Your response

Question	Your response
Question 1: Do you agree with the prioritisation of the agenda items, as shown in Annex 5, and if not why?	Confidential? – N Regarding the agenda items addressed by Viasat in this consultation, Viasat agrees with the prioritisation of the agenda items except for one. Agenda item 1.6 is categorized as “low priority”. The protection of the GSO operations from the aggregate interference of NGSO systems, including the development and implementation of an enforcement mechanism to ensure that the aggregate interference is not exceeded, is critical to ensure the reliability of services provided by geostationary spacecraft. In addition, Resolution 750 provides limits of unwanted emission power from GSO satellites into earth-exploration satellites, and there is growing interest in reexamining these emission limits. Due to the complexity and difficulties of this Agenda Item, Viasat requests the prioritization to be elevated to “medium priority”.
Question 2: Ofcom is supporting the following three priority bands for IMT identification in the RRs: **24.25 – 27.5 GHz** **40.5-43.5 GHz (as part of a wider global 37-43.5 GHz tuning range)** **66 – 71 GHz** **If you don’t agree with any of these bands, or think we should be promoting other bands, please provide justification for your views.**	Confidential? – N See Attachment for full response.

Question 3: What are your views on the suitability of the currently identified bands for HAPs and do you think there is a requirement for additional spectrum? Recognising that we support 26 GHz as a global band for IMT under agenda item 1.13, what are your views on the bands currently under study for HAPs, both globally and in ITU-R Regions?	Confidential? – N Viasat is of the view that HAPS must protect the GSO and non-GSO FSS in all bands under study for this Agenda Item. This objective could be accomplished by HAPS being permitted to operate without being able to claim protection from the FSS and by requiring that they not cause harmful interference into the FSS. Administrations authorizing HAPS must ensure that the authorized operational parameters protect existing users in the bands from interference, including through operational constraints to prevent interference to GSO satellites.
Question 4: What are your views on the bands within scope of Agenda Item 1.16 and their suitability for Wi-Fi and Wi-Fi like services? Do you agree that Ofcom should support the CEPT position of No Change? If not, please provide evidence to support your view.	No Comment
Question 5: Do you agree that UK support the inclusion of the updated Recommendation M.1849-1 ("Technical and operational aspects of ground-based meteorological radars") in footnote No.5450A? What are your views on the requirement to include a reference to ITU-R Recommendation ITU R M.1638 1 in footnotes No.5447A and 5.450A and the potential impact upon Wi-Fi (and similar technologies)?	No Comment
Question 6: Do you agree that UK support a position of not making changes to the Radio Regulations to reference specific bands for M2M/IoT usage?	No Comment

Question 7: What are your views on the potential removal of the limitations listed above?	No Comment
Question 8: What are your views on the approach we are proposing to take in respect of ESIMs and are there any additional factors that you think we should take into account?	Confidential? – N Viasat supports Method B in the ITU-R CPM text for implementation of ESIM on all three platforms: air, maritime and land. The ITU studies show that ESIMs operate without causing harmful interference to other spectrum users (See: ITU-R 4A/826 Annexes 13, 14 and 15). These studies are based on technical parameters and protection criteria provided by the other services, including terrestrial fixed and mobile services. Viasat supports ECC Decision 13(01) providing power density limits to protect ground-based networks and mobile services from ESIMs on aircraft. Geographic separation protects ground-based networks and mobile services from ESIMs on ships. Satellite downlink transmissions to the ground are the same as those for a standard fixed earth station operations and, therefore, do not require any different technical or regulatory treatment. The low power levels, low duty cycles, and rapid movement of aircraft protect Mobile Satellite feeder link operations, as demonstrated by extensive studies in the ITU-R.

Question 9: What are your views on the establishment of regulatory provisions, in Article 22, that cover non-GSO operation between 37.5 and 51.4 GHz?	Confidential? – N The Q/V Band is the expansion band for broadband satellite services, both non-GSO and GSO. Today No. 22.2 applies and non-GSO satellite systems shall not cause unacceptable interference to and shall not claim protection from geostationary satellite networks in the fixed-satellite service. This agenda item is related to removing the unprotected status of non-GSO's with respect to GSO spacecraft while still providing certainty to GSO spacecraft that they will not suffer interference from non-GSO's. At WRC-2000, Article 22 was created and an acceptable level of interference from the non-GSO's into the GSO's was quantified via epfd limits. Resolution 76 contains aggregate epfd limits in which all non-GSO's aggregated together are not to exceed. The single entry epfd limits were derived from Resolution 76, for the Ku and Ka-bands, by dividing by the number of non-GSO systems equal to 3.5. The BR verifies the single entry epfd limits for each non-GSO filing, but today there is no enforcement mechanism in place to enforce the aggregate limits in Resolution 76. If more than 3.5 systems are deployed, a protection mechanism for the GSO's is not in place today to guarantee that the aggregate limits are not exceeded. Similar work is taking place under Agenda item 1.6, in which single-entry limits (3% increase in unavailability of the GSO) will be verified by the BR and an aggregate limit (10% increase in unavailability of the GSO) is defined in the Radio Regulations. There are approximately a dozen non-GSO systems seeking licenses in the United States at this time and 40 active non-GSO filings at the ITU using these frequency bands. There is no means being proposed for reducing non-GSO emissions once the number of systems exceed the aggregate limit. The first three non-GSO systems in operation will operate at the single entry level of 3%. When systems 4 and 5 come online, we do not have a mechanism to reduce the transmission levels of the first three non-GSO system to a value less than the original 3% each to accommodate the new systems and continue to protect the GSO. Viasat is concerned that a proper mechanism must be developed to enforce the aggregate limit that is proposed in Method A of the CPM text, so that we have a complete package. A complete package is necessary for this Agenda Item to be successful and guarantee an aggregate interference level is not exceeded by the non-GSO's.

Question 10: What are your views on the various issues under consideration under Agenda Item 7, particularly in respect of the bringing into use of non-geostationary satellite networks (i.e. Issue A)?	No Comment
Question 11: What are your views on Agenda Item 9.1.1?	No Comment
Question 12: What are your views on the potential establishment of satellite pfd limits, in the 1 452 – 1 492 MHz band, to protect terrestrial use?	No Comment
Question 13: Do you have any views on the bands being studied and are there any other considerations which you think should be taken into account? What are your views on the appropriateness of the current emission limits in the band 3 700 – 4 200 MHz?	No Comment

Question 14: Do you agree that no changes to the RRs are required, under Agenda Item 9.1.7, and that managing the unauthorised operation of earth station terminals (deployed within its territory) should be addressed by the national administration concerned?	Confidential? – N Viasat is of the view that this is a national issue and there is no need to make changes to the Radio Regulations.
Question 15: What are your views on the need for additional fixed satellite service allocations in the band 51.4 – 52.4 GHz?	Confidential? – N Viasat supports additional spectrum for the Fixed Satellite Service in the 51.4-52.4 GHz band, as the V-Band is an expansion band for satellite broadband services.
Question 16: What are your views on Agenda Item 1.8, particularly the need to enhance maritime safety, set against the need to respect the international spectrum allocations and the protection of passive services in adjacent bands?	No Comment
Question 17: What are your views on Agenda Item 1.9.1, particularly the need to respect the current integrity of the AIS?	No Comment

Question 18: What are your views on Agenda Item 1.9.2, particularly the need to take into account current national users in the bands defined by RR Appendix 18?	No Comment
Question 19: What are your views on Agenda Item 1.10 and do you think that any changes to the Radio Regulations may be necessary?	No Comment
Question 20: What are you views on Agenda Item 1.11, and do you agree that no specific identification for rail communications is required in the Radio Regulations?	No Comment
Question 21: What are you views on Agenda Item 1.12 and do you agree that there is no requirement for specific identification to ITS in the Radio Regulations?	No Comment
Question 22: What are you views on Agenda Item 9.1.4 concerning radiocommunications for sub-orbital vehicles?	No Comment

Question 23: What are your views on Agenda Item 1.1, recognising that licensed amateur operators in the UK already have access to parts of the 50 – 54 MHz band?	No Comment
Question 24: What are your views on Agenda Item 1.2 concerning power limits for MetSat, Mobile Satellite and EESS, and the linkage to agenda item 1.7?	No Comment
Question 25: What are your views on Agenda Item 1.3, particularly on any limits required to protect terrestrial use?	No Comment
Question 26: What are your views on Agenda Item 1.7 considering spectrum needs for short duration satellites, noting also the potential linkages to Agenda Item 1.2?	No Comment
Question 27: What are your views on Agenda Item 1.15, particularly on the protection needs of passive services?	No Comment

Question 28: What are your views on Agenda Item 9.1.6, particularly on the categorisation of WPT and whether WRC action is required?	No Comment
Question 29: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?	No Comment
Question 30: Are you aware of any specific issues, not covered elsewhere in this document, which are likely to be raised in this part of the Director's Report and of which you think Ofcom should be aware?	Confidential? – N Viasat expects the Director's Report to address the Working Party 4A issue related to the technical feasibility of NGSO-to-GSO satellite links. Viasat supports NGSO-to-GSO links in the 17.7-20.2 GHz and 27.5-30 GHz band as this would increase spectrum efficiency by: (i) expanding the service capabilities of those GSO spacecraft without altering their technical designs or adversely changing the RF operating environment, and (ii) enabling additional NGSO connectivity allowing offloading of data-intensive traffic that can be carried more efficiently to and from Earth over GSO systems with inherently greater available throughput. Furthermore, the transmission to and from the GSO spacecraft would be entirely within the same technical envelope as an earth station operation on an aircraft. As defined in Article 1 of the Radio Regulations, the FSS includes satellite-to-satellite communications in the Earth-to-space and space-to-Earth directions.

Question 31: Do you have any comments on Agenda Item 9.3 considering Resolution 80?	No Comment
Question 32: What changes to the Radio Regulations have you identified that would benefit from action at a WRC and why? Do you have any proposals regarding UK positions for future WRC agenda items or suggestions for other agenda items, needing changes to the Radio Regulations, that you would wish to see addressed by a future WRC?	Confidential? – N Viasat is continuing to develop positions related to WRC future agenda items and plans to supplement its views in the coming weeks.