



BBC response to Ofcom's consultation: *UK preparations for the World Radiocommunication Conference 2019 (WRC-19) – UK provisional views and positions*

13 September 2018

Overview

1. The BBC welcomes the opportunity to respond to Ofcom's consultation 'UK preparations for the World Radiocommunication Conference 2019 (WRC-19)' and the opportunity to comment on the UK's developing positions for the forthcoming conference. WRCs offer an important opportunity to change the radiocommunications landscape, and careful preparation, taking into account the views of all stakeholders, is crucial if the benefit to UK citizens and consumers of a changing communications landscape are to be maximised. We are pleased to support the UK Government and Ofcom in this work.
2. The BBC has worked closely with successive UK regulators and Governments for many decades to try to achieve outcomes that are optimal for the continued health of the UK's world class public broadcasting sector both at home and for our World Service, World News and BBC Studios operations abroad.
3. As the UK prepares to leave the European Union, close collaboration between Government, Ofcom and stakeholders, leveraging all their international links and connections, will become ever more critical and WRCs offer the UK a significant opportunity to retain UK influence in international spectrum matters.
4. After a long series of WRCs in which broadcasting has featured in high-profile and contested agenda items, we hope WRC-19 offers some much needed stability to the broadcasting community. While we agree with Ofcom and others who suggest that demand for UHF spectrum for mobile has diminished,¹ we are also aware that making this spectrum available for mobile is something that some in the mobile industry are still keen to see.² As Ofcom might expect, **we firmly believe that the UK should strongly oppose any attempt to bring forward the debate on UHF scheduled to take place for 2023 to WRC-19.**
5. However, since we expect this not be under discussion at the forthcoming conference the BBC has comments on only a few WRC-19 agenda items. Our particular interest is in the following:
 - Agenda item 10 – Future WRC agenda items as the future of 470 to 960 MHz is due to be considered at WRC-23;
 - Agenda item 9.1.6 – Studies concerning Wireless Power Transfer (WPT) for electric vehicles (EV) as we believe this technology may impact reception of AM radio signals; and
 - Agenda item 9.1.7 – Managing unauthorised operation of earth stations
6. We have also commented on agenda item 8.

¹ Cf. Ofcom, 'Public Service Broadcasting in the digital age' March 2018.

² Cf. GSMA factsheet '600 MHz for mobile broadband – momentum is growing' April 2017.

7. In respect of agenda item 10 and the future of 470 to 960 MHz, Ofcom should note the BBC has contributed to Digital UK's response to Ofcom's consultation which should be read in conjunction with this response. The BBC's submission does not seek to repeat the detail of Digital UK's, but instead aims to provide additional responses relevant to other questions Ofcom has raised.

Question 1: Do you agree with the prioritisation of the agenda items, as shown in Annex 5, and if not why?

8. We note that issue 9.1.6 is categorised as "Medium" priority. This agenda item deals with Wireless Power Transmission (WPT) technology for electric vehicles. As we explain in our answer to Question 28, we are concerned that this technology could result in significant levels of interference to AM radio broadcasting services. This would be an issue for existing BBC services in the UK and around the world as when this interference occurs BBC content could be rendered inaudible.
9. The BBC is working actively at CEPT and ITU preparatory meetings on this issue, and has endeavoured to find ways to accommodate WPT technology without impacting the protection afforded in the Radio Regulations to the existing broadcasting services in LF and MF bands. We would therefore request that Ofcom allocates sufficient priority to this item at WRC-19 itself to ensure the continued protection of existing BBC broadcasting services in the LF and MF bands

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?

10. Satellite services continue to provide the BBC and other broadcasters with important contributions to content. Unauthorised earth station operation interferes with legitimate use and carries risk for our operations. However, the BBC supports Ofcom's view that no changes to the Radio Regulations are required under item 9.1.7 because their management is a national matter
11. We encourage Ofcom, on behalf of the UK, to actively engage in the development of Reports and Handbooks to assist the administrations which require assistance in the management of unauthorised earth stations within their national boundaries. It is in the interests of all users of satellite earth stations that administrations are able to provide an environment for operation which is free from interference.

Question 28: What are your views on Agenda Item 9.1.6, particularly on the categorisation of WPT and whether WRC action is required?

12. WPT is an innovative technology, but its impact on other RF using services is still being understood. We believe that decisions on frequencies and conditions of use of WPT for electric vehicle charging are a matter for administrations to resolve through the application of established engineering principles in ITU-R led studies.
13. Looking to the future, an emerging concern for the BBC is the likely harmful impact from WPT systems operating below 90 kHz on the reception of the AM sound broadcasting services operating in the 148.5-255 kHz Low Frequency (LF) and 526.5-1 606.5 kHz Medium Frequency (MF) sound broadcasting bands.
14. The BBC's radio services in these bands are still listened to in the UK³ and 8.5 million people per week worldwide listen to the BBC's MW services⁴. While alternative technologies are increasingly taken up by radio listeners in the UK, AM radio remains an important distribution mechanism for the BBC globally, with MF services reaching audiences in 15 countries. (HF remains the core AM service across Africa, the Middle East and South and South East Asia).
15. Given the intention for systems to operate in power ranges from 2 -200 kW it would appear that the systems will be operating at power levels significantly higher than that envisaged for Short Range Devices (SRDs) so we have concerns with WPT being treated as SRD as they are currently being treated by CEPT.
16. It would seem likely that some emission away from the power transfer frequency is inevitable. The BBC believes that it should be incumbent on the manufacturers of WPT equipment to ensure that emissions in the spurious domain do not cause significant and harmful interference to existing radiocommunication services.
17. The protection requirements as submitted by the ITU expert working party (WP6A) for the studies and contained in ITU-R Recommendation BS.703 and confirmed by experimentation by the BBC (See BBC R&D White Paper 332⁵) should be maintained in order to ensure the continued protection of the sound broadcasting service.
18. If these protection requirements cannot be met at the desired WPT power levels, then a mitigation technique is possible in which the WPT system is locked to the broadcasting raster (within +/- 50 Hz as defined in Recommendation BS.560) with frequency stability and spectral purity coherent with that of a broadcast transmitter.
19. This means that all harmonics from the WPT device would land on carrier frequencies of the broadcasting service. In this case a relaxation of up to 38dB in protection criteria may be possible (see draft CPM Text⁶ section 6/9.1.6/3.3.5).

³ Figures for AM listening are difficult to calculate because audiences are often unsure whether they are listening via FM/AM/DAB etc.

⁴ Global Audience Measure 2018

⁵ <https://www.bbc.co.uk/rd/publications/wireless-power-transfer-plain-carrier-interference-to-am-reception>

⁶ <https://www.itu.int/md/R15-WP1B-C-0303/en> (Annex2)

Question 29: Do you have any comments concerning the Standing Agenda Items, where not covered elsewhere in this document?

20. In respect of Agenda Item 8, the BBC urges Ofcom to support the emerging draft CEPT position. We believe that the provisions of Resolution 26 apply, namely that no new country names can be added to existing footnotes, and no new footnotes can be added to the Radio Regulations without a corresponding Agenda Item.
21. We understand that allowing new footnotes is sometimes permitted in the interest of reaching a conference compromise. However, we believe such additions are inappropriate if they would have widespread implications for citizens and consumers or would cut across planned work of future WRCs.

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?

22. At WRC-15, the BBC joined the UK Government and Ofcom in arguing that spectrum below 700 MHz should not be allocated to the Mobile Service under Agenda Item 1.1. Then - as is still the case today - the use of 470 to 694 MHz was critical for the BBC's ongoing ability to offer UK audiences access to the nation's favourite channels, free-to-air, via DTT.
23. We recognise that television viewing patterns are changing as audiences use IP-based platforms for on-demand viewing, but as Digital UK's response sets out, live linear viewing – much of it via DTT – remains resilient. Around 20 million homes in the UK rely on DTT services such as Freeview, BT TV and YouView and DTT primary set homes grew by 800,000 between Q1 2016 and Q1 2018.⁷
24. **We therefore believe that the UK should strongly oppose any attempt to bring forward the debate on UHF scheduled to take place for 2023 to WRC-19.** Failing to do so and allowing debate on UHF at WRC-19 would be premature. Indeed, it could undermine consumer and commercial confidence in DTT before the UK is able to provide an IP television service comparable to DTT in terms of reach and resilience.
25. It would also take place without an appropriate body of up-to-date work on key topics – for example, sharing studies undertaken for WRC-15 agenda item 1.1 were done on the basis of assumptions suitable for the 4G networks then foreseen; and administrations submitted their forecasts of demand for both the broadcasting and mobile services in the lead-up to WRC-15. Both of these are now in need of reviewing and updating.

⁷ Barb. Q1 2018.

26. For example, we understand that while there has historically been much interest from mobile vendors in accessing more of the UHF spectrum for mobile broadband services, the continued demand for this spectrum for mobile services cannot continue to be assumed. Indeed, Ofcom has recently suggested that demand is diminished.⁸
27. We agreed with a proposal made towards the end of WRC-15 that the question of the use and allocation of the whole UHF band (470-960 MHz) should be reviewed at WRC-23. And we assisted Region 1 administrations in drafting the preliminary agenda item 2.5 for WRC-23, and the supporting Resolution 235.
28. Our support for that WRC-23 agenda item has not changed. We continue to believe that 2023 will be an appropriate time to take stock of the use of the whole band by both the mobile and broadcasting industries and to take a holistic view of how the maximum value, both social and economic, can be extracted from the band. We therefore urge Ofcom to continue to support the inclusion of a WRC-23 agenda item on this matter in the form currently drafted in Resolution 235.

ENDS.

⁸ Ofcom, 'Public Service Broadcasting in the digital age', March 2018.