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?	There are several agenda items which techUK considers should be raised in priority, as described below. It is recognised that given limited resources, not all agenda items can be given high priority, however some agenda items in our view are of sufficient importance to the UK to justify raising their classification. Furthermore, at this stage in the process, there are probably some agenda items currently in the High or Medium category (for example 9.1.8) for which broad consensus is apparent and Ofcom might therefore place in a lower category. **WRC-19 AI 1.16** techUK is concerned to see that WRC-19 AI 1.16 has been classified as "medium". We would have expected this AI to be "high" noting wireless data traffic is projected to continue to grow dramatically during the 2018 – 2025 timeframe [Cisco Systems VNI]. New and high growth application areas such as 4k/8k HD video, AR/VR, gaming and low latency industrial applications, combined with the significant increase of the number of Mobile Broadband wireless devices in homes, schools businesses and public spaces, are expected to be significant drivers of additional traffic. UK based Quotient Associates conducted projected traffic patterns based analysis and concluded that in Europe there will be a Wi-Fi spectrum shortfall of between 345 MHz and 753 MHz in 2020 and between 655 MHz and 1 713 MHz in 2025 [Wi-Fi Alliance Spectrum Needs Study]. An analysis conducted by Qualcomm on spectrum requirements to enable 1 Gbit/s coverage in dense deployment scenarios concluded that a total amount of around 1 280 MHz of licence exempt spectrum will be required around the 5 GHz band [Qualcomm Spectrum Needs Study]. While techUK acknowledges WRC-19 AI 1.16 will not deliver any new significant spectrum to meet these anticipated spectrum demands we believe that the UK need to retain, as a priority, the need to support identification of additional spectrum for WAS/RLAN and relaxation of constraints in existing bands. **WRC-19 agenda item 9.1, issue 9.1.1** techUK is also concerned that agenda item 9.1.1 has been provisionally placed as "low" priority. Although this agenda item was originally proposed by China, there are important UK and European interests at stake with this agenda item. The bands within the scope of this agenda item are harmonised for MSS operations in the UK and Europe and are shared by two MSS operators. Interference from terrestrial IMT systems deployed in countries outside of the EU could cause harmful interference to MSS services in the UK. Furthermore, the fact that one of the satellite operators is a UK headquartered company and that Ofcom is its notifying

	administration adds to the UK interest. This agenda item gives an opportunity to address the issue at WRC-19 and consider changes to the Radio Regulations to eliminate or reduce substantially the risk of interference in the future. Given the significant UK interest in this agenda item this issue appears to fit in the Medium category at least. **WRC-19 agenda item 9.1, issue 9.1.7** techUK is also concerned that agenda item 9.1.7 has been provisionally placed as "low" priority. Although this is not a significant issue regarding the use of spectrum in the UK, it is an important issue for UK based satellite operators, most of which provide service to multiple countries, anywhere in the world. Under this agenda item, some countries could consider placing draconian requirements on satellite operators as a condition of providing satellite service. Furthermore, some proposals under this agenda item have sought to place some responsibility for authorisation abroad on the notifying administration, which could have important repercussions for Ofcom itself. While the UK has a provisional No Change position for this agenda item, it is apparent that some countries will propose some specific action is taken at WRC-19. This agenda item therefore appears to fit in the Medium category at least.

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.	**AI 1.13 IMT above 24 GHz** **24.25-27.5 GHz** techUK supports IMT identification for the 26 GHz band (24.25-27.5 GHz) noting this band has already been adopted as a "pioneer band" for 5G in Europe and is necessary for very high data rates and capacity, also noting that this band overlaps with 26.50-29.50 GHz as used in US, Korea and Japan. techUK notes that most countries are considering making at least 1 GHz of mmWave spectrum available per major operator for initial rollouts. [1] European Administrations should ensure the whole 26 GHz band is made available for 5G use before WRC-19 but where this is not available for early release 26.5-27.5 GHz should be considered as a priority. It is important that technical conditions for the 26 GHz band are not over-restrictive and do not stifle development and implementation of 5G networks and services, and ideally are aligned with other parts of the world to enable Europe to benefit from global economies of scale. It is also important that other services in the same and adjacent frequency bands are protected from harmful interference from 5G systems. techUK is concerned that restrictions on unwanted emissions in the frequency band 23.6-24.0 GHz, for protection of passive services, would prevent usage of the lower part of the 26 GHz 5G Pioneer band in Europe. TechUK believes that appropriate and least restrictive protection levels need to be identified to sufficiently protect the passive services while still enabling a proper and timely deployment of 5G in Europe. **40.5-43.5 GHz (part of a wider global 37-43.5 GHz tuning range)** techUK supports IMT identification of the 40.5-43.5 GHz range to enable 5G deployments noting that not all Regions/counties will enable access to the whole range but with an appropriate tuning range economies of scale can still be achieved. techUK therefore supports the view of the UK for an IMT identification of the 40.5-43.5 GHz. It should be noted that this band is expected to be used in the future for coordinated FSS earth stations and provisions may be needed to ensure that licensing of this band to terrestrial systems would be compatible with use by coordinated earth stations. techUK notes that Ofcom considers that this band could be part of a wider tuning range 37-43.5 GHz. techUK recognises that some regions prioritise the band 37-40 GHz for IMT and hence an equipment tuning range of 37-43.5 GHz could allow the same equipment to be used in all regions. **66-71 GHz** techUK believes that both 3GPP-based and IEEE 802.11 based technologies will play an important role in supporting 5G services and applications. We consider 5G as much more than just IMT-2020.

	techUK notes that 5G applications envisaged in the 66-71 GHz band are likely to encompass both fixed and mobile use cases. While we acknowledge 66-71 GHz will be important from a 5G perspective and should be made available on a licence exempt basis, like the 57-66 GHz band which is being made available in many countries for licence exempt use by multi-gigabit applications, our preference is **not** to seek an "IMT" identification for either band. We are concerned that if 66-71 GHz is designated for IMT that other technologies currently accessing the 57-66 GHz band today could be deliberately precluded from accessing the 66-71 GHz band. Furthermore, licence exempt use of the 66-71 GHz band by multi gigabit applications, can be implemented in a similar way as for the 57-66 GHz band, based on the existing allocation to the Mobile Service in the ITU Radio Regulations as further detailed in Recommendation ITU-R M.2003 "Multiple Gigabit Wireless Systems in frequencies around 60 GHz" for which a revision extends the frequency range up to 71 GHz.
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?	**AI 1.14 Regulatory conditions for High Altitude Platforms** **26 GHz band (24.25-27.5 GHz)** techUK is opposed to considering the 26 GHz band (24.25-27.5 GHz) for potential use for HAPs since techUK members believe that the 26 GHz band is better utilised to support the development of 5G services on a global basis. In addition, techUK is concerned about the potential use of HAPS in the bands 27.9-28.2 GHz, 47.2-47.5 GHz and 47.9-48.2 GHz. Use of this band by HAPS would require technical constraints on HAPS to ensure compatibility with FSS applications.

[1] ECC Decision (18)06 "Harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz" approved 06 July 2018

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.	**AI 1.16 RLANs** techUK believes that to accommodate the RLAN development, priority should be given to reviewing current conditions in existing RLAN bands. **5725-5850 MHz** techUK supports the recent Ofcom decision to extend Wi-Fi access in the 5 GHz band to an additional 125 MHz in the 5725-5850 MHz band ("5.8 GHz band"). With this action, UK joined several Region 2 and 3 countries that allow RLAN operations in the 5.8 GHz band. Billions of WAS/RLANs have been deployed in this frequency range without any cases of interference reported to the ITU. In the meantime, the need for additional Wi-Fi spectrum in mid-band is significant and continues to grow (see Wi-Fi Spectrum Needs Study[2]). techUK believes it would be appropriate for UK, at WRC-19, to propose extension of RLAN operations in the 5.8 GHz band to Region 1 countries consistent with its domestic decision. However, techUK also notes the difficulties of sharing with some incumbent services. If RLAN were considered in this band, appropriate protection measures should be ensured to protect incumbent and adjacent services, including FSS operations above 5850 MHz Due to extensive FSS operations. **5150-5250 MHz** techUK notes WRC-03 adopted constraints on RLAN systems in the 5150-5250 MHz ("5.1 GHz band") in order to protect a single Mobile Satellite Service network feeder-uplink operations, i.e. Globalstar. Since WRC-03, some countries (e.g. Canada, Japan, US) have authorized RLAN operations at higher EIRP level and relaxed the indoor-only restriction in the 5.1 GHz band. With appropriate power limits and antenna elevation angle constraints, these countries have demonstrated that it is possible to limit power radiated towards satellite receivers in this band, while allowing much needed spectrum access for RLANs. It is interesting to note that one administration, i.e. US, that allowed RLAN outdoor operations in 5.1 GHz band is also the notifying administration for the Globalstar network (HIBLEO-4FL. techUK is therefore of the view that based on years of real-world operational experience, there is no reason to constrain RLAN operations to indoors-only based on theoretical limits developed over 15 year ago. This EIRP modification is also essential to in-vehicle RLAN operation.

[2] http://www.wi-fi.org/file/wi-fi-spectrum-needs-study

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)?	**AI 9.1.5 Operational studies wrt ITU-R Recommendations referred to in 5250-5350 and 5450-5725 MHz** **ITU-R Recommendation ITU-R M. 1849-1** techUK is opposed to the inclusion of ITU-R M.1849-1 in footnotes No. 5.447A and 5.450A because it is simply unnecessary. First, it is important to note that ITU-R M.1849-1 is outdated. Currently Revision 2 is the ITU-R working version of Recommendation M.1849. Thus, incorporation by reference of ITU-R M.1849-1 in to Radio Regulation at WRC-19 would require subsequent regulatory revision(s) at future WRCs. Second, for the bands referenced in footnotes No. 5.447A and 5.450A, the coexistence between WAS/RLAN and the radiolocation service is regulated by No. 5.446A. Inclusion of ITU-R M.1849-1 will not provide any additional protection to the meteorological radar systems but would simply perpetuate regulatory confusion and ambiguity. **ITU-R Recommendation ITU-R M. 1638-1** techUK is opposed to the inclusion of ITU-R M.1638-1 in footnotes No. 5.447A and 5.450A. CEPT has carried out a significant amount of work to study coexistence between RLANs and new radar systems (not included in Recommendation ITU-R M.1638-0), in particular bi-static radars and fast frequency-hopping radars which operate in 5250-5850 MHz range. Neither CEPT Report 57 nor Report 64, however, provide recommendation on appropriate mitigation techniques necessary to protect these radars. In fact, currently, the only realistic mitigation technique identified to protect radars from RLAN interference is the Dynamic Frequency Selection (DFS). However, the existing DFS techniques at 5 GHz have not been designed to protect radars that are referenced in ITU-R M.1638-1 (e.g., bi-static radars and fast frequency-hopping radars). Thus, inclusion of ITU-R M.1638-1 in in footnotes No. 5.447A and 5.450A would impose an impossible regulatory requirement which would preclude existing and future RLAN operations in the 5 GHz band. This, of course, would be detrimental to billions of RLAN devices already deployed in 5 GHz and to the future of RLAN industry as a whole. Moreover, such action would contradict Resolution **764** (WRC-15)**,** objective to ensure that no undue constraints are imposed on the services referenced in Nos 5.447F and 5.450A footnotes.
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?	**AI 9.1.8 Narrowband and Broadband machine-type (i.e. IoT) communication infrastructures** techUK supports the proposed UK position not to have specific RR identification for M2M/IoT.

Question 7: What are your views on the potential removal of the limitations listed above?	**AI 1.4 Satellite Networks under Appendix 30** ITU-R Resolution 557 (WRC-15) limits WRC-19 Agenda Item 1.4 to the review and possible revision of Annex 7 to Appendix 30 (Rev. WRC-15) only. However, the limitations specified in Annex 7 to Appendix 30 cannot be revised without considering the consequences on the coordination situation involving Annex 1 and Annex 4 of Appendix 30. Therefore, Annex 7 cannot be considered by itself without also looking into the implications to Annex 1 and Annex 4 of Appendix 30. All three annexes must be considered together as in particular there is a key difference in evaluating the trigger levels in Annex 1 (BSS versus BSS) and Annex 4 (FSS versus BSS). techUK has reviewed the impact of removing the current limitations under Agenda Item 1.4 and the complexity associated with suppressing the limitations in Annex 7 of Appendix 30. In particular, by suppressing Limitations A1 and A2 the Region 1 and Region 2 FSS arc will be limited and the current flexibility will be reduced. The Appendix 30 Annex 7 limitations are very nuanced and carefully chosen as they interlinked with other Annexes. Those limitations cannot be just suppressed without taking into account the other annexes in Appendix 30. In particular, Annex 1 and Annex 4 of Appendix 30 would need to be reviewed together with any changes to be proposed to Appendix 30 Annex 7. Taking into account the protection of existing services and applying the appropriate regulatory measures to ensure their protection, the removal of the limitations allows access to more orbital positions and its associated spectrum. Existing and future FSS networks operating in the frequency bands 12.5-12.75 GHz in Region 1, 11.7-12.2 GHz in Region 2 and 12.2-12.75 GHz in Region 3 and BSS networks implemented in accordance with the current provisions of Annex 7 to Appendix 30 shall continue to be protected. techUK considers that Method C includes the necessary regulatory measures to still allow the expansion of the Region 2 and Region 1 BSS Networks located within new arcs following the removal of imitation A1a and A2a in Annex 7 of Appendix 30 and without imposing additional constraints to future FSS networks in line with Resolution 557 (WRC-15). TechUK encourages Ofcom to take an active position to defend Method C both in CEPT and internationally. techUK urges Ofcom to consider this view when preparing the CEPT position and proposals into the CEPT regional process and national process leading into WRC-19.

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?	**AI 1.5 Earth Stations in Motion (ESIM) or Earth Station on Moving Platforms (ESOMP) in 17.7-19.7 and 27.5-29.5 GHz** techUK supports the adoption of provisions in the RR to facilitate the operation of ESIM in the bands 17.7-19.7 and 27.5-29.5 GHz. Regulatory provisions for ESIM have previously been discussed and agreed in CEPT and we note that Ofcom has implemented ECC Decision DEC (13)01. We are pleased that Ofcom and CEPT is supporting the extension of such regulations globally. It is particularly important that the UK continues to promote the aero ESIM pfd limits adopted by the CEPT, as other more restrictive limits have been proposed by some administrations. For maritime ESIM, techUK supports the adoption of the Resolution 902 approach, but would highlight the importance that a distance in line with the CEPT studies (i.e. 60-70km) is adopted rather than larger distances proposed by some administrations to avoid unnecessary constraints on ESIMs. techUK supports Ofcom's opinion that Recommendation ITU-R SF.1719 provides a valid short-term interference protection criteria for fixed service links that operate with a typical 10 dB clear-sky fade margin. However, it is important that UK continues to promote the methodology used in CEPT studies, which adjusts the link fade margin based on fixed station antenna gain in order to avoid overly conservative results.
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?	**AI 1.6 Non-GSO Fixed Satellite Systems 37.5-51.4 GHz** techUK supports the principle that accommodation of non-GSO FSS systems in these bands should be on the basis of sharing with GSO FSS networks. Furthermore, technical measures should be applied that prevent interference to GSO FSS networks, even if deployed after non-GSO systems. This can be accomplished with epfd limits, similar to those applied in parts of C-band, Ku-band and Ka-band. techUK is aware that other approaches than epfd limits are being considered and satellite operators in techUK will continue to study the proposals to ensure adequate provisions for protection of GSO networks, noting that resolves to invite ITU-R 2 of Resolution 159 limits studies under this agenda item to epfd limits. techUK concurs with Ofcom that while it is acknowledged that some of the bands discussed under Agenda Item 1.6 overlap with those under Agenda Item 1.13, no changes to the Article 21 pfd limits related to the protection of terrestrial systems should be considered.

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)?	**AI 7 Satellite Coordination Procedures and Processes** techUK views the current process of incremental improvements made to the satellite coordination procedures and processes at successive WRCs as appropriate. Of the thirteen or so sub issues of AI 7 identified within the draft CPM text following the July 2018 meeting of WP 4A, techUK provides comments on the following: **For Issue A:** techUK supports the adoption of bringing-into-use (BiU) procedures for non-GSO system that is comparable to those for GSO systems, together with a milestone regime for satellite deployment requirements for frequency assignments to be included in the master register. Procedures are necessary to minimise the potential for operators to warehouse spectrum for large constellations which are not built and to avoid blocking of other prospective users of the spectrum. For non-GSO BiU procedures, techUK supports the adoption of either Option A or B in the current draft CPM text (and provided for Option B, that a high number of days is considered to permit a single non-GSO satellite to BiU a notified orbital plane). For the deployment milestone requirements, techUK supports the inclusion of appropriate and significant targets for the minimum percentage of satellites that need to be deployed in order to comply with a milestone, as well as shorter periods between milestones following the end of the seven-year regulatory period. For example, the first milestone should be within 2 years of the BiU deadline and should require at least 25% satellites to be deployed. techUK also supports the application of non-GSO BiU requirements across different FSS and MSS bands (including for MSS the L, S, Ka & Q bands). **For Issue B:** techUK strongly supports the application of the coordination arc (i.e., adoption of Method B) to MSS networks in MSS-MSS and MSS-FSS coordination, to simplify significantly the coordination requirements without adverse impact on other networks.
Question 11: What are your views on Agenda Item 9.1.1?	**AI 9.1.1 Compatibility between terrestrial and satellite component of IMT in 1885-2025 MHz and 2110-2200 MHz** Interference to MSS systems operating in this band could occur to from some types of terrestrial IMT systems, even if deployed outside of the EU. Such interference could prevent the operation of current MSS services in the UK and elsewhere in Europe. There are challenges in managing interference between IMT and MSS. techUK notes that CEPT position is already underway within ECC PT1.
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?	**AI 9.1.2 Compatibility between IMT and the broadcasting satellite service (sound) in 1452-1492 MHz** In order to facilitate the coexistence between IMT and BSS in the band 1 452-1 492 MHz, the current regulatory procedures governing the relation between BSS and terrestrial services need to be modified by inserting a pfd value of -112 dBW/m²/MHz for Regions 1 and 3 in Article 21 with the view to provide a more stable (long-term stability) situation to IMT.

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?	**AI 9.1.3 Studies relating to new non-geostationary satellite orbit systems between 3700-7025 MHz allocated to FSS** techUK has not responded to this question.
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?	**AI 9.1.7 Studies to assist administrations manage unauthorised operation of earth station terminals** techUK concurs with Ofcom that this issue is primarily a national issue and that no changes are required to Radio Regulations. techUK supports the current studies in order to assist administrations to manage the unauthorized operation of earth station terminals. The ITU-R can provide support to administrations that have difficulties with unauthorised operation of earth station, for example through development of ITU-R Recommendations and Reports.
Question 15: What are your views on the need for additional fixed satellite service allocations in the band 51.4 – 52.4 GHz?	**AI 9.1.9 Studies on 51.4-52.4 GHz to FSS (Earth-to-space)** techUK supports making spectrum available in this band for FSS (Earth-to-space) links. FSS operators are currently developing systems that will operate in the Q/V band allocations (between 37.5 GHz and 51.4 GHz). Applications envisaged for these frequency bands include feeder link earth stations, that will require access to large spectrum bandwidths (several GHz) and broadband user terminals that would be deployed in large numbers. Given that that the Q/V band allocations are also of much interest to other services such as fixed links and IMT, this additional allocation considered under AI 9.1.9 could be a valuable allocation for the FSS.

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?	**AI 1.8 GMDSS and potential new satellite providers** techUK notes that Iridium has now been adopted by IMO as a new provider of communications within the GMDSS. techUK is of the view that careful consideration should be given to the recognition of the Iridium frequency band 1618-1626.5 MHz in the Radio Regulations and potential consequences for other services in the adjacent frequency bands. Ofcom has highlighted that the radio astronomy community has suffered interference from Iridium for many years and techUK concurs that this is an important consideration. Similarly, the use of the adjacent band 1626.5-1660.5 MHz by Inmarsat and other GSO MSS operators should not be impacted by the decision to adopt Iridium as a new GMDSS provider, noting that Resolution 359 states that GMDSS satellite systems should operate within the interference environment of existing systems. If the Iridium band is recognised in the RR for GMDSS, a footnote in Article 5 should be added to ensure that Iridium terminals cannot seek protection from interference and hence cannot place new constraints on other services.
Question 17: What are your views on Agenda Item 1.9.1, particularly the need to respect the current integrity of the AIS?	**AI 1.9.1 Autonomous maritime devices in 156-162 MHz** techUK has not responded to this question.
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?	**AI 1.9.2 Maritime VHF Data Exchange System (VDES): satellite** techUK has not responded to this question.
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?	**AI 1.10 Global Aeronautical Distress and Safety System (GADSS)** techUK agrees that the evolving requirements for the GADSS do not appear to require any new frequency allocations or other changes to Article 5 of the RR.
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?	**AI 1.11 Rail Communications: train to track in the mobile service** techUK supports the UK view that we do not believe that specific Radio Regulations identification is necessary. techUK would support a No Change European Common Position as discussed in CEPT.

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?	**AI 1.12 - Intelligent Transport Systems (ITS)** techUK supports UK view that it does not seem necessary or attractive to have a specific ITS frequency band (or bands) identified for ITS in the Radio Regulations Article 5. techUK would support a No Change European Common Position as discussed in CEPT and supports Method A: No change to Vol.1 and 2 or the ITU RR and supress Resolution 237. Furthermore, techUK believes that it is necessary to insert a requirement for the design of the ITS devices to ensure they cope with the interference environment created by other co-primary services, as operation for ITS in shared bands should be made under non-protected basis. This can be made in the proposed ITU R Recommendation or, if it is the case, in a WRC Resolution when identifying bands for ITS. Recently during the WP5A meeting in June 2018 it was proposed whether it is the possible for the introduction of the LTE based V2X ITS technology to the 5875-5925 band. techUK has concern here that while in Europe there is an existing regulatory framework which prevents an ITS technology to cause interference to satellite FSS space receivers, this is not the case globally. While the APT region shares this view for AI1.12, they also state that evolving ITS should not be restricted to, nor exclude, any particular evolving ITS technology including LTE based V2X. Conveniently Europe is now undergoing studies with an aim to determine whether LTE based V2X is compatible with existing services in the band in response to the EC Mandate. This work will be conducted in SE24 with a very short timeframe to develop ECC Report 101.
Question 22: What are you views on Agenda Item 9.1.4 concerning radiocommunications for sub-orbital vehicles?	**AI 9.1.4 - Radiocommunications for sub-orbital vehicles** techUK notes that satellite and terrestrial systems are likely to have a role in providing communications for sub-orbital vehicles. techUK supports the ongoing consideration of the regulatory issues around the communication requirements for sub-orbital vehicles.
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?	**AI 1.1 - Possible allocation to Amateur service in 50-54MHz in Region 1** techUK has not responded to this question.
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?	**AI 1.2 Power limits for Metsat and EESS earth stations in 400 MHz band** techUK has not responded to this question.

Question 25: What are your views on Agenda Item 1.3, particularly on any limits required to protect terrestrial use?	**AI 1.3 Possible upgrading of Metsat and EESS allocation at 460-470 MHz** techUK has not responded to this question.
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?	**AI 1.7 Studies for short duration satellite missions** techUK has not responded to this question.
Question 27: What are your views on Agenda Item 1.15, particularly on the protection needs of passive services?	**AI 1.15 Possible use of 275-450 GHz by landmobile and fixed services** techUK has not responded to this question.
Question 28: What are your views on Agenda Item 9.1.6, particularly on the categorisation of WPT and whether WRC action is required?	**AI 9.1.6 Studies concerning Wireless Power Transmission (WPT) for electric vehicles (EV)** techUK has not responded to this question.
Question 29: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?	**Standing Agenda Items** techUK has not responded to this question.
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?	**AI 9.2 Difficulties or inconsistencies encountered in the application of the Radio Regulations** techUK has not responded to this question.
Question 31: Do you have any comments on Agenda Item 9.3 considering Resolution 80?	**AI 9.3 Action in response to Resolution 80** techUK does not see the need for any action under this agenda item at WRC-19. techUK concurs with Ofcom that there has been little activity on this topic in the ITU-R, but that based on previous WRCs this topic can prove highly controversial. Therefore a close watch should be maintained for possible proposals under this agenda item that may appear before or during the conference.

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?	**AI 10 Future WRC Agenda Items** techUK has not responded to this question.