Public Consultation on the draft BEREC Guidelines on the Implementation of the Open Internet Regulation

Response from Inmarsat plc, on behalf of itself and its subsidiaries ("Inmarsat")

Submitted by email to: OI-Guidelines-Consultation@berec.europa.eu

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1 Introduction

1.1 Inmarsat welcomes the opportunity to respond to BEREC's public consultation on the draft BEREC Guidelines on the Implementation of the Open Internet Regulation (hereinafter, the "Draft Guidelines").

1.2 This response is structured as follows:

(a) **Section 2** contains an executive summary of Inmarsat's main submissions;

(b) **Section 3** provides an introduction to Inmarsat;

(c) **Section 4** provides an introduction to Inmarsat's specialised in-flight connectivity solution;

(d) **Section 5** sets out the legal principles supporting Inmarsat's response; and

(e) **Section 6** contains Inmarsat's response to the BEREC consultation document.

1.3 For any questions regarding Inmarsat's response, please do not hesitate to contact Ethan Lucarelli, Inmarsat Director, Regulatory and Public Policy, at ethan.lucarelli@inmarsat.com.

2 Executive summary

2.1 This public consultation presents an opportunity for BEREC to help unlock the true potential of specialised in-flight connectivity solutions to the benefit of all passengers flying over the EU.

2.2 In-flight connectivity is changing the airline industry and revolutionising passengers' expectations of the on-board experience.

2.3 Inmarsat is excellently placed to provide in-flight connectivity and thus meet the surging demand of passengers flying over the EU for this type of service. However, it faces objective technical limitations that are inherent to satellite networks, as further discussed below.

2.4 In order to overcome such constraints, Inmarsat has formulated a satellite network configuration that optimises traffic depending on the objective characteristics of the application (e.g., VoIP, instant messaging and IP video), separating these specialised services from any internet access service provided, thereby improving the satellite network's general performance and flexibility.

2.5 This network configuration allows the passenger to select and use any of these specialised services (VoIP, instant messaging and/or IP video), separately from general internet browsing.

2.6 Different tariffs apply to the use of each of these specialised services, on the one hand, and to internet browsing, on the other. The tariff for internet browsing may in turn be differentiated by data volume and speeds.

2.7 The passenger would be fully informed through the terms of service of the impact of activating any of these specialised services on his own ability to access and browse the internet on the aircraft in parallel.

2.8 Inmarsat's test results show that airline passengers would have a better end user experience for these specialised services, which would not otherwise be available to them. Based on Inmarsat's own calculation, the traffic management measure envisaged would free up on average 20% additional satellite capacity, with peaks of up to 40-50%, compared to a simple speed or volume based plan. It follows that prohibiting this specialised service solution would mean denying end-users a materially better internet usage opportunity.

2.9 Inmarsat believes that this approach is compatible with the Open Internet Regulation, based on its reading of the Draft Guidelines and the European Commission Report on the implementation of the Open Internet Regulation (COM (2019) 203 final). In particular, the Report allows (page 7) "forms of reasonable traffic management measures that optimise traffic depending on the objective characteristics of the content, application or service, thereby improving the system's general performance and flexibility."

2.10 To unlock the full potential of this kind of specialised in-flight connectivity solutions in the EU to the ultimate benefit of passengers flying over the EU, it would therefore be helpful for BEREC to clarify further in the Draft Guidelines that (**proposed additions in bold and underlined**):

> "108a. Requirements for a specific level of quality can also include requirements for resource management for example in novel networking paradigms such as M2M/IoT **and certain specialised in-flight connectivity solutions**. In such cases the devices may be resource-constrained (e.g. limited processing power, battery lifetime, memory capacity **or design limitations**) and the provisioning of services in the network may have to deal with these resource management issues, such as energy exhaustion, interference**, environment conditions (such as, for example in the case of in-flight connectivity, atmospheric and solar influences and the speed and movement of the aircraft)** and security. Addressing these issues is essential in order to assure the reliability of the services, and specialised services could be justified in cases where the requirements cannot be fulfilled by the IAS for resource-constrained devices."
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> "113. Typical examples of specialised services provided to end-users are VoLTE and linear broadcasting IPTV services with specific QoS requirements, subject to them meeting the requirements of the Regulation, in particular Article 3(5) first subparagraph. Under the same preconditions, other examples would include real-time health services (e.g. remote surgery)**, certain in-flight connectivity solutions,** or "some services responding to a public interest or by some new machine-to-machine communications services" (Recital 16)."
>
> "122. While IAS and specialised services directly compete for the dedicated part of an end-user's capacity, the end-user himself may determine how to use it. When it is technically impossible to provide the specialised service in parallel to IAS without detriment to the end-user's IAS quality, NRAs should not consider this competition for capacity to be an infringement of Article 3(5) second subparagraph, as long as the end- user is informed pursuant to Article

4(1)(c) of the impact on his IAS and can obtain the contractually-agreed speeds for any IAS subscribed to in parallel. NRAs should not consider it to be to the detriment of the general quality of IAS when activation of the specialised service by the individual end-user only affects his own IAS. However, detrimental effects should not occur in those parts of the network where capacity is shared between different end-users.

123. Furthermore, as stated in Recital 17, in mobile networks **and satellite networks** - where the number of active users in a given cell **or beam**, and consequently traffic volumes, are more difficult to anticipate than in fixed networks - the general quality of IAS for end-users should not be deemed to incur a detriment where the aggregate negative impact of specialised services is unavoidable, minimal and limited to a short duration. By contrast, such unforeseeable circumstances related to the number of users and traffic volumes should not normally occur in fixed networks."

2.11 The remainder of this consultation response provides the reasons supporting Inmarsat's submission for the above proposal. Before turning to substance of Inmarsat's reasoning, the following sections provide a short description of the specialised in-flight connectivity solution proposed by Inmarsat.

3 Inmarsat

3.1 As an industry leader and pioneer of mobile satellite communications, Inmarsat has been enabling global connectivity for nearly four decades. We strive to make a difference to our customers by making their businesses more efficient and effective and by helping them to remain safe and more connected.

3.2 Our four business units provide first-class global, mobile connectivity to our customers:

(a) **Aviation**: Inmarsat has been providing connectivity services to both the cockpit and the cabin for many years. We provide cabin connectivity to the Business and General Aviation ("BGA") sectors and more recently to the Commercial Aviation sector, including through in-flight connectivity based on our GX satellite technology. Our connectivity products in the Safety and Operational Services sector ensure safe and secure communications between the cockpit and air traffic control.

(b) **Maritime:** Inmarsat offers reliable and resilient communications solutions to the maritime industry. From the largest commercial fleets to coastal vessels, our services are based on our long record of accomplishment in managing global networks and, consequently, a unique understanding of the challenges of living and working in a maritime environment.

(c) **Government:** Inmarsat remains a key partner to many governments around the world. We aim to augment a government's existing communications networks and ensure that, wherever they need to be, our secure, reliable and powerful mobile satellite networks are always available.

(d) **Enterprise:** Inmarsat provides a wide portfolio of global voice, broadband data, M2M and value-added services. We see significant growth opportunities in the medium-term from emerging new IoT markets in sectors such as mining, smart cities, smart agriculture, logistics and transportation.

4 Specialised in-flight connectivity solution

Introduction

4.1 In-flight connectivity is changing the airline industry and revolutionising passengers' expectations of the on-board experience. In particular:[1]

(a) 56% of passengers say a lack of reliable in-flight connectivity is a major cause of frustration with plane journeys.

(b) 61% agree that in-flight connectivity takes the anxiety out of flying because they can stay in contact with people on the ground.

(c) 77% of passengers would pay for in-flight connectivity on short haul leisure flights, an increase from 64% in 2016. Those happiest to pay are passengers aged 25-34, and parents travelling with children.

(d) Of passengers who have experienced high-quality in-flight connectivity for specialised services such as VoIP, messaging and/or IP video,

(i) 61% say it is more important to them than on-board entertainment; and

(ii) 45% would rather pay for connectivity than use free on-board entertainment.

(e) 89% of passengers are willing to pay for in-flight connectivity on long haul leisure flights.

(f) Two thirds (66%) of parents travelling with children said in-flight connectivity is a "life saver" when helping to keep children occupied during flights.

(g) Passengers' expectation of connectivity in the EU is increasing.

(h) 52% of passengers would take advantage of the ability to purchase items during a flight and collect them upon arrival at the airport, providing huge opportunities for in-flight e-commerce.

Satellite networks

4.2 Inmarsat provides in-flight connectivity, including through its Global Xpress ("GX") satellite network to passengers on aircrafts flying over the EU.

4.3 Although Inmarsat has a number of partnerships to deliver its service, Inmarsat is responsible for the configuration of its GX satellite network.

4.4 The GX network has been designed to allow seamless connectivity in the EU and worldwide. However, all satellite networks present certain inherent technical and capacity constraints, as further discussed below. For example:

(a) Geostationary orbits (36,000km above the equator) feature higher latency than some other communications technologies. Given the constraints faced by

[1] Inmarsat, *In-flight Connectivity Survey 2017*, available at: https://www.inmarsat.com/aviation/commercial-aviation/in-flight-connectivity-survey/

satellite communications networks, a data packet round-trip time is 650ms longer than in terrestrial communications networks. Opening a plain https webpage would require on average at least five packets round trips. This means that, whilst a connection delivery is under normal circumstances perceived as instantaneous in terrestrial communications networks, the same operation takes over three seconds in satellite communications networks. Moreover, a typical website contains many embedded objects: e.g. images, fonts, scripts, etc. Downloading each of these objects require multiple packet round-trips. The result of the accumulation of these factors is that opening a typical website over the satellite link would take on average 30-60 seconds more than terrestrial communications networks, because of the satellite high jitter, packet loss, and latency. Traditional acceleration techniques can partially mitigate the high- latency to which geostationary satellites are subject.

(b) Data connectivity is supported by a network of satellites providing coverage in a series of non-overlapping areas. Each area (approximately the combined size of France and Germany) supports capacity which is to be shared between *all* aviation end-users in that area at any moment in time.

(c) The shape of the plane and other environment conditions surrounding it (e.g. speed, rain and ice) limit the design of the signal receiver on the aircraft, which needs to be as flat as possible.

(d) The provisioning of services in the network must deal with challenging environment conditions, such as atmospheric and solar influences and the additional connectivity issues arising from the speed and movement of the aircraft's flight.

(e) As a result, the network becomes easily congested by automatic background traffic generated by end user devices when accessing the internet on the aircraft (e.g. software updates, cloud backing, etc.).

4.5 These capacity and performance constraints for satellite systems make the use of reasonable traffic management measures necessary to mitigate any negative impact on the end user experience.

Specialised services

4.6 In order to improve service quality for the passengers within these technical and capacity constraints of satellite networks, Inmarsat devised a specialised in-flight connectivity solution, which improves the GX network's general performance and flexibility. This solution consists of a satellite network configuration that optimises traffic depending on the objective characteristics of the customer's desired application and its specific QoS requirements (e.g., VoIP and/or instant messaging and/or IP video). It provides these specialised services in a way that is distinct from any internet access service provided and would not be provided to the detriment of such services.

4.7 This network configuration allows the passenger to select and use these specialised services (optimised for VoIP and/or instant messaging and/or IP video), separately from general internet browsing. Different tariffs apply to the use of each of these specialised services, on the one hand, and to internet access and browsing, on the other. The tariff for internet browsing may in turn be differentiated by data volume and speeds. The additional advantage of different tariffs for specialised services and

internet browsing is that the passenger is totally in control of what application he or she wishes to use, and is able to select a service that is optimised for that purpose.

4.8 Therefore, the solution envisaged by Inmarsat results in better allocation of limited network resources, better mitigation of the risk of network congestion, and, in turn, the passengers can benefit from a noticeably better quality of service. The result is an increase in output and consumer welfare.

4.9 Against this background, the following sections of this response outline the legal principles that should inform BEREC's review of the Draft Guidelines.

5 Applicable legal principles

5.1 This consultation presents an opportunity for BEREC to help unlock the true potential of specialised in-flight connectivity solutions to the benefit of all passengers flying over the EU. Given the pan-European (in fact, global) nature of the aviation industry, a pan-European approach to this issue is not only desirable, but it is also necessary. The Draft Guidelines should therefore clarify that traffic management measures aimed at improving in-flight connectivity are permissible under the Open Internet Regulation.

5.2 The regulation was deliberately conceived as a principles-based set of rules so that it could be applied to the foreseeable development of new technologies and services, provided they remain consistent with the open internet ecosystem. This is reflected in Recital (1) of the Open Internet Regulation which identifies the double objective of the regulation: "to protect end-users and simultaneously to guarantee the continued functioning of the internet ecosystem as an engine of innovation".

5.3 The internet is a platform connecting different kinds of players: at the two ends of the chain, end-users and providers of internet application and content, with, in the middle, a multitude of connectivity providers, including satellite operators, such as Inmarsat. The concept of "openness of the internet" can be considered from the following two angles:

(a) *The retail market*: from this point of view, a consumer wants to access and distribute information – or run the applications and services of his/her choice; and

(b) *The wholesale market*: from this point of view, application or content providers want all internet users who wish so to access their services under the best conditions.

5.4 However, different network platforms deliver internet access with varying technology constraints and qualities. For example, satellite networks are more capacity-constrained than terrestrial networks. Neither passengers nor application providers necessarily understand the material capacity constraints on satellite networks (which are not present in terrestrial mobile or fixed networks). Nor do they understand that there is a trade-off between open access and reasonable quality of service, as a result. In order to provide access at a reasonable quality level, it is necessary to use traffic shaping techniques and to design a solution that offers full open access to those who require it. This can be achieved through e activation of offers that provide access to a narrower set of specialised services with specific QoS requirements to those passengers who only want access to such a narrower suite of services, and do not want to browse the whole internet from end to end points. Satellite inherent technical

and capacity constraints mean that not all of the internet will ever be available to either side of the market, to the same extent that it would be on the ground.

5.5 In addition, other user-specific conditions affect the experience of accessing the internet when using in-flight connectivity. Accessing the internet at home cannot be considered the same as accessing the internet on the confined space of an airplane cabin. Passengers are inherently more constrained in the type of application and content they want and can access in a cabin full of other passengers.

5.6 The Draft Guidelines should consider these nuances regarding the more limited "openness" of the internet in the specific circumstances of in-flight connectivity. An outright ban of specialised services in these circumstances is unwarranted. It unduly denies network operators the ability to efficiently manage traffic where such measures result in a better allocation of limited resources and, at the same time, restrict neither the end user's right to an open internet (on the retail market), nor the economic sustainability of the internet ecosystem (on the wholesale market). This assessment should be made *in concreto*, taking account of all the relevant circumstances and cannot be based on formalistic presumptions.

5.7 It is a well-established principle of law that economic regulation restricting the freedom of economic operators in taking a certain conduct must be proportionate and limited to addressing market failures that would not otherwise exist absent that conduct. This analysis is commonly referred to as the "counterfactual analysis".

5.8 In the field of EU competition law, the counterfactual analysis is a well-established method to assess the effects of a given practice on the competitive structure of the market and on consumer welfare more broadly. That the evaluation of the counterfactual is an indispensable component of an effects-based analysis was for the first time articulated by the Court of Justice of the European Union ("CJEU") in its landmark judgment in the *Société Technique Minière case*.[2] Since then, the European Courts have consistently held that authorities applying economic regulation are required to carry out a counterfactual analysis couched on economic terms, in order to establish actual or likely anticompetitive effects to the requisite legal standard.[3] The requirement for a counterfactual analysis is now incorporated in the Commission's Article 102 TFEU Guidance Paper[4], the Guidelines on Vertical Restraints[5], the Horizontal Cooperation Guidelines[6], as well as in the Guidelines on Article 101(3) TFEU[7], forming the cornerstone of the Commission's effects based analysis. The use of counterfactuals in the area of merger control is virtually universal, given that merger requires a comparison of the competitive conditions that would result from the merger with the conditions that would have prevailed without the merger.

[2] See Case 56/65, Société Technique Minière v. Mascinenbau Ulm [1966] ECR 235, at 249-250.
[3] See for instance: Case T-328/03 *O2 (Germany) v Commission* [2006] ECR II-0000, where the General Court upheld an appeal against a Commission decision because the Commission had failed to properly consider what would have happened in the absence of the agreement. For an example under Article 101(3) TFEU, see Case T-374/94 *European Night Services* [1998] ECR II-03141. For examples under Article 102 TFEU, see for instance the *Qualcomm* and *Microsoft Internet Explorer* cases, where the EU Courts held that a counterfactual analysis may be used to demonstrate that the theory of harm developed by the Commission is incorrect.
[4] Commission Communication to the Member States on Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24 February 2009, 7 – 20.
[5] Commission Guidelines on Vertical Restraints, OJ C 130, 19 May 2010, 1 – 46.
[6] Commission Communication Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ C 11, 14 January 2011, 1 – 72.
[7] Commission Communication Guidelines on the application of Article 81(3) of the Treaty, OJ C 101, 27 April 2004, 97 – 118.

5.9 The issue of a proper counterfactual analysis also comes to the forefront of the debate on the application of the Regulation and the Draft Guidelines to the provision of in-flight connectivity. In particular:

(a) *On the retail market,* passengers are not, and cannot be, expected to access the internet in the same way they access the internet at home. For example, for obvious reasons related to privacy, decency and public security, passengers do not want to access, or in fact have their fellow passengers' access, content related to air traffic disasters or other inappropriate content. In addition, given the relatively shorter range of flights within the EU, passengers do not need or want to access large cloud storage services or OS updates during their flights.

(b) *On the wholesale market*, application or content providers do not expect to provide certain content and services to consumers on aircrafts – for example, certain inappropriate content, large cloud storage services or OS updates – because passengers do not need or want to access such content or services while in transit.

5.10 It follows that the internet ecosystem that is available in an airplane cabin is not always the whole internet – passengers may only wish to have access to a special "sub-segment" of the wider internet for specialised services, such as VoIP and/or instant messaging and/or IP video. These services have specific QoS requirements, are no substitute for, and can be offered separately from, any internet access services provided. Accordingly, the concept of "openness of the internet" in this context should be interpreted to mean access to what can reasonably be accessed in the specific circumstances, having regard to the passengers' demand and the application/content providers' supply *in concreto*.

5.11 This approach requires a counterfactual analysis that should make it possible for satellite network operators to optimise the traffic that they can usefully make available on aircraft, separately from all other traffic that they cannot make available on aircraft efficiently. Indeed, such measures do not restrict access to an open internet under a counterfactual analysis: the passengers could not access those services efficiently, even absent the traffic management measure in question.

5.12 Where a traffic management measure does not result in a reduction of output that would otherwise be available absent that traffic measure (counterfactual analysis), there is no basis in law, economics or public policy for prohibiting such measure.

5.13 It follows that the Draft Guidelines should make it clear that a specialised in-flight connectivity solution that does not materially restrict the end user's access to an open internet, under a counterfactual analysis, ought to be permissible. Such an approach would be consistent with the jurisprudence of the EU Courts and with the Commission's decisional practice, to which the Regulation must also conform.

5.14 In light of these fundamental considerations, Inmarsat has responded to the specific questions posed by the BEREC consultation document below.

6 Response to BEREC consultation

6.1 The European Commission Report and the Draft Guidelines contain useful and helpful clarifications, which in Inmarsat's view would already confirm that the proposed

specialised in-flight connectivity solution would be compatible with the Open Internet Regulation.

6.2 For example, these documents clarify that:

(a) Network slicing architectures could enable forms of reasonable traffic management measures that optimise traffic depending on the objective characteristics of the content, application or service, thereby improving the system's general performance and flexibility.

(b) The Open Internet Regulation does not prevent, per se, an optimisation function being implemented and in place on an ongoing basis inasmuch as the traffic management measure only becomes effective in times of necessity. Necessity can materialise several times, or even regularly, over a given period of time.

(c) Specialised services include network slices dedicated to connectivity for applications with specific QoS requirements which could not be met through normal internet browsing.

6.3 The Draft Guidelines could go further and make it clearer that these principles could also apply to specialised in-flight connectivity solutions.

6.4 By way of comparison, from initial conception, the FCC's net neutrality rules were intended to provide sufficient flexibility to enable network operators to ensure quality of service by managing the operations of their networks. From the FCC's first statement on the matter – its 2005 *Internet Policy Statement*, in which it declared that consumers are entitled to access the lawful content, services, and devices of their choice – the FCC made clear that its net neutrality policies "*are subject to reasonable network management.*"[8] In its 2009 Notice of Proposed Rulemaking on Preserving the Open Internet,[9] the FCC again clarified that while its non-discrimination principles would prohibit broadband internet access service providers from favouring or disfavouring lawful content, applications, or services accessed by their subscribers, the rules nonetheless would allow broadband providers to engage in reasonable network management.

Since its original 2010 Open Internet Order, the FCC has adopted a flexible, network-specific approach to traffic management, which it has defined as follows:

> "*A network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service.*"[10]

The FCC went on to clarify that legitimate network management purposes included:

> "*[E]nsuring network security and integrity, including by addressing traffic that is harmful to the network; addressing traffic that is unwanted by end users (including*

[8] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 FCC Rcd 14986 (2005) ("2005 Internet Policy Statement").
[9] *See Preserving the Open Internet*, GN Docket No. 09-191, Notice of Proposed Rulemaking, 24 FCC Rcd 13064 (2010) ("2010 Open Internet NPRM").
[10] *Preserving the Open Internet,* GN Docket No. 09-191, Report and Order, 25 FCC Rcd 17905, ¶ 82 ("2010 Open Internet Order"). The FCC reaffirmed this definition in the Restoring Internet Freedom Draft Order. It is codified at 47 C.F.R. § 8.1(c).

by premise operators), such as by providing services or capabilities consistent with an end user's choices regarding parental controls or security capabilities; and reducing or mitigating the effects of congestion on the network."[11]

In determining the effect of this exception, the FCC considered contributions made by the industry, including a group of six satellite broadband providers that pointed out the need for satellite broadband platforms to engage in sound network management to "deal with congestion issues and ensure that their users receive the quality of service that meets the subscription plan of their choosing, and to avoid harm to the network and users."[12]

The commenters identified several practices that should be deemed reasonable, such as temporary limiting bandwidth available to users during a period of congestion, prioritization of latency-sensitive traffic over latency-insensitive traffic, blocking spam, malware, or other traffic on a user's request, etc.[13] However, the FCC declined to adopt a list of "*approved traffic management techniques*" and preferred a case-by-case approach that would allow more flexibility and avoid a standard that is "*unnecessarily restrictive and may overly constrain network engineering decisions.*"[14] Further emphasising the importance of flexibility, the FCC expressly recognised that "*reasonable network management practices may differ across platforms. For example, practices needed to manage congestion on a fixed satellite network may be inappropriate for a fibre-to-the-home network.*"[15]

This network-specific, flexible approach to network management is consistent with the sort of traffic management satellite broadband providers must engage in to ensure a satisfactory user experience in the aviation context. BEREC should recognise that reducing congestion is a legitimate network management purpose, and that some practices should be permissible under special network circumstances (satellite broadband services provided in the air) that might not be acceptable in all instances.

The FCC's rules have, from the start, been carefully crafted to retain the ability of broadband service providers to deliver innovative services that are distinct from unlimited access to the entire internet. As the FCC explained in its 2015 Open Internet Remand Order "*that broadband Internet access service providers have flexibility to develop and deploy new technologies and business models, including by offering managed or specialized services that are distinct from traditional broadband Internet access service.*"[16]

In 2015, when the FCC reclassified broadband internet access service as a telecommunications service it defined the covered service as "mass market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints."[17] Broadband services that do not fit this definition, are considered "specialized services," which includes wholesale service, enterprise services, and other services that are not a "mass market retail service" and are not made available to the public at large, i.e. they are not "*marketed and sold on a standardized basis to residential customers, small businesses, and other end-user customers such as schools and libraries.*"[18]

[11] Id. (emphasis added).
[12] See Comments of the Satellite Broadband Commenters at 5, GN Docket No 09-191 (filed Jan. 14, 2010).
[13] Id. at 6.
[14] 2010 Open Internet Order, ¶ 85 (citing Comments of Level 3 at 14, GN Docket No. 09-191 (filed Jan. 14, 2010)).
[15] *Id.* ¶ 86.
[16] *See Preserving the Open Internet*, GN Docket No. 09-191, Notice of Proposed Rulemaking, 24 FCC Rcd 13064 (2010).
[17] 2015 Open Internet Order on Remand, ¶ 25.
[18] Id. ¶ 189.

Curated offerings, such as in-flight connectivity that provides access to limited suites of internet-based services, such as VoIP, instant messaging and/or IP video, are outside the FCC's broadband internet access service definition and do not fall within the scope of internet access service. Indeed, the distinction between providers that offer access to "*all or substantially all*" end-points on the internet as "*neutral, indiscriminate conduits*" and those that "*offer […] access only to a limited segment of websites*" was confirmed by even the prior FCC, and was accepted by the U.S. Circuit Court of Appeals for the District of Columbia.[19] As Judge Tatel explained in his concurrence to the denial of rehearing *en banc* in *US Telecom*, even the current rules "*do […] not apply to an ISP . . . making sufficiently clear to potential customers that it provides a filtered service involving the ISP's exercise of 'editorial discretion.*'"[20] Put another way, if an ISP "*were to choose to hold itself out to consumers as offering them an edited service rather than indiscriminate internet access. . . it could then bring itself outside the rule[s]*."[21]

6.5 Inmarsat submits that these principles are good law and BEREC should propose to endorse them in the context of the Draft Guidelines, as follows (**proposed additions in bold and underlined**):

> "108a. Requirements for a specific level of quality can also include requirements for resource management for example in novel networking paradigms such as M2M/IoT **and certain specialised in-flight connectivity solutions**. In such cases the devices may be resource-constrained (e.g. limited processing power, battery lifetime, memory capacity **or design limitations**) and the provisioning of services in the network may have to deal with these resource management issues, such as energy exhaustion, interference**, environment conditions (such as, for example in the case of in-flight connectivity, atmospheric and solar influences and the speed and movement of the aircraft)** and security. Addressing these issues is essential in order to assure the reliability of the services, and specialised services could be justified in cases where the requirements cannot be fulfilled by the IAS for resource-constrained devices."
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> "113. Typical examples of specialised services provided to end-users are VoLTE and linear broadcasting IPTV services with specific QoS requirements, subject to them meeting the requirements of the Regulation, in particular Article 3(5) first subparagraph. Under the same preconditions, other examples would include real-time health services (e.g. remote surgery)**, certain in-flight connectivity solutions,** or "some services responding to a public interest or by some new machine-to-machine communications services" (Recital 16)."
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> "122. While IAS and specialised services directly compete for the dedicated part of an end-user's capacity, the end-user himself may determine how to use it. When it is technically impossible to provide the specialised service in parallel to IAS without detriment to the end-user's IAS quality, NRAs should not consider this competition for capacity to be an infringement of Article 3(5) second subparagraph, as long as the end- user is informed pursuant to Article 4(1)(c) of the impact on his IAS and can obtain the contractually-agreed speeds

[19] U.S. Telecom Ass'n v. FCC, 825 F.3d 674, 743 (D.C. Cir. 2016) ("USTelecom").
[20] U.S. Telecom Ass'n v. FCC, 855 F.3d 381, 389 (D.C. Cir. 2017) (denying rehearing en banc) (Tatel, J., concurring).
[21] *Id.* at 390.

for any IAS subscribed to in parallel. NRAs should not consider it to be to the detriment of the general quality of IAS when activation of the specialised service by the individual end-user only affects his own IAS. However, detrimental effects should not occur in those parts of the network where capacity is shared between different end-users.

123. Furthermore, as stated in Recital 17, in mobile networks **and satellite networks** - where the number of active users in a given cell **or beam**, and consequently traffic volumes, are more difficult to anticipate than in fixed networks - the general quality of IAS for end-users should not be deemed to incur a detriment where the aggregate negative impact of specialised services is unavoidable, minimal and limited to a short duration. By contrast, such unforeseeable circumstances related to the number of users and traffic volumes should not normally occur in fixed networks."

7 Conclusion

7.1 Inmarsat submits that optimising VoIP, instant messaging and IP video, through dedicated connectivity offers, which are separated from any internet access service provided and would not be provided to the detriment of such services, is an optimal solution for managing in-flight connectivity. Airline passengers would benefit by being able to enjoy a better connection and paying for the type of service they want or need during their flight, not more, no less.

7.2 Any different interpretation would be inconsistent with the Regulation itself, and it would risk having a chilling effect on the efficiencies generated by innovative services to the detriment of the legitimate interests of passengers, including the many EU citizens flying over the EU every day.

7.3 This review offers BEREC an opportunity to unlock the full potential of in-flight connectivity in the EU to the ultimate benefit of passengers flying over the EU by removing any residual uncertainty that:

a) a counterfactual and effect based analysis is always required to assess whether a traffic management measure is reasonable in the circumstances, regardless of its form; and

b) the concept of specialised service includes certain in-flight connectivity solutions, such as dedicated connectivity for VoIP and/or instant messaging and/or IP video.

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