidth across the piece

(30) IFC represents a particularly attractive vertical for SSPs because demand for IFC globally and in Europe is expected to more than double over the next ten years. Therefore, while the Parties will each endeavour to win additional contracts in the next two to three years, this would still leave a large proportion of the overall market untapped and provide recent entrants (e.g., Starlink, OneWeb) ample opportunity to expand, capitalising on substantial investments in launched constellations.

(31) To illustrate the point, Euroconsult estimates that there are currently 9,735 active commercial aircraft broadband IFC terminals worldwide with 1,390 (14%) active in Europe. Euroconsult forecasts that this will grow to 12,261 active terminals worldwide and 1,883 active in Europe by 2025, and 20,697 active worldwide active and 3,775 in Europe by 2031 (as illustrated in Figure 1 below).[8]

Figure 1 Number of broadband IFC terminals for commercial aviation in Europe and worldwide



Source: RBB Analysis based on Prospects for In-Flight Entertainment and Connectivity, Euroconsult, 2022 Edition (attached as Annex ISCA.001) and In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002).

[8] Analysis by RBB Economics based on Prospects for In-Flight Entertainment and Connectivity, Euroconsult, 2022 Edition (attached as Annex ISCA.001). The Parties note that also some of the worldwide active terminals by non-European airlines will be used by UK and other European passengers as there are a range of non-European airlines that fly from or to Europe.

(32) This means that:

(i) currently, over 50% of terminals expected to be active by 2031 both worldwide and in Europe are not yet active and hence are open to competition; and

(ii) even by 2025, over 40% of worldwide terminals expected to be active by 2031 and over 50% of terminals expected to be active in Europe by 2031 are not yet active and hence would still be open to future competition.

2.2 The unequivocal direction of market demand: more IFC-connected aircraft and higher bandwidth consumption per aircraft, where airline demand is differentiated

(33) As set out in more detail in Section 5, airlines' demand for IFC has both grown and evolved over time, in response to (and based on their prediction of future) demand from passengers. This is not a commodity market – there is a large degree of differentiation in demand with airlines valuing different price and non-price factors (in particular please refer to Figure 12 and Figure 13 below). A brief history of some of the key developments includes:

(i) In the early 2000s, Boeing launched Connexion by Boeing ("**CBB**"), an IFC service that was first demonstrated in 2003 on the long-haul flights of Lufthansa between Frankfurt and Washington Dulles and those of British Airways between London Heathrow and New York JFK. CBB was primarily targeted at business passengers who required connectivity for their laptops.

(ii) In 2006 Boeing announced that "*the market for this service has not materialised as had been expected*" and exited the market.[9]

(iii) The launch of Apple's iPhone in 2007 and subsequent Android phones resulted in a large number of airplane passengers having WiFi-enabled devices.

(iv) The advent of Netflix and other streaming services after 2013 has further increased consumer demand for streaming their own content.

(34) As a result, in the 15+ years since Boeing exited the market there have been multiple shifts in demand of airlines' (as dictated by passenger needs): (i) target users have shifted from business class passengers to all parts of the cabin; (ii) primary target devices have moved from laptops to smart phones and tablets; (iii) primary target applications have moved from email and messaging to web browsing to streaming / entertainment; and (iv) the primary target market has extended from premium global long-haul to include regional short-haul. These shifts in demand have resulted in increased demand for bandwidth. In particular, connected passenger streaming results in far higher bandwidth usage but also creates incentives for closer substitution with IFE alternatives. In other words, while watching new-release movies, TV, sport or other licensed content via IFE seatback is not a close substitute for lower-bandwidth IFC applications (email and text messaging, social media or simple web browsing), airlines may consider IFE entertainment options to be closer substitutes for heavy-bandwidth video streaming on passengers' own portable devices on IFC. As set out in Section 5.2.2, this also means that IFE-heritage players (who can offer IFE, IFC or IFE/ICE packages) are more competitive as IFC entertainment and IFE converge.

[9] Historical Snapshot: Connexion by Boeing® Mobile Communications Service, Boeing, available at: https://www.boeing.com/history/products/connexion-by-boeing-mobile-communications-service.page.

2.3 An industry move towards "free Wi-Fi" for passengers further drives bandwidth consumption

(35) As recognised by the P1D,[10] the IFC industry is moving towards a "free Wi-Fi" model where airlines will no longer be able to directly pass on Wi-Fi costs to customers via inflight connectivity charges if such airlines want to remain competitive.[11]

(36) On the demand side, industry experts report that demand for inflight Wi-Fi is at an all-time high as passengers return to flying following the Covid-19 pandemic and increasingly expect Wi-Fi connectivity onboard.[12] Some airlines' early adoption of free IFC, such as Qantas Airways, JetBlue and United Airlines (with Viasat), Air New Zealand (with Inmarsat), Alaska Airlines (with Intelsat), Norwegian Air Shuttle (with Anuvu) or Hawaiian Airlines (with Starlink from next year), is also gradually increasing the pressure on other airlines to do the same as customers will expect access to free Wi-Fi. In November 2022, it was reported that the Delta Air Lines plans to have free IFC "soon" on all domestic flights, with an international expansion slated for the end of 2024.[13]

(37) **[CONFIDENTIAL TO VIASAT]**:

Figure 2 [CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**

3 Suppliers are expanding with rival GEO and NGSO technologies in response

3.1 IFC SSPs leasing capacity from GEO SNOs benefit from large upstream capacity investments

(38) Both globally and over Europe, there have been massive investments by SNOs in capacity that either is very suitable to be used in the aviation vertical, or in some cases with the aviation vertical specifically in mind, such as the SES-17 and Eutelsat 10B satellites – see further Sections 3.1.2 and 3.1.3 below.

(39) A central feature of this trend is those SNOs that do not have direct relationships with airlines but are in the aviation vertical in partnership with SSPs. These capacity investments have been made in direct partnership with SSPs who have signed capacity leases to access the new capacity. In this sense, the continued investment at the SNO level makes the SSPs more competitive, by allowing them to take advantage of the growing opportunities in IFC. Capacity investment by SNOs, particularly in designing satellites that are optimised for use in mobility applications including IFC like Eutelsat's 10B XTS and Konnect VHTS satellites, is a response to the increasing demand. The implication of this is that there is significant spare capacity capable of servicing the IFC market and that any attempt by the merging Parties to increase prices and/or restrict capacity to that segment of demand would fail.

(40) SES, Intelsat and Eutelsat are key examples of GEO SNOs that are investing and expanding in the market. As set out below, they have all made investments in European GEO capacity and have strategic

[10] P1D, para. 90.

[11] See for instance, Annex 16.3 to the FMN, Prospects for In-Flight Entertainment and Connectivity, 9th edition, July 2021, p. 99; and Annex 16.4 to the FMN, The Future of In Flight Connectivity – 2020 Edition, 21 December 2021. Note, that the meaning of "free to the passenger" varies by airline. Some would like full, fast, free internet for all without any friction for the passenger, while others would like "free" to only be for their high value passengers. Others would like advertiser- or sponsor-supported free service, while others would like "free" to be offered through the passenger's own mobile service carrier. In this way, multiple different models are evolving, allowing for existing IFC providers and recent entrants to create innovative business models to disrupt the market.

[12] Prospects for In-Flight Entertainment and Connectivity, Euroconsult, 2022 Edition (attached as Annex ISCA.001).

[13] Delta debuts free Wi-Fi for all SkyMiles members in latest internet trial, the Points Guy, 16 November 2022, available at: https://thepointsguy.com/news/delta-free-wifi-skymiles/?utm_content=B5AF0DAA-65ED-11ED-BC24-D8A84744363C&utm_medium=social&utm_term=editorial&tw=1&utm_source=twitter&utm_campaign=thepointsguy. Accessed on 22 November 2022.

capacity deals with SSPs like Panasonic and Anuvu, thus sponsoring their capacity and coverage. Gogo's commercial aviation business, now owned by Intelsat, also continues to rely on leased capacity.

(41) The satellite industry is characterised by high fixed costs and low variable costs. This is true both GEO and NGSO satellites, but the NGSO model is even more extreme in terms of its impact on aggressive incentives to compete in aviation for three principal reasons.

(i) **First, the sheer relative size of fixed cost investment for NGSO constellations over GEO investments.** Once a provider invests in satellite capacity, they are making an irrevocable bet on the ability to monetise the capacity of that satellite. While GEO satellites are high fixed cost investments in the hundreds of millions of dollars, NGSOs have already deployed multiple billion dollars in fixed cost investment for global constellations upfront, creating even stronger incentives to fill that capacity with volume that, even at very low prices, will be above very low incremental (variable) cost of additional bandwidth. Any such revenue contributes to recovery of high fixed costs and therefore makes economic sense. Once such a bet is made and the satellite constellation is deployed, any revenue is better than none – SNOs will therefore reduce prices until they find takers for their capacity.

(ii) **Second, the shorter operational lifetime of NGSOs heighten pressure to monetise at low prices to recover fixed costs.** Such recovery must also occur during the operational lifetime of the satellites in orbit, which in the case of NGSO satellites is shorter than for GEOs creating additional pricing pressure.

(iii) **Third, the relevance of the physics of constant motion NGSO constellations for monetisation specifically in aviation and maritime verticals.** In the case of a GEO satellite, the ability to provide coverage to intermediaries / end-users and monetise its capacity is limited to the geographies covered from the orbital location / beam positioning. In the case of an NGSO which spends ~80% of the time over water, the only opportunity to monetise capacity during that 80% of time is through the maritime and aviation verticals and there is no opportunity cost of that bandwidth over water for land applications such as fixed broadband. In the case of satellites designed with mobility segments in mind (essentially, those with beams directing capacity over oceans), the SNO will have a considerable incentive to find customers or SSPs active in aviation or maritime markets, which are the *only* options to monetise such capacity, or deploy the capacity in mobility segments themselves if they are also an SSP. These incentives ensure that there will be no prospect of the Parties raising prices and or restricting capacity post-merger – doing so would only result in customers switching to other alternatives.

3.1.2 SES

(42) SES owns GEO and MEO satellites (which together comprised 9% of global broadband capacity at the end of 2021[14]). SES' multi-orbit network is available to all mobility verticals. SES has said that it has "*much of [its] global fleet and capacity to meet the needs of the inflight connectivity market*" and that "*Aero service providers are at the design table with us, making sure we're building satellites that can provide the high-powered coverage where it's needed today and in the future*".[15]

(43) On 3 November 2022, SES announced that the first O3b mPOWER launch of two satellites is locked in for 15 December 2022. With two further launches planned in Q1 2023, SES expects to begin services with the six satellites constellation in Q3 2023. As the current O3b constellation is already in place, SES

[14] See Table 7, FMN.

[15] Entering a New Age of Inflight Connectivity (IFC)., SES, 12 September 2018, available at: https://www.ses.com/entering-new-age-inflight-connectivity-ifc.

will start deploying enhanced MEO services to existing customers in early 2023.[16] The new generation O3b mPOWER will be composed of a total of 11 software defined MEO satellites for broadband internet services and which will target all mobility verticals, with c. one Terabit per second of total capacity, including coverage over Europe.[17]

(44) SES currently has active relationships with most major SSPs to whom it sells capacity for the aviation vertical, including Panasonic, Anuvu, Intelsat (through Gogo) and Thales. In June 2022, SES brought into operation SES-17 which has a heavy IFC focus with North and South American and transatlantic coverage. This has been used by Thales to serve Spirit airlines and will be used by Air Canada on all its routes.[18]

(45) As detailed further below at paragraph (66), SES is also about to become a managed services provider on HBC+ along with Inmarsat, thereby becoming a direct provider of IFC to airlines instead of only being active at the wholesale level where it supplies satellite capacity to other IFC providers.

Figure 3 SES 17: Coverage

Source: Thales FlytLIVE gets boost with SES-17 activation, Paxex.Aero, 26 July 2022, available at: https://paxex.aero/thales-flytlive-ses-17-speed-boost/. Accessed on 22 November 2022; Spirit's transition to SES-17 satellite capacity continues apace, Runway Girl Network, 21 August 2022, available at: https://runwaygirlnetwork.com/2022/08/spirit-ses-17/. Accessed on 22 November 2022.

3.1.3 Eutelsat / Panasonic

(46) Eutelsat, backed by the French Government, continues to invest in its growing 36 satellite GEO fleet. Historically, Eutelsat's satellites were not designed for the mobility market. For example, it previously owned KA-SAT (now owned by Viasat) which was designed for fixed verticals and had mobility coverage gaps over oceans as seen in Figure 4 below. However, Eutelsat has changed its strategy over the last five years and has made investments of several billions in its Konnect, Konnect VHTS and other HTS

[16] Q3 2022 SES SA Earnings Call – Final, 3 November 2022, available at: https://www.newsdesk.lexisnexis.com/click/?p=aHR0cHM6Ly93d3cubmV3c2Rlc2subGV4aXNuZXhpcy5jb20vYXJ0aWNsZS80OTE3ODUzNzgxNC5odG1sP2hsaD0xNmZhNGI2MyZmaWQ9MTQxODE0NyZjaWQ9TVRBNE56WXkmdWlkPU1USXdNVEUxT1E&a=49178537814&f=TmV3cw&s=YWxlcnQ&u=Y2Fyb2xlLnRob21hc0BsaW5rbGF0ZXJzLmNvbQ&cn=TGlua2xhdGVycyBCdXNpbmVzcyBTZXJ2aWNlcw&ci=108762&i=1368&si=80333&fmi=655596059&e=RkQgKEZhaXlgRGlzY2xvc3VyZSkgV2lyZQ&d=1201159&t=3&h=1&mbc=Q1QzL2E9NDkxNzg1Mzc4MTQmcD0xNGUmdj0xJmhsaD0xNmZhNGI2MyZmaWQ9MTQxODE0NyZ4PUlaa0tTMllmSjlNbW1HWmIxSWhkSkEmdTE9TkQmdTI9dXAtdXJuOnVzZXI6UEExODc2MzA3NTQ&fi=1418147&ai=263139&wa=1&ac=263139_1667725872000&ck=d2ea8af13638f936e143058fb8ec743a. Accessed on 22 November 2022.

[17] Please refer to https://o3bmpower.ses.com/sites/o3bmpower/files/2021-09/SES_O3b_mPOWER_Factsheet_EN.pdf. Accessed 8 February 2022.

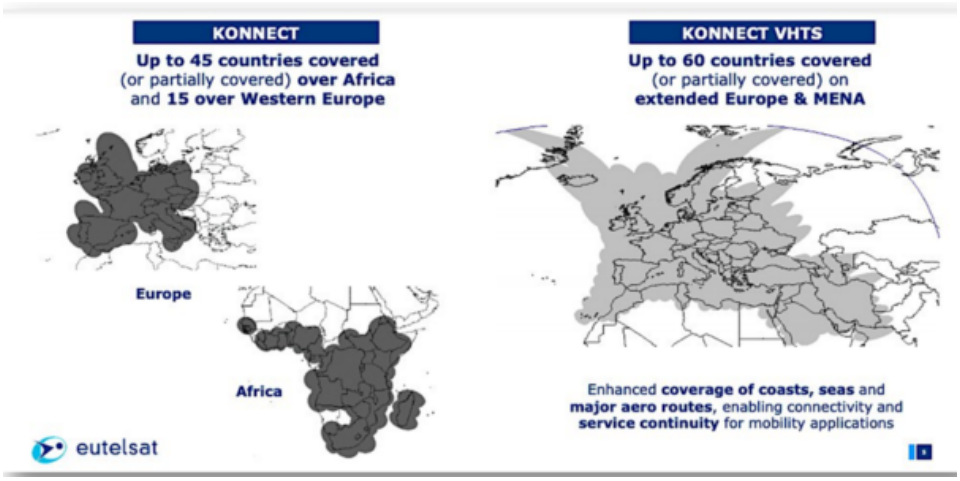
[18] Spirit Airlines Rolls Out New FlytLIVE In-Flight Connectivity Service, Avionics International, 13 July 2022, available at: https://www.aviationtoday.com/2022/07/13/spirit-airlines-rolls-new-flytlive-flight-connectivity-service/. Accessed 3 August 2022.

satellites, including Eutelsat 10B XTS. These are focused on higher demand areas in Western Europe and do not have any material IFC coverage gaps.

Figure 4 KA-SAT coverage

Source: Ka Band – Tooway, First Telecom, available at: http://www.first.gr/services/satellite-internet/ka-band-tooway.

Figure 5 Eutelsat Coverage



Source: Peter B. de Selding's tweet from 27 April 2021, available at: https://mobile.twitter.com/pbdes/status/1387073544417316869.

(47) In addition, on 22 November 2022, SpaceX successfully launched the Falcon 9 rocket with Eutelsat 10B satellite.[19] Eutelsat 10B was designed in partnership with Panasonic specifically to deliver extreme high throughput capacity for aviation and carries "*two new multi-beam HTS Ku-band payloads: a high-capacity payload, covering the North Atlantic corridor, Europe, the Mediterranean basin and the Middle East, offering significant throughput in the busiest air and sea traffic zones; and a second payload to extend coverage across the Atlantic Ocean, Africa and the Indian Ocean*". It will be able to process more than 50 GHz of bandwidth, offering a throughput of approximately 35 Gbps.[20] Eutelsat had already pre-sold one third of the capacity of the Eutelsat 10B satellite to IFC SSPs at the time of its launch.

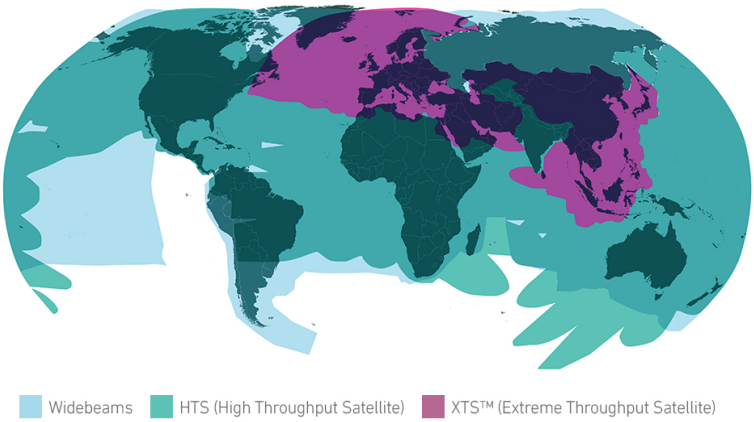
(48) Eutelsat leases capacity to Panasonic, Anuvu, Intelsat (through Gogo) and others (such as Taqnia). Eutelsat has a particularly close relationship with Panasonic, which – as noted above – collaborated

[19] Live coverage: SpaceX launches Falcon 9 rocket with Eutelsat 10B satellite, SpaceFlightNow, 22 November 2022, available at: https://spaceflightnow.com/2022/11/22/falcon-9-eutelsat-10b-live-coverage/. Accessed on 23 November 2022.

[20] Future Eutelsat Satellite Launches, Eutelsat, available at: https://www.eutelsat.com/satellites/future-satellites.html. Accessed on 22 November 2022.

closely with Eutelsat on the design of its Eutelsat 10B satellite, on which Panasonic is the anchor tenant, so as to materially enhance Panasonic's coverage across Europe and the Middle East.[21]

Figure 6 Panasonic coverage as a result of Eutelsat 10B



Source: World Class In-Flight Connectivity, Panasonic, available at: https://www.panasonic.aero/our-offerings/platforms/in-flight-connectivity/.

(49) Eutelsat is also in the process of a merger with OneWeb which will create the first integrated GEO/LEO player, operating across all verticals.[22]

3.1.4 Intelsat

(50) Intelsat owns over 50 GEO satellites but is also pursuing multi-orbit and multi-network services by: (i) integrating Starlink's LEO connectivity,[23] (ii) partnering with OneWeb to offer a combined LEO and GEO offering to customers[24], (iii) launching an MEO constellation[25] and (iv) developing multi-orbital interoperable terminals. It also recently acquired Gogo Commercial Aviation. While active at the SSP level, Intelsat also provides SNO capacity to other SSPs including Panasonic and Anuvu. Intelsat is also reportedly in talks with Airbus regarding the potential for Intelsat to be included in the HBC+ IFC program.[26] The below coverage map in Figure 7 shows the coverage from Intelsat Epic, its high-performance, next generation satellite platform which utilises C-, Ku- and Ka-bands, wide beams, spot beams and frequency reuse technology. However, Intelsat's IFC offering also utilises Intelsat's other non Epic satellites to achieve near global coverage.

[21] Panasonic Avionics Teams Up With Eutelsat to Deliver XTS In-flight Connectivity Across Europe and the Middle East, Panasonic.Aero, 12 May 2019, available at: https://www.panasonic.aero/press-release/panasonic-avionics-teams-up-with-eutelsat-to-deliver-xts-in-flight-connectivity-across-europe-and-the-middle-east/. Accessed on 22 November 2022.

[22] Eutelsat to combine with OneWeb, A leap forward in Satellite Connectivity, 26 July 2022, available at: https://www.eutelsat.com/files/PDF/investors/2021-22/Eutelsat_OneWeb_Investor_Presentation.pdf. Accessed on 26 July 2022.

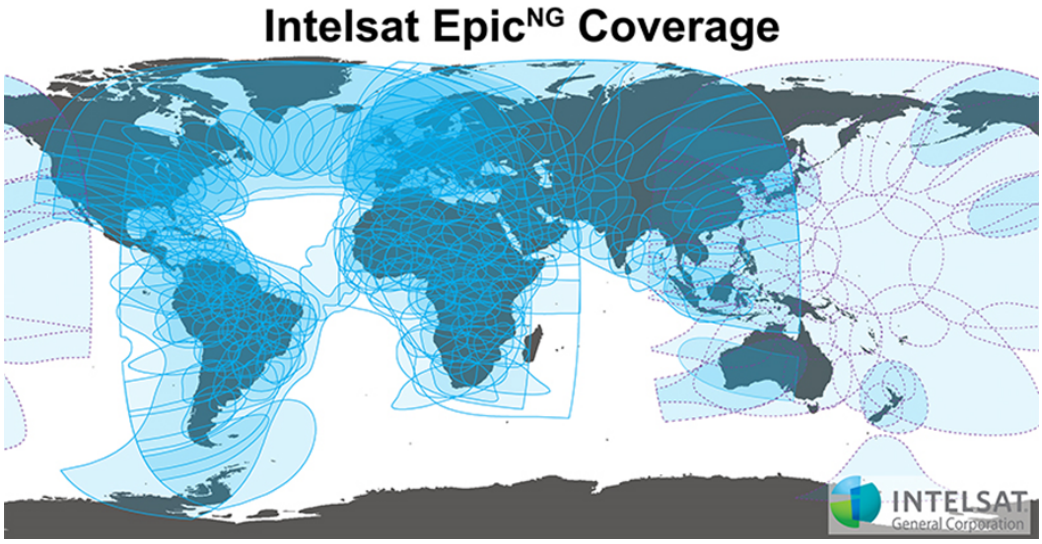
[23] Intelsat rolls out network service that integrates Starlink and geostationary satellites, SpaceNews, 26 March 2022, available at: https://spacenews.com/intelsat-rolls-out-network-service-that-integrates-starlink-and-geostationary-satellites/#:~:text=of%20you.%27%E2%80%9D-,Intelsat%20is%20buying%20Starlink%20terminals%20and%20services%20and%20reselling%20them,one%20interface%2C%E2%80%9D%20said%20Claussen. Accessed on 29 March 2022.

[24] Intelsat and OneWeb Demonstrate GEO/LEO Service to U.S. DoD, ViaSatellite, 4 November 2021, available at: https://www.satellitetoday.com/government-military/2021/11/04/intelsat-and-oneweb-demonstrate-geo-leo-service-to-u-s-dod/. Accessed on 29 March 2022.

[25] Intelsat eyes small MEO constellation for hybrid aero service, Runway Girl Network 4 April 2022, available at: https://runwaygirlnetwork.com/2022/04/intelsat-eyes-small-meo-constellation-for-hybrid-aero-service/. Accessed on 3 August 2022.

[26] Intelsat sees 2Ku longevity but prepares for ESA-enabled future, Runway Girl Network, 22 November 2022, available at: https://runwaygirlnetwork.com/2022/11/intelsat-2ku-esa-enabled-future/. Accessed on 22 November 2022.

Figure 7 Intelsat Coverage[27]



Source: What Passengers Have To Gain From The Gogo – Intelsat Deal, Simple Flying, 19 November 2020, available at: https://simpleflying.com/gogo-intelsat-deal/.

3.1.5 Anuvu

(51) In July 2021, Anuvu announced a partnership with Astranis to launch two dedicated software-defined programmable "MicroGEO" satellites in early 2023, with six more to follow. Anuvu plans to devote its constellation exclusively to aviation and maritime applications, initially to provide high-performance connectivity over North America and the Caribbean.[28]

(52) At present, Anuvu leases coverage from a number of SNO lessors including SES, Intelsat and Telesat, to provide the coverage shown in Figure 8 below. This strategy allows Anuvu to stitch together capacity from various global and regional operators, ensuring it diversifies its offering and allows is to experiment with new technologies. For example, Telesat Lightspeed and Anuvu have successfully tested Anuvu's IFC services on Telesat's LEO test satellite, reporting latency of 19 ms (compared to more than 600 ms on a GEO satellite).[29] Anuvu is also developing a hybrid GEO / LEO antenna that would allow it to provide service using a GEO satellite and switchable to a LEO constellation, in conjunction with the 10 Gbps of Telesat capacity to which it committed in 2021.[30]

[27] Please note that this map only displays Intelsat's coverage from its Epic constellation. However, Intelsat would have other wide-beam satellite coverage in some areas where the map currently shows gaps.

[28] Anuvu Announces High Performance MicroGEO Satellite Constellation, Anuvu Press Release, 26 July 2021, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/250/anuvu-announces-high-performance-microgeo-satellite-constellation. Accessed on 20 July 2022.

[29] Global Eagle Airconnect Ka Antenna Clears Critical Milestone toward Certification for IFC Deployment on Telesat Lightspeed, Anuvu Press Release, 10 May 2021, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/245/global-eagle-airconnect-ka-antenna-clears-critical-milestone-toward-certification-for-ifc. Accessed 7 February 2022.

[30] Anuvu develops second generation Ka antenna for hybrid GEO/LEO ops, Runway Girl Network, 11 October 2021, available at: https://runwaygirlnetwork.com/2021/10/11/anuvu-develops-second-generation-ka-antenna-for-hybrid-geo-leo-ops/. Accessed 7 February 2022.

Figure 8 Anuvu coverage

Source: Connectivity, Anuvu, available at: https://www.anuvu.com/our-portfolio/connectivity.

(53) A recent article in a specialised industry paper praised the quality of Anuvu's IFC on Air France's narrowbody Airbus 320 aircraft as "*speeds were lightning-fast and the system was responsive, with video loading quickly: substantially faster than on anything else in recent memory, and certainly anything else in Europe*".[31]

3.2 The expansion of Starlink and OneWeb continues to accelerate

(54) As acknowledged in the P1D, the satellite industry is undergoing a "*period of major change*"[32] and such change is occurring at pace. This is borne out by significant developments in the market in the mere seven weeks since the P1D. As summarised by Intelsat's CEO at an industry conference "*[t]here is an announcement every day with a new antenna or with Starlink announcements*".[33] Highlighted below are some of the key announcements (which are also detailed at Table 9 below):

3.2.1 Starlink: Global coverage and launch of Starlink Aviation

(55) Starlink already has global coverage, and with final densification launches underway, its services will be available worldwide by mid-2023. Due to the nature of NGSO satellite constellations, 80% of Starlink's satellites are over oceans at any given time. Due to their low orbits, this means that a large proportion of LEO satellites can only deliver service to customers on or over oceans – i.e., maritime or aviation customers. Given the cost structure of owning and operating satellites (i.e., high fixed costs of manufacturing and launching satellites into orbit but relatively low marginal costs of serving customers), Starlink has a very strong incentive to pursue and serve the IFC vertical so that the capacity of their satellites while over oceans is monetised. Indeed, it is already clear that Starlink is planning to monetise its ocean capacity given that it has won an IFC contract with Hawaiian Airlines which requires ocean coverage due to Hawaii's geographic location in the middle of the Pacific Ocean, and that Starlink is

[31] Air France's Anuvu Ku stuns on recent flight, Runway Girl Network, 16 November 2022 (attached as Annex ISCA.013).

[32] P1D, para. 7; Issues Statement, para 16.

[33] Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses, Space Intel Report, 19 October 2022, available at: https://www.spaceintelreport.com/intelsat-to-uk-regulators-viasat-inmarsat-judgment-hello-in-flight-connectivity-is-one-of-our-fastest-growing-businesses/ (attached as Annex ISCA.008).

aggressively finding partnerships with Value Added Resellers ("**VARs**"), such as Anuvu and Speedcast, in the maritime vertical.

(56) On 19 October 2022, Starlink formally launched its "Starlink Aviation" offer online for both commercial and business aviation customers via a dedicated Starlink Aviation webpage advertising "*high-speed, low-latency, in-flight internet with connectivity across the globe*" with the ability to immediately make reservations for delivery in 2023.[34] This formal launch demonstrates that Starlink has overcome any barriers to entry and has achieved global coverage in an extraordinarily short space of time (much more rapidly than either of the Parties). Further details about Starlink Aviation are set out in Section 7.7.

3.2.2 OneWeb as supplier of LEO-backed capacity to rival SSPs

(57) OneWeb, the UK Government-backed NGSO, has already established itself as an important wholesale supplier of LEO satellite capacity and many of the Parties' key competitors will soon be relying on OneWeb's LEO constellation for additional capacity and global coverage. OneWeb has a first generation constellation of 462 satellites in orbit today (of 648 planned for operational orbit by Spring 2023 with its second generation already under development),[35] and is in the process of a merger with Eutelsat which will provide substantial additional access to capital and opportunities to expand.

(58) As per the OneWeb and Eutelsat latest investor presentation, OneWeb expects full global coverage by Q4 of its 2023 fiscal year which ends in March 2023 and anticipates starting to generate revenues from aviation services in FY24 (year ending March 2024), i.e., within less than two years.[36]

(59) Intelsat is partnering with OneWeb to offer a combined LEO and GEO offering to customers[37] and the Parties report that Intelsat is already participating in tenders on the basis of its combined offer with OneWeb (e.g., **[CONFIDENTIAL TO BOTH PARTIES]**, **[CONFIDENTIAL TO VIASAT]**, **[CONFIDENTIAL TO VIASAT]** and **[CONFIDENTIAL TO VIASAT]**) see Annex ISCA.003 on NGSOs' participation in tenders for further details).

(60) Panasonic has also recently announced a partnership with OneWeb.

(61) The agreement enables Panasonic to market, sell, and support OneWeb's high-speed, low-latency IFC services to commercial airlines worldwide,[38] using the LEO/GEO Stellar Blu ESA solution.[39] From the perspective of Panasonic, this partnership will further strengthen its leading position in long-haul IFC as well as in short-haul, including in Europe.

(62) These two partnerships confirm OneWeb's partnership approach to the commercial IFC market (further to its Gogo and Satcom Direct in business aviation – see Part II of the Initial Submission for more detail). This approach will further accelerate OneWeb's expansion by leveraging the well-established positions and existing customer support services of its partners (e.g., 24x7 service, retro-fit installation, portals,

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[34] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 3 November 2022.

[35] Please refer to OneWeb Confirms Successful Launch of 36 Satellites, After Rapid Year of Progress, OneWeb's Press Release, 27 December 2021, available at: https://oneweb.net/resources/oneweb-confirms-successful-launch-36-satellites-after-rapid-year-progress. Accessed 10 February 2022. Starlink and OneWeb reach spectrum coordination plan, SpaceNews, 14 June 2022, available at: https://spacenews.com/starlink-and-oneweb-reach-spectrum-coordination-plan/. Accessed on 21 June 2022. The UK Government owns >19% of OneWeb.

[36] Eutelsat to combine with OneWeb, A leap forward in Satellite Connectivity, Eutelsat, 12 October 2022, p. 8 and 54, available at: https://www.eutelsat.com/files/PDF/investors/2021-22/Eutelsat%20Strategic%20Update%20-%20vF2-1.pdf. Accessed on 3 November 2022.

[37] Intelsat and OneWeb Demonstrate GEO/LEO Service to U.S. DoD, ViaSatellite, 4 November 2021, available at: https://www.satellitetoday.com/government-military/2021/11/04/intelsat-and-oneweb-demonstrate-geo-leo-service-to-u-s-dod/. Accessed on 29 March 2022.

[38] OneWeb and Panasonic Avionics Corporation to Deliver Low Earth Orbit (LEO) Connectivity to Airlines Worldwide, Panasonic Press Release, 18 October 2022, available at: https://www.panasonic.aero/press-release/panasonic-leo/. Accessed on 3 November 2022.

[39] Panasonic Avionics highlights Stellar Blu antenna for OneWeb LEO service, Paxex.Aero, 26 October 2022, available at: https://paxex.aero/panasonic-oneweb-stellar-blu-antenna-leo-inflight-internet/. Accessed on 3 November 2022.

value-added services). These new capacity agreements also support the Parties' argument that non-vertically integrated SSPs can take advantage of the latest and best in satellite innovation and have access to a diverse, open ecosystem of many satellites across multiple providers who continue to launch multiple new satellites annually.

(63) OneWeb has completed successful trials of its IFC system on a Boeing 777, evidencing its commitment to the aviation vertical. OneWeb's new IFC system, known as "Sidewinder" has been developed in partnership with technology providers Stellar Blu Solutions[40] and Ball Aerospace. OneWeb's IFC system is capable of operating on all commercial aviation aircraft and will continue to be tested throughout 2022. Certification for installation of the system is expected in mid-2023.[41]

3.3 More innovation is leading to greater interoperability in the IFC space

(64) Beyond the disruption brought by NGSO entry, there is also a clear move towards interoperability in the market. This trend will further change the competitive outlook, allowing airlines to switch IFC providers more easily than previously was the case[42], especially as players such as Starlink are expected to continue to subsidise the switching of IFC equipment. The P1D referred to this trend, citing in particular evidence from an OEM which is developing an "agnostic connectivity platform" which will allow airlines to switch IFC providers without changing the equipment installed on the aircraft.[43] This expands the scope for competition within the industry as no one player, including the Merged Entity, will enjoy a 'protected' position as an IFC provider for a specific airline. The Parties understand this is a reference to the Airbus HBC+ programme which is an innovative measure that will result in greater interoperability in the market.

(65) The Parties maintain that this is an indication of innovation in the market that will result in greater interoperability and switching in the future. Airbus commented that "*HBC+ grants airlines much needed flexibility as it decouples the bandwidth provider from the antenna and the IFE systems*".[44]

(66) Since the P1D, it has been announced that SES's multi-orbit GEO and MEO constellations will now be available directly to airlines as SES is on track to becoming the second Managed Service Provider ("**MSP**") on the HBC+ catalogue after Inmarsat. Until now, SES was not active as an IFC service provider at the retail level; its involvement in the IFC market was limited to supplying capacity to other SSPs including Thales, Panasonic and Anuvu. Seth Miller, journalist at the aviation journal PaxEx.Aero, commented: "*This is a big deal, with SES getting into the business of selling IFC capacity to airlines directly rather than via a partner integrator.*"[45] SES's mPower software-defined MEO constellation, along with lower latency globally, will be a key positioning point towards airlines and a strong differentiating factor from the existing Airbus MSP (Inmarsat).[46]

(67) **[CONFIDENTIAL TO INMARSAT]**This was then implicitly confirmed by Airbus and reported in an industry article which reads: ""[*W]e're in talks with everyone", said Duifhuizen [Airbus upgrades marketing director] when pressed by RGN if the likes of OneWeb and SpaceX's Starlink might be*

[40] Formerly GDC Advanced Technology.

[41] OneWeb Stellar Blu Solutions successfully deliver LEO inflight connectivity on Boeing 777 test flight, OneWeb Press Release, 14 June 2022, available at: https://oneweb.net/resources/oneweb-stellar-blu-solutions-successfully-deliver-leo-inflight-connectivity-boeing-777. Accessed on 21 June 2022.

[42] P1D, fn. 148.

[43] P1D, fn. 148.

[44] Airbus on track to expand the Airspace Link HBCplus catalogue with SES, creating its first agnostic cabin satcom offer, Airbus Press Release, 26 October 2022, available at: https://aircraft.airbus.com/en/newsroom/news/2022-10-airbus-on-track-to-expand-the-airspace-link-hbcplus-catalogue-with-ses. Accessed on 8 November 2022.

[45] Seth Miller's tweet from 25 October 2022, available at: https://twitter.com/WandrMe/status/1584962339010662400. Accessed on 9 November 2022.

[46] SES eagerly awaiting the flexibility O3b mPower promises, SpaceNews, 11 November 2022, available at: https://spacenews.com/o3b-mpower-flexibility/. Accessed on 18 November 2022.

included. 'We're not excluding anyone at this stage and [are] absolutely in discussions.'"[47] There is no reason why any other SNOs (GEO or NSGO) would lack the ability or incentive to follow SES and Inmarsat into the HBC+ catalogue; it would be responsive to airline demands for greater flexibility and lower switching costs. This further illustrates the dynamism and the fast pace of change in the industry.

4 Viasat and Inmarsat are not particularly close rivals in geographic coverage or bandwidth depth – key strategic parameters that drive how they compete in IFC

(68) The CMA's principal basis for finding an SLC in the P1D and referred to in the Issues Statement[48] is that the Parties are close competitors in the supply of IFC to commercial aviation customers as they are the only two vertically integrated players (at the SNO level) operating in Ka-band capacity in the relevant market segments.

(69) However, as will be set out in more detail in Part B below, the items on this "similarities" checklist vary from having negligible to limited relevance to the competitive effects analysis, even on the interim issue of whether the Parties are "close competitors" in the relevant sense of CMA merger guidelines, let alone the ultimate question of a likely SLC (which must consider not only "closeness" today but the competitive strategies and response of rivals – see further the analysis of GEO rivals and expanding NGSOs below).

(70) As explained in Part B below, on the issue of "closeness", Ka and Ku frequency bandwidths are, on proper inspection, close substitutes (as shown by new Ku as well as Ku investments) and leased capacity is not inherently less competitive, all else equal, than owned capacity (as Viasat's own track record shows), especially via strategic SNO/SSP partnerships.

(71) However, far more important strategic or "capacity-based" parameters for competition in IFC than demarcations of "Ka or Ku?" or "owned or leased?", which are not visible to end-users of IFC (airline passengers, whose perceptions shape airline demand) are breadth and depth of coverage, which are the factors that directly affect airlines' ultimate offer to their own customers – i.e. whether customers can (i) get online for all or most of their flights; (ii) have sufficient bandwidth/speed to pursue their desired use(s) of IFC; and (iii) at what price (as intermediated by the airline's IFC business model).

(72) Breadth of geographic coverage has historically been Inmarsat's key strength and the core pillar of its differentiated offer to airlines. Viasat does not currently have global coverage and, as explained in this section, by the time it does (assuming successful launch and deployment of ViaSat-3), there will be multiple SNOs with an equivalent or superior offer to either of the Parties. In particular, the significant LEO constellations deployed by Starlink and OneWeb are by definition global. This means that in future, the mere fact of global coverage will no longer be a powerful differentiating factor for either party (in fact, without polar coverage, the Parties will actually still be at a relative disadvantage even after the launch and deployment of ViaSat-3).

(73) In terms of depth of capacity or available bandwidth, this has historically been Viasat's focus. This determines many key questions that are increasingly important for the desirability of a providers' offer in the context of growing demand: how much bandwidth can the IFC provider deliver to an aircraft and at what price – enough for all of business class, and how much? Enough for all business and economy passengers to log in simultaneously (e.g. if free wi-fi on board?), and how much? Enough for how many passengers to stream videos and at what cost? Enough for only those passengers that pay a surcharge, as might apply for some traditional airlines and low-cost carriers? And how much? This issue is important both to service levels (quality of IFC to passengers) and price (unit cost of bandwidth / airtime). In addition to being a historical strength for Viasat in those regions that it covered, depth of coverage is

[47] Airbus surprises with pact to add SES on supplier-furnished IFC, Runway Girl Network, 31 October 2022, available at: https://runwaygirlnetwork.com/2022/10/airbus-ses-supplier-furnished/. Accessed on 3 November 2022.

[48] P1D, para 162; Issues Statement, para.35(a).

a key focus of its expansion plans. It is also a dimension of competition on which NGSOs – key among them Starlink – are by far Viasat's closest competitors (**[CONFIDENTIAL TO VIASAT]**). Inmarsat is not a close competitor on this dimension today and would absent the merger become only more distant.

(74) The next section explains each Party's strategy relative to rivals with these two key strategic parameters in mind and why in these respects they are not particularly close competitors. This is not to discount other factors that airlines also consider important in IFC tenders (see further Section 6 for GEO rivals and Section 7 for NGSO advantages that they will push).

(75) The key point, however, is that the Parties are not both strong, and other weak, on any of these parameters, either individually or in aggregate – given differentiated demand means that airlines will make trade-offs across parameters of price, quality and service.

4.1 Viasat and Inmarsat have taken very different strategic approaches to competition as SNOs and as SSPs for IFC and will continue to do so

(76) Viasat and Inmarsat have each pursued very different strategies as to their respective evolution as businesses and in their approach to competition in IFC.

(77) Viasat is a fully-integrated satellite technology company, active in payload, gateway earth stations, network, terminals, and wireless TV among other elements. Viasat started as a technology provider not a satellite company, serving the defence and broadband markets in the US before expanding into building its own broadband satellite payloads in 2008. This was driven by the market trend of consumers wanting increasing amounts of bandwidth year on year. Viasat therefore focused on building depth – rather than breadth – of coverage to address demand in the US and the Americas more generally. It initially chose to build deep coverage in small regions of the world to test whether there was demand, starting with partial coverage over the US with ViaSat-1, and then built deeper coverage incrementally by region.

(78) In contrast, Inmarsat's heritage is based on communications for safety in maritime. Inmarsat was set up in 1979 by the International Maritime Organization (IMO) to develop a satellite communications network for protecting lives at sea, with the main objective to ensure that ships could access minimum essential communications wherever they were, thus necessitating total global coverage. Therefore, Inmarsat prioritised building out global coverage with limited bandwidth depth. This translates into a very different IFC market approach to Viasat with Inmarsat's dimension of value based on its thin global coverage.

(79) While Inmarsat is active as an SNO and SSP levels, it is not a fully-integrated technology provider, as it does not build satellites, gateways or terminals or infrastructure itself, but rather buys these elements from other companies.

4.2 The merger rationale reinforces differentiation and not 'closeness' in IFC being a driver of the transaction

(80) The rationale for the Proposed Transaction is first and foremost to address the major disruption from new NGSO providers in the satellite communications market. The rationale is based on the complementarities of the Parties, thus reinforcing the differentiation of the Parties rather than any closeness of competition in aviation being a driver for the Proposed Transaction. The Proposed Transaction will enable the Merged Entity to achieve substantial savings, fixed cost amortisation and ongoing capital and R&D synergies across the complementarities. Such savings can then be passed on to consumers as they allow the Merged Entity to better compete against recent entrants who are competing aggressively on price and subsidising hardware.

(81) As explained in the FMN (paras. 81-98), at a global level, the Proposed Transaction combines complementary networks, assets and businesses in complementary geographies, allowing the Merged Entity to offer enhanced services to customers on a global basis. Viasat's and Inmarsat's satellite

constellations have complementary technological features, with Viasat's technology focusing on providing access to specific frequencies in the "Ka-band" for high-speed broadband offerings primarily for fixed users and secondarily for mobile users, whereas Inmarsat's technology serves mobility customers first with L-band services, and more recently also with Ka-band and S-band mobile services. The merger of their networks will also allow for the innovative combination of the Parties' combined broadband plus Inmarsat's narrowband offerings – including, for example, network-agnostic terminals connected to broadband as the primary network, with narrowband as a back-up.

(82) Another key motivation for the merger from Viasat's perspective is to achieve resilience through having access to back-up capacity from Inmarsat's satellites in the event of an in-orbit failure of one of Viasat's satellites. The Proposed Transaction will allow Viasat to achieve global coverage immediately (whereas Viasat-3 is only due **[CONFIDENTIAL TO VIASAT]** and would not cover the poles whereas Inmarsat's HEO satellites cover the Arctic region) and with additional depth and resilience. One clear benefit, that neither Party could achieve absent the Proposed Transaction, is therefore an acceleration of high-quality resilient global coverage.

(83) The Proposed Transaction will also allow for network quality synergies that will clearly benefit consumers by allowing the merged entity to more efficiently allocate power to satellite beams. The combination of Inmarsat's existing global constellation, Viasat's existing constellation, Viasat's planned ViaSat-3 satellites, and the planned next generation of Inmarsat satellites will give the combined company increased choice in directing capacity to best serve customer demand. The Proposed Transaction will therefore allow the Merged Entity to provide these benefits to existing customers in the form of higher-quality service offerings. These synergies and benefits are also linked to the complementary nature of the parties' satellite assets and are cognisable and specific to the Proposed Transaction.

(84) The rationale is also based on diversification. Inmarsat has "narrowband" satellite networks, a strong presence in certain industry sectors (such as maritime, L-band, cockpit, Internet of Things and international government), and globally distributed satellite coverage and revenues, all of which the US-centric Viasat – with almost 90% of its sales in North America – currently lacks. Viasat's largest customer base consists of broadband internet residential customers which Inmarsat does not serve at all. Given the recent inroads by Starlink into the US and other residential broadband markets and the US and other government's investments in fibre and other infrastructure for rural broadband, Viasat wants to diversify its offering to enable it to be resilient and less dependent on the US residential broadband market.

(85) Aviation represents only a small portion of the Parties' businesses (accounting for only 7% of the Parties' combined revenues in 2021, with the UK portion accounting for less than 0.1%) and the overlap between the Parties in aviation was a by-product of the merger, not the driver for the combination. However, the merger specific efficiencies will deliver tangible benefits for customers in the aviation vertical. Capital expenditure and operating efficiencies will result in greater value to customers in the form of lower prices (including from access to greater capacity), which will allow the Merged Entity to compete with NGSOs more effectively for opportunities in aviation.

(86) The Parties' internal documents are consistent with the above-described strategy and rationale for the Proposed Transaction of combining two players with different value propositions. The complementarity in the Parties' businesses is the key aspect of the transaction rationale highlighted in Viasat's public presentations of the Proposed Transaction: "*Enhanced growth and innovation opportunities through fusion of complementary assets and resources*".[49] The perspective of creating a global resilient network

[49] **[CONFIDENTIAL TO VIASAT]**. See also more recently in Viasat's Annual Shareholder Presentation, Viasat, 1 September 2022, slide 18, available at: https://investors.viasat.com/static-files/834346d7-8b45-4f8d-bafa-2c5ddce8b850.

is also noted in Viasat's documents: "**[CONFIDENTIAL TO VIASAT]**.[50] **[CONFIDENTIAL TO VIASAT]**[51]**[CONFIDENTIAL TO VIASAT] [CONFIDENTIAL TO VIASAT]**[52]

(87) When examining aviation, internal documents reflect how the complementarity of the Parties' IFC offerings was repeatedly flagged as the driver for future synergies and to increase the value proposition to IFC customers post Transaction. For instance, **[CONFIDENTIAL TO VIASAT]**.[53] In addition, the complementarity of the Parties' geographic footprints in IFC (with Viasat being US-centric, and Inmarsat having a more global profile) is highlighted extensively in internal documents discussing the Proposed Transaction. For example, **[CONFIDENTIAL TO INMARSAT]**[54]**[CONFIDENTIAL TO INMARSAT]**[55] Whilst aviation is identified as an area of important future growth and synergies for the Merged Entity, it only constitutes one aspect of the Parties' strategic rationale amongst many others e.g., **[CONFIDENTIAL TO VIASAT]**.[56]

(88) Overall, the Proposed Transaction's synergies will benefit customers, including by increasing rivalry in the light of NGSO disruption as well as increasing investments from traditional GEO players such Intelsat, SES, Eutelsat etc. The Merged Entity will be able to deliver an offering which can compete more effectively against existing GEO and NGSO operators than either Party alone by (i) combining the Parties' satellite networks to achieve global coverage and network resilience; (ii) combining Inmarsat narrowband and combined broadband solutions into new packages; (iii) allowing the Merged Entity to more efficiently allocate power to satellite beams, resulting in better network quality; and (iv) enabling the Merged Entity to achieve substantial capital expenditure savings and ongoing operating cost savings.

4.3 Viasat and Inmarsat have not been particularly close strategic rivals in geographic coverage ('IFC coverage breadth') or available bandwidth ('IFC capacity depth')

(89) The Parties are also not close today (or historically) in terms of depth of their European coverage. Today, Eutelsat (591 Gbps), Avanti (114 Gbps) and Intelsat (58 Gbps) individually offer more European GEO capacity depth than Inmarsat (45 Gbps), and Eutelsat and Avanti also offer more than Viasat and Inmarsat combined (103 Gbps), as set out in Table 2 below.

(90) Neither are the Parties close today (or historically) in terms of depth of their global coverage. Viasat does not offer 'single source' owned global GEO coverage today but instead relies on leased coverage for the APAC, Middle East and South America regions. For its part, Inmarsat's depth of global coverage (95 Gbps) is considerably smaller, for example, than both SES (641 Gbps) and Intelsat (126 Gbps) as set out in Table 1 above.

4.4 Viasat and Inmarsat will not be close future rivals in 'European coverage' or depth once the ViaSat-3b EMEA satellite is operational

(91) The P1D relies on the expansion plans of the Parties as a key reason why it considers the Parties would likely compete "*even more closely in the near future*" absent the merger.[57] This is based on Viasat's not yet launched new satellite constellation ViaSat-3 which, upon completion, is expected to provide global coverage (**[CONFIDENTIAL TO VIASAT]**), which Viasat currently lacks, and that such global coverage would make Viasat more similar to Inmarsat and a stronger competitor. However, this planned

[50] **[CONFIDENTIAL TO VIASAT]**
[51] **[CONFIDENTIAL TO VIASAT]**
[52] **[CONFIDENTIAL TO VIASAT]**.
[53] **[CONFIDENTIAL TO VIASAT]**
[54] **[CONFIDENTIAL TO INMARSAT]**
[55] **[CONFIDENTIAL TO INMARSAT]**
[56] **[CONFIDENTIAL TO VIASAT]**.
[57] Issues Statement, para 35(a).

expansion will not provide the strong competitive advantage assumed by the P1D, as Viasat and Inmarsat will not be close future rivals in "European coverage" once the ViaSat-3b (EMEA) satellite is operational (**[CONFIDENTIAL TO VIASAT]**) given (i) the amount of new capacity due to enter the market from other rivals; (ii) the limited impact Inmarsat's new satellites will have on its competitive position; and (iii) the fact that future satellites still carry significant launch risk.

4.4.1 Inmarsat's European coverage does not have depth today relative to others and its expansion will not substantially change this relative to multiple rivals

(92) As discussed above, although Inmarsat has near global coverage, it has relatively thinly-spread coverage, including over Europe (see Table 2 below), meaning it is less well suited to deal with high bandwidth demand (one of the main sources of demand in future (see Section 2.2 above)) than Viasat.

(93) Like Viasat, Inmarsat also has committed to expansion, via its GX constellation, with or without the Proposed Transaction. However, these additional satellites will not dramatically improve its depth of capacity over Europe relative to Viasat and other competitors, and therefore will not make it a closer competitor to Viasat absent the merger.

(94) Inmarsat has six new satellites to be launched by 2024: (i) an additional hybrid satellite (GX6B) with Ka-band and L-band payloads, which is expected to be launched **[CONFIDENTIAL TO INMARSAT]**; (ii) three additional GX Ka-band satellites (GX 7, 8, 9) which are expected to be launched **[CONFIDENTIAL TO INMARSAT]**; and (iii) two further Ka-band payloads (GX10A and GX10B), hosted on Space Norway's ABSM-1 and ASMB-2 spacecraft to be placed into HEO to cover, in tandem, the Arctic region **[CONFIDENTIAL TO INMARSAT]** (which cannot be served by GEO satellites).

(95) The current plan is for GX7 to serve the Asia-Pacific region, GX8 to serve North America and GX9 to serve Central Asia and Eastern Europe but these locations (and the previously noted launch dates) may change. All three spacecraft are expected to be launched and in operation by the end of 2025. Ultimately the capacity of the GX7, 8 and 9 satellites will vary based on the antenna pointing on-orbit and the number of ground stations added to the network. However, at a maximum the capacity is estimated at c. 110 Gbps per satellite. Even with this additional capacity, Inmarsat is only estimated to have a **[CONFIDENTIAL TO INMARSAT]**% share of the total global high throughput satellites ("**HTS**") broadband satellite capacity at the end of 2025, which is in line with its share in 2021.[58]

4.4.2 Rival SNOs will have enhanced depth of European coverage by the time ViaSat-3b is operational

(96) As a reaction to the multiple launches of NGSO satellites (future or current), other GEO SNOs are also planning to launch additional capacity in the next couple of years which should be operational by the time ViaSat-3 is available. Consequently, the Parties' expansion plans will not result in them being closer competitors. In fact, the market will become more competitive, with enhanced depth of European coverage available from a number of players.

(97) In particular, Eutelsat's 10B XTS satellite (successfully launched this week on Tuesday 22 November 2022)[59], will have a high-capacity payload covering Europe (as well as the North Atlantic corridor, the Mediterranean basin and the Middle East), offering significant throughput in these areas.[60] In addition, Eutelsat's Konnect VHTS, launched on 7 September 2022, has introduced 500 Gbps Ka-band capacity

[58] See tables 7 and 10 of the FMN.

[59] Successful Launch of EUTELSAT 10B: A Satellite Bringing New Inflight and Maritime Connectivity Services, 23 November 2022, available at: https://www.businesswire.com/news/home/20221123005170/en/Successful-Launch-of-EUTELSAT-10B-A-Satellite-Bringing-New-Inflight-and-Maritime-Connectivity-Services

[60] Future Satellites, Eutelsat, available at: https://www.eutelsat.com/satellites/future-satellites.html.

positioned over Europe and it is currently the biggest and most powerful satellite built over Europe.[61] That one Eutelsat satellite over Europe exceeds all of Inmarsat's current global capacity by 10x.

(98) SES's new generation O3b mPOWER satellite constellation (11 MEO satellites with a total of c. one Terabit per second of capacity) is due to become operational in Q3 2023 with existing customers being able to benefit from enhanced services from early 2023.

(99) Avanti, a UK-based vertically integrated SNO and SSP, operates four active GEO satellites, three of which currently orbit over Europe (HYLAS-2, HYLAS-3, and HYLAS-4). Collectively, these satellites supply 114 Gbps of GEO-HTS capacity, all of which can be directed at Europe. While, according to Euroconsult, Avanti's capacity is mainly supplied in the consumer broadband, civil government and enterprise, and military satcom verticals,[62] Viasat has leased some capacity from Avanti in 2022 and 2021 for the provision of IFC services to commercial aviation customers in the EEA. In the future, more of Avanti's capacity can be leased to other SNOs or SSPs and used for the provision of IFC services in Europe.

(100) Table 2 below summarises the amount of capacity available over Europe that Inmarsat will have up to 2025 (when its new capacity becomes available) and the capacity of rival GEO SNOs over Europe in those years. It shows the significant existing capacity and expectations of future capacity over Europe by a range of GEO competitors to the Parties including Eutelsat, Avanti, Intelsat, and SES. Inmarsat is only one of six GEO operators that will be able to supply capacity into IFC, with Inmarsat holding a relatively low level of European coverage capacity throughout this period.

Table 2 Inmarsat European coverage capacity and GEO rivals' capacity, by SNO

SNO	Year-end European capacity (Gbps)			
	2022	2023	2024	2025
Inmarsat	45	45	45	84
Eutelsat	591	626	626	626
Avanti	114	114	114	114
Intelsat	58	58	58	58
SES[63]	0	0	50	50

Source: High Throughput Satellites – 6th Edition, Euroconsult, Q1 2022, attached as Annex ISCA.004.

(101) Aside from new GEO capacity, there will also be enhanced NGSO capacity over Europe by the time ViaSat-3's EMEA satellite is operational. Starlink and OneWeb are both targeting global coverage and are in advanced stages of their LEO constellation deployment.

(102) As shown in Figure 9 below, OneWeb's satellites to be launched in 'Phase 1.5' will provide coverage over Europe and this is expected in Q3 of fiscal year 2024, earlier than when the ViaSat-3 EMEA satellite becomes operational, with a forecasted capacity of 1,066 Gbps by the end of calendar year 2024.[64]

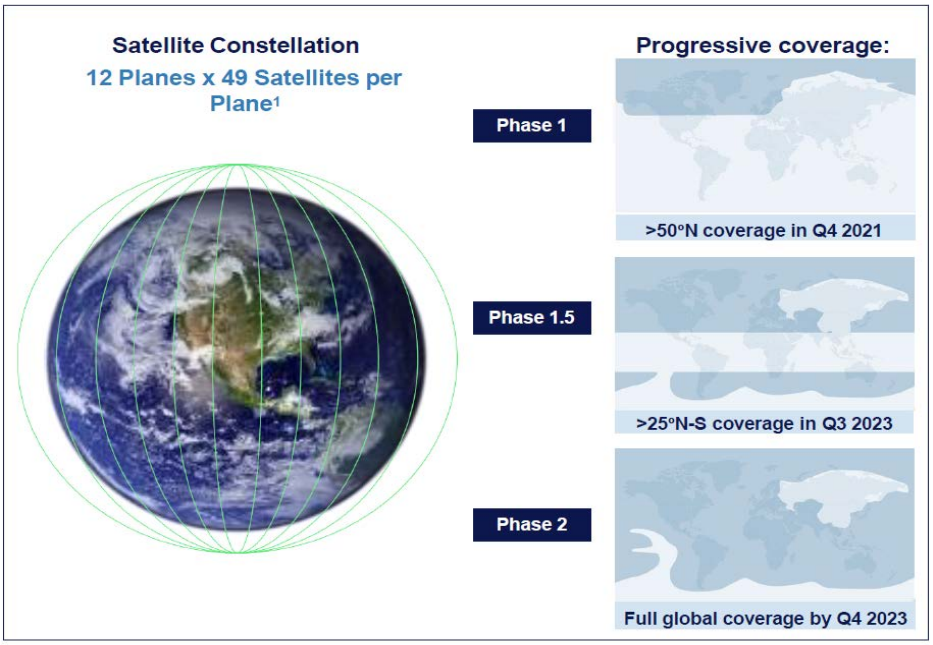
[61] Future Satellites, Eutelsat, available at: https://www.eutelsat.com/satellites/future-satellites.html.

[62] High Throughput Satellites, 6th Edition, Euroconsult, Q1 2022, page 24 (attached as Annexes ISCA.004 and ISCA.005).

[63] Note that SES's mPower satellites are MEO (NGSO) satellites and are therefore not covered by this table The currently active GEO satellites of SES are all located in orbital slots which do not have full visibility over all of Europe and are therefore not included in the market share assessment. Only the SES satellite Astra 1Q, which will be launched in 2024, will have full visibility over all of Europe

[64] High Throughput Satellites –– 6th Edition, Euroconsult, Q1 2022, attached as Annex ISCA.004.

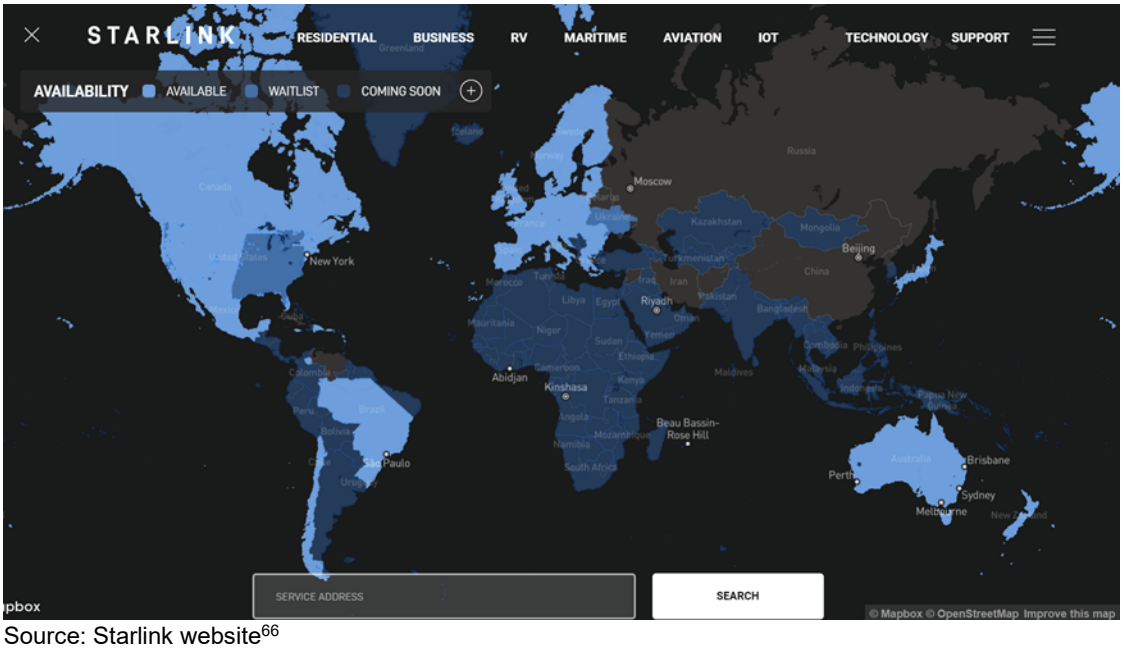
Figure 9 OneWeb timeline for achieving global coverage



Source: Eutelsat to combine with OneWeb, A leap forward in Satellite Connectivity, Eutelsat, 12 October 2022, p. 21, attached as Annex ISCA.017.

(103) Starlink has already successfully launched 3,133 satellites,[65] which will deliver global coverage. As shown from Figure 10, Starlink already has available capacity over much of Europe.

Figure 10 Starlink coverage map



Source: Starlink website[66]

[65] Another batch of Starlink satellites launch from Cape Canaveral, SpaceFlightNow, 20 October 2022, available at: https://spaceflightnow.com/2022/10/20/falcon-9-starlink-4-36-live-coverage/. Accessed on 08 November 2022. See notes on total satellites at bottom of table on the following website: https://en.wikipedia.org/wiki/List_of_Starlink_launches. Accessed on 24 November 2022.

[66] https://www.starlink.com/map

(104) While, as noted previously, it would not be sensible to allocate NGSO capacity to specific geographic regions given the necessarily arbitrary nature of such an exercise as a result of their being non-geo-stationary, it is clear that a range of NGSOs, including Starlink, OneWeb, and SES's O3b, as well as the above-mentioned GEO competitors, will have significant capacity available that they can usefully deploy in the aviation subsegments in Europe. The timeline for European coverage deployable for IFC of these various GEO and NGSO competitors as well as the Parties is summarised in Table 3 below. It shows that, besides the Parties, Intelsat, Eutelsat, Avanti, SES and Starlink already have capacity deployable for IFC available over Europe, whereas OneWeb has indicated that it will have capacity available for use globally, including over Europe, by year-end 2023.

Table 3 European HTS coverage deployable for IFC, by SNO

	As of today	H1 2023	H2 2023	H1 2024	H2 2024
Inmarsat					
Viasat					
Intelsat					
Eutelsat					
Avanti					
SES					
Starlink					
OneWeb					

Source: Publicly available sources.

4.4.3 Summary of relative strength of future European coverage

(105) In **[CONFIDENTIAL TO VIASAT]**, once its ViaSat-3b EMEA satellite is operational, projected **[CONFIDENTIAL TO VIASAT]**, Viasat will, on third party data, have the most GEO capacity over Europe. However:

- Even among GEO players, Inmarsat will not be a particularly strong European capacity competitor (45 Gbps) as it will be well behind Eutelsat (626 Gbps) and Avanti (114 Gbps) and still less than Intelsat (58 Gbps) and SES (50 Gbps).
- NGSO satellites and capacity, are constantly evolving, and are thus by definition not dedicated to Europe in the same way as GEO. However, the ability of NGSOs to offer sufficiently deep European coverage is clear based on (i) the sheer global capacity of the two most advanced constellations, Starlink (21,537 Gbps by end 2024 – or 200x Inmarsat global capacity) and OneWeb (1,067 Gbps by end 2024 or over 10x Inmarsat global coverage), coupled with the fact that (ii) by definition, a substantial proportion of the constellation will be over Europe at any one point in time; and (iii) the short lifespan of NGSO satellites driving the need for high utilisation to recoup Capex investment to launch.

(106) This means that, in addition to Intelsat and Eutelsat-, SES- and Avanti-backed rivals (including SSPs Panasonic and Anuvu), Starlink and OneWeb will, on all third-party estimates, be formidable rivals from the point of view of depth of European coverage deployable for IFC by end 2024 and end 2025 and on any reasonable proportional measure ahead of Inmarsat's 84 Gbps by the end of 2025.

4.5 Viasat and Inmarsat will not be close future rivals in 'global coverage' or depth once Viasat achieves global coverage

4.5.1 Rival SNOs will have enhanced breadth of global coverage by the time ViaSat does

(107) Due to the number of new satellites and satellite constellations being launched by different players in the next few years, many offering global coverage, Viasat and Inmarsat will not be particularly important future competitors in global coverage even when all three of the ViaSat-3 satellites are operational.

While global coverage has historically been a unique selling point for Inmarsat, this has increasingly become a feature that many providers can offer and hence the fact that both Viasat and Inmarsat will have global coverage does not make them any closer competitors than other rivals with global coverage.

(108) By the time the first ViaSat-3 satellite is expected to be fully operational, Starlink and OneWeb will have already achieved operational global coverage, given both are already in a very advanced stage of their LEO constellation deployment.

(109) Indeed, Starlink has already successfully launched 3,133 satellites[67] and is heavily marketing its global coverage. The home page of its newly launched Aviation website[68] reads: "*Starlink Aviation: High-speed, low-latency, in-flight internet with connectivity across the globe. Reserve now with deliveries starting in 2023.*" It also includes the following quote: "*Global Coverage: As the world's largest satellite constellation with coverage over land, the oceans and polar regions, Starlink is positioned to connect passengers wherever your flight routes evolve.*" The website's FAQ also includes the following: "**Q:** *Where is Starlink Aviation service available?* **A:** *Starlink Aviation will have global coverage. Since the satellites are moving in low-earth orbit, there are always satellites overhead or nearby to provide a strong signal at high latitudes and in polar regions - unlike with geo-stationary satellites. Service will be available in-flight over land and water and on the ground during taxi, takeoff, and landing. As long as the equipment is powered on and the Starlink has an unobstructed view of the sky, connection is possible.*"[69]

(110) Similarly, as already mentioned, OneWeb expects to have global coverage operational by the end of fiscal year 2023 with only four launches remaining and anticipates starting to generate revenues from aviation services in FY24 (year ending in March 2024), i.e., within less than two years.[70]

(111) As well as NGSOs, the GEO competitors also already have or are in the process of achieving global coverage through new satellite launches and partnerships, thus improving competitive positioning and enabling them to more closely compete with the ViaSat-3 satellites when they become operational (estimated in 2024).

(112) Intelsat already has global coverage, through its fleet of 50+ GEO satellites which cover 99% of the Earth's populated regions and with coverage over the poles coming soon through its partnership with OneWeb.[71]

(113) Panasonic already offers global coverage through its long-term leases with SNOs. Since the P1D, on 18 October 2022, Panasonic announced a partnership with OneWeb through which it will "*offer OneWeb's global service standalone or paired with Panasonic Avionics' award-winning GEO service, which covers 99.6% of the world's flight routes*". Panasonic expects to support OneWeb-equipped aircraft in the second half of 2023.[72]

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[67] Another batch of Starlink satellites launch from Cape Canaveral, SpaceFlightNow, 20 October 2022, available at: https://spaceflightnow.com/2022/10/20/falcon-9-starlink-4-36-live-coverage/. Accessed on 08 November 2022. See notes on total satellites at bottom of table on the following website: https://en.wikipedia.org/wiki/List_of_Starlink_launches. Accessed on 24 November 2022.

[68] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 3 November 2022.

[69] Aviation FAQ, Starlink, available at: https://support.starlink.com/topic?category=57. Accessed on 3 November 2022.

[70] Eutelsat to combine with OneWeb, A leap forward in Satellite Connectivity, Eutelsat, 12 October 2022, p. 8 and 54, available at: https://www.eutelsat.com/files/PDF/investors/2021-22/Eutelsat%20Strategic%20Update%20-%20vF2-1.pdf. Accessed on 3 November 2022.

[71] About Us, Intelsat, available at: https://www.intelsat.com/about-us/

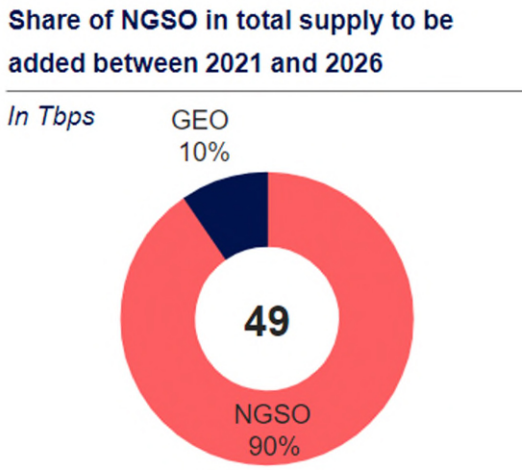
[72] OneWeb and Panasonic Avionics Corporation to Deliver LEO Connectivity to Airlines Worldwide, APSCC, 17 October 2022, available at: https://apscc.or.kr/oneweb-and-panasonic-avionics-corporation-to-deliver-leo-connectivity-to-airlines-worldwide/. Accessed on 25 October 2022.

(114) Anuvu states that it has global coverage (with the exception of the poles), through its long-term leases and partnerships with SES and Intelsat. It is also developing a MicroGEO constellation in partnership with Astranis (due to be launched in 2023) which will enhance its capacity and coverage and it is partnering with Telesat to gain access to the capacity on Telesat's new Lightspeed LEO constellation.[73]

(115) Notably, even with the launch of ViaSat-3, Viasat will not have "full" global coverage, as it will not be able to provide service over the poles with its GEO constellation. Other providers, including Intelsat, Panasonic and Anuvu, will have access to polar coverage through their partnerships with OneWeb or Telesat. Starlink will have full global coverage including the poles. Global coverage is extremely important to many airlines with long-haul routes, as evidenced by polar coverage requirements in recent tenders from Emirates, ASC, Cathay Pacific and British Airways **[CONFIDENTIAL TO VIASAT]**.

(116) With regard to this new capacity coming to the market, as shown in Figure 11 below, Euroconsult estimates that the total GEO capacity that will be launched by 2026 (which includes the Parties' new satellites but also other new GEO satellites like Eutelsat's Konnect) will only represent 10% of the total additional HTS capacity to be launched (the remaining 90% being NGSO satellites).

Figure 11 Share of NGSO in total satellite capacity to be launched between 2021 and 2026



Source: Satellite Connectivity and Video Market, Euroconsult, September 2021, p. 21 (Annex 016.2 of FMN).

(117) As a result, there are a range of other suppliers with global capacity competing with the Parties to deploy that capacity in the aviation vertical. As shown by Table 4 below, other than the Parties, this includes Starlink, Intelsat, SES, OneWeb, and Telesat. In addition, as shown in Table 5 below, this capacity with global coverage will not be inactively located in space but will either already be readily deployable for IFC as of today (for Inmarsat, Intelsat and SES) or will be deployable for IFC within the next two years (for Starlink, OneWeb (who are only a few launches away from being fully global already) and Viasat (when ViaSat-3 is fully operational)).[74]

Table 4 Euroconsult global capacity shares - top 7 major commercial SNOs

SNO	Year-end global capacity share			
	2022	2023	2024	2025
Starlink	71%	68%	69%	64%

[73] Anuvu Constellation, Anuvu, available at: https://www.anuvuconstellation.com/

[74] For more details on Viasat's launch plans for ViaSat-3, please also see Figure 12 above.

SNO	Year-end global capacity share			
	2022	2023	2024	2025
Viasat	8%	9%	11%	9%
Intelsat	1%	1%	1%	1%
SES	4%	7%	6%	6%
OneWeb	1%	3%	3%	3%
Inmarsat	1%	0%	0%	1%
Telesat	0%	0%	0%	8%

Source: High Throughput Satellites - 6th Edition, Euroconsult, Q1 2022 (attached as Annex ISCA.004).

Table 5 Global coverage deployable for IFC, by SNO

	H2 2022	H1 2023	H2 2023	H1 2024	H2 2024
Inmarsat					
Intelsat					
SES					
Starlink					
OneWeb					
Viasat					

Source: Publicly available sources.

4.5.2 Summary of relative strength of future global coverage

(118) In 2025, once its ViaSat-3c APAC satellite is operational, **[CONFIDENTIAL TO VIASAT]**, Viasat will achieve full global (sans polar) coverage through its owned satellite fleet and, in that sense, will finally "match" the fact of Inmarsat's global coverage today.

(119) However, this fact will not make Viasat and Inmarsat absent the merger particularly strong or "close" in differentiation to third-party rivals. They will be in a similar situation to Intelsat, SES, Starlink and OneWeb such that there will be five commercial global SNO players each with "one stop shop" global coverage, even before considering solutions (as is true today e.g. Viasat in Australia and Brazil) that involve collaborations between SNOs with regional strengths, such as leasing Eutelsat's large European capacity (626 Gbps or almost 14 times that of Inmarsat at end 2024).

(120) While part of Viasat's differentiation from Inmarsat (and others) is that it has prioritised depth of capacity for ViaSat-3 and consequently will offer the most global GEO-backed capacity, the merger does not combine two players that would, in this respect, be particularly strong in the depth of their respective capacity, or ability to offer large bandwidth to airlines, by end 2024 onwards absent the merger.

(121) As shown below based on Euroconsult data, Inmarsat is ranked sixth among the top seven commercial SNOs in each year above until end 2025 when it ranks fifth. When looked at by market share, Inmarsat is at or below 1% of capacity in each relevant year.

(122) Assuming that ViaSat-3c APAC is launched successfully and becomes operational **[CONFIDENTIAL TO VIASAT]**, Viasat expects to achieve global (without polar) coverage of its owned satellite fleet and remove, to a large extent, its competitive disadvantage on this important dimension. However, by the time it does this, it will according to Euroconsult still be a fraction (one-sixth) the size of Starlink, and its

largest peers in depth of capacity will be Starlink, OneWeb, SES, and Telesat each with over a Terabit of capacity per second (>1,000 Gbps) each (see Table 6), with polar coverage. At the same time, Inmarsat will rank sixth in 2024 (and the same in 2025) and its global capacity share will not exceed 1%.

Table 6 Top 7 Global Commercial SNOs in Gbps and market share by year

SNO – global capacity for IFC	End 2022		End 2023		End 2024		End 2025	
	Gbps	Market Share	Gbps	Market Share	Gbps	Market Share	Gbps	Market Share
1 Starlink	11,894	71%	17,080	68%	21,537	69%	24,703	64%
2 Viasat	1,381	8%	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]
3 SES	641	4%	1,765	7%	1,922	6%	2,151	6%
4 OneWeb	201	1%	808	3%	1,067	3%	1,208	3%
5 Intelsat	126	1%	126	1%	201	1%	426	1%
6 Inmarsat	95	1%	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]
7 Telesat	66	<1%	66	<1%	66	<1%	2,952	8%

Note: Expansion relative to prior year end is marked in blue.

Source: RBB Economics, based on Euroconsult and Parties' own estimates of their capacity

(123) As Table 6 makes clear, Starlink and SES are the "nearest"-ranked competitors to Viasat in terms of depth of capacity but this fails to capture the significant asymmetry in size of Starlink capacity relative to Viasat today and in every year going forward. **[CONFIDENTIAL TO VIASAT]**.

5 Highly diverse IFC demand makes differentiated SSPs credible – there is no set of airline IFC tenders where the Parties are 'strong' and their rivals are 'weak' bidders

5.1 Viasat and Inmarsat are not strong head-to-head rivals for the same airline IFC tender preferences

5.1.1 Beyond IFC coverage and depth, Viasat and Inmarsat are not generally close substitutes in any other dimensions that airlines value

(124) The market for IFC in aviation is still relatively nascent and is subject to rapid change due to its link to technology, entertainment and social media developments which drive passengers' demand for IFC e.g. in recent years the trend towards streaming services. This means that there are constant shifts in dimensions of value in the market and airlines' preferences may change as they try to respond to meet

the needs of passengers, in line with their own strategy and priorities. The key question for SSPs in the IFC market is how to predict and respond to airlines' current favoured dimensions of value. As mentioned, Viasat and Inmarsat have pursued different strategies towards their IFC offerings, which means they appeal to different dimensions of value for airlines, thus demonstrating they are not particularly close competitors.

(125) Depth of coverage and capacity can influence IFC pricing – greater capacity leads to higher fixed cost, lower variable costs and shapes the ability to offer bandwidth / service guarantee propositions. However, SSPs also compete on other dimensions of value as set out below.

(126) The below spider charts illustrate airlines' ratings of satellite providers from 0 to 10 on each key dimension of value,[75] namely: coverage, capacity depth, non-airtime operational expenditure, upfront cost, airtime unit costs, product portfolio, SLA quality and latency. As shown in Figure 12, Viasat and Inmarsat are not perceived by airlines to be strong in the same areas. Viasat scores higher on capacity depth (i.e. amount of bandwidth) and airtime unit costs as well as SLA quality and product portfolio, whereas Inmarsat scores higher on coverage.

Figure 12[CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**

(127) Moreover, what the airline sees as the "price" of the service can be very different depending on what they consider to be the most important dimensions of value – and this continues to evolve with the market. Some airlines are more concerned about the upfront cost of the equipment, while others are focused on the cost of required maintenance or the incremental costs of weight and in-flight drag. Some see IFC as being supplemental to IFE, while others see it as the opposite.

5.2 Intelsat, Panasonic and Anuvu are not weak rivals to the merging parties

5.2.1 Comparison with Inmarsat

(128) As illustrated in Figure 13 below, based on customer feedback, Inmarsat is more similar to Panasonic, Anuvu and Intelsat, which also score highly on coverage and have a similar rating in capacity depth, upfront costs, airtime unit costs, SLA quality and latency. They similarly rate lower than Viasat on SLA quality, capacity depth and airtime unit costs. Contrary to the findings in the P1D and Issues Statement, this suggests that Intelsat, Panasonic and Anuvu are not materially weaker competitors than Inmarsat and clearly shows that airlines place value on the different elements of their competitive offerings.

Figure 13 [CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**.

(129) Figure 14 below shows a comparison of all main competitors in IFC, demonstrating that airlines have a wide choice based on differentiated offerings from providers that have strengths across different dimensions of value.

Figure 14[CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**.

(130) Given these rapid and ongoing changes in the market, airlines place different weight on the various price and non-price factors when selecting an IFC solution. When looking to be more competitive in

[75] With 10 being the best rating. Ratings are based on feedback from airlines provided to Viasat and the spider charts have been prepared internally by Viasat.

fulfilling passenger demand, some airlines have adopted a “free” Wi-Fi model, while others have looked to bundle their IFE and IFC solutions. They also have differentiated demand from their IFC providers – placing varying weight on upfront costs (equipment installation, aircraft downtime), operating expenses (weight / drag on aircraft) and ongoing maintenance, and opting for different commercial models e.g. paying unit cost per bandwidth, fixed price etc. Such increased and differentiated demand means that multiple, differentiated suppliers are credible competitors in the IFC market. As set out below, Panasonic, Intelsat and Anuvu perform well on certain metrics and they are not weak rivals to either of the Parties relative to each other.

5.2.2 Panasonic and Anuvu’s IFE heritage makes them stronger competitors given that an increasing amount of IFC bandwidth used for streaming

(131) There have been links between the IFE and IFC markets since the inception of IFC. When Boeing withdrew its Connexion product, a new generation of providers developed onboard connectivity offerings that were cheaper, lighter and easier to install. Key amongst them were Panasonic and Row 44 (acquired by Global Eagle, which is now Anuvu). Lufthansa was the launch customer for Panasonic’s new IFC service.[76] In turn, both Panasonic and a subsidiary of Global Eagle were two of the three launch customers for Intelsat’s first global mobility-focussed HTS offering, known as EPIC.

(132) A critical industry feature to understand is that as use of bandwidth increases, an ever greater proportion of that bandwidth is being used for the streaming of content. In particular, streaming / entertainment by passengers results in far higher bandwidth usage but also creates incentives for closer substitution with IFE alternatives. In other words, while watching new-release movies, TV, sport or other licensed content via IFE seatback is not a close substitute for lower-bandwidth IFC applications (email and text messaging, social media or simple web browsing), airlines may consider IFE entertainment options to be closers substitute for heavy-bandwidth video streaming on passengers’ own portable devices on IFC.

(133) Airlines differ in predicting the substitutability of IFE and IFC for streaming, and what proportion of their passengers would prefer to access IFE content (video libraries of new releases and other entertainment or sports content not necessarily available on their own devices) rather than streaming on their own devices via their subscriptions to Netflix, Disney+, BBC iPlayer, YouTube, etc. This means airlines may trade off IFE (high fixed cost; low variable cost) and IFC (potentially high variable cost). In the US, American Airlines and Southwest have retreated from seatback screens in their narrowbodies but offer some free entertainment options that passengers can stream on their own devices. By contrast, United and Delta have made big bets on IFE by installing seatback entertainment screens.[77]

(134) Clearly, IFC and IFE are not perfect substitutes but in a differentiated market, by definition, no substitute will be perfect for any other. As already noted at paragraph (651) of the FMN, some airlines offer seatback or wireless IFE services as an "entertainment" alternative to IFC. Airlines may choose lower bandwidth IFC for complementary usage (comms, web, social media) and substitute to IFE in lieu of higher bandwidth IFC needs. Long-standing IFE players like Panasonic and Anuvu have an advantage in this respect – both have independent IFE and IFC offerings and can also offer bundles.

(135) Pure-IFC providers can only respond by offering greater high bandwidth that can be used for streaming on passengers’ own devices, or airlines have to choose a separate IFE provider. Panasonic’s seatback IFE screens are installed on a large number of long-haul aircraft and it has leveraged its relationship with airlines to include IFC as part of a wider bundle with IFE, using third-party broadband capacity. Anuvu has similarly leveraged its significant presence in the provision of wireless IFE services within

[76] Lufthansa to relaunch inflight internet, Breaking Travel News, 13 October 2009, available at: https://www.breakingtravelnews.com/news/article/lufthansa-to-relaunch-inflight-internet/. Access on 22 November 2022.

[77] Coming soon to all United flights: Seatback entertainment screens, Association of Flight Attendants – CWA, AFL-CIO, 29 June 2021, available at: https://unitedafa.org/news/2021/6/29/coming-soon-to-all-united-flights-seatback-entertainment-screens.

the narrow-body segment into the IFC segment. In the latest Euroconsult Report, Anuvu is described as "*strongly positioned in the IFE market with the ability provide enriched IFEC offers to its customers*".[78]

(136) To the extent that streaming requires greater bandwidth, as noted, Inmarsat does not offer particularly deep coverage in Europe or globally, and so will not be a particularly strong competitor to Viasat in this regard relative to Intelsat, Panasonic or Anuvu (and partners SES and Eutelsat).

6 Key GEO-backed SSP rivals are expanding in IFC

(137) The Parties consider that the commercial aviation IFC market is occupied by strong incumbents who exert – and are projected to continue doing so in the future – significant competitive constraints on the Parties. They do not recognise the picture presented by the CMA in the PD1 of the Parties' three main GEO competitors exerting an increasingly weaker constraint.

6.1 Intelsat has the ability, incentive and commitment to expand in IFC

(138) As mentioned above in Section 3.1.4, Intelsat is active as an SNO and an SSP. It owns 50+ GEO satellites with global coverage which it leases to players like Panasonic and Anuvu and, at the SSP level, provides IFC directly to airline customers. As well as already being the IFC provider with the largest number of active/committed aircraft (when considering both short-haul and long-haul), Intelsat has a strong and competitive growth strategy,[79] shown through its December 2020 acquisition of Gogo's commercial aviation branch[80] and its multi-orbit plans and partnership with OneWeb. Intelsat therefore clearly has the ability, incentive and demonstrable commitment to expand and compete aggressively in IFC and will continue to be a significant competitive constraint on the Parties.

(139) The P1D acknowledges that Intelsat is a notable market player with a significant presence in IFC services to widebody aircraft.[81] It also highlights that Intelsat benefits from the vertical integration aspect on which the CMA places great weight, due to its acquisition of Gogo's commercial aviation branch,[82] and provides global coverage in Ku-band. Although the Parties consider that vertical integration is not a prerequisite to compete in commercial IFC or even, taken in isolation, a significant advantage in this regard, it is nevertheless relevant to note that the Gogo commercial aviation acquisition has further solidified Intelsat's already strong market position. Similarly, the fact that its global coverage is from Ku-band is not a competitive drawback and nor is Ka-band an unambiguous advantage. From an end-user perspective, they are indistinguishable and neither provides a clear technical or performance related advantage.

(140) The P1D also acknowledges that Intelsat's upcoming acquisition of line-fit certifications (TCs) on most in-demand aircraft families will further enhance its competitive position vis-à-vis the Parties.[83] Again, the Parties consider this observation to be relevant in the assessment of Intelsat's competitive strength, notwithstanding the fact that line-fit certification is by no means a prerequisite to effectively compete, with retro-fit remaining a valid and attractive route to market. In fact, as the P1D points out, Intelsat is

[78] Prospects for In-Flight Entertainment and Connectivity, Euroconsult, 2022 Edition, page 61 (attached as Annex ISCA.001).

[79] Intelsat CEO David Wajsgras: 'Consolidation Makes Sense', Via Satellite, 24 October 2022, available at: https://interactive.satellitetoday.com/via/november-2022/intelsat-ceo-david-wajsgras-consolidation-makes-sense/. Accessed on 25 October 2022. Notably, the Intelsat CEO also echoes the Parties' position on the way in which the satellite industry can benefit from consolidation, noting that "*partnerships among satellite communications companies and bringing together complementary capabilities can drive competition and innovation. This benefits customers and people around the world who rely on seamless connectivity. It is clear that our industry is transforming, with new capabilities and technologies being brought to the market.*"

[80] Gogo Commercial Aviation is Now Intelsat, Intelsat Press Release, 13 July 2021, available at: https://www.intelsat.com/newsroom/gogo-commercial-aviation-is-now-intelsat/.

[81] P1D, para. 136.

[82] P1D, para. 160.

[83] P1D, para. 144(b).

well-equipped to compete in both the narrowbody and the widebody segments, seeing as it holds STCs for the majority of aircraft families.[84]

(141) Despite recognising these competitive characteristics, the Issues Statement notes that Intelsat "*only provides a moderate constraint on the Parties*".[85] The Parties believe this label severely understates the importance of Intelsat's competitive constraint on the Parties.

(142) Intelsat has a strong set of customers globally, including flagship customers in virtually all regions (including, among others, Delta Air Lines, American Airlines, United Airlines, Alaska Airlines, Air Canada in North America; Air France, British Airways in Europe; JAL, Cathay Pacific, and Virgin Australia in Asia PAC; Aeromexico, LATAM, Gol in Latin America). Intelsat is currently supporting a free-to-all-passengers Wi-Fi service on JAL, as well as growing free-to-passenger offerings across several airlines, including Alaska Airlines and Air Canada. Its competitive strength is also borne out by its recent strong track record in IFC tender wins shown in Annex ISCA.007 (e.g. Air Canada, Alaska Airlines[86], Condor, Virgin Australia[87], LATAM, Northern Pacific Airways, Cathay Pacific, Regional Express Airlines).

(143) Far from being "*uncertain how it will develop in the future*",[88] Intelsat has a strong and competitive growth strategy.[89] At a recent industry conference (APSCC 2022), Intelsat's regional vice president for the Asia-Pacific directly reacted to the CMA's P1D findings, stating that he was "*very surprised*" that Intelsat was described by the CMA as being in "*modest position with uncertain future*" and reiterated that "*aviation IFC is a pillar of the company's planned future growth*". He further highlighted that "*the reason [Intelsat] chose Gogo is that mobility is the fastest growing market now and we have 3,000 aircraft connected.*"[90]

Figure 15 Intelsat's reaction to the CMA's description of its business

Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses

written by Peter B. De Selding | October 19, 2022

SEOUL — **Intelsat** is predictably miffed that Britain's competition regulator described Intelsat Commercial Aviation as being in "modest position with uncertain future" in its decision to put a hold on **Viasat**'s acquisition of **Inmarsat**.

[84] P1D, para. 144.

[85] Issues Statement, para 35(b)(iii).

[86] In this respect see also Alaska Airlines MAXes out with updated order book, Paxex.Aero, 26 October 2022, available at: https://paxex.aero/alaska-airlines-737-max-order-options/. Accessed on 1 November 2022. "*Alaska Airlines will add 52 more 737 MAX to its fleet over the next five years, the largest single aircraft commitment in its history. […] In announcing the deal Alaska Airlines notes "performance of the 737-9 has exceeded expectations on economics and fuel efficiency, as well as guest satisfaction." The passenger satisfaction front is fed, in part, by seats from Recaro and 2Ku inflight internet service from Intelsat. On the inflight connectivity front, in particular, lower and fixed pricing also helps.*"

[87] Virgin Australia Taps Intelsat for IFC Service, Satellite Today, 25 October 2022, available at: https://www.satellitetoday.com/mobility/2022/10/25/virgin-australia-taps-intelsat-for-ifc-service/. Accessed on 1 November 2022.

[88] Intelsat CEO David Wajsgras: 'Consolidation Makes Sense', Via Satellite, 24 October 2022, available at: https://interactive.satellitetoday.com/via/november-2022/intelsat-ceo-david-wajsgras-consolidation-makes-sense/. Accessed on 25 October 2022.

[89] Intelsat CEO David Wajsgras: 'Consolidation Makes Sense', Via Satellite, 24 October 2022, available at: https://interactive.satellitetoday.com/via/november-2022/intelsat-ceo-david-wajsgras-consolidation-makes-sense/. Accessed on 25 October 2022. Notably, the Intelsat CEO also echoes the Parties' position on the way in which the satellite industry can benefit from consolidation, noting that "*partnerships among satellite communications companies and bringing together complementary capabilities can drive competition and innovation. This benefits customers and people around the world who rely on seamless connectivity. It is clear that our industry is transforming, with new capabilities and technologies being brought to the market.*"

[90] Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses, Space Intel Report, 19 October 2022, available at: https://www.spaceintelreport.com/intelsat-to-uk-regulators-viasat-inmarsat-judgment-hello-in-flight-connectivity-is-one-of-our-fastest-growing-businesses/ (attached as Annex ISCA.008).

Source: Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses , Space Intel Report, 19 October 2022, attached as Annex ISCA.008.

(144) Intelsat's dynamic trajectory and commitment to expansion in IFC is further substantiated by recent statements of its CEO, who identifies commercial aviation IFC as a "*main engine of growth for the company*", with the Gogo acquisition enabling the company to "*innovate more in the next three to five years than I believe Intelsat has ever done before*". Intelsat's CEO notes that "*[s]ince the acquisition of Gogo Aviation (now called Commercial Aviation), in-flight connectivity and the broader commercial aviation sector is a key part of our ongoing strategy*".[91]

(145) Intelsat has a very credible roadmap for future capacity and coverage increases, with several software-defined HTS set to launch over the next few years with significant new capacity (as shown in Table 6 above). It also has a broad feature set and experience with passenger-facing products and user interfaces, as well as significant experience in managing and monetizing a retail model, which draws significant interest from many airlines that do not want to take on the operational efforts of managing IFC (this point is particularly relevant for LCCs).

(146) Further evidence of Intelsat's important competitive threat can be seen in its multi-orbit strategy and innovative partnerships with other players in the satellite market, such as (i) its deal with OneWeb to offer a combined LEO and GEO offering to customers,[92] (ii) its integration of Starlink's LEO connectivity into its network,[93] (iii) its planned MEO constellation,[94] and (iv) its hybrid GEO/LEO ESA terminal partnership with Stellar Blu, and (v) the billions it has committed to new software defined 5G satellites, including satellites aimed at European markets.

(147) Additionally, Intelsat maintains strong and growing partnerships with third-party telcos, including T-Mobile and TIM Brazil, with a seamless ability to replicate this for other markets – particularly with Intelsat having a significant existing MNO customer base for other verticals. These partnerships help to significantly offset the cost of IFC for airlines and provide the value of free service funded by third party telcos, which is a critical selling point to airlines. To give a concrete example, with approximately 24% of cell phone users in the U.S. being T-Mobile customers, it can be estimated that around 24% of Alaska's or United Airlines'[95] passengers could benefit from free IFC services from Intelsat (Gogo).

6.2 Panasonic has the ability, incentive and commitment to expand in IFC

(148) Panasonic, with its IFE heritage and first mover advantage (which is acknowledged in the P1D[96]), continues to hold a strong position in the IFC market and exert a significant competitive constraint on the Parties. This strong position, along with its recently announced partnership with OneWeb, shows that Panasonic has the ability, incentive and commitment to expand in IFC. Based on Panasonics' global

[91] Intelsat CEO David Wajsgras: 'Consolidation Makes Sense', Via Satellite, 24 October 2022, available at: https://interactive.satellitetoday.com/via/november-2022/intelsat-ceo-david-wajsgras-consolidation-makes-sense/. Accessed on 25 October 2022.

[92] Intelsat and OneWeb Demonstrate GEO/LEO Service to U.S. DoD, ViaSatellite, 4 November 2021, available at: https://www.satellitetoday.com/government-military/2021/11/04/intelsat-and-oneweb-demonstrate-geo-leo-service-to-u-s-dod/. Accessed on 29 March 2022.

[93] Intelsat rolls out network service that integrates Starlink and geostationary satellites, SpaceNews, 26 March 2022, available at: https://spacenews.com/intelsat-rolls-out-network-service-that-integrates-starlink-and-geostationary-satellites/#:~:text=of%20you.%27%E2%80%9D-,Intelsat%20is%20buying%20Starlink%20terminals%20and%20services%20and%20reselling%20them,one%20interface%2C%E2%80%9D%20said%20Claussen. Accessed on 29 March 2022.

[94] Intelsat eyes small MEO constellation for hybrid aero service, Runway Girl Network 4 April 2022, available at: https://runwaygirlnetwork.com/2022/04/intelsat-eyes-small-meo-constellation-for-hybrid-aero-service/. Accessed on 3 August 2022.

[95] T-Mobile customers get free Wi-Fi on United, One Mile At A Time, 23 September 2022, available at: https://onemileatatime.com/news/united-free-wifi-tmobile/. Accessed on 23 November 2022. See also T-Mobile's Website available at: https://www.t-mobile.com/support/coverage/t-mobile-in-flight-connections-on-us. Accessed on 23 November 2022.

[96] P1D, para. 134.

share of supply of IFC to in-service aircraft and committed aircraft (which the Parties consider to be a much more accurate representation of real world, on-the-ground competitive dynamics than shares including backlog), Panasonic continues to hold very high shares of supply in commercial aviation IFC long-haul, within the [56-66]% range.[97] Panasonic is and has long been the leading provider of seatback IFE on new widebody aircraft. It is therefore unclear on what grounds the P1D finds that Panasonic's bundled IFE/IFC offering for widebody aircraft has "*largely lost traction*".[98]

(149) Panasonic already offers global coverage through its long-term and high-volume leases with SNOs which provide it with high network redundancy and flexibility. As explained in Section 508.2, being vertically integrated and having direct access to owned satellite capacity is not a particular competitive advantage in the IFC commercial aviation market. Many players including the Parties themselves rely or have relied on leased capacity in order to compete for and win opportunities with airlines.

(150) Beyond its market leading position in the global long-haul segment, Panasonic also consistently competes in, and often wins, IFC tenders in the short-haul and/or European segments, as evidenced by the tender data.[99] Valour Consultancy data for Q2 2022 shows that Panasonic has committed to provide IFC to 336 long- and short-haul aircraft owned by airlines located in Europe, indicating a trend towards expansion in that segment in the near future.[100]

(151) Moreover, Panasonic has had significant success in providing IFC to narrowbody (short-haul) aircraft to non-European airlines, including 216 active and committed narrowbody aircraft operated by U.S. based airline United Airlines, 97 active (132 committed) narrowbody aircraft operated by Canadian airline WestJet, 76 active (committed) narrowbody aircraft operated by Japanese airline All Nippon Airways, and 58 active (113 committed) narrowbody aircraft operated by Turkish Airlines.[101] Additional recent Panasonic wins include Aer Lingus (A321XLRs), ITA Airways (A220s), Middle East Airlines (A320neo), TAP Portugal (A320neo), Iraqi Airways (A220, 737MAX), and Korean Air Lines (737MAX). There is no evidence to suggest that Panasonic could not also have equal success involving European tenders for IFC on narrowbody aircraft.

(152) An important recent development which shows that Panasonic is actively taking steps to further strengthen its position in the market - and that is expected to further reinforce Panasonic's competitive market position - is its partnership with OneWeb, which has been announced since the P1D, on 18 October 2022.[102] According to Panasonic, it will "*market, sell, and support OneWeb's high-speed, low-latency in-flight broadband services to commercial airlines worldwide. Panasonic will offer OneWeb's global service standalone or paired with Panasonic Avionics' award-winning GEO service, which covers 99.6% of the world's flight routes*". Panasonic notes that partnering with OneWeb reflects its dedication to a multi-orbit strategy and will enable it to offer airlines more choice and "*top-tier*" products supporting forward link speeds approaching 200 Mbps and return link speeds up to 32 Mbps everywhere, including polar routes. Panasonic expects to support OneWeb-equipped aircraft in the second half of 2023.[103]

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[97] FMN, Table 15.

[98] P1D, para. 134.

[99] P1D, para. 155.

[100] In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002).

[101] In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002).

[102] OneWeb and Panasonic Avionics Corporation to Deliver Low Earth Orbit (LEO) Connectivity to Airlines Worldwide," Panasonic (Oct. 18, 2022), https://www.panasonic.aero/press-release/panasonic-leo/. Access on 3 November 2022.

[103] OneWeb and Panasonic Avionics Corporation to Deliver LEO Connectivity to Airlines Worldwide, APSCC, 17 October 2022, available at: https://apscc.or.kr/oneweb-and-panasonic-avionics-corporation-to-deliver-leo-connectivity-to-airlines-worldwide/. Accessed on 25 October 2022.

Panasonic and OneWeb jointly announced at the recent APEX industry conference that the 'default' antenna option for their joint LEO solution would be a LEO/GEO Stellar Blu ESA solution.[104]

(153) Panasonic has scale and credibility through a large set of customers globally, including flagship customers across all regions (United Airlines, American Airlines, WestJet in North America; Lufthansa, IAG, Air France, Virgin Atlantic, TAP Portugal, Finnair in Europe; ANA, Cathay Pacific, Korean Air, Singapore Airlines, China Southern in Asia PAC; Emirates, Etihad in Middle East; Aeromexico, Azul in Latin America).

(154) Panasonic has a credible roadmap for future capacity increases, in particular over EMEA via Eutelsat's 10B (which was just successfully launched on 22 November 2022 and which was designed collaboratively by Eutelsat and Panasonic, with Panasonic being the anchor tenant for 10B) and Konnect VHTS satellites[105], as well as over APAC via APSATCOM's APSTAR 6D HTS – both designed primarily to support inflight connectivity and mobility services.[106] Panasonic has significant scale in its maintenance and support network, including touch labour, because it has an existing maintenance and support network globally for IFE. Panasonic also has IPTV scale and content, including exclusive content service providers for Sport24 – which is the leading global live TV sports channel for commercial aviation and is an extremely attractive proposition on long-haul fleets.

(155) Finally, a complete and accurate assessment of the competitive strength of Panasonic cannot disregard the fact that it is also a subsidiary of the conglomerate Panasonic Corporation, and is thus able to leverage significant advantages and synergies from its parent's R&D activities.

(156) This evidence demonstrates that, far from standing still or being in decline, Panasonic is making bold moves to innovate, improve its competitive offering and win IFC opportunities. Therefore, rather than exerting a "*materially weaker constraint on the Parties than the Parties exert on each other*", [107] the evidence must lead to the conclusion that Panasonic remains a strong competitive constraint in the market.

6.3 Anuvu has the ability, incentive and commitment to expand in IFC

(157) Anuvu is a key competitor of the Parties, especially for the European short-haul segment where it is the second leading SSP for European short-haul IFC with existing customers that include Air France, Norwegian, Turkish Airlines and Icelandair. The P1D understates Anuvu's competitive strength, outlining certain factors to support the finding that Anuvu exercises a materially weaker constraint on the Parties than they do on each other, such as it not having direct access to satellite capacity, its small customer base, regional coverage only and only holding a limited number of line-fit certifications.[108] However, Anuvu already has global coverage (minus the poles), continues to win important tenders (e.g., recent Turkish Airlines[109] and Aeromexico wins[110]) and has entered multiple strategic partnerships and is

[104] Panasonic Avionics highlights Stellar Blu antenna for OneWeb LEO service, Paxex Aero, 26 October 2022, available at: https://paxex.aero/panasonic-oneweb-stellar-blu-antenna-leo-inflight-internet/ and **[CONFIDENTIAL TO INMARSAT]**

[105] Eutelsat Orders EUTELSAT 10B Satellite for Inflight and Maritime Connectivity Services, businesswire, 29 October 2019, available at: https://www.businesswire.com/news/home/20191029005434/en/Eutelsat-Orders-EUTELSAT-10B-Satellite-for-Inflight-and-Maritime-Connectivity-Services. Accessed on 18 November 2022.

[106] Panasonic Avionics and APSATCOM Bring Extreme Throughput Satellite Technology to Asian Mobility Markets, Panasonic Aero, 3 August 2018, available at: https://www.panasonic.aero/press-release/panasonic-avionics-and-apsatcom-bring-extreme-throughput-satellite-technology-to-asian-mobility-markets/. Access on 18 November 2022.

[107] Issues Statement, para 35(b)(i).

[108] Issues Statement, para 35(b)(iii).

[109] Turkish Airlines Launch Inflight Connectivity Service Enabled by Anuvu and Profen, 18 May 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/274/turkish-airlines-launch-inflight-connectivity-service-enabled-by-anuvu-and-profen. Accessed on 24 November 2022.

[110] Anuvu's Twitter account, tweet of 22 November 2021, available at: https://twitter.com/anuvu_official/status/1462874558386561025?s=20&t=dmlX9F3NZ0clYwXp-Vv_gQ: "*We're celebrating the start of a great relationship with @Aeromexico with connectivity activation on select 737 aircraft, giving them the ability to deliver world class*

pursuing growth strategies, thus showing its ability and incentive to continue to compete and expand in the IFC market and its position as an important competitive constraint on the Parties.

(158) Anuvu was in Chapter 11 for six months from October 2020 to March 2021 which may have temporarily impacted its ability to compete during that period, and may have influenced some third party commentary at Phase 1. But it has since emerged it remains a strong competitor with tender wins. A case in point is Turkish Airlines, the largest traditional carrier in Europe (second overall to easjyet) in fleet size, ahead of Lufthansa, BA and Air France.[111] In May 2022 ,Turkish selected Anuvu ahead of other options for its Airbus and Boeing narrowbody fleet, one of the largest recent such tenders in Europe. As of May 16, the system has been implemented on 13 aircraft and it is planned to complete installations on 103 aircraft by Q2 2023. The CMA can verify with Turkish Airlines why it considered Anuvu's offer the most compelling for its large tender.

(159) Anuvu has very effectively used its ability to bundle IFE content with IFC to its advantage such as for Southwest Airlines (TV content) and Turkish Airlines (IFE content). Anuvu has also created very effective partnerships which have influenced airline decisions to award them fleets. This includes its partnership with Orange, which was critical to receive its award from Air France[112], and its partnership with a local Turkish MRO for the Turkish Airlines tender (on which Prof. Ahmet Bolat, Turkish Airlines' Chairman of the Board and Executive Committee, commented: "*Our successful partnership with Anuvu, Profen and Turkish Technic has culminated in bringing our passengers the fastest and most reliable connectivity in the market. Accomplishing this great milestone through the challenges of COVID-19 is something of which the entire team is very proud. This launch of the commercial entry into service reaffirms our commitment to the partnership.*")[113]. Anuvu also features a proven ability in delivering a free-to-all-passenger Wi-Fi service for Norwegian Air and supporting Southwest Airlines' free-to-all service trial on its 737NG fleet which was recently upgraded to Anuvu's service, with better performing hardware (offering 10x the speeds of the previous system)[114].

(160) Anuvu's multiple industry partnerships clearly demonstrate its commitment to growth in IFC, including:

(i) recent capacity commitments with Eutelsat (Eutelsat 7A), Hispasat, and ABS, which demonstrate ample availability of SNO capacity;

(ii) developing a hybrid GEO/LEO antenna with QEST introduced last month at APEX;

(iii) partnership with Astranis on the MicroGEO HTS constellation for enhanced capacity and coverage;

(iv) agreement with Telesat for capacity on the future Lightspeed constellation, which provides a roadmap for capacity expansion and LEO connectivity; and

experiences to their passengers. We look forward to working with the Aeromexico team for months to come." Accessed on 1 November 2022.

[111] Spotlight on Europe: Top 10 Biggest European Airlines By Fleet Size – Information Design, 9 July 2021, available at: id1.de. Accessed on 25 November 2022.

[112] Anuvu: Air France awards in-flight connectivity solution to Global Eagle and Orange Business Services for Airbus A320 family aircraft, (1 October 2018) available at https://www.anuvu.com/our-company/newsroom/press-releases/detail/209/air-france-awards-in-flight-connectivity-solution-to-global-eagle-and-orange-business-services-for

[113] Turkish Airlines Launch Inflight Connectivity Service Enabled by Anuvu and Profen, Anuvu, 18 May 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/274/turkish-airlines-launch-inflight-connectivity-service-enabled-by-anuvu-and-profen. Access on 24 November 2022.

[114] Southwest Airlines Chooses Anuvu to Upgrade Wi-FI on Current Fleet, Anuvu, 8 June 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/276/southwest-airlines-chooses-anuvu-to-upgrade-wi-fi-on-current-fleet#:~:text=Southwest%20is%20trialing%20the%20new,by%20the%20end%20of%202022. Accessed on 22 November 2022.

(v) partnership with Starlink for energy and maritime services which could potentially extend to aviation, further differentiating Anuvu's IFC offering in the marketplace.[115]

(161) Like Panasonic, although not an SNO, Anuvu also benefits from "vertical integration-like" economics, given its long-term leases with satellite operators, which provide it with more flexibility, lower investment costs and sufficient scale to command very attractive wholesale prices. In particular in February 2022, Telesat and Anuvu announced a satellite capacity deal whereby Anuvu will acquire ten Gbps of Ka-band capacity from Telesat starting from March 2022. Anuvu's airline customers will be able to begin using its newly developed terminals and capacity now, as they are forward-compatible with the Telesat Lightspeed LEO network and the deal has been described as a way to "*[set] the stage for LEO connectivity with Telesat Lightspeed*".[116] Along with its planned MicroGEO constellation, Anuvu also has immediate access to available satellite capacity from multiple Ku operators, so there is no current restraint on Anuvu achieving global coverage.

(162) Anuvu continues to pursue competitive growth strategies. On 17 October 2022, Anuvu announced the launch of its new hybrid Dual-Panel Ka-band antenna that is compatible with both LEO and GEO networks. The terminal is built in partnership with QEST and was unveiled at the recent industry conference, APEX, in October.[117] The antenna is described as *"a key component of Anuvu's Airconnect Ka multi-orbit connectivity platform designed specifically for both GEO and LEO networks."*[118]

6.4 SES

(163) SES is another player in this space that provides a prime example of how fast-paced the competitive developments in the commercial aviation IFC market are. Although SES has to date operated as an SNO supplying capacity to SSPs for the provision of their own IFC offerings to airlines, Airbus announced in late October 2022 that it would be partnering with SES in the context of its HBC+ catalogue offering for airlines.

[115] Anuvu Launches Crew Portal for Energy Markets Utilizing SpaceX's Starlink, 5 October 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/283/anuvu-launches-crew-portal-for-energy-markets-utilizing-spacexs-starlink. Accessed on 24 November 2022.

[116] Anuvu Secures Major Capacity Deal with Telesat, Anuvu press release, 14 February 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/268/anuvu-secures-major-capacity-deal-with-telesat#:~:text=Under%20the%20agreement%2C%20Anuvu%2C%20t,from%20Telesat%20starting%20next%20month. Accessed on 3 November 2022.

[117] Anuvu and QEST Introduce New Dual-Panel Ka Antenna, Anuvu press release, 17 October 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/285/anuvu-and-qest-introduce-new-dual-panel-ka-antenna. Accessed on 3 November 2022. See also, Anuvu develops second generation Ka antenna for hybrid GEO/LEO ops, Runway Girl, 11 October 2021, available at: https://runwaygirlnetwork.com/2021/10/anuvu-develops-second-generation-ka-antenna-for-hybrid-geo-leo-ops/. Accessed on 3 November 2022.

[118] Anuvu and QEST Introduce New Dual-Panel Ka Antenna, Anuvu Press Release, 17 October 2022, available at: https://www.anuvu.com/our-company/newsroom/press-releases/detail/285/anuvu-and-qest-introduce-new-dual-panel-ka-antenna. Accessed on 3 November 2022.

Figure 16 Airbus press release regarding SES addition to HBC+ catalogue

AIRBUS

Press Release

Airbus on track to expand the Airspace Link HBCplus catalogue with SES, creating its first agnostic cabin satcom offer

- More choice for airlines with SES as new Partner in the MSP catalogue (Managed Service Provider)
- SES will bring the first multi-orbit global Ka network to the HBCplus MSP offer

APEX EXPO, Long Beach, October 25th 2022 – SES, a leader in global content connectivity solutions, has signed a Letter of Agreement (LoA) with Airbus, paving the way for the company to become the second Managed Service Provider (MSP) to join the Airspace Link HBCplus catalogue offering for airlines.

Source: Seth Miller's Twitter.[119]

(164) As detailed at paras. (45) and (66) above, this introduces SES as a new player (and one with an established track record in the satcom industry for that matter) in the commercial aviation IFC segment, a development which undoubtedly will have a significant impact on competitive dynamics in this market. Airbus' strong position as an OEM is likely to accelerate the trend towards provider-agnostic IFC equipment, which in turn facilitates switching by airline customers. Commenting on the new partnership, Airbus' Upgrades Marketing Director noted that "*[SES's] innovative approach of looking at GEO and MEO satellites is really something that adds a lot of value in their offerings*",[120] adding that SES's forthcoming O3b mPOWER MEO network will ensure global coverage as part of its multi-orbit solution.[121] In the same vein, SES's chief strategy and product officer remarked that "*SES along with its global partners are building a truly differentiated multi-orbit network, which is capable of providing the best IFC service in the air for both short-haul and long-haul commercial aviation markets. We look forward to concluding our partnership with Airbus and working together to bring these innovative multi-orbit global capabilities to the Airspace Link HBCplus ecosystem*".[122]

(165) In addition, similar to Intelsat and Anuvu, SES also has existing customer relationships with telcos/MNOs across the globe, which can help facilitate third-party deals for aviation and offset the IFC cost for airlines. For instance, Orange is one of SES's top customers and already has existing relationships with Air France which SES could leverage for fleet opportunities.

7 Accelerating rivalry from Starlink, OneWeb and other NGSO-backed rivals

(166) There is increasing rivalry from NGSO rivals – particularly Starlink and OneWeb – that is only expected to grow. As Eutelsat said, *"[t]he contribution from NGSO is expected to grow c.2.5x faster than the overall market to represent almost 50% of the market by 2030, mostly captured by LEO*

[119] Seth Miller's tweet of 25 October 2022, available at: https://twitter.com/WandrMe/status/1584955481344585728/photo/1. See also Airbus on track with Airspace Link HBC plus catalogue expansion with SES, 26 October 2022, available at: https://www.inflight-online.com/airbus-on-track-with-airspace-link-hbcplus-catalogue-expansion-with-ses/. Accessed on 1 November 2022; and SES joins Airbus Airspace Link HBCplus catalog, 28 October 2022, available at: https://aviationweek.com/air-transport/interiors-connectivity/gallery-apex-showcases-latest-ifec-technologies. Accessed on 1 November 2022.

[120] Airbus surprises with pact to add SES on supplier-furnished IFC, 31 October 2022, available at: https://runwaygirlnetwork.com/2022/10/airbus-ses-supplier-furnished/. Accessed on 1 November 2022.

[121] Ibid.

[122] Ibid.

constellations".[123] Similarly, SES' Chief Technology Officer noted that "*In our industry today, we have to run to stand still*".[124]

(167) There have been significant developments in the market even during the course of the CMA investigation, including key changes in the 7 weeks since publication of the P1D and there are further important NGSO developments expected by 2025. These changes are summarised in Table 7 below. As summarised by Intelsat's CEO at an industry conference *"[t]here is an announcement every day with a new antenna or with Starlink announcements*".[125]

Table 7 NGSOs' major developments during the CMA investigation and within 2 years of the merger

Time Period	Key Developments
Feb – Aug 2022 (Pre-notification)	Starlink wins first airline contracts with JSX and Hawaiian Trials of ESAs by various SNOs.
Aug – Oct 2022 (Phase 1)	Starlink ISLs are operational Starlink wins Royal Caribbean contract (maritime) OneWeb / Eutelsat merger announced
Oct – Nov 2022 (Phase 2 – Initial Submission)	Starlink Aviation launched –STCs to be approved OneWeb announced partnerships with Panasonic and Intelsat SES announced to join the HBC+ programme Recent RFPs ask for LEO only or LEO/GEO solutions OneWeb launches additional Gen-1 satellites
Dec 2022 – Mid 2023 (Rest of Phase 2 / Closing)	Starlink Aviation will be operational (starts serving JSX and Hawaiian) OneWeb ISLs will be operational Intelsat and Panasonic to have LEO/GEO ESAs (from partnerships with OneWeb and Stellar Blu) Launch of ViaSat-3 and SES' O3b mPower
Mid 2023-Mid 2025	Starlink capacity share of ≥64% by end-2023 OneWeb to have global coverage by Q4 2023 and will generate revenue from IFC in FY24 Intelsat to launch 2 Ku-band HTS satellites ViaSat-3 EMEA / APAC to be operational by mid-2024

7.1 NGSOs have strong incentives to grow in aviation

(168) The Parties strongly dispute the CMA's scepticism towards NGSOs' incentives to supply IFC to commercial aviation customers.[126] In fact, there is solid evidence as to the strong incentives for NGSOs and the Parties suspect that internal documents of NGSOs would further support this, given the rapid

[123] Eutelsat Strategy Update on the proposed combination with OneWeb, Eutelsat Press Release, 12 October 2022, available at: https://www.eutelsat.com/en/news/press.html#/pressreleases/eutelsat-strategy-update-on-the-proposed-combination-with-oneweb-3210411. Accessed on 3 November 2022.

[124] SpaceNews, Newsletter from 16 November 2022, attached as Annex ISCA.028.

[125] Intelsat to UK regulator's Viasat-Inmarsat judgment: Hello? In-flight connectivity is one of our fastest-growing businesses, Space Intel Report, 19 October 2022, available at: https://www.spaceintelreport.com/intelsat-to-uk-regulators-viasat-inmarsat-judgment-hello-in-flight-connectivity-is-one-of-our-fastest-growing-businesses/ (attached as Annex ISCA.008).

[126] P1D, paras. 170, 172.

and aggressive targeting of IFC, particularly by Starlink. The CMA's doubt is based on the following premises:

(i) IFC is not critical to NGSOs business models;[127]

(ii) Starlink's and OneWeb's first-generation constellations were not designed for use in mobility applications;[128]

(iii) such an incentive depends on NGSOs ability to overcome barriers to entry and make a return on investment[129] and their ability to compete profitably in other verticals.[130]

(169) This section addresses each of these concerns in turn.

7.2 IFC as a critical monetisation route for NGSOs

(170) Contrary to the P1D's view, it should already be abundantly clear from the above that NGSOs do in fact have a strong incentive to be in IFC. Due to the nature of their satellite constellations, 80% of NGSO satellites will be over oceans or polar ice at any given time and due to their proximity to earth, this means that proportion of their satellites can only deliver service to customers on or these oceans – i.e., maritime or aviation customers. Given the cost structure of the business (i.e., high fixed costs of getting satellites into orbit but relatively low marginal costs of serving customers), NGSOs have a very strong incentive to serve the IFC vertical so that the capacity of their satellites that are over oceans or polar ice is monetised. Regardless of whether IFC is critical to the LEO business model or not, it is indisputable that LEOs will deliver far better economic results if they utilise their capacity optimally.

(171) This point is particularly salient given that LEO constellations involve significant fixed costs to launch and sustain the constellation whereas the incremental costs of serving IFC are comparatively tiny (see also Section 12 below on hurdles to overcome for NGSOs). The combination of very high fixed costs and very low marginal costs means that operators of LEO constellations have particularly strong incentives to load as much capacity volume on their constellations to recover these fixed costs. When LEO constellations do not expect to have their capacity fully filled up, even over land, this means they have particularly strong incentives to enter all downstream verticals to monetise their capacity and to recover their large fixed costs.

(172) To take Starlink as an example, around ~USD 2.8 billion of sunk capital investment out of ~USD 3.5 billion of total space investment is at any given time over oceans or polar ice. Those satellites have a five-year design life and therefore an effective depreciation of around USD 47 million per month on a straight-line basis. This depreciation dwarfs the costs of entering IFC, giving Starlink an enormous incentive to maximise their inroads in IFC as rapidly as possible.

(173) Equally, Amazon must launch at least half of its planned 3,236 satellites by 2026 to retain the relevant licence granted by the Federal Communication Commission ("**FCC**") and accordingly, plans to invest more than USD 10 billion in its Kuiper constellation. In Q3 2022, Amazon indicated that it is on track to meet this FCC milestone[131] and Amazon also announced in October 2022 a newly acquired facility for satellite manufacturing to "*provide the scale required to build as many as four satellites per day* ". It has further confirmed that it would launch further prototype satellites in early 2023 and also announced contracts for up to 92 heavy-lift launches from Arianespace, Blue Origin, and ULA, marking the largest commercial procurement of launch vehicles in history and thereby securing contracts to "*deploy the*

[127] P1D, fn. 46, para.170.

[128] P1D, para.171.

[129] P1D, para.172.

[130] P1D, para.173.

[131] NGSO Constellation Tracker Q3 2022 update –Euroconsult, Q3 2022, page 24, attached as Annex ISCA.016].

majority of [Amazon Kuiper's] satellite constellation".[132] Amazon is intent on the success of Amazon Kuiper – the pressure exerted by the 2026 expiry of its FCC approval constellation is not 50% launched, upholding its reputation for innovation and the substantial level of investment into the project all contribute to IFC provision being a critical component of Amazon's business strategy.

(174) The CMA in the P1D also relies on third-party evidence, provided by an NGSO, stating that it would not build a business case around supplying IFC services.[133] However, this assumes that an NGSO must *exclusively* provide IFC services whereas in reality, it is likely that a player with such capacity investments would build a multi-faceted business case covering other verticals, as all SNOs do. Indeed, Viasat itself entered the satellite broadband market after entering the residential broadband market and then quickly branching into other verticals including IFC. If anything, such an approach would allow NGSOs to cross-subsidise aviation prices with success in other segments, thus allowing them to increase market shares rapidly. The CMA is incorrect to apply such a high standard to NGSOs. IFC might not be the sole reason to launch a constellation, but it does not follow that the IFC segment cannot be a very important driver especially regarding ocean coverage, as discussed. It would be beneficial for the CMA to supplement such third-party evidence with further material from other competitors and market players to ensure it acquires an accurate understanding of NGSOs' incentives.

(175) Starlink is already active in commercial aviation IFC, but its commitment to the market is further supported by: (i) the fact that Starlink has already won a commercial aviation IFC contract (Hawaiian Airlines), (ii) the fact that it is already actively advertising its offering in commercial and business aviation IFC[134]; (iii) the fact that it is in the process of obtaining STCs for the overwhelming majority of commercial aviation aircraft, a very costly investment which would be entirely irrational if Starlink did not fully intend – and expect – to undertake activities in the commercial aviation IFC space; and (iv) the fact that Starlink's IFC solution is already being tested in Delta's fleet **[CONFIDENTIAL TO INMARSAT]**.

7.3 Starlink expects to have operational ISLs in early 2023; OneWeb's proximity to earth means ISLs are not critical to it supplying aviation

(176) With respect to the P1D argument regarding the suitability of Starlink and OneWeb's first-generation constellations for mobility applications (namely that these constellations were not designed at first instance for use in mobility applications such as aviation),[135] it incorrectly assumes that in order for aviation to be a critical component of NGSOs' business strategy, it must be the *only* or the *core* component. NGSOs are exploring multiple avenues via which they can monetise their satellites, but this does not in and of itself undermine the proposition that aviation is a critical part of their business strategy, as demonstrated by the fact that Starlink's global coverage was leveraged to win the contracts for Hawaiian Airlines (which includes long-haul routes), Royal Caribbean cruises and Hurtigruten Expeditions (which requires coverage over the poles for its Arctic and Antarctic cruises)[136]. Importantly, starting in July 2021, Starlink began exclusively launching generation 1.5 satellites each of which are equipped with laser ISLs.[137] OneWeb's[138] second generation constellation will also be equipped with

[132] Amazon expands satellite manufacturing at newly acquired Project Kuiper facility, Amazon's Press Release, 27 October 2022, available at: https://www.aboutamazon.com/news/innovation-at-amazon/amazon-expands-satellite-manufacturing-at-newly-acquired-project-kuiper-facility. Accessed on 22 November 2022. .

[133] P1D, para. 170.

[134] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 22 November 2022.

[135] P1D, para. 171.

[136] Hurtigruten completes fleetwide implementation of Starlink, Digital Ship, 18 October 2022, available at: https://thedigitalship.com/news/maritime-satellite-communications/item/8110-hurtigruten-completes-fleetwide-implementation-of-starlink#:~:text=Three%20of%20Hurtigruten%27s%20vessels%20will,also%20for%20all%20crew%20members.

[137] Elon Musk on Twitter: "@SpaceX These are V1.5 Starlinks with laser inter-satellite links, which are needed for high latitudes & mid ocean coverage". available at: https://twitter.com/elonmusk/status/1436541063406264320. Accessed on 3 November 2022.

[138] **[CONFIDENTIAL TO VIASAT]**

ISLs thus ensuring that OneWeb stand-alone is suitable for long-haul aviation routes without the need for hybrid LEO+GEO solutions.

(177) The CMA also relies on the Parties internal documents,[139] noting that "**[CONFIDENTIAL TO BOTH PARTIES]**" however, the same document notes Starlink's "**[CONFIDENTIAL TO INMARSAT]**". Equally, the Viasat internal documents note that "**[CONFIDENTIAL TO VIASAT]**."[140] Since the P1D, Starlink has launched Starlink Aviation and notes that deliveries will start in 2023 which demonstrates its confidence that it will be fully operational and have its full constellation by 2023, so any reservations based on perceived shortcomings of the deployed first generation satellites are irrelevant. For OneWeb, a lack of ISLs does not affect its competitive offering as it is able to rely on terrestrial gateways to facilitate transatlantic coverage.

7.4 The business case for aviation is strong

(178) With respect to recouping costs incurred in entering the aviation segment and making a return on investment, as noted in paragraph 50 of the Parties' ILR, the provision of IFC services offers a higher yield than other verticals such as consumer broadband and the incremental costs that NGSOs have to incur to enter the aviation verticals are tiny in comparison (see also Section 12 below on the purported remaining hurdles for NGSOs to overcome in order to enter IFC).

(179) The aviation segment is a very profitable, and consequently, a very attractive avenue for NGSOs in comparison to other verticals. It not only allows such players to leverage the capacity already available to them in response to an existent demand from customers but to make a return on investment. Therefore, the CMA's concerns surrounding NGSOs incentives to supply IFC services to commercial aviation customers are unjustified and unfounded.

7.5 NGSOs can push the dimensions of value on which they score strongest over GEO players

(180) It is apparent from the messaging and public statements of the NGSOs themselves that IFC solutions form an integral part of their business strategy. For example, OneWeb announced an agreement with Panasonic to market and sell OneWeb's broadband service to airlines by mid-2023,[141] Telesat concluded a capacity agreement with Anuvu, the second-largest SSP in European IFC[142] and Eutelsat issued a press release in which it notes its proposed combination with OneWeb addresses "*a significant c. $16bn market opportunity*".[143] Third-party reports also confirm that aviation will be a key vertical for Starlink and OneWeb. For instance, Valour Consultancy's latest business aviation report flags that "*While SpaceX's immediate focus is on increasing adoption in commercial aviation, business aviation is also a top priority*".[144]

(181) NGSOs can capitalise on the dimension of value in which they score better than GEO players, including:

(i) **Latency**: While GEO signals must travel to and from an orbit that is about 35,800 km above the Earth, NGSOs are typically located within about 300 to about 8,000 km from Earth. Starlink's

[139] **[CONFIDENTIAL TO INMARSAT]**.

[140] **[CONFIDENTIAL TO VIASAT]**

[141] SpaceX rolls out Starlink internet service for private jets, Reuters, 19 October 2022, available at: https://www.reuters.com/technology/spacex-rolls-out-starlink-internet-service-private-jets-2022-10-19/. Accessed on 8 November 2022.

[142] Anuvu Secures Major Capacity Deal with Telesat, Anuvu Press Release, 14 February 2022, available here: https://www.anuvu.com/our-company/newsroom/press-releases/detail/268/anuvu-secures-major-capacity-deal-with-telesat. Accessed on 8 November 2022.

[143] Eutelsat Strategy Update on the proposed combination with OneWeb, Eutelsat Press Release, 12 October 2022, available at: https://www.eutelsat.com/en/news/press.html#/pressreleases/eutelsat-strategy-update-on-the-proposed-combination-with-oneweb-3210411. Accessed on 8 November 2022.

[144] The Market for IFEC and CMS on VVIP and Business Aircraft, Valour Consultancy, September 2022, p. 175 (attached as Annexes ISCA.026 and ISCA.027).

constellation, for example, orbits at about 550km.[145] This means that the delay associated with the satellite-Earth station path can be more than 60x less in the case of an NGSO system.

(ii) **Greater network resilience**: While each of the Parties' broadband fleets consists of five satellites, as of October 2022, Starlink is estimated to have more than 3,100 operational satellites currently in orbit[146] and OneWeb has 462 satellites.[147] Multiple satellites in a constellation not only add to capacity and geographic coverage; but they, critically, also offer network resilience and redundancy.

(iii) **Coverage**: As their satellites are not tied to equatorial orbits, NGSOs are able to provide polar coverage. Starlink already has polar coverage (with 184 high inclination satellites launched in July and August 2022[148]) and expects to complete its initial constellation by the beginning of 2023.[149]

(iv) **Price**: NGSO satellites are cheaper to manufacture and launch, as they are smaller and simpler to design, and also cheaper to launch, than GEO satellites and thus enable NGSOs to offer more competitive lower prices.[150]

(v) **Product weight and drag**: NGSOs typically offer smaller, lighter terminals which offer weight advantages (at the margin, allowing the airline to carry extra passenger/luggage weight) and drag advantages, which save the airline on fuel costs.

(182) The above factors allow NGSOs to outperform GEOs on a number of metrics and thus to pose an attractive alternative to GEO players for airlines. This is further demonstrated in the Eutelsat / OneWeb Strategic Update in which NGSOs were assessed to perform more strongly than GEOs with respect to coverage ubiquity, latency and ease of terminal installation.[151]

7.6 Airlines are responding to NGSOs in their tenders by referencing NGSO/LEO technology and participation

(183) NGSOs benefit from advantages including lower latency, greater network resilience, greater coverage and – analysts predict[152] – the ability to provide lower prices (USD/Mbps/month) by 2030. Airlines have recognised those advantages and started to issue RFPs that explicitly or implicitly require NGSO capacity (a complete list of tenders where explicit or implicit requirements of NGSO capacity is set out at Annex ISCA.003 on NGSOs' participation in tenders). For instance, **[CONFIDENTIAL TO VIASAT]**.[153]

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[145] Technology, Starlink, available at: https://www.starlink.com/technology. Accessed on 8 November 2022.

[146] SpaceX launches 54 Starlink more satellites, lands rocket in 100th mission from Florida pad, Space.com, 20 October 2022, available at: https://www.space.com/spacex-starlink-group-4-36-satellites-launch. Accessed on 8 November 2022.

[147] 36 OneWeb satellites successfully launched by ISRO/ NSIL from Sriharikota, OneWeb Press Releases, 23 October 2022, available at: https://oneweb.net/resources/36-oneweb-satellites-successfully-launched-isro-nsil-sriharikota. Accessed on 8 November 2022.

[148] With Polar Satellite Launches, SpaceX's Starlink Eyes Global Coverage, PC Mag. 11 July 2022, available at: https://www.pcmag.com/news/with-polar-satellite-launches-spacexs-starlink-eyes-global-coverage. Accessed on 8 November 2022.

[149] Starlink, Coverage Map, available at: https://www.starlink.com/map. Accessed on 8 November 2022.

[150] While industry analyst Northern Sky Research ("**NSR**") estimates that in 2020 NGSO high throughput satellite ("**HTS**") capacity was still priced above GEO HTS broadband capacity, at USD 230.2 per Mbps / month against USD 219.8 per Mbps / month (but with lower latency), NSR anticipates that by 2030 prices for both satellite types will have fallen substantially since 2020, and that NGSO capacity will be priced below GEO capacity: by 2030, NGSO HTS broadband capacity will be priced at USD 56.8 per Mbps / month against USD 72.2 per Mbps / month for GEO HTS broadband capacity18 (i.e., NGSO would be less than 80% of the cost of GEO capacity).See Global Satellite Capacity Supply and Demand, 18th Edition, NSR, June 2021, p.19

[151] **[CONFIDENTIAL TO VIASAT]** Eutelsat's agreement with OneWeb was announced on 15 November 2022 (https://www.broadbandtvnews.com/2022/11/15/eutelsat-and-oneweb-ink-final-deal/).

[152] Global Satellite Capacity Supply and Demand, 18th Edition, Northern Sky Research, June 2021, p.19 (Annex 16.7 to the FMN).

[153] **[CONFIDENTIAL TO VIASAT]**

(184) Similarly, Air Canada, a major North American airline issued an RFI on October 4, 2022, stating that "*Air Canada is looking for a LEO or LEO/GEO Hybrid high-speed IFC technology product and services solution*".[154] **[CONFIDENTIAL TO VIASAT]**[155] **[CONFIDENTIAL TO VIASAT]**[156]

(185) NGSO entry into IFC is not a "threat", but a reality for the Parties, who are *already* facing direct competition from Starlink and OneWeb in tenders (and indirect competition from OneWeb through its partnerships). **[CONFIDENTIAL TO VIASAT]** To take only one example from each party, **[CONFIDENTIAL TO INMARSAT]**, while **[CONFIDENTIAL TO VIASAT]**

(186) The Parties also reported other RFPs with a requirement for NGSO solutions (e.g., **[CONFIDENTIAL TO VIASAT]** as set out in further details in Annex ISCA.003 – NGSOs participation in tenders).

(187) For instance, Delta's recent regional jet RFP from 17 July 2022 noted that "*LEO systems offer the lowest latency by up to an order of magnitude*"; "*Use of a LEO system also enables smaller (footprint, weight, lower overall power consumption) Satcom terminals which in turn could provide a significant advantage to Delta in the regional fleet"* and that "*LEO constellations increase coverage and network resiliency*", demonstrating its interest in standalone LEO options.[157] Delta requires a prototype IFC solution by the end of 2023, with production complete by the first half of 2024. The RFP explicitly states, *"[p]roposed solutions must be realizable in this timeframe and should not be notional concepts or stretch goals*".[158]

(188) **[CONFIDENTIAL TO VIASAT]**[159]

Figure 17 [CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]

Source: **[CONFIDENTIAL TO VIASAT]**.

(189) **[CONFIDENTIAL TO VIASAT]**[160]These concerns echo Delta's views on the benefits a LEO system would provide: "*footprint, weight, lower overall power consumption*."[161] Inmarsat also did not advance to a second round of proposals. **[CONFIDENTIAL TO VIASAT]**.[162]

(190) Equally, airlines operational in European short-haul flights have signalled that they too are considering NGSOs as part of the tendering process. **[CONFIDENTIAL TO VIASAT]**.[163] Similarly, AirBaltic's CEO Martin Gauss indicated the airline's potential interest in Starlink's IFC solution on Twitter.[164] The UK airline Virgin Atlantic has also publicly stated that "*[it] will be watching partner airline Delta's collaboration with Starlink closely as it plans its own next steps in in-flight wifi"*.[165] **[CONFIDENTIAL TO INMARSAT]**, **[CONFIDENTIAL TO VIASAT]**.

[154] **[CONFIDENTIAL TO VIASAT]**

[155] **[CONFIDENTIAL TO VIASAT]**.

[156] **[CONFIDENTIAL TO VIASAT]**

[157] **[CONFIDENTIAL TO VIASAT]**

[158] Ibid.

[159] **[CONFIDENTIAL TO VIASAT]**.

[160] **[CONFIDENTIAL TO VIASAT]**

[161] **[CONFIDENTIAL TO VIASAT]**; Allegiant Airlines echoed similar concerns and noted that LEO offerings, such as Starlink, address these challenges. See Is Allegiant ready to add inflight WiFi? Paxex.Aero, 12 September 2022 (attached as Annex ISCA.014).

[162] **[CONFIDENTIAL TO VIASAT]**

[163] **[CONFIDENTIAL TO VIASAT]**.

[164] Martin Gauss's tweet from 1 June 2022, available at: https://twitter.com/Gaussm/status/1531879966996156417?ref_src=twsrc%5Etfw.

[165] In-flight wifi: the dream, the dismal reality and the future, The Independent, 3 June 2022, available at: https://www.independent.co.uk/travel/news-and-advice/flight-wifi-plane-internet-air-travel-b2090572.html. Accessed on 3 November 2022.

7.7 Starlink

(191) Just since the P1D, Starlink has recorded a number of important milestones in its path to IFC expansion, further highlighting the rapid pace of development that this market is currently experiencing. This section details these developments.

7.7.1 Starlink Aviation launch in October

(192) The P1D noted that ISL technology is "not commercially operational for IFC and is challenging to develop" and that the technology enabling ESAs for commercial aviation was "still being developed". However, on 19 October 2022, Starlink launched its "Starlink Aviation" offer online for both commercial and business aviation customers via a dedicated Starlink Aviation webpage advertising "*high-speed, low-latency, in-flight internet with connectivity across the globe*" with the ability to make reservations now for delivery in 2023.[166] Starlink has therefore clearly developed the key technologies – Inter-Satellite Links ("**ISLs**") and Electronically Steered Phased Array antennae – which will allow it to service its customers in 2023.[167] All Starlink satellites launched since July 2021 have ISLs.

7.7.2 Starlink STC pipeline announced in late October / November

(193) As seen in Figure 18 below, Starlink's Aviation website lists the aircraft on which Starlink has STCs in development, including for commercial aviation aircraft used by JSX Air (ERJ-135 and -145) and Hawaiian Airlines (i.e., narrowbody A321 and widebody B787) and also reports other STCs on track for narrowbody B737 and B757; widebody A330 and regional jets ERJ-140, E170, E175, E190, E195 and DeHavilland Dash 8-400 (also called the Q400).[168]

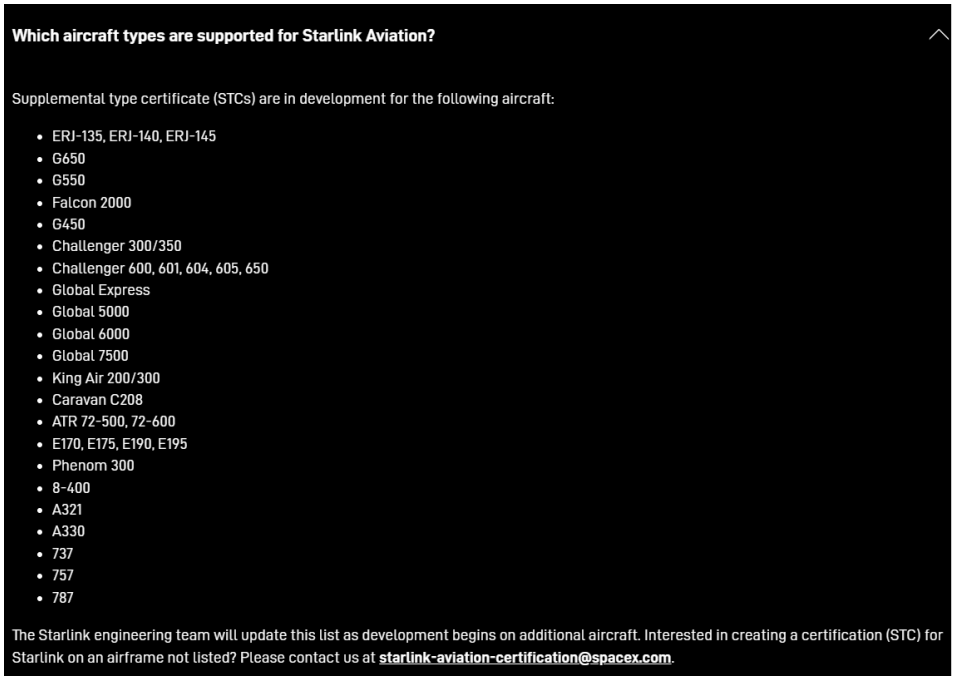
(194) Additionally, the Parties understand the references to a Starlink STC in development for the narrowbody A321 to also cover the A319 and A320, given that the three practically belong to the same aircraft type family (so in effect, the STC development process covers all three models). Together, these three models account for a large portion of the European short-haul market, highlighting Starlink's competitive potential specifically in Europe (considering the extraordinary nature of this move by Starlink to front-load its STCs before actually obtaining customer orders for specific fleet types). The only two commercial aviation aircraft types for which Starlink is not publicly noting that it is currently developing STCs are the A350 and the B777X. However, for these specific aircraft types, a contract is required prior to the OEMs allowing the STC development process, while they also represent a very small addressable market (which could be an additional reason for not prioritising the development of STCs for these two particular types of aircraft). It is also noteworthy that a significant share of these commercial aircraft types (namely: A330, B787, A321, B737, B757, Embraer ERJ-140, Embraer E170, Embraer E175, Embraer E190, Embraer E195, DeHavilland Dash 8-400) have been listed on the Starlink Aviation website since the P1D, sometime in late October/early November 2022. This further evidences the rapid pace at which Starlink's progress in the IFC space in general (and commercial IFC in particular) is unfolding.

[166] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 3 November 2022.

[167] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 8 November 2022.

[168] **[CONFIDENTIAL TO VIASAT]**

Figure 18 Starlink Aircraft Model STCs in Development



Which aircraft types are supported for Starlink Aviation?

Supplemental type certificate (STCs) are in development for the following aircraft:

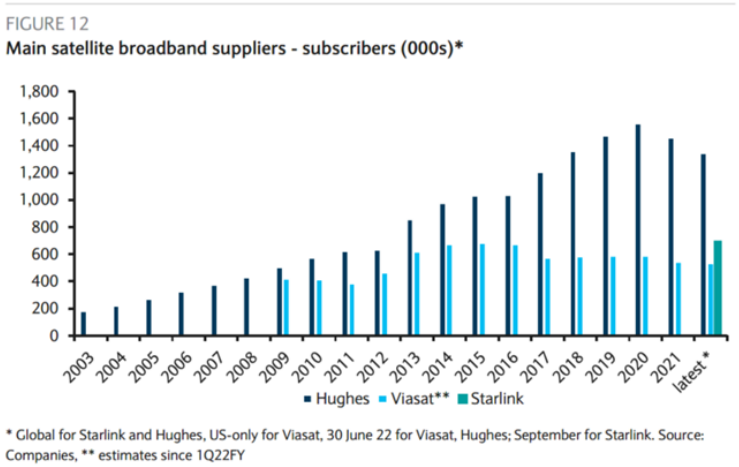
- ERJ-135, ERJ-140, ERJ-145
- G650
- G550
- Falcon 2000
- G450
- Challenger 300/350
- Challenger 600, 601, 604, 605, 650
- Global Express
- Global 5000
- Global 6000
- Global 7500
- King Air 200/300
- Caravan C208
- ATR 72-500, 72-600
- E170, E175, E190, E195
- Phenom 300
- 8-400
- A321
- A330
- 737
- 757
- 787

The Starlink engineering team will update this list as development begins on additional aircraft. Interested in creating a certification (STC) for Starlink on an airframe not listed? Please contact us at starlink-aviation-certification@spacex.com.

7.7.3 Starlink's unprecedented pace of expansion in IFC follows its success in residential broadband

(195) The above developments which took place within less than two months demonstrate the unprecedented pace of progress in IFC. In particular, the speed of Starlink's growth is remarkable and its rapid expansion in residential broadband is indicative of its likely trajectory in aviation, given that SNOs entering the retail market usually start with residential broadband before moving into mobility verticals (as Viasat did, and it seems Starlink is taking the same approach). By way of comparison, it took Viasat seven years to reach 600,000 retail broadband subscribers, whereas Starlink increased its number of subscribers from 250,000 to 700,000 in one and a half years.[169] This very rapid growth is illustrated by the below graph from Barclays' 2022 Report.

Figure 19 Evolution of the main satellite residential broadband suppliers from 2003 to 2022



Source: Satellite Services: To Infinity and Beyond – Volume 2, Barclays, 19 October 2022, Figure 12 (attached as Annex ISCA.010).

[169] Starlink has 700,000 subs, Advanced Television, 19 September 2022, available at: https://advanced-television.com/2022/09/19/starlink-has-700000-subs/. Accessed on 3 November 2022.

(196) **[CONFIDENTIAL TO VIASAT]**.[170]

7.7.4 Starlink activity in tenders in which Inmarsat is participating

(197) **[CONFIDENTIAL TO INMARSAT]**This was then implicitly confirmed by Airbus and reported in an industry article which reads: ""[*W]e're in talks with everyone", said Duifhuizen [Airbus upgrades marketing director] when pressed by RGN if the likes of OneWeb and SpaceX's Starlink might be included. 'We're not excluding anyone at this stage and [are] absolutely in discussions.*'"[171]

(198) **[CONFIDENTIAL TO INMARSAT]**[172]**[CONFIDENTIAL TO INMARSAT]**

7.7.5 [CONFIDENTIAL TO VIASAT]

(199) **[CONFIDENTIAL TO VIASAT]**

(200) **[CONFIDENTIAL TO VIASAT]**

(201) **[CONFIDENTIAL TO VIASAT]**[173]**[CONFIDENTIAL TO VIASAT]**[174]

Figure 20 **[CONFIDENTIAL TO VIASAT]**

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**

(202) **[CONFIDENTIAL TO VIASAT]**

(203) **[CONFIDENTIAL TO VIASAT]**

(204) **[CONFIDENTIAL TO VIASAT]**

(205) **[CONFIDENTIAL TO VIASAT]**

(206) **[CONFIDENTIAL TO VIASAT]**

(207) **[CONFIDENTIAL TO VIASAT]**[175]**[CONFIDENTIAL TO VIASAT]**[176] **[CONFIDENTIAL TO VIASAT]**.[177]

Figure 21 **[CONFIDENTIAL TO VIASAT]**

[CONFIDENTIAL TO VIASAT]
Source: **[CONFIDENTIAL TO VIASAT]**.

(208) The constraint imposed by NGSOs is not limited to price. Rather, Viasat has also had to improve their Service Level Agreements ("**SLA**") in response to the pressure of NGSOs. Tenders are not homogenous and so Viasat improving its offering on a non-price metric in response to NGSO competition is also evidence of the constraint imposed by NGSOs.

(209) **[CONFIDENTIAL TO VIASAT]** As set out above, **[CONFIDENTIAL TO VIASAT]**The Parties urge the CMA to use its third party RFIs to gather more evidence on these rumours and suggestions of NGSO constraint from the airlines themselves in order to verify the Parties' own experience.

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[170] **[CONFIDENTIAL TO VIASAT]**

[171] Airbus surprises with pact to add SES on supplier-furnished IFC, Runwaygirl Network, 31 October 2022, available at: https://runwaygirlnetwork.com/2022/10/airbus-ses-supplier-furnished/. Accessed on 3 November 2022.

[172] **[CONFIDENTIAL TO INMARSAT]**

[173] P1D, para.189(c).

[174] See RFI2.009.

[175] **[CONFIDENTIAL TO VIASAT]**

[176] **[CONFIDENTIAL TO VIASAT]**

[177] **[CONFIDENTIAL TO VIASAT]**

Figure 22 [CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]

Source: **[CONFIDENTIAL TO VIASAT]**

7.8 OneWeb

(210) On 18 October 2022, OneWeb announced a partnership with Panasonic to deliver LEO connectivity to airlines worldwide by 2023.[178] The agreement enables Panasonic to market, sell, and support OneWeb's high-speed, low-latency IFC services to commercial airlines worldwide,[179] using the LEO/GEO Stellar Blu ESA solution.[180] This confirms OneWeb's partnership approach to the IFC market (further to its agreements with Intelsat in commercial aviation, Gogo and Satcom Direct in business aviation). This approach will further accelerate OneWeb's market penetration by leveraging the well-established positions and existing customer support services of its partners (e.g., 24x7 service, portals, installation, value-added services). From the perspective of Panasonic, this partnership will further strengthen its leading position in long-haul IFC as well as in short-haul, including in Europe. This new capacity agreement also supports the Parties' argument that non-vertically integrated SSPs can take advantage of the latest and best in satellite innovation and have access to a diverse, open ecosystem of many satellites across multiple scale providers who continue to launch multiple new satellites each year.

(211) In October 2022, OneWeb launched 36 additional LEO satellites bringing OneWeb's total Gen 1 LEO constellation to 462 satellites which represents 70% of the total 648 satellites OneWeb intends launch to complete its first-generation constellation, including 60 spare in orbit satellites. With four more launches to go, OneWeb's CEO reported that they will "*complete the roll-out of the constellation by spring, which enables us to complete global commercial service by the end of next year*".[181] OneWeb and Eutelsat also released a new investor presentation which confirms that OneWeb expects full global coverage by Q4 of fiscal year 2023 and anticipates starting to generate revenues from aviation services in FY24 (year ending in March 2024), i.e., within less than two years.[182]

(212) **[CONFIDENTIAL TO INMARSAT]** it demonstrates the fact that, it too, directly competes with Parties in relation to standalone IFC offerings. **[CONFIDENTIAL TO INMARSAT]**[183]

(213) As set out in Annex ISCA.003 on NSGOs' participation in tenders, the Parties both reported OneWeb's presence, either as a direct IFC provider or through its partnership with Intelsat, in various tenders including **[CONFIDENTIAL TO INMARSAT]**, **[CONFIDENTIAL TO VIASAT]**, **[CONFIDENTIAL TO INMARSAT]**, **[CONFIDENTIAL TO VIASAT]**, **[CONFIDENTIAL TO INMARSAT]**, **[CONFIDENTIAL TO VIASAT]**.

[178] OneWeb and Panasonic Avionics Corporation to Deliver Low Earth Orbit (LEO) Connectivity to Airlines Worldwide, Panasonic Press Release, 18 October 2022, available at: https://www.panasonic.aero/press-release/panasonic-leo/. Accessed on 3 November 2022.

[179] OneWeb and Panasonic Avionics Corporation to Deliver Low Earth Orbit (LEO) Connectivity to Airlines Worldwide, Panasonic Press Release, 18 October 2022, available at: https://www.panasonic.aero/press-release/panasonic-leo/. Accessed on 3 November 2022.

[180] Panasonic Avionics highlights Stellar Blu antenna for OneWeb LEO service, 26 October 2022, available at: https://paxex.aero/panasonic-oneweb-stellar-blu-antenna-leo-inflight-internet/. Accessed on 3 November 2022.

[181] 36 OneWeb satellites successfully launched by ISRO/ NSIL from Sriharikota, OneWeb Press Release, 23 October 2022, available at: https://oneweb.net/resources/36-oneweb-satellites-successfully-launched-isro-nsil-sriharikota. Accessed on 3 November 2022.

[182] Eutelsat to combine with OneWeb, A leap forward in Satellite Connectivity, Eutelsat, 12 October 2022, p. 8 and 54, available at: https://www.eutelsat.com/files/PDF/investors/2021-22/Eutelsat%20Strategic%20Update%20-%20vF2-1.pdf. Accessed on 3 November 2022.

[183] **[CONFIDENTIAL TO INMARSAT]**

Part B: Comments on aspects of the analytical approach of the Phase 1 Decision

(214) Part A of this submission provided industry background on commercial aviation, including how the growing and largely untapped IFC demand has caused GEO and NGSO suppliers to invest in capacity and coverage that can be used in the IFC market. This Part B addresses specific aspects of the CMA's analytical approach in the P1D namely:

(i) the P1D relied on flawed reasoning to argue that the Parties are particularly close competitors;

(ii) the P1D finding that Parties can "lock-in" customers is not supported by evidence; and

(iii) there is growing evidence of credibility of NGSO expansion in commercial aviation IFC.

8 Phase 1 factors perceived to support 'strength' of Parties and 'weaknesses' of all other rivals

8.1 Ka v Ku technology

(215) Offering Ka-band does not make the Parties particularly close competitors. As outlined in the FMN and ILR,[184] and as the P1D recognises,[185] Ka- and Ku- bands are interchangeable and completely indistinguishable from an end-user perspective. Both GEO and NGSO satellites can operate in Ka- and Ku- frequency bands. There is no technical limitation for GEO and NGSO operators in their choice on the broadband frequency band for their satellite launches. In fact, some GEO and NGSO satellites are designed to use both Ka- and Ku- frequency bands simultaneously, such as using Ka-band for service between the satellites and gateways and Ku-band for service between the satellites and user terminals.

(0) There is no unambiguous technical or performance advantage of Ka-band over Ku-band. Ku-band capacity for broadband satellite services is estimated to be **more than twice** the increase in Ka-band capacity between 2021 and 2025. Ku-band remains widely used and is backed by sophisticated investors like Starlink and OneWeb who are investing billions into global Ku-band constellations (and have won contracts on the basis of this, e.g., Hawaiian). Other players – notably Intelsat, SES, Eutelsat, Telesat, Panasonic, Anuvu and Gogo – also compete effectively with Ku-band aviation offerings. For instance, Anuvu's IFC Ku-band services on Air France's A320 narrowbody aircraft was recently reported by an industry specialist to be "*substantially faster than on anything else in recent memory, and certainly anything else in Europe*".[186] Intelsat is investing billions in next generation Ku-band satellites, with satellite commitments across Airbus and Thales. Notably, Viasat's own offering of IFC to large business aircraft currently primarily relies on leased Ku-band capacity.

(216) Therefore, just because the Parties happen to both have Ka-band capacity, it does not mean that they are closer competitors, when they compete equally fiercely against Ku-band competitors as part of their everyday business.

(217) The P1D cites certain internal documents to the effect that Inmarsat viewed **[CONFIDENTIAL TO INMARSAT]**.[187] However, the Parties submit that this quote is taken out of context, given that all industry participants were **[CONFIDENTIAL TO INMARSAT]** during that time as a result of the **[CONFIDENTIAL TO INMARSAT]**. While both Intelsat and Anuvu (then Global Eagle) went through Chapter 11 restructurings in 2020, they have emerged far stronger financially and contractually. The fact that Inmarsat's main competitors are referred to under the rubric of "**[CONFIDENTIAL TO INMARSAT]**", which is merely a shared feature that allows an easier reference to these competitors as a group, in no

[184] ILR, paras. 25-31.

[185] P1D, para. 110.

[186] Air France's Anuvu Ku stuns on recent flight, RunwayGirl Network, 16 November 2022, attached as Annex ISCA.013.

[187] P1D, para. 148(a).

way can be taken to imply that the financial difficulties they were facing at the time should be attributed to their focus on **[CONFIDENTIAL TO INMARSAT]**. In fact, the Parties note that, in their own bidding experience, neither Viasat nor Inmarsat has encountered an airline RFP that specifically requires Ka-band or Ku-band capacity; the RFPs simply require the provision of IFC broadband services. This further reinforces the conclusion that, although Ka-band and Ku-band capacity have certain technical differences, this feature constitutes only one among many factors in a buyer's decision on which IFC provider to choose.

8.2 Vertical integration in the specific sense of "owned vs. leased capacity for IFC"

(218) The P1D highlights SNO/SSP vertical integration as being a very significant factor in the competitive position of an IFC provider, thereby dismissing the strength of two of the Parties' key competitors, Panasonic (the clear market leader) and Anuvu, who rely on leased capacity from third-party SNOs [188] and overstating the closeness of competition between the Parties.

(219) SNOs employ various business strategies to bring satellite capacity to end users:

(i) SNOs can sell wholesale capacity to SSPs, VARs, or vertically integrated SNOs, who then package that capacity with value-added services for end users;

(ii) vertically integrated SNOs can use their own capacity – with or without third-party capacity – to sell services directly to end users or to VARs, who sell to end users either in a distribution model or as an independent entity with additional services; and

(iii) SNOs can also utilise a mix of both strategies.

(220) Non-vertically integrated players can and very much do operate in IFC on the basis of leased capacity. Several IFC providers, including Viasat, have successfully built their businesses on the basis of leased capacity. Viasat itself entered the IFC market in Europe (and Australia and Brazil) based on entirely leased capacity and continues to rely on leased capacity. **[CONFIDENTIAL TO VIASAT]**[189]**[CONFIDENTIAL TO VIASAT]** Notably, most of Viasat's European narrowbody fleets were awarded while Viasat was leasing bandwidth from on KA-SAT (i.e. before it acquired sole control in April 2021). Viasat was not in any way seen as being at a disadvantage for not owning the satellite but rather operating on the basis of leased capacity and committed to the high level of service required by the airlines and generally expected from Viasat.

(221) Viasat still depends significantly on leasing capacity from third party satellites – particularly in relation to its Ku-/Ka- antennas on widebody aircraft – in order to provide coverage in areas not covered by the range of its GEO satellites. Viasat expects to continue leasing capacity indefinitely, even after completion of the Proposed Transaction and the eventual introduction of the three ViaSat-3 satellites.

(222) Inmarsat also leases Ka-band capacity from Telenor and others for additional capacity in Europe and the North Atlantic.

(223) Furthermore, the evidence in Annex ISCA.012 shows that nearly **[CONFIDENTIAL TO VIASAT]** **[CONFIDENTIAL TO INMARSAT]** European tenders are regularly won by IFC providers relying on leased Ku-band capacity. For example, Anuvu won a Norwegian Air bid in 2017 with a leased Ku-band

[188] P1D, paras. 107, 128, 148 and fns. 160, 161; CMA Issues Statement, para. 35(a).

[189] Please refer to Viasat Completes Acquisition of Remaining Stake in its European Broadband Joint Venture, Inclusive of the KA-SAT Satellite and Ground Assets, Viasat's Press Release, 29 April 2021, available at: https://www.viasat.com/about/newsroom/press-releases/viasat-completes-acquisition-remaining-stake-its-european/. As noted in para. 118 of the FMN, In April 2021, Viasat completed the acquisition of Eutelsat Communications' 51% share in its joint venture, Euro Broadband Infrastructure Sàrl ("**EBI**"), which was formed in 2016.

based free IFC proposal.[190] This clearly indicates that vertical integration is by no means the norm nor a prerequisite to operate competitively in commercial aviation IFC and that airlines do not necessarily favour this in their tenders.

(224) The Parties' internal documents further support the importance of leased capacity in achieving a satisfactory geographic coverage. An indicative example is provided in Figure 23, **[CONFIDENTIAL TO VIASAT]**

Figure 23[CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]

Source: **[CONFIDENTIAL TO VIASAT]**

(225) If vertical integration is to be seen as the "holy grail" of effective competition in this market, for all intents and purposes, other key players such as Intelsat (itself now vertically integrated due to the Gogo Commercial Aviation acquisition), as well as Panasonic (the clear market leader) and Anuvu, should be treated on a par with the Parties: as explained in the ILR, Panasonic and Anuvu operate largely based on long-term capacity leasing agreements concluded before the launch of the satellites concerned. This arguably has the same effect as vertical integration in the narrow sense, given that the uncertainty element of the leased capacity approach is effectively removed through such long-term arrangements that allow the Parties to achieve very attractive rates.[191]

(226) Panasonic continues to invest significantly, as an anchor long-term tenant, in third-party capacity commitments, as evident by its capacity commitment on Eutelsat 10B for extreme high throughput capacity over Europe and on APSTAR 6D also for XTS capacity. Those agreements were signed long before the launch of either of those satellites.[192] The Parties note that Panasonic's level of commitment to that capacity on those satellites leads experts and Panasonic to describe it as "*Panasonic Avionics' third-generation communications (Gen-3) network*" as if the satellites were Panasonic's.[193] On Eutelsat 10B, Panasonic "*collaborated closely with Eutelsat on this satellite design*" to make the capacity tailored to the need of airlines for IFC over Europe and the Middle East. This was also the case for APSTAR 6D, as this was a joint collaboration between APT Mobile Satcom and Panasonic in Asian mobility markets.[194]

(227) Anuvu continues to invest in its network by partnering with Astranis to launch a constellation of small GEO satellites, targeting two launches in 2023 with six more to follow.[195] Anuvu announced a significant Ka-band capacity deal with Telesat earlier in 2022, which will be a bridge to its planned commitment on Telesat's LEO Lightspeed constellation.[196]

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[190] Global Eagle Wins Five-Year Contract with Norwegian Air Shuttle Across Its Boeing 737NG Fleet for Inflight Entertainment, Connectivity, GlobeNewswire, 20 July 2017, available at: https://www.globenewswire.com/en/news-release/2017/07/20/1054850/25163/en/Global-Eagle-Wins-Five-Year-Contract-with-Norwegian-Air-Shuttle-Across-Its-Boeing-737NG-Fleet-for-Inflight-Entertainment-Connectivity.html . Access on 18 November 2022.

[191] ILR, para. 121.

[192] Panasonic Avionics Teams Up With Eutelsat to Deliver XTS In-flight Connectivity Across Europe and the Middle East, Panasonic Press Release, 5 December 2019, available at: https://www.panasonic.aero/press-release/panasonic-avionics-teams-up-with-eutelsat-to-deliver-xts-in-flight-connectivity-across-europe-and-the-middle-east/. Accessed 3 November 2022.

[193] Panasonic Avionics Switches On XTS Connectivity Over China, Panasonic Press Release, 13 July 2021, available at: https://www.panasonic.aero/press-release/panasonic-avionics-xts-connectivity-over-china/. Accessed 3 November 2022.

[194] Panasonic Avionics and APSATCOM Bring Extreme Throughput Satellite Technology to Asian Mobility Markets, Panasonic Aero, 3 August 2018, available at: https://www.panasonic.aero/press-release/panasonic-avionics-and-apsatcom-bring-extreme-throughput-satellite-technology-to-asian-mobility-markets/. Access on 18 November 2022.

[195] Anuvu Announces High Performance MicroGEO Satellite Constellation, Anuvu Press Release, 26 July 2021, available here: https://www.anuvu.com/our-company/newsroom/press-releases/detail/250/anuvu-announces-high-performance-microgeo-satellite-constellation. Accessed 3 November 2022.

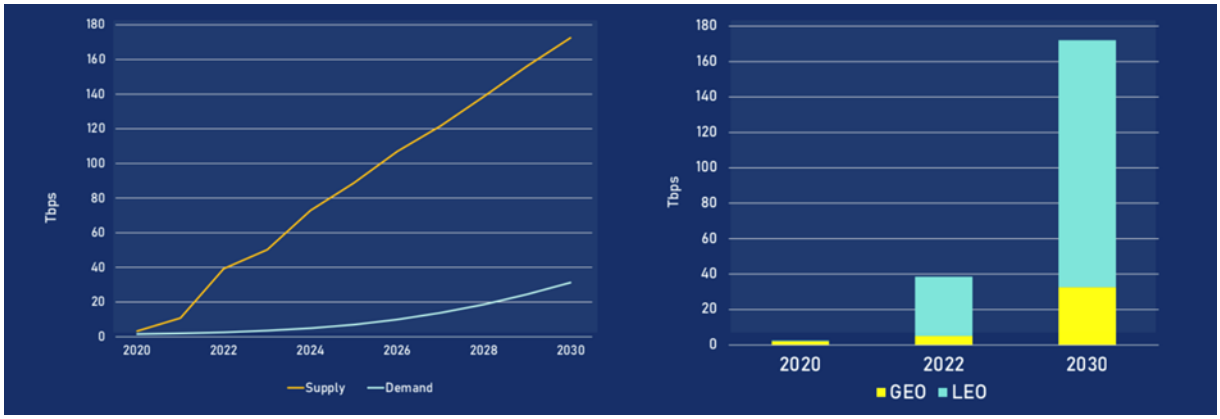
[196] Anuvu Secures Major Capacity Deal with Telesat, Anuvu Press Release, 14 February 2022, available here: https://www.anuvu.com/our-company/newsroom/press-releases/detail/268/anuvu-secures-major-capacity-deal-with-telesat. Accessed on 8 November 2022.

(228) Such arrangements also give Panasonic, Anuvu and others the flexibility to take advantage of innovation in satellite capacity from the entire satellite ecosystem. For instance, they were able to source HTS capacity (and now XTS capacity) when it became available without having to go through the cost and time investment of launching their own satellites. Similarly, those non-vertically integrated SSPs are now able to partner with NGSO satellite operators to access that capacity which is now in high demand on the IFC market as exemplified by the recent RFPs which make NGSO capacity a strict requirement (e.g., Air Canada and Bombardier). Both Panasonic and Anuvu have partnered up with NGSOs and already, OneWeb and Telesat (Lightspeed) respectively.

(229) Intelsat also remains a leading IFC provider on a dynamic growth trajectory as evidenced by the Gogo Commercial Aviation acquisition, with a strong recent track record of IFC tender wins, and very promising partnerships in development with other innovative market players such as OneWeb, in the direction of a multi-orbit offering.

(230) Further, with the sharp ongoing increase in the available supply of satellite capacity, SSPs are able to procure capacity at rates that are decreasing. This was reflected in SES' latest Earning Call for Q3 3033 where they stated: "*we've seen our other service provider customers also acquiring new bandwidth because they're seeing demand picking up from an aviation standpoint*".[197] Increased capacity and innovative HTS technology have pushed the prices of satellite capacity down over the past years. As illustrated by the left part of Figure 25 below, both total capacity supply and the total volume of capacity leased have more than doubled between 2016 and 2020, whereas the total revenue earned from capacity (both in absolute terms and on a per-unit basis) have decreased over the same period.[198] Therefore, pricing for capacity has become cheaper and will become even cheaper as additional capacity from GEO and NGSO competitors rapidly comes online. This will ensure that non-vertically integrated competitors can continue to serve the growing demand for IFC (and other verticals) at competitive prices using leased capacity.

Figure 24 - Satellite capacity supply and demand



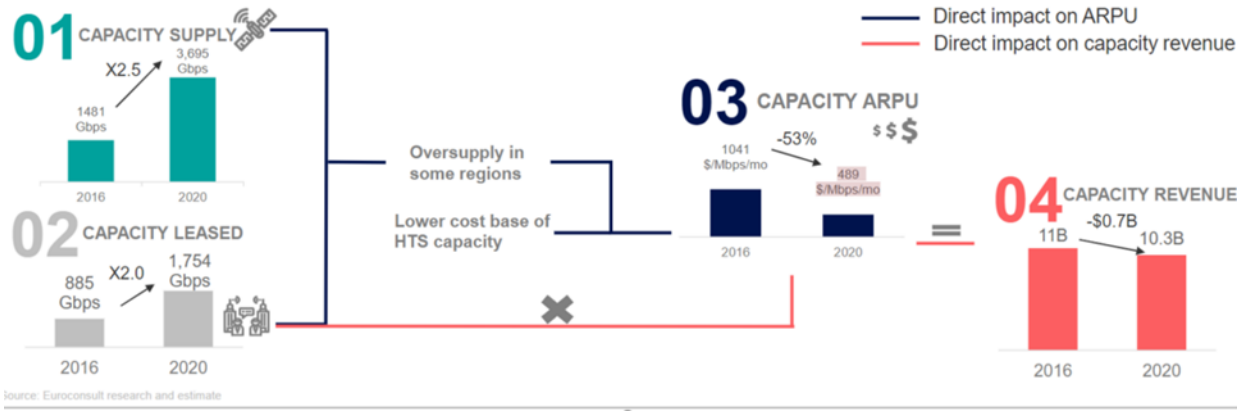
Source: NSR, Global Satellite and Capacity Supply and Demand, June 2021; Inmarsat checkin deck, slide 22.

(231) **[CONFIDENTIAL TO VIASAT]**

[197] Q3 2022 SES SA Earnings Call – Final, 3 November 2022, available at: https://www.newsdesk.lexisnexis.com/click/?p=aHR0cHM6Ly93d3cubmV3c2Rlc2subGV4aXNuZXhpcy5jb20vYXJ0aWNsZS80OTE3ODUzNzgxNC5odG1sP2hsaD0xNmZhNGI2MyZmaWQ9MTQxODE0NyZjaWQ9TVRBNE56WXkmdWlkPU1USXdNVEUxT1E&a=49178537814&f=TmV3cw&s=YWxlcnQ&u=Y2Fyb2xlLnRob21hc0BsaW5rbGF0ZXJzLmNvbQ&cn=TGlua2xhdGVycyBCdXNpbmVzcyBTZXJ2aWNlcw&ci=108762&i=1368&si=80333&fmi=655596059&e=RkQgKEZhaXlgRGlzY2xvc3VyZSkgV2lyZQ&d=1201159&t=3&h=1&mbc=Q1QzL2E9NDkxNzg1Mzc4MTQmcD0xNGUmdj0xJmhsaD0xNmZhNGI2MyZmaWQ9MTQxODE0NyZ4PUlaa0tTMllmSjlNbW1HWmIxSWhkSkEmdTE9TkQmdTI9dXAtdXJuOnVzZXI6UEExODc2MzA3NTQ&fi=1418147&ai=263139&wa=1&ac=263139_1667725872000&ck=d2ea8af13638f936e143058fb8ec743a. Accessed on 22 November 2022.

[198] Annex 16.2 to the FMN, Satellite Connectivity and Video Market, Euroconsult, September 2021, p. 13.

Figure 25 Structural drivers for price and revenue drop in satellite capacity



Source: Annex 16.2 to the FMN, Satellite Connectivity and Video Market, Euroconsult, September 2021, p.13.

(232) Finally, the Parties' internal documents on which the CMA relies to support the assertion that vertical integration is important for supplying IFC to commercial aviation do not bear out that claim. These statements are taken out of context and, when read along with other passages within the same document, cannot support the conclusions drawn in the P1D.

(233) The P1D asserts that "*Inmarsat* **[CONFIDENTIAL TO INMARSAT]**.[199] Notably, the sentence quoted by the CMA reads in full as follows: **[CONFIDENTIAL TO INMARSAT]** [emphasis added] The reference to **[CONFIDENTIAL TO INMARSAT]** is merely a turn of phrase used to refer to **[CONFIDENTIAL TO INMARSAT]**. In the same vein, **[CONFIDENTIAL TO INMARSAT]**.

(234) Quoting the same Inmarsat internal document, the P1D highlights an Inmarsat reference to Panasonic and Anuvu as **[CONFIDENTIAL TO INMARSAT]**.[200] This reference is also quoted in a partial manner which does not accurately reflect its meaning. The relevant sentence from Inmarsat's May 2021 **[CONFIDENTIAL TO INMARSAT]**, when viewed in full, reads as follows: **[CONFIDENTIAL TO INMARSAT]**.[201] [emphasis added] Again, while **[CONFIDENTIAL TO INMARSAT]** the follow-on part of the sentence indicates that **[CONFIDENTIAL TO INMARSAT]**. The P1D's representation of this reference as implying that the Parties do not consider Panasonic Avionics and Global Eagle/Anuvu a considerable competitive threat is therefore misleading.[202] It should be remembered that the entire IFC industry was in difficulty in this period due to the impact and uncertainty around the Covid-19 pandemic.

(235) In addition, the same page of the **[CONFIDENTIAL TO INMARSAT]** from which the P1D picks out the quote that **[CONFIDENTIAL TO INMARSAT]**,[203] also notes that Panasonic is **[CONFIDENTIAL TO INMARSAT]**.[204] Again, such quotes provide much-needed nuance to the P1D's selected interpretation of the Parties' internal documents, and indicate that vertical integration is only *one among many* factors in the Parties' assessment of other market players' competitive strengths and weaknesses.

(236) In a similar vein, a quote about the perceived benefits of vertical integration from Viasat's 2021 **[CONFIDENTIAL TO VIASAT]**[205] should be read in the context of the rest of the document, which paints a much fuller picture of the general market landscape and related challenges for incumbents to compete.

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[199] P1D, para. 148(a), referring to Annex 8.12 to Inmarsat's response to the CMA's second Notice, **[CONFIDENTIAL TO INMARSAT]**, May 2021, p. 1 and 5.

[200] P1D, para. 148(a).

[201] Annex 8.12 to Inmarsat's response to the CMA's second Notice, **[CONFIDENTIAL TO INMARSAT]**, May 2021, p. 5.

[202] P1D, para. 148.

[203] P1D, para. 148(a).

[204] **[CONFIDENTIAL TO INMARSAT]**.

[205] **[CONFIDENTIAL TO VIASAT]**.

Indicatively, the same document highlights **[CONFIDENTIAL TO VIASAT]**.[206] The passage continues by adding: **[CONFIDENTIAL TO VIASAT]**.[207]

(237) Overall, the various phrases selected in the P1D from certain of the Parties' internal documents to refer to the perceived benefits of vertical integration carry disproportionate weight in the P1D's analysis. As indicated above, the same documents quoted in the P1D in this regard paint a wider picture of an extremely dynamic market with strong competition coming from incumbents and new entrants (i.e. LEOs), and with vertical integration being a "good-to-have" at most – certainly not a prerequisite to competing strongly.

8.3 Contradictions in the importance of global coverage and the uncertainties of future expansion

(238) While SNOs and SSPs may use their future available capacity and coverage in tenders as an attractive feature to appeal to airlines and include such commitments in their contracts, as mentioned above, until the additional capacity is successfully launched and operational, there remain risks and there is no guarantee that the satellite provider will be able to deliver these services.

(239) The P1D dismisses the importance of Viasat's current lack of global coverage based on a presumption that the ViaSat-3 satellites will be launched successfully and will thus provide Viasat with the global coverage it currently does not have within the next two years. The P1D views the risks associated with the prospects of the ViaSat-3 constellation launches as "*inherent in all satellite launches*" and as such insignificant, based on the lack of evidence that the risks of ViaSat-3 are seen as material.[208] However, although the Parties agree with the statement that the inherent launching risks of ViaSat-3 are similar to the launch of any other GEO satellites, such risks should not be underplayed, given that one small error or fault at launch or once deployed could result in huge cost consequences. For example, the **[CONFIDENTIAL TO VIASAT]** Similarly, the total loss of the Intelsat 29e GEO satellite in April 2019 resulted in an "asset impairment charge" of USD 381.6 million for Intelsat.[209]

(240) Indeed, the risks associated with GEO satellites are far higher than LEOs given their larger size, fewer number and greater potential coverage. Unlike NGSO satellites, GEO satellites carry an important risk as they cover a large part of the Earth and there is much more riding on each satellite, compared to the hundreds, or even thousands, of LEO satellites that might make up an NGSO constellation. If a LEO satellite fails (e.g. a Starlink satellite), the constellation can easily adapt to cover the gap, given that NGSO satellites are generally interchangeable, thus providing resiliency/in-orbit redundancy. However, if a GEO satellite fails to launch, then the entire deployment program takes a multi-year hit, as it takes a much longer time to build and attempt to launch another GEO satellite compared to the next batch of LEOs in a planned constellation.

(241) The delays suffered by the ViaSat-3 programme are not common in the industry. For instance, the launch of ViaSat-2 did not suffer such extensive delays nor did Inmarsat's multiple satellite launches. It is also important to consider that it took more than seven years from announcement to the currently scheduled first launch of the first ViaSat-3 satellite, which has yet to take place. In contrast, Starlink's launches have been completed not only on schedule, but far ahead of most industry expectations.

(242) At the same time, the P1D seems to place considerably more weight on the risks associated with NGSOs' (notably Starlink and OneWeb) latest technological developments, including ISLs and ESAs,

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[206] **[CONFIDENTIAL TO VIASAT]**

[207] **[CONFIDENTIAL TO VIASAT]**

[208] P1D, para. 132.

[209] Investigators conclude external forces killed an Intelsat satellite in April, Spaceflight Now, 30 July 2019, available at: https://spaceflightnow.com/2019/07/30/investigators-conclude-external-forces-killed-an-intelsat-satellite-in-april/#:~:text=Investigators%20probing%20the%20sudden%20failure,%24382%20million%20hit%20to%20Intelsat%27s. Accessed on 22 November 2022.

with little to no substantiation provided for this differentiated approach.[210] Indeed, the key argument in the P1D in this regard seems to be that Viasat and GEO operators in general have previously overcome the various barriers to successful launch of constellations.[211] However, the same can be said about Starlink and OneWeb, who are already in a very advanced stage of their LEO constellation deployments. Indeed, Starlink has already successfully launched 3,133 satellites (with 2,646 satellites in their operational orbits and the others on the way),[212] which will deliver global coverage for IFC by H1 2023, so has already overcome the inherent risks associated with satellite launches, as compared with Viasat who is yet to launch the ViaSat-3 satellites. In fact, while a handful of Starlink satellites were deployed into unsustainably low orbits, in 65 consecutive launches Starlink/SpaceX has never suffered a launch failure.

(243) The Parties submit that this inconsistency in approach results in a skewed picture of the comparable risks and that the uncertainties around the successful implementation of the ViaSat-3 plans should be assessed on an equal footing with any uncertainties surrounding Starlink's and OneWeb's prospects for ongoing successful launches of their respective LEO constellations.

(244) **[CONFIDENTIAL TO VIASAT]**as shown in Figure 26 below.

Figure 26 [CONFIDENTIAL TO VIASAT]

[CONFIDENTIAL TO VIASAT]

Source: **[CONFIDENTIAL TO VIASAT]**

(245) Viasat has been marketing its ViaSat-3 capabilities for a number of years. The P1D considers that **[CONFIDENTIAL TO VIASAT]**[213]**[CONFIDENTIAL TO VIASAT]**In its Q2 FY2023 shareholder letter, Viasat noted that ViaSat-3 launch is "*anticipated in Q1 CY2023, with a target of earlier in that period, which is later than we had planned*".[214]

(246) **[CONFIDENTIAL TO VIASAT]**

(i) [CONFIDENTIAL TO VIASAT]

(ii) [CONFIDENTIAL TO VIASAT]

(iii) [CONFIDENTIAL TO VIASAT]

(iv) [CONFIDENTIAL TO VIASAT]

(v) [CONFIDENTIAL TO VIASAT]

8.4 Line-fit vs retro-fit and pipelines

(247) Finally, the P1D relies on "*Viasat's progress towards obtaining line-fit certifications*" as another key reason why it considers the Parties would likely compete "*even more closely in the near future*" absent the merger.[215] In doing so, the P1D places specific emphasis on line-fit certification, as a purportedly

[210] P1D, paras. 180-183.

[211] P1D, fn. 165.

[212] Another batch of Starlink satellites launch from Cape Canaveral, SpaceFlightNow, 20 October 2022, available at: https://spaceflightnow.com/2022/10/20/falcon-9-starlink-4-36-live-coverage/. Accessed on 08 November 2022. See notes on total satellites at bottom of table on the following website: https://en.wikipedia.org/wiki/List_of_Starlink_launches. Accessed on 24 November 2022.

[213] P1D, paras. 131, 132 and fn. 164.

[214] Viasat, Q2 FY23 Shareholder Letter, 8 November 2022, available at: https://investors.viasat.com/static-files/fc0715db-6b88-4b29-ac39-f42ea3853b2b. Accessed on 18 November 2022.

[215] P1D, para. 35(a).

key element of the Parties' activities in commercial aviation IFC.[216] However, this over-emphasis on line-fit certification is misplaced.

8.4.1 Certifications are not a prerequisite to winning IFC contracts

(248) Certification is not a prerequisite to win tenders and the P1D's implication that certification is a pre-condition to a provider being able to compete in a tender process is factually incorrect. This is consistent with the Parties' experience, which is set out in detail below, data from the IFC industry in general and recently borne out by the Starlink wins which happened before Starlink's IFC system obtained certifications. The investment required for certification across all major air frames is a small fraction of that required for launching global coverage. Starlink has already demonstrated that they are willing to make this investment in certifications across most of these types ahead of wins (see Figure 18 above).

(249) Overall, as the evidence shows in Annex ISCA.012, more than 30% of IFC selections for both retro-fit as well as line-fit contracts, are made well in advance of the provider having certification for these solutions.

(250) For retro-fit:[217]

(i) In approximately 40% of retro-fit IFC fleet awards, the provider did not have an STC for the aircraft type prior to receiving the award.

(ii) [CONFIDENTIAL TO VIASAT]

(251) For line-fit:[218]

(i) In approximately 21% of cases, the provider did not actually have line-fit certification for the aircraft type prior to receiving the award.

(ii) [CONFIDENTIAL TO VIASAT]

(252) Importantly, in **[CONFIDENTIAL TO VIASAT]**

(253) Some recent examples of Viasat being selected before being line-fit offerable include the following (see Annex ISCA.012 for the details):[219]

(i) **[CONFIDENTIAL TO VIASAT]**

(ii) [CONFIDENTIAL TO VIASAT]

(iii) [CONFIDENTIAL TO VIASAT]

(iv) [CONFIDENTIAL TO VIASAT]

(v) [CONFIDENTIAL TO VIASAT]

(vi) [CONFIDENTIAL TO VIASAT]

(vii) [CONFIDENTIAL TO VIASAT]

(254) It is therefore common for IFC providers to (successfully) participate in line-fit and retro-fit opportunities even without having the required certifications when submitting the tender application. Furthermore, airlines will often circulate tenders without an established preference for either line-fit or retro-fit operability. **[CONFIDENTIAL TO VIASAT]**.

[216] P1D, paras. 103-104.

[217] IFC tender awards by airlines (2016-2022), Viasat (attached as Annex ISCA.012).

[218] IFC tender awards by airlines (2016-2022), Viasat (attached as Annex ISCA.012).

[219] IFC tender awards by airlines (2016-2022), Viasat (attached as Annex ISCA.012).

8.4.2 The Parties' participation in line-fit and retro-fit opportunities is considerably more balanced than presented in the P1D

(255) The P1D notes that "**[CONFIDENTIAL TO BOTH PARTIES]** *of the commercial opportunities in which the Parties have recently participated have been line-fit opportunities*", referencing in this regard paragraph 793 and Table 17 to the FMN.[220] However, although Table 17 of the FMN does technically present line-fit opportunities as representing a **[CONFIDENTIAL TO BOTH PARTIES]** of the January 2019 – June 2022 opportunities of the Parties in commercial aviation IFC, the same table reveals that **[CONFIDENTIAL TO VIASAT]**% of Viasat's tenders and **[CONFIDENTIAL TO INMARSAT]**% of Inmarsat's tenders since 2019 have involved a retro-fit component (in most cases **[CONFIDENTIAL TO BOTH PARTIES]**). This constitutes an overall much more **[CONFIDENTIAL TO BOTH PARTIES]** than the one that is derived from merely stating that **[CONFIDENTIAL TO BOTH PARTIES]** focused on line-fit.

8.5 Number of aircraft involved is a better metric than number of RFPs in terms of estimating the Parties' participation in line-fit and retro-fit opportunities

(256) The P1D's focus on a simple count of line-fit and retro-fit opportunities[221] does not adequately reflect the actual number of line-fit and retro-fit aircraft involved in each opportunity. The Parties consider that the number of aircraft involved in each opportunity is a better proxy for the weight each opportunity has on the competitive position each IFC provider.

(257) In fact, the Parties' data indicates that using the number of aircraft as a metric reveals that approximately **[CONFIDENTIAL TO INMARSAT]** of all aircraft covered by the RFPs for which Inmarsat has tendered since 2019 entailed retro-fit (**[CONFIDENTIAL TO INMARSAT]**% as compared to **[CONFIDENTIAL TO INMARSAT]**% when using a simple RFP count). Although Viasat's retro-fit share remains **[CONFIDENTIAL TO VIASAT]** using either of the two metrics, it is notable that its share of line-fit opportunities drops when using the number of aircraft metric (**[CONFIDENTIAL TO VIASAT]**% as compared to **[CONFIDENTIAL TO VIASAT]**% when using a simple RFP count).

Table 8 Viasat's and Inmarsat's opportunities in commercial aviation by line-fit and retro-fit (period January 2019 to June 2022)

Party	Total number of RFPs	Total number of aircraft	Number of line-fit aircraft	Number of retro-fit aircraft	Number of mix aircraft (allocation not possible) [222]	Line-fit (%)	Retro-fit (%)	Proportion not allocatable
Viasat	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]
Inmarsat	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]	[CONFIDENTIAL TO INMARSAT]

Source: Parties.

8.5.1 The Parties' own businesses as well as third-party projections demonstrate the enduring predominance of retro-fit

[220] P1D, para. 100.

[221] P1D, para. 100.

[222] For these aircraft, Viasat's tender data indicates that IFC will be installed via an undetermined mixture of line-fit and retro-fit.

(258) As set out in Table 9 below, almost **[CONFIDENTIAL TO VIASAT]**% of Viasat's **[CONFIDENTIAL TO VIASAT]** installations to date have been retro-fit based on the number of aircraft. When looking at the number of fleet opportunities awarded, **[CONFIDENTIAL TO VIASAT]**% of airline fleets awarded overall since 2016 are for retro-fit with **[CONFIDENTIAL TO VIASAT]**% of Viasat airline fleet awards for retro-fit over that period. For instance, in 2018 Viasat and **[CONFIDENTIAL TO VIASAT]** performed over **[CONFIDENTIAL TO VIASAT]** retro-fit installations; and in a recent six-month period it carried out over 300 retro-fit installations on **[CONFIDENTIAL TO VIASAT]** (both on 'new install' and a 'rip and replace' basis, where another IFC provider is replaced).

Table 9 Viasat split between line-fit and retro-fit aircraft installations (by year based on number of aircraft and total)

	2018	2019	2020	2021	2022	Total
Line-fit (%)	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]
Retro-fit (%)	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]	[CONFIDENTIAL TO VIASAT]

Source: Viasat.

(259) While the percentage of line-fit installations has been increasing, it is expected that retro-fits will continue to outpace line-fits for the next several years. Significantly, **[CONFIDENTIAL TO VIASAT]**% of Viasat's European narrowbody installations to date have been either post-delivery modifications or retro-fits.

(260) For Inmarsat's GX and EAN businesses, **[CONFIDENTIAL TO INMARSAT]** of total commercial aviation IFC installations to date have been retro-fit (based on the number of aircraft).[223] Furthermore, for European tenders Inmarsat is considering competing in, the installation type for at least **[CONFIDENTIAL TO INMARSAT]** aircraft is retro-fit.[224]

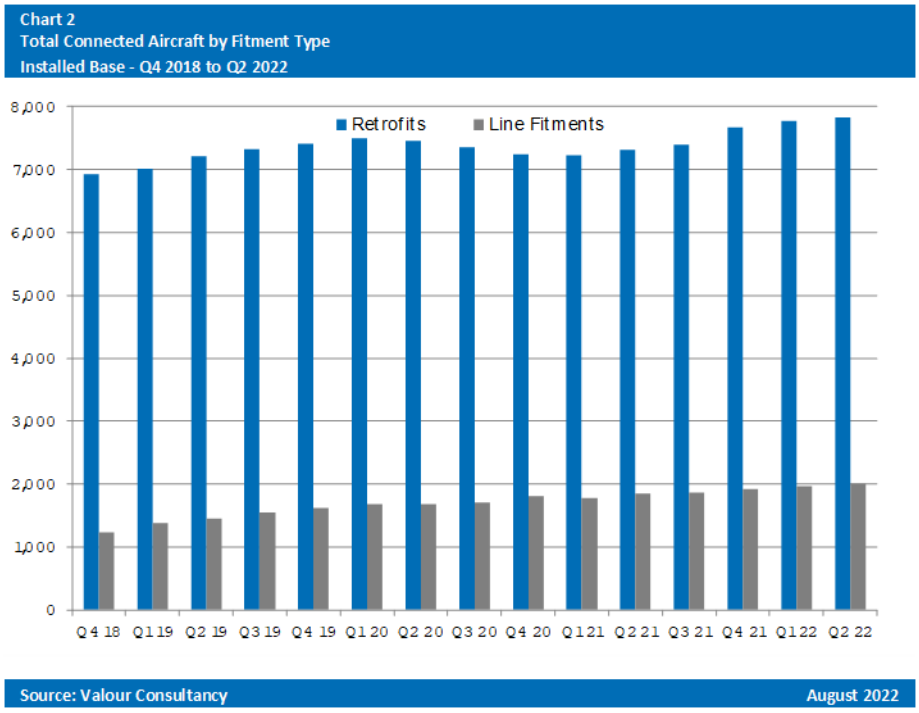
(261) Similarly, third-party experts show that in the industry as a whole, retro-fit installations have played and are expected to continue to play a crucial role in the IFC market alongside line-fit installations. For example, the latest IFC tracker data from Valour Consultancy for Q2 2022, shows how the number of retro-fit and line-fit aircraft has evolved in the past few years with line-fit representing only a small share of installations from Q4 2018 to Q2 2022. Importantly, the chart shows that the relative proportions of retro-fit and line-fit aircraft have not changed significantly in the past few years, so it would be incorrect to say that line-fit certifications are becoming more important in recent years to compete effectively.[225]

[223] **[CONFIDENTIAL TO INMARSAT]**

[224] **[CONFIDENTIAL TO INMARSAT]**

[225] P1D, para. 104.

Figure 27 Total connected aircraft by Fitment Type (Q4 2018 – Q2 2022)[226]



Source: In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002)

(262) Even more significantly, Valour Consultancy estimates confirm that retro-fit is on a set course to remain the prevalent IFC solution on commercial aircraft up until 2029, consistently overtaking line-fit in annual installations and is thus projected to remain crucial for new entrants (see Table 10 below). In fact, Valour Consultancy forecasts that even by 2029, over 50% of aircraft deliveries will not have IFC installed as a line-fit (approximately 70% by 2025 and 55% by 2029).[227]

Table 10 Annual Gross Installations of IFC on Commercial Aircraft by Type: Forecast (2019-2029)

Fitment Type	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Sum (2019-2029)
Retro-fit	468	351	461	635	841	920	981	940	899	837	7,333
Line-fit	102	229	313	397	435	513	615	732	835	916	5,087
Total	570	580	774	1,032	1,276	1,433	1,596	1,672	1,734	1,753	12,420

Note: Figures represent gross installations during calendar year.
Source: Annex 16.4 to the FMN, The Future of In-Flight Connectivity – 2020 Edition, Valour Consultancy, Table 3.11.

(263) The Parties highlight that even for newly ordered aircraft, retro-fit can sometimes constitute an attractive option for airlines as a retro-fit installation offer from an IFC provider might be cheaper than a line-fit installation and also quicker to finalise. Viasat reports at least **[CONFIDENTIAL TO VIASAT]**.

(264) As regards the P1D's assertion that "*a proportion of uncommitted aircraft will also be approaching retirement and would not, therefore, justify the investment to install IFC*",[228] the Parties note first and

[226] This chart includes aircraft that use narrowband based IFC solutions (excluding narrowband based cockpit connectivity). This inclusion is unlikely to have any material impact given the small number of globally connected aircraft that use narrowband based IFC.

[227] Annex 16.4 to the FMN, The Future of In-Flight Connectivity – 2020 Edition, Valour Consultancy, Figure 3.3.

[228] P1D, fn. 133.

foremost that this fact is of little consequence, given that these aircraft headed for retirement will of course be replaced by new aircraft. In any event, the numbers do not bear out this statement. Specifically, as the Parties noted in the ILR,[229] approximately 80% of the EU commercial aviation short-haul market consists of uncommitted aircraft. Considering an average life span of a commercial aircraft of approximately 30 years,[230] this would imply that on average 3.3% of all commercial aircraft retire each year. In fact, this constitutes a conservative assumption: with the increase of in-service aircraft over the last three decades, some third-party estimates place the global proportion of aircraft which retired in e.g. 2021 at 1.5%.[231] Assuming that current aircraft are equally likely to have any number of years (from 1 to 30) remaining in their lifespan, implies that two-thirds of current aircraft would have 10 years or more remaining in their lifespan. Assuming further that airlines would only consider aircraft with a remaining lifespan of at least 10 years as suitable for retro-fit, this implies that one can expect that two-thirds of EU short-haul aircraft which are uncommitted, or around 50% (two-thirds of 80%) of all EU short-haul aircraft, are currently still eligible for retro-fit.

(265) In conclusion, the evidence is compelling that retro-fit is an extremely important source of demand and a route to market for both existing and new players – this should not be underplayed in the CMA's assessment and the CMA's view that Viasat's purported progress towards line-fit should not be considered a key factor that increases the closeness of competition between the Parties.

8.5.2 The parties' experience confirms that STCs are on average obtained within 12 months (with an additional three months for an STC from a second authority) and TCs take on average between 12 to 24 months

(266) The Parties submitted in previous submissions that line-fit certifications (TCs) take on average between 12 to 24 months and that retro-fit certifications (STCs) are obtained on average within 12 months with an additional three months needed on average to obtain an equivalent STCs from a second authority.

(267) The P1D reported that OEMs estimated that line-fit certifications take between 18 months to three years.[232] Similarly, the CMA reported that third-party evidence indicates that STCs take between six months to two years to be obtained and up to six months for STCs in subsequent jurisdictions.[233]

(268) The Parties do not disagree with such statements as indeed certain TCs and STCs have previously taken longer than 24 months and 12 months respectively to obtain, in particular due to COVID-related delays. However, the Parties note that this fact has little bearing on competition, given that airlines make their selections well in advance of actual installation, factoring into their assessment the time lag of certification.

(269) In any event, the Parties maintain their initial estimates and provide additional evidence to support their statements. For Inmarsat, the average length of time to obtain its STCs is **[CONFIDENTIAL TO INMARSAT]**.[234]

[229] ILR, para. 34.

[230] How are planes decommissioned, and how much value can be salvaged from their parts?, Flexport, 1 June 2022, available at: https://www.flexport.com/blog/decommissioned-planes-salvage-value/. Accessed on 3 November 2022.

[231] The afterlife of retired aircraft: what are old planes turned into?, AeroTime Hub, 8 June 2022, available at: https://www.aerotime.aero/articles/31236-second-life-of-retired-plane#:~:text=In%20its%20recent%20research%2C%20NAVEO,had%20been%20sent%20for%20scrapping. Accessed on 3 November 2022.

[232] P1D, para. 97.

[233] P1D, para. 98.

[234] **[CONFIDENTIAL TO INMARSAT]**.

8.6 Comments on Phase I tender data analysis

(270) The CMA's own tender analysis in the P1D concludes that Viasat has won nearly half of all relevant tenders across European short-haul and long-haul.

(271) That is not consistent with the number of wins in the Viasat tender data. The P1D claims that Viasat won 11 tenders since 2019 (out of 22) but the Viasat tender data shows only 2 wins in either European short-haul or global long-haul for UK or European-based airlines.

(272) The Parties believe the sample size employed in the P1D was too small and would expect the number of Viasat wins to be lower than 2 within a more-realistic larger sample. Certainly, Viasat's shares do not support the P1D view that it is winning 50% of tenders.

9 Market definition and share data

9.1 Distinct markets for short-haul and long-haul fleets

(273) The P1D left the market definition open and examined effects on the provision of IFC on (i) short and medium haul flights from/to and within Europe; and (ii) long-haul market from/to Europe.[235]

(274) However, the P1D does acknowledge that: airlines typically use narrowbody flights for short-haul and widebody for long-haul; tenders are run on a model-by-model basis; and IFC coverage varies between flying routes.[236] All of these factors indicate that there are distinct markets for short-haul and long-haul flights in/out of Europe.

(275) The Parties believe that regardless of whether the CMA considers the supply of IFC to short-haul and long-haul flights as two separate markets, or two segments within an overall IFC market, the competitive effects analysis should be the same.[237]

9.2 Parties have taken a consistent approach to market definition

(276) The P1D notes that the Parties have changed their position in relation to geographic scope between the FMN and the ILR.[238] The Parties wish to clarify that their position did not change – only that the language used was modified to reflect the CMA's classification in the Issues Letter ("**IL**").

(277) In the FMN, a distinction was made between IFC for European short-haul and long-haul flights. In the case of long-haul, the Parties referred to the Euroconsult definition of flights of more than 4,000 km[239] and which roughly correspond to six hours or more of flying time. The market share data provided were based on third-party reports which distinguished between narrowbody and widebody aircraft (rather than flight route) and this was used as a proxy for short-haul and long-haul flights.

(278) For short-haul, a regional market was defined to include UK and EEA headquartered airlines for the reasons set out in paragraphs 654-656 of the FMN. For long-haul, a global market was defined for the reasons set out in paragraphs 657-658 of the FMN.

(279) In the IL, the CMA stated that it wanted to focus its investigation on flights that affect European / UK passengers and had identified two distinct areas of potential concern: (i) intra-European flights, and (ii) intercontinental flights to/from Europe. In addition to the European short-haul shares (which provide a good proxy for the competitive conditions for intra-European short-haul flights and intercontinental flights

[235] P1D, para. 76.

[236] P1D, paras. 71, 72 and 74.

[237] FMN, para. 638.

[238] P1D, paras. 67-69.

[239] See for instance, Euroconsult's Data Snapshot from 18 January 2022, available at: https://www.eurocontrol.int/sites/default/files/2022-01/eurocontrol-data-snapshot-24_20220118.pdf. Accessed on 7 February 2022.

short-haul to/from Europe), the Parties had therefore also presented shares for European long-haul, which provide a good proxy for inter-continental long-haul flights to / from Europe. It was not disputed that the long-haul market is global.

(280) Indeed, the P1D itself presents inconsistent views on market definition and market shares. In particular, the P1D stated that it will examine the effects on the provision of IFC for long-haul flights to and from Europe. However, in the P1D has relied on the *global* long-haul shares and has not constructed market shares for long-haul flights to and from Europe.[240]

9.3 P1D has not adequately reflected the reality of global long-haul shares in its assessment

(281) The P1D has stated that it will examine the effects of the merger on the provision of IFC services for long-haul flights to and from Europe but did not seek to assess shares on this basis in the P1D. The Parties' primary position is that the CMA should undertake a forward-looking assessment of the market and that market shares are therefore of limited relevance. However, to the extent the CMA does consider it valuable to look at historic market share data, there is no support for an SLC finding in respect of this segment.

(282) Using desk research on whether each airline has operated a long-haul flight to or from Europe in November 2022, the Parties have constructed alternate share of supply estimates for long-haul flights to or from Europe. These estimates include the wide-body aircraft of airlines which have been identified to operate long-haul flights in Europe, rather than just airlines which are headquartered in Europe. They therefore relate directly to the market defined in the P1D. As these estimates capture flights to and from Europe which are operated by non-European airlines, they are less susceptible to the P1D concern that they may disregard flights which are relevant to UK customers.[241]

(283) As set out in Table 11 below, the Parties' combined share in the supply of IFC for long-haul flights to or from Europe would be modest at c. 14% based on the number of in-service aircraft and c. 18% based on the number of committed aircraft, with a low increment from Viasat of c. 2% on either basis. Panasonic Avionics has by far the highest share (56%-63%), and Intelsat is a distant second with a share of 21%-22%. These estimates therefore are broadly consistent to the global long-haul shares in terms of Viasat's minimal presence (~2%) as well as the high share by Panasonic (>55%) and Intelsat (>20%) and the more limited share of Inmarsat (12-16%).

Table 11 Shares of supply for IFC services to long-haul aircraft owned by airlines operating in Europe in Q2 2022

IFC Provider	In-service aircraft		Committed aircraft	
	Number	Share (%)	Number	Share (%)
Panasonic Avionics	**1,523**	**62.7**	**1,771**	**56.4**
Intelsat	**530**	**21.8**	**645**	**20.5**
Inmarsat	**294**	**12.1**	**509**	**16.2**
Inmarsat (Direct)	*159*	*6.5*	*335*	*10.7*
SITAONAIR (VAR)	*70*	*2.9*	*87*	*2.8*
Collins Aerospace (VAR)	*35*	*1.4*	*38*	*1.2*

[240] P1D, Table 2.

[241] P1D, fn. 151.

Other VARs[1]	*30*	*1.2*	*49*	*1.5*
Viasat	**39**	**1.6**	**66**	**2.1**
Others[2]	42	1.7	151	4.8
Combined	***333***	***13.7***	***575***	***18.3***
Total	**2,428**	**100**	**3,142**	**100**

Source: RBB Economics – based on data from third-party report (In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 Sep 2022 (attached as Annex ISCA.002)) with allocation of VAR activity to underlying service provider based on the Parties' industry knowledge.

[1] This includes Thales and CTTIC

[2] This includes Taqnia Space, Thales, Nelco, Anuvu, and a small number of aircraft for which the IFC provider is unknown.

(284) Using the same methodology described in paragraph 245, the Parties have also constructed share of supply estimates for short-haul flights to or from Europe. As set out in Table 12 below, the Parties' combined share in this segment is c. 63% in terms of active aircraft and c. 59% in terms of committed aircraft, with a Viasat increment of c. 14% on either basis. Compared with the share of supply estimates previously submitted to the CMA, these estimates show that Panasonic is a considerable competitor also in the short-haul segment, with a share above 10% on either basis. This reflects tender wins involving narrowbody aircraft used on short-haul flights in Europe by Panasonic with airlines which are headquartered in regions near to the EEA/UK, such as wins with Turkish Airlines and Air Serbia.

Table 12 Shares of supply for IFC services to short-haul aircraft owned by airlines operating in Europe in Q2 2022

IFC Provider	In-service aircraft		Committed aircraft	
	Number	Share (%)	Number	Share (%)
Inmarsat	**514**	**49.4**	**737**	**45.6**
Inmarsat (Direct)	504	48.4	724	44.8
SITAONAIR (VAR)	6	0.6	9	0.6
Thales (VAR)	4	0.4	4	0.2
Anuvu	229	22.0	326	20.2
Viasat	**144**	**13.8**	**222**	**13.7**
Panasonic Avionics	123	11.8	212	13.1
Taqnia Space	19	1.8	61	3.8
Others[1]	12	1.2	57	3.5
Combined	**658**	**63.2**	**959**	**59.4**
Total	**1,041**	**100**	**1,615**	**100**

Source: RBB Economics – based on data from third-party report (In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 Sep 2022 (attached as Annex ISCA.002)) with allocation of VAR activity to underlying service provider based on the Parties' industry knowledge.

[1] This includes Intelsat and a small number of aircraft for which the IFC provider is unknown.

9.4 The P1D's emphasis on shares of supply based on aircraft backlog is inappropriate

(285) The P1D uses aircraft in backlog as a metric for shares of supply.[242] The Parties consider that this is an incorrect approach to capturing current competitive dynamics.

(286) As the Parties explained in the ILR, backlog is often the result of contracts awarded many years ago. In fact, a high proportion of backlog corresponds to old tenders which may never materialise.[243] In contrast, some in-service aircraft may be from recent wins that quickly translated into active aircraft. In the Parties' experience, airlines can and do cancel orders, including due to new technological developments which divert demand elsewhere. Current competitive dynamics, in markets in intense flux such as the one for IFC services, are best reflected through tender wins over the past approx. six months, which turn reflect the competitive dynamics in the market over the last 12-18 months, i.e. the time span within which campaigns for airline bids will have unfolded.

(287) A further complication with focusing on backlogs as a proxy for recent wins is that IFC providers may calculate their own backlog (which then is provided to Valour Consultancy to construct the relevant shares of supply estimates quoted in the P1D) in inconsistent ways from one another. For example, Inmarsat's own backlog for its GX Aviation and EAN businesses, as reflected in the Valour Consultancy data, represents an aspirational maximum number of future connected aircraft, whereas other providers may submit more conservative backlog estimates to Valour Consultancy.

(288) An example illustrating the types of inconsistencies that may arise from the use of backlog data is found on Panasonic's website, which reads that it has "*over 3,750 total aircraft from various airline customers*" committed to the Panasonic Aviation IFC solution.[244] This compares to 2,662 committed aircraft reported for Panasonic in the Valour Consultancy data.[245] This example further supports the notion that the backlog/commitment figures in the Valour Consultancy data are very likely to overestimate backlog for some competitors (such as Inmarsat) while underestimating backlog for others (such as Panasonic).

(289) In any event, it is telling that the P1D itself acknowledges that share of supply estimates should generally be interpreted cautiously, given the difficulties in precisely mapping the relevant market segments (IFC to long-haul intercontinental flights from/to Europe, IFC to short-/medium-haul flights from/to and within Europe) onto the data available.[246] As the P1D warns, the selection of which airlines and aircraft operate within these market segments is not straightforward and different approaches can lead to somewhat different outcomes.[247]

(290) Moreover, the P1D expressly acknowledges that the nature of the commercial aviation IFC market, characterised by growing demand and, importantly, recent and potential entrants, means that the evidentiary weight of the share of supply data is limited.[248] Not only do these entrants pose a significant competitive constraint on the Parties, but in fact, any pending question regarding the magnitude of this constraint now revolves around their *expansion* in commercial aviation, seeing as they have *already entered* this segment and are already exerting this competitive constraint in the here and now (as discussed above).

[242] P1D, para. 119.

[243] ILR, Annex A.

[244] See Panasonic Avionics New Connectivity Bundles Help Airlines Maximize Value of In-Flight Connectivity, Panasonic Press Release, 31 August 2023, available at: https://www.panasonic.aero/press-release/panasonic-avionic-connectivity-bundles-help-airlines-maximize-ifc-value/. Accessed on 21 October 2022.

[245] In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002).

[246] P1D, para. 123.

[247] P1D, fn. 156.

[248] P1D, paras. 123-124.

10 The P1D's finding that switching IFC suppliers is uncommon is not backed by the evidence

(291) The P1D considers that switching IFC providers is uncommon and/or too costly for airlines thus giving the Parties an ability to "lock-in" customers.[249] This is contrary to both economics and the Parties' experience.

(292) The Parties note that, in the rare instances that it occurs, the cost of "ripping and replacing" an IFC solution can range, as noted in the P1D, upward of USD 500,000 for a narrowbody aircraft (with the price rising a bit higher for a widebody aircraft).[250] However, those costs must be viewed relative to the cost of the total asset i.e. the aircraft costing in the region of USD 100 million. Against this significant overall asset value, which is a critical component in establishing their differentiation and competitiveness in attracting passengers (and, as a consequence, the health and profitability of their business), the sunk cost to replace a preferred new IFC system is minimal (i.e., approximately 0.5% of the overall cost of the aircraft). It is the Parties' consistent observation that airlines would not compromise degrading the value of its total asset (i.e. costing ~USD 100 million) if faced with the need to recapitalise less than 0.5% of that cost in order to reap the benefits of a preferred IFC system to drive down cost and increase the quality of service, just because there is some perceived advantage or efficiency of remaining with the incumbent IFC provider and hence the Parties have no ability to "lock-in" customers.

(293) The Parties are aware of an abundance of examples of **[CONFIDENTIAL TO BOTH PARTIES]**. These examples are laid out in detail in Annex ISCA.037 and **[CONFIDENTIAL TO BOTH PARTIES]**. **[CONFIDENTIAL TO VIASAT]**

(294) Furthermore, as the Parties noted in the FMN and the ILR, airlines often demand clauses in their contracts with IFC providers which effectively allow them to terminate the relationship early, i.e., ripping and replacing mid-term, where a materially improved IFC product has become available and their existing IFC provider has failed to offer an equivalent alternative.[251]

(295) In paragraph 785 of the FMN, the Parties noted the following two examples where such clauses were applied:

(i) In June 2020, Delta Air Lines amended the terms of its Ku-band-based IFC contract for earlier expiration on most of their narrowbody fleet with Gogo Commercial Aviation (now operating as Intelsat) which was initially supposed to run until July 2022. The contract reportedly included a clause which "*gave Delta the right to terminate the 2Ku Agreement if, among other things, a materially improved in-flight connectivity product becomes commercially available and the failure to offer that alternative would likely cause Delta competitive harm*." For certain fleets, Delta instead contracted Viasat as an IFC provider.**[CONFIDENTIAL TO VIASAT]**

(ii) In 2016, American Airlines brought legal action against Gogo to terminate its IFC contract early.[252] The airline withdrew its complaint ten days later after Gogo agreed to offer a new solution that matched an offer from a competing IFC provider (Viasat), which American Airlines

[249] P1D, paras. 18, 100.

[250] P1D, para. 113. The upfront costs for installing a new IFC system are even lower, ranging from approximately USD 300,000 to USD 500,000. See Annex 16.4 to the FMN, The Future of In-Flight Connectivity – 2020 Edition, Valour Consultancy, p. 73.

[251] FMN, para. 785; ILR, fn. 27.

[252] American Airlines' complaint against Gogo in 2016 relied on a clause in its contract with Gogo whereby, according to the complaint, "*American has the right to notify Gogo that another provider is offering connectivity services that materially improve upon Gogo's air-to-ground system. Following receipt of this notice, Gogo has the chance to submit a new proposal to American, to match or exceed the competitor's offering. […] In short, if American reasonably determines that Gogo's new proposal is the same or better as the competitor's offering, the Agreement would be amended on agreed upon terms. If American reasonably determines that Gogo's proposal is not as favorable, American may elect to terminate the agreement*." See https://www.wired.com/2016/02/american-airlines-sues-gogo-over-god-awful-inflight-wi-fi/.

considered was superior to Gogo's offering.[253] Under the settlement agreement, Gogo (now Intelsat) remained as the provider on around 130 aircraft, while Viasat replaced Gogo as the provider on around 600 aircraft.

(296) **[CONFIDENTIAL TO VIASAT]**

(297) **[CONFIDENTIAL TO INMARSAT]**.

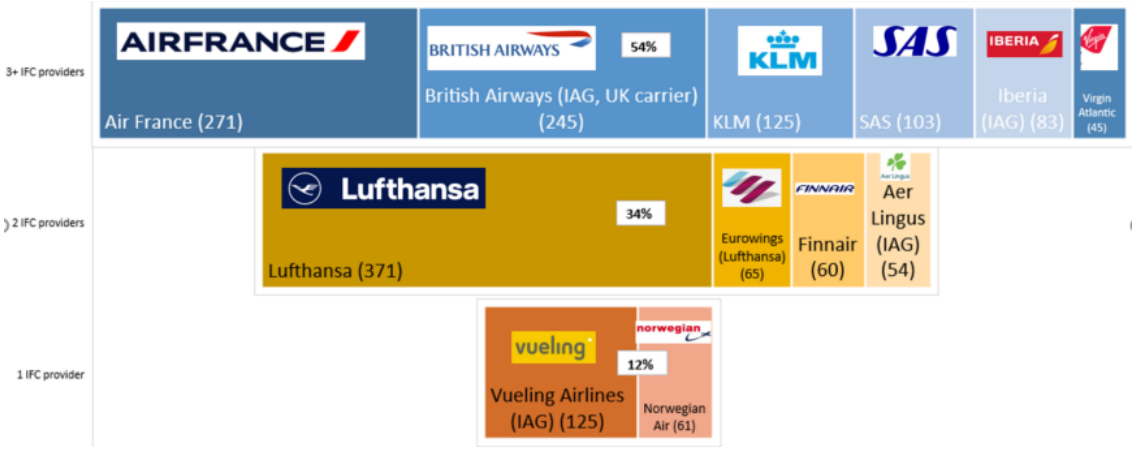
(298) **[CONFIDENTIAL TO VIASAT]**

(299) Another relevant example of switching in the industry was when Alaska Airlines decided in 2017 to drop Viasat's IFC system and replace it with Gogo's IFC solution (now Intelsat) on one of its fleets. **[CONFIDENTIAL TO VIASAT]**. **[CONFIDENTIAL TO VIASAT]** (see paras. (187) to (199) for further details).

(300) Annex ISCA.007 provides a number of additional examples in the same vein, which the Parties themselves have experienced. It is notable that the competitive threat leveraged by airlines to bargain better deals vis-à-vis the Parties has involved both traditional players (e.g. Panasonic Avionics, Intelsat, Anuvu) and also, to a significant and increasing extent, NGSOs.

(301) Additionally, airlines are increasingly working with more than one IFC services supplier (including within their short-haul and long-haul fleets). As shown in Annex ISCA.012, approximately 57% of airlines with more than 50 IFC-committed aircraft, have IFC commitments to more than one IFC provider.[254] As illustrated by Figure 28 below, of the top 12 airlines in Europe which account for c.89% of committed aircraft in Q2 2022, only two airlines rely on just one IFC provider. By contrast, six airlines have commitments with three or more providers.

Figure 28 Multi-homing by Top 12 European Airlines



Source: Viasat

(302) This further reinforces the conclusion that airlines have not felt "locked in" to a specific IFC choice, with the majority in fact pursuing a "multi-homing' approach to IFC solutions. This diversification allows airlines leverage when negotiating new contracts and helps to drive prices down through added competition. Valour Consultancy reports that diversification was "*inevitable*" and also flags that "*the scale of diversification is increasing as airlines become more educated and demand more from service providers*".[255]

[253] See American Airlines drops its lawsuit against Gogo, Engadget, 22 February 2016, available at: https://www.engadget.com/2016-02-22-american-airlines-drops-lawsuit-against-gogo.html.

[254] IFC tender awards by airlines (2016-2022) (Attached as Annex ISCA.012).

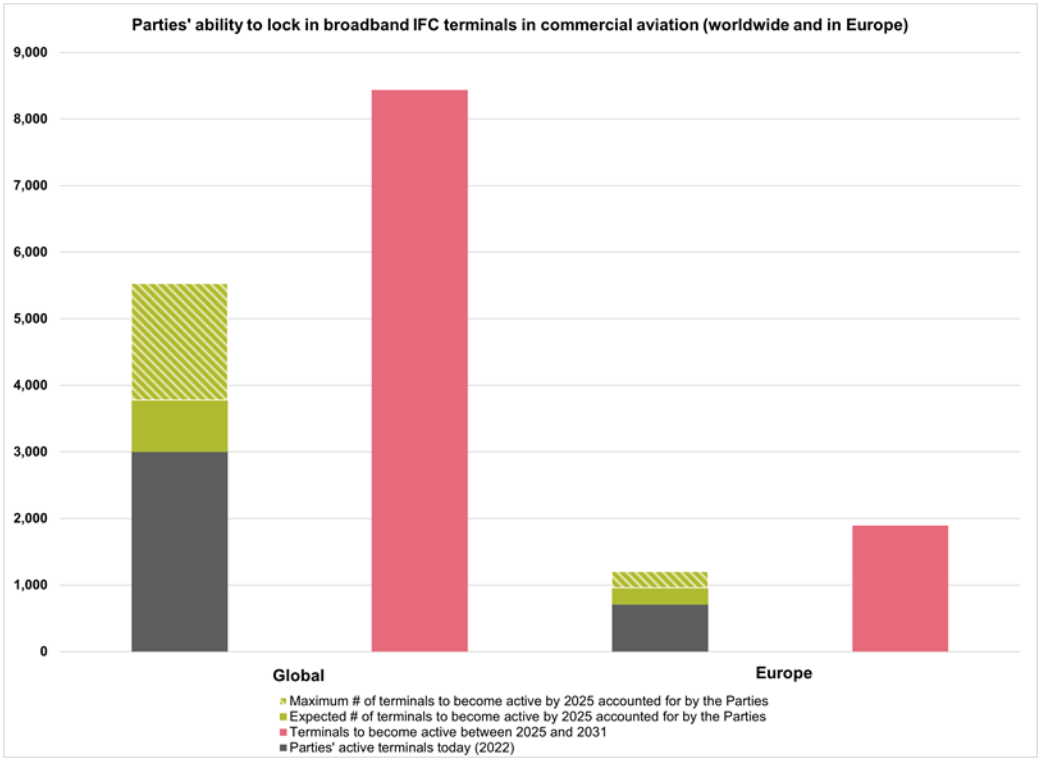
[255] Annex 16.4 to the FMN, The Future of In-Flight Connectivity, Valour Consultancy, 2020 Edition, p.182.

(303) Finally, as set out in Section 2.1, even if Inmarsat and Viasat were able to win a large part of the future market in the coming three years, even hypothetically winning the entirety of the market until 2025, there would still be ample opportunity for NGSOs to fully enter and expand (as well as for other rivals to continue to win new contracts) in the commercial IFC segment. Therefore, the Parties would not be capable of "locking-in" terminals to the extent that NGSOs' would lack opportunities to enter or expand in the market.

(304) Moreover, the growth of the market makes lock in implausible. Even if the Merged Entity maintained the Parties' combined market shares until 2025 ("**Scenario A**"), the number of terminals becoming active in the 2025 to 2031 period would far exceed (by 982% globally and 649% in Europe) the number of terminals that the Parties would install until 2025. Even when considering an extremely conservative "**Scenario B**" in which the Parties win all terminals in the 2022 to 2025 period (effectively winning 100% of the market in that period), the below chart shows that the Parties' total active terminals in 2025 would still remain lower than the number of future active terminals expected in the 2025 to 2031 period.

(305) In the below graph (Figure 29), the combination of the grey and solid green bars shows the number of terminals the Parties would have under Scenario A (maintain current market share) and the combination of the grey, dashed green and solid green bars shows the number of terminals the Parties would have by 2025 under Scenario B (i.e. in the unlikely event of winning 100% of new opportunities between 2022 and 2025). The pink bar shows the number of new terminals anticipated to become active between 2025 and 2031.

Figure 29 The Parties do not have the ability to lock in broadband IFC terminals in commercial aviation (worldwide and in Europe)[256]



[256] This graph assumes that the Parties' share of terminals in 2022 is the same as their combined share of active aircraft as calculated using the data in Valour Consultancy's In-Flight Connectivity Update – Q2 2022 dated 13 September 2022. In this graph:

- Red bars represent all terminals becoming active between 2025 and 2031 globally and in Europe;
- Grey bars represent the number of terminals the Parties combined have today (2022);
- Dashed green bars represent the terminals becoming active in the period 2022-2025 that the Parties would not win assuming the Parties maintained their current market share; and

Source: RBB Analysis based on Prospects for In-Flight Entertainment and Connectivity, Euroconsult, 2022 Edition (attached as Annex ISCA.001) and In-Flight Connectivity Update – Q2 2022, Valour Consultancy, 13 September 2022 (attached as Annex ISCA.002)

11 Large NGSO constellations are competitive substitutes to GEOs and the Parties are far from being the two major players in hybrid packages

(306) As the CMA is aware, NGSO and GEO technologies are differentiated, as are all suppliers and as is airline demand in the differentiated IFC market. Asymmetries exist: for example, GEOs simply cannot serve the Poles; NGSOs can. GEOs offer worse latency than NGSOs but have much larger coverage areas per satellite and can adjust bandwidth within it.

(307) It does not logically follow from the fact that GEO/NGSO offerings can be combined – for example to solve a Polar coverage gap for GEOs -- that a massive global NGSO constellation is not a direct competitive substitute for European or global coverage based on GEO technology. Starlink Aviation's very business model is premised on this. If Starlink were a complement not a substitute then Viasat's treatment of Starlink (discussed) above would make no sense. For One Web, its model thus far is different from Starlink. Sophisticated incumbent SSPs have struck partnership deals with One Web to win more in IFC. Again, the detail of these actions are not consistent with the One Web LEO constellation being viewed by any player as a pure complement and not a competitive substitute.

(308) In any event, to the extent that airline demand shifts towards GEO/NGSO hybrid combinations – as, while they are substitutes when the NGSO constellation is large, a hybrid offer may in some circumstances achieve the "best of both" competing technologies – then the competitive effects analysis does not change. There is no evidence to suggest that the Parties' efforts in hybrid solutions are unique or leading in the industry relative to others such as Panasonic/One Web, Anuvu/One Web and Intelsat/One Web, among others.

(309) Therefore, regardless of the precise technology mix and share between pure GEO, pure NGSO and hybrid solutions, the fact remains that neither NGSO technology in general nor One Web specifically can meaningfully be discounted or segregated in the competitive assessment.

12 NGSOs have entered and the purported remaining barriers will not prevent their expansion

(310) The P1D notes that NGSO providers must overcome a series of financial, operational, technical, regulatory, and commercial barriers in order to be able to compete effectively in the supply of IFC to commercial aviation customers.[257] It concludes that there remains "*substantial uncertainty*" as to whether Starlink or OneWeb will be able to overcome the various barriers and thus insufficiently robust evidence to show that NGSOs' entry in commercial aviation would be timely, likely or sufficient.[258] However, as is clear from the pace of expansion and the evidence of NGSOs' participation in IFC tenders (particularly Starlink), the Parties submit that NGSOs have already overcome these barriers. Considering Starlink in particular, the rate at which it has expanded is far quicker than that of the Parties' entry (as illustrated above in Section 7). As such, the discussion below is focussed primarily on barriers to expansion.

(311) The P1D found that there was not sufficiently robust evidence available to show that NGSOs' entry in commercial aviation would be timely, likely, or sufficient.[259] Such a conclusion appears to be largely

- Green solid bars show the terminals becoming active in the period 2022-2025 that the Parties would win assuming the Parties maintained their current market share.

[257] P1D, para. 174.

[258] P1D, paras. 178, 186.

[259] P1D, para. 186; CMA Issues Statement, para. 35(c).

based on third-party evidence as demonstrated by the recurring references to third-party questionnaires and the redacted material within the decision itself.

(312) As the Parties explained in their letter to the Panel Inquiry Group,[260] the critical questions in this case are about the ability and incentive of multiple third parties to compete and what this implies for the credibility of the threat to keep the Merged Entity from harming IFC customers. The NGSOs are by far making the largest capital investments in space and driving the evolution of and competition in the industry. It is, therefore, critical for the Parties' advisers to understand the key evidence on which the P1D analysis was based to judge the intensity of the threat from NGSO rivals. Transparency would enable the Parties' advisers to clarify any mischaracterisations and help refine the CMA's evidence gathering.

(313) Notwithstanding this lack of transparency around the evidence base, the Parties set out below the key reasons why the assessment of NGSO constraint and entry in the P1D is incorrect – there is sufficiently robust evidence that NGSO entry has occurred and in any event that entry would be timely, likely and sufficient to constrain the Merged Entity.

12.1 Financial barriers

(314) Paragraph 180(a) of the P1D acknowledges that Starlink does benefit from substantial financial backing but goes on to note that:

(i) it may not be able to maintain its constellation at a justifiable cost;

(ii) there is uncertainty as to its future success based on third-party responses; and

(iii) the Parties' own internal documents note the risk of SpaceX's business model.

(315) Given that billionaire-backed and government-funded NGSOs have the ability to make the significant upfront funding required to launch and operate massive global satellite constellations involving thousands of satellites (latest estimates place SpaceX's valuation at c. USD 150 billion)[261], the Parties submit it is illogical to assume that they would then suddenly lack the funds to maintain the constellations following entry or that they would choose not to pursue activities in the profitable commercial aviation sector in order to monetise those already launched satellites. In other words, it is illogical that NGSOs would invest heavily in satellite constellations and pre-emptively obtaining STCs for the vast majority of aircraft types (as elaborated in Section 7.7 above) if they had no intention of further investing in their success by investing relatively small additional sums to expand across verticals including IFC. Had there been any reasonable concern regarding return on investment, this would likely have led the NGSOs to pursue other, less financially demanding markets first. The fact that NGSOs such as Starlink and OneWeb intend to continue pursuing activities in the aviation vertical is demonstrated by their participation in tenders, partnerships with various players with the objective of providing future coverage and public statements made by these players.

(316) While the P1D notes[262] that, in an internal document, Inmarsat states that SpaceX will "**[CONFIDENTIAL TO INMARSAT]**",[263] such a statement appears to be a general (and fairly logical) statement regarding **[CONFIDENTIAL TO INMARSAT]**. Rather, in the same slide, Inmarsat notes that if **[CONFIDENTIAL TO INMARSAT]**". In relation to the quotation taken from Viasat's internal document that

[260] Parties' Letter to the Inquiry Group dated 18 October 2022.

[261] Elon Musk's SpaceX in talks to raise nearly $1 billion at $150 bn valuation, Business Today, 16 November 2022, available at: https://www.businesstoday.in/latest/world/story/elon-musks-spacex-in-talks-to-raise-nearly-1-billion-at-150-bn-valuation-352994-2022-11-16. Accessed on 24 November 2022.

[262] P1D, para. 180(1)(ii).

[263] **[CONFIDENTIAL TO INMARSAT]**.

[CONFIDENTIAL TO VIASAT][264]**[CONFIDENTIAL TO VIASAT]**. Furthermore, the same document goes on to state "**[CONFIDENTIAL TO VIASAT]**".[265] The P1D therefore, appears to have misinterpreted the objective of the internal documents on which it has relied.

12.2 Operational barriers

(317) With respect to operational barriers, the CMA argues that:[266]

(i) respondents to its third-party questionnaires noted the importance of maintenance services and engineering support when choosing IFC providers;

(ii) the Parties' own internal documents note the importance of maintenance services and engineering support; and

(iii) the extent to which outsourcing arrangements would prove appropriate for NGSO contracts remains uncertain.

(318) NGSOs in general are (and Starlink in particular is) well-funded and would be expected to have sufficient capital and resources to build the required operational networks. While the CMA asserts this will take two to five years,[267] at least in the case of Starlink this can happen in a shorter window because of its unprecedented financial backing and simplicity of its aviation offering – which allows free Wi-Fi service to passengers with no custom portal which effectively eliminates a large customer facing engineering organisation. Furthermore, while the relevant third parties noted that maintenance services and engineering support is *an* important factor, it is not necessary that they viewed it as the *only* or the most important factor. Given the range of other advantages LEO satellites offer, it is very possible that customers would undertake a cost benefit analysis and decide that NGSOs are still able to provide the most attractive service.

(319) As the Parties' explained in their ILR,[268] NGSOs could easily outsource their operational networks, either on a temporary or long-term basis, as there is no particular need for this to be done in-house. Outsourcing customer support and other maintenance services is common in the industry and indeed is the approach that Inmarsat took for its contract with Lufthansa in 2015, its first direct IFC customer in Europe, when Inmarsat did not have managed services such as customer service or support / maintenance services. **[CONFIDENTIAL TO INMARSAT]**

(i) **[CONFIDENTIAL TO INMARSAT]**

(ii) **[CONFIDENTIAL TO INMARSAT]**

(iii) **[CONFIDENTIAL TO INMARSAT]**

(iv) **[CONFIDENTIAL TO INMARSAT]**

(v) **[CONFIDENTIAL TO INMARSAT]**

(320) **[CONFIDENTIAL TO INMARSAT]**

(321) NGSOs could similarly outsource their operational requirements when entering the market, obviating the need for large operational teams, at least at the outset. **[CONFIDENTIAL TO INMARSAT]**, or through a turnkey managed service provider such as SITA. Providing such managed services is SITA's

[264] **[CONFIDENTIAL TO VIASAT]**

[265] **[CONFIDENTIAL TO VIASAT]**

[266] P1D, para. 180(b).

[267] P1D, para. 174(b).

[268] ILR, para. 60.

core offering, and it benefits from volume economies of scale, as more providers are onboarded allowing it to offer a competitive offering to NGSOs. **[CONFIDENTIAL TO INMARSAT]**

(322) Similarly, sales functions could be outsourced (e.g. to VARs/SSPs). However, NGSOs will likely not need large sales teams given the approach they appear to be adopting to their sales process (particularly Starlink). NGSOs seem to be sufficiently confident in the competitiveness of their offering (both in terms of being cheaper and faster than that offered by GEOs) that they appear to be willing to compete on a standard offer basis, which does not require large sales teams to negotiate detailed, bespoke contracts on a case-by-case basis. This is visible by Starlink's competitive standardised pricing offer, which is already in the public domain.

(323) Furthermore, for Starlink's recent contract with Royal Caribbean, the customer support is outsourced to a third-party. For its recent win of Hurtigruten Expeditions, Starlink's broadband connectivity is being integrated via the advanced network management technologies of Speedcast, a leading communications and IT services provider to the cruise and other mobility verticals. Speedcast began testing and integration of Starlink's LEO service in March which, following multi-month trials, resulted in a "*seamless failover from Starlink's LEO connectivity to Speedcast's global maritime network*".[269]

(324) While the P1D relies[270] on the Parties' internal documents, namely a presentation from May 2021 in which Inmarsat notes that "**[CONFIDENTIAL TO INMARSAT]**",[271] the same presentation concludes that NGSO players **[CONFIDENTIAL TO INMARSAT]**. Given the current reality of Starlink's rapid entry, it is clear that Inmarsat, therefore, severely **[CONFIDENTIAL TO INMARSAT]**. In light of Starlink's unprecedented financial means, simplified customer support proposition and ability to outsource, the Parties believe that it can overcome any perceived operational barriers in a short timeframe and well within the two-year relevant time period.

12.3 Technical barriers

(325) With respect to technical barriers, the P1D argues that:[272]

(i) there is uncertainty whether ESAs will be commercially operational for three to five years; and

(ii) Starlink will not be able to address global mobility markets until a full constellation with ISLs is deployed, which is unlikely before 2024/25.

(326) The Parties consider these concerns to be unwarranted and that NGSOs are already able to overcome these purported technical barriers, or at least will be able to in a short time frame. While it is not disputed that ESAs are not yet commercially operational at scale, Starlink's ESA-based IFC system is already installed on one JSX aircraft[273] with the remainder pending the necessary STC and this is indicative of the NGSOs' own belief in having operational ESAs in the near future (certainly well within the next two years) and the customers' belief in NGSOs being able to have operational ESAs in place. Starlink Aviation reports that it will specifically use "*electronically steered phased array antenna*":

[269] Hurtigruten Expeditions Completes Fleetwide Implementation of Starlink as Part of Managed Service Solution from Speedcast, Speedcas Newsroomt, 12 October 2022, available at: https://www.speedcast.com/newsroom/press-releases/2022/hurtigruten-expeditions-completes-fleetwide-implementation-of-starlink-as-part-of-managed-service-solution-from-speedcast/. Accessed on 3 November 2022.

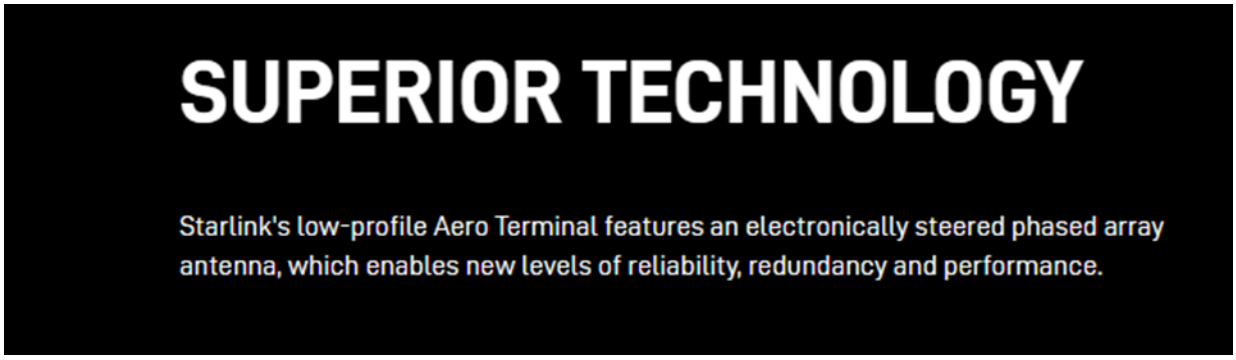
[270] P1D, para.180(b)(ii).

[271] **[CONFIDENTIAL TO INMARSAT]**.

[272] P1D, paras. 180(b), 180(c)(ii).

[273] Starlink/JSX STC slips, Paxex.Aero, 7 November 2022, available at: https://paxex.aero/spacex-starlink-stc-jsx-delay/.

Figure 30 Starlink's ESA-based IFC system



Source: Starlink's website.

(327) The P1D appears to dismiss the fact that successful trials of ESAs have taken place (as set out in Table 3 of the FMN), ignoring the strong evidence that they are due to become operational in the short term. In addition, Panasonic recently announced its LEO/GEO Stellar Blu ESA solution antenna for OneWeb LEO service at the APEX EXPO conference in October 2022.[274]

(328) Additionally, it is clear that the development of ESAs has not impeded NGSO entry into the commercial aviation segment given that NGSOs continue to participate in and, win, tenders.

(329) In relation to ISLs, the Parties reiterate their submission that Starlink's ISLs are already operational, as confirmed by Starlink itself in an email to a Brazilian customer.[275] Since June 2021, Starlink has launched approximately 1,600 satellites that include ISLs, and these are scheduled to be online globally in Q1 2023 (in time for Starlink's contract with Hawaiian Airlines) as noted on Starlink's website.[276]

(330) Industry experts from Valour Consultancy confirmed that schedule in their most recent report in September 2022 where they stated: "*As of August 2022, [Starlink's] coverage is defined by proximity to shorelines. However, at some point in Q4 2022, this will expand in two large bands around the globe. One covers from approximately 16 degrees north to approximately 58 degrees north. This includes a decent chunk of the Caribbean, as well Fas flight paths from the US east coast to western Europe. It should also cover routes between the US mainland and Hawaii, critical for supporting the company's deal with Hawaiian Airlines. And by 2023, the company expects to have enough satellites in orbit with ISLs to deliver coverage anywhere on Earth*."[277]

(331) This seems achievable given that the technology is not new and has been in use for decades by Iridium in other verticals.[278] While the Parties accept that Iridium's ISLs are different from Starlink's (as the former relied on radio frequencies rather than optical laser links), the fact that this is established technology is relevant to the ease with which it can be adapted for NGSOs.

(332) The Parties acknowledge that first generation OneWeb satellites did not include ISLs, but this is not a competitive disadvantage given that OneWeb also has a substantially higher orbit (and therefore higher coverage per satellite) and gateways to facilitate transatlantic coverage.[279] A gateway is a ground station

[274] Panasonic Avionics highlights Stellar Blu antenna for OneWeb LEO service, Paxex.Aero, 26 October 2022, available at: https://paxex.aero/panasonic-oneweb-stellar-blu-antenna-leo-inflight-internet/. Accessed on 18 November 2022.

[275] Nathan Owens's tweet from 1 October 2022, available at: https://twitter.com/VirtuallyNathan/status/1576241884233887746?cxt=HHwWhMDT3Y7p998rAAAA. Accessed on 3 November 2022.

[276] Aviation, Starlink, available at: https://www.starlink.com/aviation. Accessed on 3 November 2022.

[277] The Market for IFEC and CMS on VVIP and Business Aircraft, Valour Consultancy, September 2022, p. 30 (attached as Annexes ISCA.026 and ISCA.027).

[278] Link Strategy for the Mobile Satellite System Iridium, Harald Keller, Horst Salzwedel, https://ieeexplore.ieee.org/document/501506

[279] See a OneWeb filing made in Sweden in June 2022 which indicates countries where they have coordinated gateways – including Greenland. Available at: https://www.pts.se/globalassets/startpage/dokument/icke-legala-

that transmits data to/from the satellite to the local area network. In order to achieve their desired coverage and provide connectivity, NGSOs require either ISLs or gateways local to each service area. OneWeb's Gen-1 constellation operates at 1200 km from the Earth and therefore requires fewer satellites and ground stations, decreasing the importance of ISLs. OneWeb can therefore cover major aviation routes without ISLs using carefully placed terrestrial gateways and it currently operates across North America and Europe and the North Atlantic aviation and shipping routes.

(333) The P1D also references the Parties' internal documents as providing **[CONFIDENTIAL TO BOTH PARTIES]**,[280] however, some of these references are misleading. In Viasat's document entitled **[CONFIDENTIAL TO VIASAT]**.

12.4 Regulatory barriers

(334) With respect to regulatory barriers, the Parties submit that these perceived barriers will not prevent Starlink, OneWeb or other NGSOs from competing effectively in a timely manner. In this regard, the P1D argues that:

(i) Starlink faces barriers in obtaining the requisite regulatory licences and certifications, partly due to the litigation brought by the Parties;[281] and

(ii) Starlink is unlikely to become line-fit operable in a timely fashion and such certification is critical to compete effectively in commercial aviation.[282]

(335) However, while the P1D argues that NGSOs may struggle to acquire the necessary licenses, it also notes in footnote 24 of the P1D that it can take just three months to apply for NGSO licences, which is hardly prohibitive.

(336) While the Parties accept that they have launched legal proceedings against Starlink, the P1D acknowledges that such proceedings have been unsuccessful thus far. It states that losing a regulatory challenge "*could represent an existential threat*",[283] however, this wording is an indication of the extent which such a risk is theoretical and vague, and the Parties note it was a statement made by a competitor, so it should not be given much weight. In fact, the legal proceedings are strong evidence that the Parties view Starlink as a significant threat in the sector, as businesses do not incur lightly the significant effort and costs associated with litigation. Furthermore, NGSOs have been successful with respect to regulatory approval in other jurisdictions such as Canada,[284] suggesting that regulatory barriers are unlikely to be strong or insurmountable.

(337) Starlink's pipeline of STCs for the vast majority of commercial aviation aircraft types (as elaborated in para. (194)) also clearly argues against the existence of regulatory barriers impeding the entry and expansion of NGSOs in the commercial aviation IFC space.

(338) The Parties strongly believe that the P1D's conclusions on the significance of and the time taken for life-fit operability are misplaced. On significance, as evidenced above in Section 8.4, the Parties maintain that retro-fit certification forms a very important component of the sector.

dokument/remisser/2022/radio/konsultationssvar-700-1500-26-28-ghz/oneweb-response-to-consultation-final.pdf. Accessed on 3 November 2022.

[280] P1D, para. 180(c)(ii).

[281] P1D, para. 180(d)(i).

[282] P1D, para. 180(d)(ii).

[283] P1D, para. 180(d)(i).

[284] ISED's tweet from 6 November 2020, available at: https://twitter.com/ISED_CA/status/1324790429947174913.

12.5 Commercial barriers

(339) In addition, the Parties submit that the commercial barriers identified by the P1D are not supported by the evidence and do not prove a credible hurdle to NGSOs competing effectively in the commercial aviation market. The P1D argues that NGSOs such as Starlink:

(i) may not be able to perform to the required level;[285]

(ii) would need to develop sector expertise (including network management and customer support);[286] and

(iii) would need to overcome the Parties' attempts to increase 'stickiness'.[287]

(340) While the P1D is correct that NGSOs would need to demonstrate the operability and/or effectiveness of its offering and prove that they can perform at the required level, this does not pose a constraint on NGSOs but rather, forms a natural part of the process when entering any sector. The Parties too had to prove themselves when they first entered the market – this is not a constraint specific to LEOs. The P1D relies on the fact that the Parties' internal documents indicate that **[CONFIDENTIAL TO BOTH PARTIES]**.[288] However, it should be borne in mind that the IFC industry is still nascent and the current period of disruption is a novel development; airlines would have had less choice of IFC provider in the past and did not have the attractive offerings of the more recent NGSO entrants to take into account. In addition, billionaire backed NGSOs such as Starlink and Amazon's Kuiper, benefit from the publicity of their high profile backers (Elon Musk and Jeff Bezos) – individuals that are renowned for innovation. In this way, it is likely that customers will be willing and trusting of Starlink's offering given their backers' well known success in other markets, rather than distracted by its novelty in the market. Strong industry players are also assessing the competitive strength of Starlink and Amazon Kuiper on a same level as GEOs such as the Parties. SES's chief technology officer recently remarked that "*in our industry today, we have to run to stand still […] If you're competing with the likes of SpaceX Starlink, Amazon Kuiper, ViaSat, Inmarsat, you have to drive the technology forward. You have to try new things*."[289]

(341) In Delta Air Lines' recent RFP, for example, it noted its desire to "*experiment*" and "*flight test*" other solutions and this indicates that customers view NGSOs' offerings as exciting opportunities rather than untested.[290] Extraordinary financial backing from commercial titans like Elon Musk and Jeff Bezos lends credibility to NGSOs, increasing airlines' willingness to try their satcom solutions. **[CONFIDENTIAL TO INMARSAT]**[291]

(342) As noted above, the NGSOs have the financial backing required to quickly and efficiently develop the necessary sector expertise, especially as they will be able to outsource certain elements. While the CMA relies on a quotation taken from the Parties' internal documents, the Parties consider this to be misleading, as the same page of the relevant document lists a number of Starlink's strengths (including its innovative workforce, large amount of capacity and brand visibility).[292] The Parties, therefore, are conscious that NGSOs do pose a very real and credible commercial competitive constraint.

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[285] P1D, para. 180(e)(i).

[286] P1D, para. 180(e)(ii).

[287] P1D, para. 180(e)(iii).

[288] **[CONFIDENTIAL TO VIASAT]**

[289] Risky Business, SpaceNews newsletter, 16 November 2022, available at: https://mailchi.mp/spacenews/upping-fuel-efficiency-rent-a-sherpa-3d-printed-spacesuits-python-venom-179596?e=900ecfab93.

[290] **[CONFIDENTIAL TO VIASAT]**

[291] **[CONFIDENTIAL TO INMARSAT]**

[292] **[CONFIDENTIAL TO VIASAT]**

(343) The P1D's concern that NGSOs would need to compete with the Parties' own purported competitive strategies to create 'stickiness' seems misplaced as there is no indication of the extent to which such strategies have been successful.[293] As the P1D notes, these are simply "efforts" made by the Parties[294] and therefore, may well not have any impact on the LEO players, especially in light of the increasing demand in the market, opening up ample new opportunity for NGSOs.

(344) Therefore, as explained above, there is no "substantial uncertainty" as to whether Starlink and OneWeb can overcome the purported barriers necessary to compete effectively in commercial aviation in a timely manner. In fact, Starlink's launch of its aviation business and recent wins of airline tenders clearly demonstrate that it has already overcome these barriers and leads the way for other NGSOs. Crucially, Starlink's entry and ongoing expansion, OneWeb's timely, likely and sufficient entry, and SES's entry in the HBC+ catalogue will exert a sufficient constraint on the Merged Entity to prevent an SLC.

13 Conclusion

(345) Consequently, the Proposed Transaction cannot be expected to result in an SLC in the supply of IFC to commercial aviation customers in the UK. The Merged Entity would operate in a dynamic, fast paced and innovative industry which benefits from both a large and varied number of competitors and a surging demand from end users. As the longer established GEO players continue to improve and diversify their offerings and NGSOs continue to gain popularity with airlines on the basis of their technical advantages, competition will remain fierce following the Proposed Transaction.

[293] P1D, para. 175.

[294] P1D, para. 175.