Your response

Question	Your response
Questions for stakeholders that are interested in using 2 GHz MSS	
Question 1: Which service(s) do you wish to provide using 2 GHz MSS spectrum? When do you expect that you could provide these services, and what UK geography would these services cover? Where applicable, please provide evidence to support your response (including but not limited to): business plans, internal market forecasts, board papers, analyst reports, etc.	Confidential - Y

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Question 2: Please explain any barriers to your deployment of a service and your plans to address them.	Confidential - Y

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Question 3: What benefits might be realised by enabling the service(s) you wish to provide through to 2032 (the short term)? Similarly, through to 2045 (the long term).	Confidential? – No In the short term, to 2032, enabling Sateliot's 3GPP NB-IoT NTN service in the 2 GHz MSS band would deliver immediate improvements in UK-wide IoT coverage, particularly in rural, remote, and hard-to-reach areas where terrestrial mobile networks face economic or physical deployment constraints. The ability to provide coverage from low Earth orbit without additional terrestrial infrastructure would ensure continuity of IoT services across the UK landmass, including remote islands and coastal waters. This would support critical applications such as smart agriculture, environmental monitoring, fisheries management, logistics, utilities metering, and asset tracking, all of which benefit from consistent low-bitrate connectivity. These benefits can be realised quickly because the NB-IoT NTN technology is already standardised in 3GPP Release 17 and above, interoperable with existing NB-IoT devices, and integrated with terrestrial mobile networks via GSMA-standard roaming agreements. In addition to enhancing coverage, short-term benefits include improved network resilience by providing an alternative communications path in areas affected by terrestrial outages, whether due to natural disasters, extreme weather events, or infrastructure failures. A service like this complements the MNO but does not compete against them. The wholesale integration model ensures that these benefits extend through existing UK mobile operators, preserving their customer relationships while expanding the geographic reach of their IoT

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	offerings. The initial modest spectrum requirements of 2 × 1 MHz, scalable to 2 × 5 MHz mean gains can be achieved while leaving the majority of the band available for other MSS uses. In the long term, to 2045, the same infrastructure can evolve to support additional MSS applications alongside NB-IoT NTN, including future direct-to-device (D2D) and NR-based services as standardisation progresses. By reserving a defined segment for NB-IoT and allowing for scaling within that segment, Ofcom would help ensure the continuity and stability of low-bitrate IoT services over multiple technology generations, avoiding the disruption and cost of migrating deployed devices. Over this period, persistent nationwide coverage will continue to enable critical data collection for climate monitoring, environmental protection, and smart infrastructure management, contributing to national sustainability and digital transformation objectives. Alignment with European approaches would also safeguard the UK's participation in a wider, harmonised ecosystem, ensuring economies of scales and facilitating cross-border IoT service continuity well into the 2040s.
Question 4: Please explain what you consider would be the appropriate licence period for the service(s) you wish to provide? Please explain why, including providing evidence, such as asset use life, where applicable.	Confidential? – No Sateliot considers that an appropriate licence period for NB-IoT NTN services in the 2 GHz MSS band would be a minimum of ten years, coupled with clear roll-out and performance milestones, and supported by "use-it-or-lose-it" provisions. A ten-year term would provide sufficient certainty for long-term investment in satellite infrastructure, ground segment integration, and device ecosystem development, while remaining flexible enough to accommodate future changes in technology, market demand, and spectrum policy. This duration is also consistent with typical lifecycles for LEO satellite constellations, where operational planning, replenishment, and return on investment generally require a multi-year horizon. Milestone-based licensing would help ensure that the spectrum is brought into timely and effective use. For Sateliot's 3GPP NB-IoT NTN service, this could include measurable targets such as establishing commercial service availability within the first year of the licence,

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	achieving integration with a defined number of UK mobile network operators within three years, and meeting agreed connection or coverage thresholds by the midpoint of the term. A licensing model that combines a ten-year term with performance conditions would provide the necessary stability for Sateliot and other providers to commit to the UK market while ensuring that Ofcom retains the ability to reassess band segmentation and usage models in line with future technological and policy developments. This approach balances investment certainty with regulatory flexibility, supporting both the near-term deployment of NB-IoT NTN and the long-term evolution of the MSS ecosystem.
Question 5: What is the minimum amount of spectrum you would need to provide your service(s) to deliver a basic service to customers? What additional service features and/or customer numbers could you meet with a larger allocation (please specify the amount of spectrum)? Please include details of any guard bands that you would consider necessary within this spectrum for coexistence purposes.	Confidential? – No As mentioned, the spectrum requirements are minimal for the provision of a basic. For 3GPP NB-IoT NTN service in the UK, Sateliot would require a minimum allocation of 2 × 1 MHz in each direction of the 2 GHz MSS band. This would accommodate five 200 kHz NB-IoT carriers in each direction, enabling multiple simultaneous connections and allowing redundancy to ensure consistent service quality. This configuration is sufficient to support our initial service portfolio of low data-rate, delay-tolerant IoT messaging applications such as smart agriculture, environmental monitoring, utilities metering, logistics, and asset tracking. As customer numbers and application diversity grow, the service could scale efficiently to a 2 × 5 MHz allocation within the same defined NB-IoT segment. This expanded capacity would enable additional carriers for higher connection density, reduced latency through increased message throughput, and the integration of more advanced features such as larger payload support as well as covering applications which will require NR RedCap. Maintaining the allocation as a contiguous block would also facilitate efficient channel planning, simplify coordination, and ensure backward compatibility for already-deployed devices.

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Question 6: For each service, please explain why you wish to use 2 GHz MSS. Please explain why this is a more suitable frequency compared to alternatives.	Confidential? – No The 2 GHz MSS band is suited for the provision of Sateliot's 3GPP NB-IoT NTN service because it is one of the first frequency ranges to be standardised in 3GPP Release 17 for non-terrestrial NB-IoT. This ensures immediate compatibility with a growing ecosystem of commercial NB-IoT devices, modules, and network infrastructure, and enables seamless roaming between terrestrial and satellite networks. The paired FDD configuration of 1980–2010 MHz uplink and 2170–2200 MHz downlink provides balanced link performance and supports the duplexing requirements of 3GPP NB-IoT NTN without the need for custom modifications to end-user devices. Sateliot´s is already deploying services in these bands around the world. Compared to lower-frequency bands, 2 GHz offers a practical balance between propagation characteristics and antenna size. It provides sufficient link budget to support IoT devices with small form-factor antennas while maintaining the capacity to serve high connection densities across large geographic areas. Relative to higher-frequency MSS allocations, it allows more reliable performance under challenging conditions such as foliage, terrain obstructions, or indoor penetration, all of which are important for many IoT use cases. The band also benefits from a degree of international harmonisation through the EU MSS Decision and similar frameworks in other jurisdictions, which creates a larger addressable market for devices and enables economies of scale in manufacturing and deployment. This is critical for a wholesale model like Sateliot's, where integration with UK mobile network operators relies on the availability of standardised, mass-market devices that can operate seamlessly across borders. Using 2 GHz MSS for NB-IoT NTN therefore reduces both the cost and complexity of deployment compared to alternative frequencies that lack the same level of global or regional alignment. In addition, the 2 GHz MSS band can accommodate the minimal spectrum needs of NB-IoT NTN within a service-specific segment that coexists predictably with other MSS applications such as D2D or in-flight connectivity. This enables Ofcom to maximise the utility

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	of the band by supporting multiple service types in parallel, something that is more challenging in alternative MSS bands with less available paired spectrum or more restrictive incumbent use.
Question 7: To what extent are there economies of scale across the UK and the EU for each service you wish to provide? What is the minimum number of users/devices you would need for each service to be economically viable?	Confidential? – Yes
Question 8: For the service(s) you wish to provide in the UK, what is the extent and nature of potential technical coexistence issues with other jurisdictions, particularly the EU? What are minimum satellite beam footprint sizes that you consider feasible, and what cross-border sharing conditions do these facilitate?	Confidential? – No For Sateliot's NB-IoT NTN service in the 2 GHz MSS band, the potential for technical coexistence issues with other jurisdictions, including the EU, is relatively limited due to the narrowband, low-duty-cycle, and low-power characteristics of the service. As described above, the NB-IoT NTN uses 200 kHz carriers within a defined 2 × 1 MHz segment (scalable to 2 × 5 MHz), resulting in a minimal interference footprint compared to wideband MSS applications. This makes adjacent channel operation

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	with other MSS services feasible with only nominal guard-band requirements (channels are of 180kHz+20guardband), provided that predictable coexistence conditions are in place. The main cross-border consideration is that satellite beam footprints in low Earth orbit are inherently larger than national boundaries, meaning that transmissions intended for UK users may also be receivable in neighbouring jurisdictions. This is equally true for services operating from the EU that have coverage over the UK. For Sateliot's service, beam footprints are typically on the order of several hundred kilometres in diameter, optimised to balance link budget requirements with the ability to reuse spectrum efficiently across the constellation. While smaller beam sizes are technically possible, they introduce complexity and cost, and can reduce overall spectrum efficiency; our current beam architecture represents a practical trade-off for NB-IoT NTN operations. Given these factors, cross-border sharing conditions should be based on agreed technical parameters that reflect the characteristics of NB-IoT NTN. This could include coordination on maximum EIRP levels, duty-cycle limits, and adjacent channel leakage ratios, ensuring that low-bitrate IoT operations can coexist with other MSS applications without causing harmful interference. Alignment with EU technical rules and segmentation would further simplify cross-border coordination by ensuring that devices and network configurations are consistent across the region. Such alignment can In particular define and protect an NB-IoT segment and would also preserve the benefits of harmonisation for the device ecosystem and support the seamless provision of IoT services across the UK–EU boundary.
Questions for stakeholders not interested in using 2 GHz MSS	
Question 9: What service(s) do you think could use 2 GHz MSS in the UK? What benefits do you think these services could provide, and how much spectrum do you consider these services require to (i) deliver basic	Confidential? – No N/A

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services, and (ii) to deliver more advanced services?	
Questions for all stakeholders	
Question 10: Overall, to what extent does demand for 2 GHz MSS spectrum to provide services in the UK relate to demand for spectrum to provide 2 GHz MSS services in the EU (and vice versa)?	Confidential? – No Demand for 2 GHz MSS spectrum in the UK is tightly interdependent with demand in the EU because the NB-IoT NTN service relies on a single, standards-based device ecosystem and roaming-led integration with mobile network operators across borders. A common UK–EU configuration enables vendors to build once for both markets, keeps module and device costs low, and allows Sateliot's wholesale model to extend UK operators' footprints seamlessly into continental deployments and vice versa. In practical terms, the business case for UK service launch strengthens when devices certified for EU operation can be used unchanged in the UK, and when roaming agreements allow continuous service for cross-border assets (for example, transport and logistics). This interdependence also reflects how LEO MSS systems operate: satellite beams naturally cover areas that span national boundaries, and operational planning, spectrum reuse, and interference management benefit from consistent band segmentation and technical conditions on both sides of the Channel. If the UK and EU both recognise an NB-IoT segment, operators can coordinate predictable coexistence with other MSS uses while maximising usable capacity. Conversely, divergence would fragment demand and raise costs. Different segment sizes, duplexing assumptions, or emission limits would force device variants, duplicate certification, and bespoke network configurations, increasing time to market and undermining economies of scale. It would also complicate cross-border coordination and reduce the utility of roaming for UK enterprises with EU operations (and EU enterprises operating in the UK). In short, demand is mutually reinforcing: UK uptake benefits directly from aligned EU demand (through larger device volumes and harmonised roaming), and EU uptake benefits from UK alignment that expands the addressable

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	market and de-risks vendor investment. Policy choices that preserve UK–EU alignment in the 2 GHz MSS band therefore translate into stronger commercial viability, faster adoption, and lower end-user costs in both jurisdictions.
Question 11: Do you consider there would be any benefits or risks from aligning with the EU regarding the types of 2 GHz MSS services being authorised, as well as the specific operators licensed to operate?	Confidential? – No Alignment with the EU on the types of services authorised in the 2 GHz MSS band would deliver clear benefits for NB-IoT NTN. Common service categories and technical conditions reduce device and module fragmentation, support roaming-based integration with UK MNOs, and simplify cross-border coordination where satellite beams span national boundaries. In practical terms, if both the UK and EU recognise an NB-IoT segment, vendors can build once for both markets, operators can plan uniform channelisation and emission masks, and end users gain continuity for assets that move across the UK-EU area. There are also benefits to aligning on timelines, coexistence parameters, and certification assumptions. Parallel milestones for consultation, authorisation, and device approval help lock NB-IoT NTN into global roadmaps. Consistent technical rules (for example, adjacent-channel limits, duty-cycle expectations, and maximum EIRP) lower coordination overheads at borders and allow predictable sharing with other MSS uses (e.g., D2D or in-flight connectivity) without unnecessary guard bands. However, operator-specific alignment, in the sense of mirroring EU choices about which individual operators hold UK authorisations, carries risks. It could foreclose participation by new or service-specialised providers and limit competitive pressure to deliver innovative, low-bandwidth IoT services. It may also entrench wideband-centric configurations that do not reflect the minimal spectral footprint of NB-IoT NTN. The UK should therefore preserve discretion over licensing outcomes and promote a service-led, non-exclusive model that accommodates multiple providers, including a shared NB-IoT segment. A balanced approach is to align where scale matters and retain flexibility where competition matters. The UK can

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	align with the EU on service categories, technical conditions, and (where feasible) band segmentation, while reserving the ability to tailor its licensing framework. For example, milestone-based terms, use-it-or-lose-it obligations, and a light-licensing "spectrum park" for NB-IoT NTN. This preserves economies of scale and cross-border operability, yet avoids locking the UK into operator-specific decisions that could slow innovation or exclude narrowband IoT entrants.
Question 12: Do you have any other points that we should consider for our consultation on future proposals?	Confidential? – No Ofcom's future proposals for the 2 GHz MSS band should recognise the value of adopting a service-led segmentation model that explicitly accommodates low-bandwidth, narrowband IoT alongside other MSS applications. By defining a dedicated NB-IoT segment within the band, Ofcom can ensure that low-power, low-duty-cycle services with a minimal interference footprint are not displaced by wideband-centric licensing approaches. This segmentation could be implemented in a way that allows multiple NB-IoT NTN providers to operate under light-licensing conditions, with proportionate technical parameters such as EIRP caps, duty-cycle limits, and self-coordination protocols. Flexibility in licensing is also important. A framework that supports milestone-based authorisations, "use-it-or-lose-it" provisions, and the ability to scale capacity within the defined NB-IoT segment would encourage timely deployment while maintaining adaptability to future technology and market developments. Ofcom could also consider incorporating a "spectrum park" model for narrowband IoT, similar to approaches seen in other jurisdictions, to maximise utilisation and innovation in this part of the band. Finally, early clarity on segmentation, technical conditions, and timelines will be essential to securing the UK's place in the global NB-IoT NTN ecosystem. Aligning these elements as far as practicable with EU decisions would preserve economies of scale, simplify device certification, and support uninterrupted service continuity across borders. This would position the UK to capture both the near-term benefits of expanded IoT

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	coverage and the long-term gains from a competitive, multi-service 2 GHz MSS environment.