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: NO Airbus Defence and Space understands the Ofcom prioritisation of the agenda items and would like to propose that Agenda Item 1.14 be elevated from “medium” to “high” status. As unveiled at Farnborough Air Show mid-July 2018, Airbus Defence and Space has invested in a new production facility dedicated to its HAPS program “Zephyr” in Farnborough, UK. The facility is home to the world’s leading HAPS and will be a showcase location, linking to our operational flight bases around the world. This program is supported by UK governments and reflects the UK Ministry of Defence’s position as the first customer for this innovative and potentially game changing capability. Airbus defence and Space believes that Ofcom has a clear interest in a successful outcome of this agenda item and that this therefore deserves Ofcom’s highest attention.

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: NO Airbus Defence and Space can agree with the identification of these three bands for IMT under certain conditions, providing that the results of the sharing studies to protect the incumbent services be taken into account. <u>24.25 – 27.5 GHz:</u> IMT technical and deployment characteristics may evolve in the future and result in excessive interference into FSS/ISS/EESS/SRS satellite systems. Should this occur, interference reduction at satellite receivers after the deployment of IMT systems would be complicated due to aggregate interference from a large number of IMT stations as well as the fact that satellite footprints can cover territories of multiple administrations. Regulatory measures included in ECC Decision (18)06 to address long term protection of satellite systems should better reflect the results of the sharing studies results, i.e.: - Requiring that the tilt of IMT base stations <u>not be higher</u> than 0 degree. - Requiring that the mechanical tilt of IMT base stations <u>be below</u> the horizon. - To regularly update characteristics of IMT (including base station density) and to study/assess the impact on sharing and compatibility with other services. This would enable to recommend corrective measures to address situations whereby the interference threshold to FSS/ISS/EESS/SRS space stations would be at a risk to become exceeded. It is noted that such process would also be relevant to the continued protection of EESS passive band in the 23.6 – 24 GHz. Furthermore, Airbus Defence and Space notes the measures regarding FSS/ISS in the ECC Decision (18)06 and is of the view that appropriate in-band TRP limits are needed to ensure protection of FSS/ISS space stations and would have represented a balanced solution in this band. These regulatory measures should be part of the regulatory measures at WRC-19 for the 24.25 – 27.5 GHz and future draft WRC-19 Resolution to protect Space Systems in this band, noting that the EESS (s-E) allocation in 25.5 – 27 GHz is currently used by EDRS (European Data Relay Satellite System), part of the broader European satellite network called "Copernicus" which provides imaging data for environmental/security/disaster monitoring.

Question 2: (continued 1/2)	40.5 – 43.5 GHz: The studies have shown possibilities to achieve co-existence between IMT and other incumbent services under certain conditions. Therefore it is possible to: - Upgrade the existing secondary mobile allocation in the frequency band 40.5 – 42.5 GHz to a primary allocation in the Table of Frequency allocations in Region 1 and identify the frequency band for IMT by a new footnote with certain regulatory conditions. - Identify the frequency band 42.5 – 43.5 GHz for IMT in Region 1 by a new footnote with certain regulatory conditions. In Region 1, regulatory measures similar to those included in the ECC Decision (18)06 applicable to the 24.25 – 27.5 GHz frequency band should also be included in future WRC-19 Resolution to protect FSS in 40.5 – 43.5 GHz. In addition, noting that per 5.516B the 40.5 – 42 GHz frequency band is identified for HDFSS in Region 2 and noting that coexistence in the same band between HDFSS and IMT applications may be challenging, IMT identification in 40.5 – 43.5 GHz in Region should not be promoted. Protection of existing applications is likely to be expected. Protection should be understood as interference avoidance and also additional burden avoidance to existing applications operation and deployment. Furthermore, Airbus Defence and Space notes the measures regarding FSS/ISS in the ECC Decision (18)06 and is of the view that appropriate in-band TRP limits are needed to ensure protection of FSS space stations in 42.5 – 43.5 GHz and represents a balanced solution in this band.

Question 2: (continued 2/2)	Additional consideration on 37 – 40.5 GHz: Since Europe will support an identification for IMT in the band 40-5 – 43.5 GHz and is willing to maintain a necessary balance within the range 37 – 43.5 GHz between spectrum for IMT in 40.5 – 43.5 GHz and spectrum for other services in 37 – 40.5 GHz there is a need to support no change to the RR in the band 37 – 40.5 GHz. In absence of NOC in this band, the position on AI 1.13 would not be balanced and would not preserve possibilities for existing services. 66 – 71 GHz: The studies have shown possibilities to achieve co-existence between IMT and other incumbent services under certain conditions. Therefore, Airbus Defence and Space supports to identify the frequency band 66 – 71 GHz for IMT including relevant conditions to be taken into account in the corresponding WRC Resolution. Protection of existing applications is likely to be expected. Protection should be understood as interference avoidance and also additional burden avoidance to existing applications operation and deployment.

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: NO Based on the sharing studies results, Airbus Defence and Space is of the view that the following bands currently identified are suitable for HAPS globally with appropriate regulatory conditions to protect incumbent services: ✓ 6 440 – 6 520 MHz: HAPS to ground ✓ 27.9 – 28.2 GHz: HAPS to ground ✓ 31 – 31.3 GHz: HAPS to ground and ground to HAPS ✓ 47.2 – 47.5 GHz and 47.9 – 48.2 GHz: HAPS to ground and ground to HAPS Based on sharing studies results and HAPS spectrum requirement, AIRBUS Defence and Space also supports the following additional frequency bands with appropriate regulatory conditions to protect incumbent services including IMT in the 26 GHz band: ✓ 21.4 – 22 GHz: HAPS to ground in Region 2 ✓ 24.25 – 25.25 GHz and 27 – 27.5 GHz: HAPS to ground in Region2 ✓ 25.25 – 25.5 GHz: ground to HAPS in Region 2 ✓ 38 – 39.5 GHz: ground to HAPS worldwide

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.	Confidential: NO
	
	As well as the Ofcom, Airbus Defence and Space supports the CEPT position of "No Change" with respect to agenda item 1.16.
	
	Indeed, taking into account results from compatibility studies,
	- No Change in the RRs for 5 350 – 5 470 MHz and 5 850 – 5 925 MHz frequency bands is recommended to avoid any interference on existing application
	
	- Protection of the FSS in the 5 725 – 5 850 MHz frequency range should be ensured and then, adequate mitigation techniques should be identified (power limitation, indoor restrictions, …)
	
	- Relaxing regulatory conditions in the 5 150 – 5 250 MHz frequency band
	  ○ should ensure adequate protection of aeronautical radionavigation operations, and in particular the flight test and telemetry applications
	  ○ should ensure adequate protection to existing and planned FSS application in the band (taking into account, in particular, feedbacks from FSS stakeholders who experience relaxed regulatory measures for RLAN operation in some countries in this frequency band)
	  ○ should not constrain future operation and deployment of FSS systems in the band

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)?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.
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?	Confidential: NO Airbus Defence and Space supports the CEPT position according to which no modifications to the RRs are required in order to resolve Agenda item 9.1 issue 9.1.8. There are needs for multi-support IoT including satellite-based solution which could be accommodated within existing regulatory framework. The different needs should be addressed in ITU-R Reports and Recommendations.
Question 7: What are your views on the potential removal of the limitations listed above?	Confidential: NO On the principle, Airbus Defence and Space supports the exercise consisting in reviewing the limitations. This may contribute, in the future, to create new orbital and spectrum opportunities. However, such an exercise should not adversely impact existing and future FSS and BSS networks operating in the designated frequency bands. In that perspective, appropriate measures, if any, should be investigated and included in the future WRC Resolution accordingly, in order to guarantee adequate protection to existing satellite network.

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: NO Airbus Defence and Space supports the CEPT approach as well as the CEPT position with regards to the ESIM WRC Agenda Item in order to facilitate the operation of such system. ESIM new regulation could especially open new market opportunities including facilitating aircraft connectivity. The “lighter” the ESIM regulation, the larger the market opportunities, benefiting to various applications. A global harmonisation could be a real opportunity for ESIM-based solutions in order to facilitate their deployment.

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: NO Q/V band is more and more considered in satellite projects. This Agenda Item could offer a market opportunity for new constellations compared to lower bands. Technical options are likely achievable (similar to Ku, Ka bands). Protection of GSO systems needs to be ensured and current applicable regulatory framework for GSO should not be impacted by this Agenda Item. Defining a regulatory provisions, in Article 22, to cover non-GSO operation between 37.5 – 51.4 GHz will provide more certainty and confidence and will facilitate the introduction of NGSO network when investigating the usage of this frequency band for new constellation. More generally, while the Ka band becomes more and more used for both user links and feeder links – and noting that broadband communications needs are increasing in all sectors – defining a consolidated regulatory framework for NGSO systems will contribute to facilitate access to Q/V band and therefore may also contribute to balance the usage of both bands.

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)?	Confidential: NO On Agenda Item 7 and the bringing into use of non-geostationary networks in Issue A, Airbus Defence and Space's objective is to find a proper balance between the need to preventing spectrum warehousing, the functioning of coordination mechanisms and the requirements related to manufacturing, launching and operating non-GSO satellite systems with a view to develop a regulatory frame that supports a competitive constellation market. At this stage, we have found that a proper balance for our interests today would point toward a first milestone of 8.33% on 1st Jan 2025.
Question 11: What are your views on Agenda Item 9.1.1?	Confidential: NO Airbus Defence and Space supports the CEPT approach as well as CEPT position with regards to this Agenda Item ensuring adequate protection to MSS GSO system as well as NGSO networks considering adequate measures for protection of MSS satellites from harmful interference from the terrestrial component of IMT, taking into account that the bands 1 980 – 2 010 MHz and 2 170 – 2 200 MHz are prioritised for MSS use.
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?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.
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?	Confidential: NO Airbus Defence and Space supports a "No Change" to the Radio Regulation noting that studies carried out in the framework of this Agenda Item concluded on possible interference issues in relaxing current conditions. Taking into this situation, Airbus Defence and Space is of the view that a "No Change" will maintain the current balanced spectrum environment which is achieved in this frequency band since years.

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: NO Airbus Defence and Space Support the current studies in order to assist administrations to manage the unauthorized operation of earth station terminals since earth station licensing and related issues of licensing are national matters and no changes to the Radio Regulations are necessary, as Article 18 sufficiently addresses the required international regulatory measures. Therefore Airbus Defence and Space is of the view that the issue referred to in studies under 2a) is already addressed in Article 18. Thus Airbus Defence and Space does not see the need for any changes of the Radio Regulations, as portrayed in Option 1 of the draft CPM text. Airbus Defence and Space does however support, for the issues referred to in studies under 2b), possible ITU-R studies on best practices, related to national management of unauthorized operation of earth station terminals deployed within territory of concerned administration. Thus Airbus Defence and Space does not see the need for any changes of the Radio Regulations. Furthermore Airbus Defence and Space notes this issue only deals with enforcement of unauthorized ubiquitous earth stations and therefore is not the same issue of earth stations in motion (ESIM) which is covered by Agenda item 1.5.

Question 15: What are your views on the need for additional fixed satellite service allocations in the band 51.4 – 52.4 GHz?	Confidential: NO Airbus Defence and Space concurs with the findings of ITU-R WP4A regarding the needs and agrees with the benefits for additional fixed satellite service allocations in the band 51.4 – 52.4 GHz. Airbus Defence and Space supports the definition of appropriate regulatory measures allowing new primary allocations to the fixed-satellite service (FSS) in the frequency band 51.4 – 52.4 GHz (Earth-to-space) limited to FSS feeder links for geostationary orbit use as this opportunity will offer 5 GHz of spectrum in two contiguous segments (3 GHz + 2 GHz), that can be used directly with the downlink band to facilitate, in particular, the deployment of HTS systems. The large amount of contiguous spectrum would offer opportunities for gateways with higher throughput requirements and at the same time may contribute to release spectrum for user terminals in Ku and Ka bands. However, the opportunities for such gateway operation can be limited due to enhanced propagation attenuation in the Q/V bands as well as regulatory measures related to the protection of other services that are currently being developed. Therefore regulatory measures which could apply should be defined in order to maximize the benefit of this new allocation taking into account propagation conditions while ensuring appropriate protection to existing application operating in the frequency band. Airbus Defence and Space would also like to note that taken into account the benefit mentioned above, it does not support the removal of another FSS allocation if this allocation is approved by the WRC-19.
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?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.

Question 17: What are your views on Agenda Item 1.9.1, particularly the need to respect the current integrity of the AIS?	Confidential: NO Airbus Defence and Space does not have a particular view on 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?	Confidential: NO Airbus Defence and Space does not have a particular view on 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?	Confidential: NO Airbus Defence and Space supports the following CEPT: - systems contributing to the GADSS shall operate in accordance with ICAO requirements or recommendations contained in Standard and Recommended Practices (SARPs), manuals or guidance material; - any changes to the Radio Regulations should be determined on the basis of the GADSS concept developed by ICAO; - systems identified to contribute to the GADSS do not require any change to Article 5 of the Radio Regulations; - Additional regulatory actions for the introduction and use of GADSS should not place any additional constraints on the existing and planned systems.
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?	Confidential: No Airbus Defence and Space does not have a particular view on this question.

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?	Confidential: NO Airbus Defence and Space supports the protection of incumbent services while recognizing the need to develop an adequate framework to accommodate ITS applications on a global basis.
Question 22: What are you views on Agenda Item 9.1.4 concerning radiocommunications for sub-orbital vehicles?	Confidential: NO Satellite systems are likely to have an important role in providing communications for sub-orbital vehicles. Therefore Airbus Defence and Space supports the ongoing consideration of the regulatory issues around the communication requirements for sub-orbital vehicles and supports further studies into the potential for current and future satellite systems to provide service. Furthermore, Airbus Defence and Space believes that it is important that any regulatory changes associated with this agenda item will not adversely impact the operation of launch vehicles or sounding rockets.
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?	Confidential: NO Airbus Defence and Space does not have a particular view on 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?	Confidential: NO Airbus Defence and Space supports the definition of power limits that would ensure the long term use of data collection systems which are actually in operation in the band without constraining its operation.
Question 25: What are your views on Agenda Item 1.3, particularly on any limits required to protect terrestrial use?	Confidential: NO Airbus Defence and Space supports the definition of a pfd limit that would allow the upgrade of the EESS allocation to a primary one.

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?	Confidential: NO Airbus Defence and Space supports subject to agreeable definition of a "satellite with short duration mission" and protection of science and COSPAS SARSAT services, noting that if studies do not provide a compatible solution in the bands being studied other alternatives to satisfy this agenda item may be needed.
Question 27: What are your views on Agenda Item 1.15, particularly on the protection needs of passive services?	Confidential: NO Airbus Defence and Space does not have a particular view on 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?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.
Question 29: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?	Confidential: NO Airbus Defence and Space does not have a particular view on 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?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.

Question 31: Do you have any comments on Agenda Item 9.3 considering Resolution 80?	Confidential: NO Airbus Defence and Space does not have a particular view on this question.
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: NO Airbus Defence and Space is aware of some ideas from parts of the terrestrial mobile community for new agenda items seeking to identify more radio spectrum for IMT in parts of the C-band spectrum and the 28 GHz band. Airbus Defence and Space is alarmed to see such proposals, considering that similar proposals have already been made and rejected before. We support that Ofcom retains its opposition to such proposals.