

## Your response

Question	Your response
<p><b>Question 1: Do you agree with our initial conclusion that fixed wireless services are the highest value alternative use for each of the 10, 28 and 32 MHz bands? If not, please provide evidence to support your answer.</b></p>	<p>Confidential? – N</p> <p>While SpaceX expresses no opinion about the 10 and 32 GHz bands at this time, SpaceX does not agree with Ofcom’s initial conclusion with respect to the 28 GHz band. Next-generation satellite operators including SpaceX and OneWeb rely on the 28 GHz band (27.5-30 GHz) for robust gateway earth station uplink connectivity. This band has been allocated on a co-primary basis for the fixed-satellite service and is essential to enable satellite operators to meet the growing demand from consumers for high-quality satellite broadband, including in rural and remote areas that lack adequate terrestrial service and for critical use cases such as emergency preparedness, enterprise broadband, and high-speed, low-latency connectivity on moving platforms. In the future, 28 GHz spectrum may also be critical for satellite user terminals to provide even greater capacity to consumers, including for consumer, business, and industrial use cases.</p> <p>By contrast, a 2021 report from the Global mobile Suppliers Association (GSA) on the state of 5G and 5G-relevant licensing demonstrated paltry interest in the 28 GHz band among CEPT countries, with the vast majority of countries focused on spectrum below 27.25 GHz, often referred to as the “26 GHz band”, including the focus on the band at the ITU World Radiocommunication Conference in 2019. And as Ofcom recognizes in the Consultation, the 26 GHz band has been increasingly popular among mobile operators and equipment vendors.</p> <p>At the same time, in recent years regulators around the world have shifted from exclusive terrestrial licensing arrangements for 28 GHz spectrum toward shared access among co-</p>

	<p>primary users to support robust backhaul for next-generation satellite service. For example, the Italian regulator Agcom recently concluded a proceeding that will condition exclusive licenses for 28 GHz terrestrial operators on coordinating with satellite operators in good faith and without charging sublicensing fees. Moreover, Agcom requires exclusive terrestrial licensees to share the locations of their 28 GHz deployments in order to speed gateway siting and coordination with satellite operators. This sharing is facilitated by the favourable propagation characteristics of the 28 GHz band, which enable many different co-primary users to coexist within close physical proximity using directional beams and readily available spectrum sharing techniques.</p> <p>Thus, as Ofcom recognizes in the Consultation, while the 28 GHz band is essential for next-generation satellite operators now and into the future, the deployment of 5G fixed wireless access in the band remains speculative. At the very least, Ofcom should assess the extent to which terrestrial licensees have deployed networks in the band or plan to deploy in the band (rather than simply leasing the spectrum to other operators). Further, Ofcom should publish information about 28 GHz deployments in a public database to provide a clear picture of the extent to which the licenses are being used and where. Not only would this exercise help inform future policy decisions about how to maximize the use of the 28 GHz band, it also would enable satellite operators to efficiently plan their networks and coordinate with licensed operators.</p>
<p><b>Question 2: Do you agree with our initial conclusion that there is likely to be excess demand for each of the 10, 28 and 32 GHz bands in future, if cost-based fees were applied and that therefore an AIP fee is appropriate? If not, please provide evidence to support your answer.</b></p>	<p>Confidential? – N</p> <p>SpaceX respectfully requests that Ofcom adopt a cost-based fee rather than adopting an AIP fee for the 28 GHz band. As explained by the OECD, the economic valuation of any particular use of spectrum is difficult because:</p> <p style="padding-left: 40px;">Firstly, it necessarily requires a multiyear evaluation – ten or more years – in a sector characterized by technological</p>

breakthroughs and discontinuities. Few envisaged, for example, the high rate of smartphone uptake around the world. Secondly, country-specific and market conditions influence any valuation. Thirdly, even among similar players and uses, the value for each player could be significantly different depending on specific circumstances. Assigning the spectrum to a player that values it the most does not necessarily maximize the value to the economy. This is part of the rationale behind spectrum caps, which try to protect competition by preempting possible spectrum hoarding, which increases barriers to entry. Fourthly, the valuation might require a comparison of distinctly different things, as was the case for broadcasting and broadband. In such scenarios, certain aspects are very hard – if not impossible – to measure. In countries where most households predominantly access free-to-air (FTA) television broadcasting, either because of income restrictions or because pay television infrastructure is not ubiquitous, the social value of the service is high and challenging to quantify.<sup>1</sup>

As this Consultation demonstrates, a fee structure based on uncertain economic valuations in a rapidly evolving market will lead to unintended and potentially harmful consequences for consumers. To address potential excess demand, Ofcom should instead seek to drive spectral efficiency through well-designed spectrum policies that encourage sharing between co-primary users on a co-equal basis. Properly designed spectrum policies can encourage operators to continue to invest in high-performing technologies without allowing national or regional licensees to leverage exclusive licenses to extract excessive rents from other users who require—but cannot directly access—the spectrum.

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<sup>1</sup> OECD/IDB (2016), *Broadband Policies for Latin America and the Caribbean: A Digital Economy Toolkit*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264251823-en>, 71.

<p><b>Question 3: Do you agree with our proposed market value for the national 10, 28 and 32 GHz spectrum? If not, please provide evidence to support your view.</b></p>	<p>Confidential? – N</p> <p>While SpaceX has no comment on the specific methodology that Ofcom proposes, it is concerned that the proposed market value for 28 GHz spectrum—as reflected in the fees—will ultimately represent a pass-through cost from exclusive licensees to satellite operators and their customers that will significantly increase the cost of doing business in the UK, harming investment, innovation, and competition. Ultimately, such costs could result in less service provided to consumers, including in rural and remote areas.</p>
<p><b>Question 4: Do you agree with our proposed calculation of the regional 28 GHz ALFs set out in detail in Annex A6, including our proposed calculation of fees for specific locations in part of a region? If not, please provide evidence to support your view.</b></p>	<p>Confidential? – N</p> <p>As above, while SpaceX has no comment on the specific methodology that Ofcom proposes, it is concerned that the proposed market value for 28 GHz—as reflected in the fees—will ultimately represent a pass-through cost to satellite operators that will significantly increase the cost of doing business in the UK, harming investment, innovation, and competition. Ultimately, such costs could result in less service provided to consumers, including in rural and remote areas.</p>
<p><b>Question 5: Do you agree with our initial conclusion that fees set based on our estimate of market value will best meet our statutory duties?</b></p>	<p>Confidential? – N</p> <p>As explained in more detail below in response to Question 6, SpaceX does not agree with Ofcom’s initial conclusion that fees set based on its estimate of market value will best meet its statutory duties.</p>
<p><b>Question 6: Are there any other comments that you wish to make in respect of the proposals that we make in this consultation?</b></p>	<p>Confidential? – N</p> <p>Next-generation satellite operators such as SpaceX and OneWeb rely on the 28 GHz band (27.5-30 GHz) for robust gateway earth station uplink connectivity. This band has been allocated on a co-primary basis for the fixed-satellite service and is essential to enable satellite operators to meet the growing demand of consumers for high-quality satellite broadband connectivity in the UK.</p>

Today, fixed-satellite service operators lack full access to critical Ka-band uplink spectrum in the United Kingdom because part of the band—the subject of this Consultation—has been exclusively assigned to four terrestrial operators. As a result, satellite operators are required to negotiate for leased access to this essential uplink spectrum. Unfortunately, without an obligation to share the spectrum on a co-equal basis pursuant to good-faith coordination, terrestrial operators can seek rents costing hundreds of thousands or millions of pounds per year. In some cases, terrestrial licensees may pass through the entire regional or national license fee to a single satellite operator, even though satellite operators may only require access to the spectrum in discrete areas that would not impair or inhibit terrestrial deployments. As a result, satellite operators may be forced to shoulder a disproportionate burden of the fee—e.g., paying an entire regional or national fee for a small number of gateway sites—that is not commensurate with the actual spectrum use or opportunity cost of the gateway deployment. Such costs could drive satellite operators to limit service provided to UK consumers. In the worst case, terrestrial licensees may refuse to lease the spectrum to satellite operators altogether, also hobbling service for consumers. Unfortunately, the Consultation does not adequately account for how its new fee arrangement would impact these subleasing arrangements and the satellite consumers they serve, including consumers who otherwise lack access to terrestrial broadband.

The current arrangement for 28 GHz spectrum is out of step with Ofcom’s statutory duties, and harms satellite consumers and competition in a number of ways. First, the lack of direct access to sufficient spectrum in the 28 GHz band, coupled with excessive subleasing fees, significantly reduces the ability of satellite operators to meet growing demand for satellite service, including in Very Hard to Reach premises, leading to a suboptimal use of spectrum. Second, because terrestrial operators are under no obligation to engage in, or complete, commercial arrangements in a timely manner or in good faith, the requirement to

sublease can delay or deny critical satellite capacity necessary to serve consumers and citizens. Third, because there is no obligation to share spectrum, terrestrial operators have an incentive to seek the maximum amount possible for their rent, up to or beyond the licence fee, passing on costs to satellite operators—diverting scarce resources from innovation, competition, investment, and customer service to unwarranted sublicensing fees—or passed onto the consumers, raising prices and reducing affordability (and consequently, consumer choice).

To mitigate these harms, drive consumer benefit, and align Ofcom's policies in the 28 GHz band with its statutory duties, SpaceX urges Ofcom to commence a proceeding that paves the way for next-generation satellite operators to be granted full, co-equal access to the co-primary spectrum in the 28 GHz band. The Italian regulator Agcom recently concluded a proceeding that will condition exclusive licenses for 28 GHz terrestrial operators on coordinating with satellite operators in good faith and without charging sublicensing fees. Moreover, it requires terrestrial licensees to share the locations of their 28 GHz deployments in order to speed gateway siting and coordination with satellite operators. SpaceX urges Ofcom to commence a similar proceeding to drive massive benefit for UK consumers and businesses who rely on next-generation satellite connectivity.