Response to Ofcom's Call for Input: Future demand for mobile broadband spectrum and consideration of potential candidate bands

The BBC welcomes the opportunity to respond to Ofcom's Call for Input on World Radio Conference 2015 Agenda Item 1.1. The BBC's main submission is contained in a separate joint UK industry submission with Channel 4, ITV, Arqiva and SDN. We fully endorse the views set out within that response. This submission, from BBC Global News division, more directly addresses our principle international interests as they relate to spectrum in general and Agenda Item 1.1 in particular.

Introduction

BBC Global News division attracts a global audience of 239 million people to its international television and radio services and its international-facing news websites and mobile services. We currently operate 28 language and regional services, including English. The division comprises BBC World Service (our international radio services, language TV services and on-line services), BBC World News (our international English language TV channel), bbc.com (the international online news service), BBC Monitoring (open source monitoring of TV, radio, web and print media around the world) and the international charity BBC Media Action.

BBC World Service is currently funded by Parliamentary Grant- in-Aid from the Foreign and Commonwealth Office and transfers to the Licence Fee from 2014/15. Although editorial control rests entirely with the BBC, the relationship between BBC World Service and the Foreign Secretary (currently extensively detailed in The Agreement which sits alongside the Royal Charter) enables the BBC to "plan and prepare the provision of the World Service in the public interest".

Spectrum requirement forecasts

BBC Global News supports the responses made in the joint industry submission from BBC, Channel 4, ITV, Arqiva and SDN to Questions 1-7. We have no further comments to add.

Frequency ranges under discussion

Question 8: What are your views about the pros and cons of the frequency ranges in Table A6.1 in Annex 6 for mobile broadband and for existing applications using this spectrum? Do you have views on other bands that are not in Table A6.1?

<u>470-694 MHz</u>

In addition to the response made in the joint submission from BBC, Channel 4, ITV, Arqiva and SDN, BBC Global News would like to draw Ofcom's attention to the BBC's interest in the existing applications using this spectrum outside the UK and the future viability of terrestrial television platforms, particularly in Africa.

BBC World Service added television services to its traditional radio offers in 2008 and 2009, with the launches of BBC Arabic TV and BBC Persian TV on various Direct To Home (DTH) satellite platforms. Since 2012, a number of additional language TV services have been launched in Africa, Turkey, India and Pakistan in English, Swahili, Turkish, Hindi and Urdu. All of these new services are syndicated on local TV network's terrestrial platforms, with the majority of these partners still broadcasting on analogue terrestrial networks.

As BBC World Service continues to meet the demands of a changing media landscape, it is likely that the use of TV to connect with our audiences will increase. Although at present this World Service Language TV is reliant on syndicated slots, there would clearly be an interest in any opportunity to deliver BBC World Service content on DTT platforms as and when they launch in Africa.

The WRC-12 proposal for a co-primary mobile allocation in 694-790 MHz in Region 1 was made by African and Arab regional groups in order to open up the possibility for the region to expand the Digital Dividend for IMT. Despite the ITU carrying out frequency coordination exercises in Sub-Saharan Africa since March 2012, the recommended date of June 2015 for the completion of analogue TV switch-off looks optimistic, given current progress. BBC Global News believes that any consideration to extend the co-primary mobile allocation to 470-694 MHz in Region 1 risks undermining this process and, similarly to the UK, risks the long term viability of the DTT platform. These concerns have also been raised with the BBC by African broadcasting colleagues. We understand that at the recent African Telecommunications Union (ATU) meeting in Dakar in March, concern was expressed that any allocation of 470-694 MHz to mobile may be premature given that the majority of countries in Africa heavily relied on this band to provide TV to the public and that the African region was still in the process of dealing with accommodating the decisions of WRC-12 and the requirements of Resolution 232.

<u>3400-3600 MHz, 3600-3800 MHz, 3800-4200 MHz</u>

BBC Global News' view on the need to protect the existing applications in these bands has not changed since Ofcom's consultation on WRC-07 Agenda Item 1.4 in March 2007. The BBC Global News Satellite Media Distribution System (SMDS) utilises a number of different satellites to distribute BBC World Service radio and TV programmes to its global audience of 180 million. The majority of these operate in the C-Band and currently between 3900 and 4200 MHz (by 2015 these downlink frequencies may change to anything between 3400 – 4200 MHz because we may need to choose different satellites). BBC World News also uses C-Band satellites for distribution of their programmes to their distribution partners. BBC Monitoring relies heavily on its network of Receive Only Earth Stations to access frequencies right across the 3400 - 4200 MHz band in support of source monitoring operations, both within the UK and at its international offices.

All earth stations directly used by BBC World Service and BBC World News are receive-only, and there are very few parts of the world where there is any requirement to register them with the local administration. Currently, less than 2% of receive-only earth stations used for BBC World Service

programme distribution internationally are registered. It should also be noted that all earth stations are not equal in their audience reach, for example, some may only serve a local radio station in a small town, whilst others may serve an HF broadcasting transmitter capable of providing coverage across large parts of the world.

Table 1: Quantity and audience of BBC World Service earth stations

Registered Earth stations	Total number of earth stations	Weekly audience
10	**629**	**180 million**

Note all figures are approximate and subject to change at any time.

In 2007, BBC Global News welcomed Ofcom's change of position with respect to C-band, following its consultation on WRC-07 Agenda Item 1.4, as well as Ofcom's efforts within the CEPT and during WRC-07 to ensure the adoption of a Resolution to provide appropriate protection for existing satellite use. BBC Global News notes, however, that this protection can only be afforded to existing users if they are either licensed or registered and that the licensing of receive-only satellite terminals (through TVROs) ceased years ago in Europe as part of the move to deregulation to ease the burden of unnecessary regulation on companies and the public. Following EC Decision 2008/411/EC in May 2008 and the introduction of fixed broadband wireless access (BWA) into some C-band spectrum in the UK, BBC Global News saw interference levels increase. In July 2010, Ofcom published a consultation on Recognised Spectrum Access ("RSA") for Receive Only Earth Stations in bands including 3600 – 4200 MHz, stating that "the move should provide greater information about these stations, their use of spectrum, and potential interference problems". The introduction of RSAs has provided a mechanism to address this problem within the UK, but only after significant increases in interference to BBC Monitoring operations at Caversham had forced them to move reception to an alternative site.

Since 2007, we have continued to see problems with interference in many countries which have authorised wireless access systems in some parts of the C-band.

At the beginning of 2012, we confirmed that Fixed Satellite Service (FSS) earth stations operating in the C-band and used for our international satellite distribution network had been affected by harmful interference in the following countries: D.R. of the Congo, Gabon, Guinea, Morocco, Nigeria, Tanzania, Uganda, Burkina Faso, Burundi, Rwanda, Pakistan, Cambodia, Trinidad, South Sudan and Jamaica. Recent cases include the silencing of the BBC World Service FM relay in Freetown, Sierra Leone in January, where local investigations revealed that a 3500 MHz WiMAX terminal had been installed nearby, and interference to a local FM partner in Pakistan, also traced to a WiMax installation.

These cases are generally limited to the wireless access systems deployed in the lower part of the C-band, typically a band of 200 MHz. If wireless access systems were to be deployed in additional parts of the band 3400–4200 MHz, many more interference cases must be expected.

In many of the aforementioned locations which have suffered harmful interference, various mitigation techniques have been deployed in order to allow the continuation of our operation. The success of these mitigation techniques has been mixed. In a large number of locations these techniques have been able to remove sufficient terrestrial interference to allow the satellite service to be receivable. However, in some locations the spectral and /or geographic separation is insufficient to allow the deployment of practical filtering / mitigation techniques.

5850-5925 MHz, 5925-6425MHz

The current corresponding uplink frequencies for the downlinks used by the BBC Global News Satellite Media Distribution System (SMDS) utilise frequencies between 5850-6425MHz (licenced to our uplink provider) and would require adequate protection from any new mobile allocation in this band in order not to jeopardise the global distribution of our radio and TV services.

Question 9: Are there any other bands that are not in Table A6.1 for which you think we should be considering their pros and cons for mobile broadband and for existing applications using this spectrum?

6425-6725 MHz

Although not included in Table A6.1, if at any point this band should come under consideration, BBC Global News would like to point out that the uplink frequencies for extended C-band (3400-3625MHz) utilise the band 6425-6725MHz.

Question 10: What are your views on bands which should be a priority for consideration for mobile broadband?

BBC Global News has no further comments to make other than to support those made in the joint industry submission from BBC, Channel 4, ITV, Arqiva and SDN.