Your response

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Question 1: Are there other trends in the space sector (or the broader spectrum environment) that we should monitor and/or take account of in our strategy?	Confidential? No It is important for techUK members that Ofcom focuses on ensuring that in this new space environment there are no loopholes in the ITU-R Radio Regulations that result in less efficient use of the spectrum and allow speculation. Specifically, our members encourage Ofcom to participate in the design of proposals to the ITU to avoid the proliferation of massive NGSO constellation filings endorsed by other administrations, which may represent a new way to introduce "paper satellites". As the industry progresses towards 5G and eventually 6G, this is an important ask.
Question 2: Do you agree with the broad areas we have prioritised for our work?	techUK welcomes Ofcom's Space Spectrum Strategy, in the light of recent developments and the rapid expansion of the space sector. Our members broadly agree with the prioritised areas of work detailed in the document.
Question 3: Are there other issues and actions that are likely to be important over the next 2 – 4 years?	To support the broadest range of use cases, such as broadband, sensing and IoT, among others – in both global and local network markets with very different requirements – there is an increasing need for greater spectrum access. Accordingly, techUK members encourage Ofcom to enable further access to additional frequency bands. Some of our members noted that Ofcom should not only ensure that additional bands are made available to satellite networks, but it should also consider broadening its availability in the way the spectrum is offered.
Question 4: Do you have any evidence on whether specific actions should be a high priority?	Our members noted that areas which should be made a high priority are the following: • Sharing between GSO and NGSO Spectrum sharing in an NGSO context raises may raise similar issues as between GEOs and terrestrial services. Some of our members highlighted that sharing between GSO and NGSO networks must be made a priority to

ensure that GSO networks have the certainty for protection of their operations.

- 14.25 – 14.5 GHz

Ku band uplink 14.25-14.5 GHz could be used more efficiently, and that reviewing its use for satellite services should be considered a high priority. This is a critical frequency band for enabling the true benefit of satellite broadband services to UK consumers and businesses. The current UK requirement for satellite user terminals to coordinate with a limited number of fixed service links in the 14.25-14.5GHz band places a significant constraint on the provision of domestic satellite services (which is not the case in most other European countries). As a result, most satellite operators focus their offerings in the UK to the 14.0–14.25 GHz band. This results in congestion that prevents the optimal deployment of satellite services in the UK. To maximise the provision of connectivity across the country, the deployment of satellite user terminals for the whole 14.0-14.5 GHz should be on an uncoordinated and ubiquitous basis.

- Q/V Bands

Q/V bands will play a critical role in enabling feeder links for the next generation of high throughput satellite systems. Any new approach to licensing gateway earth stations in the Q/V band should be based on ensuring interference-free operation for commercial satellite services in the UK.

- ESIMs

Our members agree with Ofcom's proposal to update ship, aeronautical and network licenses for ESIMs in the Ku and Ka bands, including ESIMs communicating with NGSO systems (Please see paragraph 5.15).

- Protection criteria for Fixed Satellite Services (FSS)

techUK broadly supports the work of the ITU's Working Party 4A (WP4A) and agree that there is value in reviewing the protection criteria recommendations for FSS to reflect the current/future sharing environment. Specifically, WP4A has been studying the issue of NGSO-to-NGSO coordination for some time. Unlike GSO coordination, NGSO-to-NGSO coordination is highly complex as each system's architecture is different. It is therefore essential that the ITU Coordination process continues to

	be promoted and upheld (by Ofcom and other international regulators) so that operators have the flexibility to determine the right approach to coordinating their systems. When/if the international NGSO community converges on a common set of agreed criteria, its implementation to complement the ITU Coordination process should be considered.
Question 5: Do you have any other issues you wish to comment on?	In spectrum bands where the satellite industry is already operating, the ability to have current and future services protected will be critical for the sector. It is important that Ofcom work to ensure that satellite networks have long term access to spectrum that is not placed at risk of interference for other services, whether deployed in UK or in other countries. The strategy document includes elements related to interference between satellite systems (NGSO-GSO and NGSO-NGSO) and interference from satellite downlinks to terrestrial systems, but there is no reference to issues related to interference from terrestrial systems to satellite systems. It is suggested that Ofcom should the issue of interference to satellite systems from terrestrial systems in the list of issues to be addressed in the strategy. Some members encourage Ofcom to actively support, at the ITU, the inclusion of the creation of the satellite component of IMT-2020 and IMT-2030 on an expedited basis, to track with the development of technology in this area. Some members suggested that Ofcom should consider taking additional actions related to space sustainability, beyond those actions already identified. For example, in establishing network licences for NGSO systems, Ofcom may need to include licence conditions to ensure that those systems comply with international guidance on orbital debris.
Question 6: Are there other issues and actions specifically relating to NGSO communication systems that are likely to be important over the next 2 – 4 years?	techUK would respectfully highlight a number of issues concerning sharing between NGSO systems as well as sharing with GSO systems under Agenda Item 7, Topic A at the next World Radiocommunication Conference (WRC-23) In addition, under Agenda Item 1.17, WRC-23 will

	have to address the issue of sharing of intersatellite links in the Ka and Ku band with GSO and NGSO networks operating in these bands. techUK members agree with Ofcom's proposal to consider providing NGSO systems access to the same spectrum as GSO systems where it is currently not possible and where new spectrum may be provided for satellite systems generally. This approach would be a 'win-win' for both satellite operators and UK consumers. Furthermore, some members agree that the Earth station network license be amended to enable NGSO ship/aircraft earth stations to use the same parts of Ku and Ka band spectrum that are currently available for GSO use (as well as the corresponding changes to the Ship and Aircraft Radio licenses themselves).
Question 7: Do you have any evidence on whether specific actions relating to NGSO communication systems should be a high priority?	As NGSOs continue to proliferate at a rapid pace, our members noted it is critical that Ofcom advance at the ITU and domestical level to ensure the rational and fair use of the orbital and spectrum resource. Some of our members, however, suggested that regulators need more detailed figures for meaningful analysis. Some members would welcome that these new developments and constellations announcements are considered. It is suggested that Ofcom should not only account for existing users and constellations, but also future expected users and positions. Some of our members highlighted that it is important for regulators to retain flexibility and acknowledge that there are a significant number of users emerging.
Question 8: Do you have any other comments relating to NGSO systems?	As more countries increase their focus on NGSO systems, it is important it does not result in a global patchwork of different approaches. Members see this result as likely if individual countries take action in inconsistent ways, and risk making operations for the satellite sector more challenging. However, some highlighted that not all users of the spectrum will be cross-border or fully

	international. In fact, excessive harmonisation could result in a loss of autonomy and localisation.