



**BBC Response to Glasgow 2014 Commonwealth Games**

**Draft Spectrum Plan**

## 1. BACKGROUND

- 1.1 The BBC welcomes Ofcom's engagement with stakeholders on spectrum planning for the Glasgow 2014 Commonwealth Games through the publication of its 23 July consultation document. In particular, we welcome the opportunity to respond to ensure that Glasgow 2014's spectrum planning is as well informed as possible. As a rights holder for the Games and as the Home Broadcaster, the BBC has a responsibility to serve audiences with the best possible coverage whilst ensuring best value for money. The UK public will enjoy the games through a number of methods such as television, radio, online and red button. We therefore have a duty to ensure excellent and comprehensive coverage.
- 1.2 In order to achieve the high standards of production the public expect from the Games, the BBC will need to make extensive use of radio spectrum - a critical component in broadcasting. Careful and efficient planning of spectrum is critical to meet our aspiration of delivering high quality content to the UK population. .
- 1.3 For more background information on the BBC, please access the following web pages:
  - [www.bbc.co.uk](http://www.bbc.co.uk)
  - [www.bbc.co.uk/bbctrust/](http://www.bbc.co.uk/bbctrust/)
- 1.4 The BBC relies heavily on its annual frequency assignments. These facilitate a flexible and responsive approach to our operations. In addition to these annual assignments, the BBC uses short-term licences to cover specific events. During London 2012, the BBC used both its annual assignments and additional temporary licences, allowing us to successfully achieve most of our editorial and production objectives. This could only be secured, however, after rigorous planning and coordination between the BBC, other broadcasters and the UK licensing bodies.
- 1.5 The BBC's experience of spectrum management during London 2012 was broadly positive and contributed in no small part to the overall success of the Games. We have similar high aspirations for the coverage of the Glasgow 2014. However, Ofcom will need to recognise that there are a number of things that are different between London 2012 and Glasgow 2014.
- 1.6 For example, there will be fewer frequencies available for PMSE use due to frequencies being withdrawn. This impacts most acutely on wireless microphones and wireless cameras - clearly two key elements of a successful Games coverage. Another feature of Glasgow 2014 which differs from London 2012 is the presence of four home nations as opposed to a single Team GB. This will cause some differences in the nature of spectrum demand for news gathering.
- 1.7 The landscape in Scotland is also significantly different to that in London or around the other key London 2012 sites, affecting availability of spectrum for wireless microphones in particular.

## 2. General Response to Document

- 2.1 Section 2.20: The linear distances between several key Glasgow venue locations are small presenting additional challenges for frequency re-use and coordination.
- 2.2 Section 2.29: Careful co-ordination of frequencies between users has clear benefits and anticipated BBC usage of VSAT in Scotland will be noticeably higher than at London 2012.
- 2.3 Section 2.30: We suggest that some of the Wi-Fi 2.4 GHz band is retained inside venues for Rights Holding Broadcasters (RHB's). The BBC supports widespread availability of Wi-Fi in venues which offers line of sight to the field of play. This facility should be made available exclusively to RHBs and be separate from public networks. As an example of this, we expect that the Sochi Winter Olympics in 2014 will make Wi-Fi exclusively available to all media.
- 2.4 Section 2.38: Medal ceremonies would normally be covered under the host broadcaster coverage requirements.
- 2.5 Section 2.40: Spectrum demand for the London 2012 Torch Relay was greater than anticipated. Co-ordination of up to 40 wireless microphones as well as wireless cameras and talkback was required. Spectrum demand for The Queen's Baton relay will also be significant and will need particular attention.
- 2.6 Section 2.41: The BBC would be interested in further explanation as to how spectrum will actually be co-ordinated on the ground. For example, what do Ofcom expect the role of JFMG to be in this? We will be happy to discuss and advise Ofcom on this.
- 2.7 Section 2.42: Any additional spectrum that is made available would, of course, be welcomed. However, it must be in frequencies which existing broadcasting equipment is designed to operate in. This is because broadcasters are unable, for commercial reasons, to re-equip for a single event of such short duration. Spectrum may be most efficiently used if it is cleared for short periods during the games - not necessarily for as much as the standard licence duration of month (where it is not needed for that duration).
- 2.8 Section 3.1: Outside of Glasgow 2014, business as usual spectrum demand by BBC News and BBC Scotland is relatively low. However, it will increase significantly both as the Games approach and during Glasgow 2014 itself.
- 2.9 Section 3.2: Very significant areas of BBC spectrum usage were missing from the Analysys Mason report, including BBC Radio and BBC News. This was as a result of the consultants not speaking to all relevant BBC stakeholders. We urge Ofcom to ensure that any spectrum demand profiling designed to inform spectrum planning for Glasgow 2014 takes account of all relevant BBC spectrum users. Table 3.1, for example does not (but should) include all BBC spectrum demand, including Sport, News, Radio, Scotland and Other Nations and Regions.
- 2.10 Section 3.4: Very little additional spectrum will be required by RHB's as early as Feb 2014. The exception to this will be for the Queens Baton coverage.
- 2.11 Section 3.11: Table 3.2, Figure A.3 is misleading in that the London 2012 demand for airborne links is shown as zero. This was not the case and any demand estimate on this basis will inevitably be inaccurate. More generally, it would be useful to see a separation of host broadcaster requirements and RHB's to allow us to provide a more informed commentary on overall demand requirements.
- 2.12 Section 3.31: On the assumption that BBC requirements are treated as a whole we would be surprised if there are three other broadcasters each requiring 75% of the BBC requirements. We anticipate high demand from one other significant and comparable broadcaster but that other demand will be appreciably lower.
- 2.13 Section 3.32: The BBC News helicopter required high levels of spectrum usage at London 2012. It would therefore be appropriate to include those spectrum requirements in wide area talkback estimates.

- 2.14 Section 3.33: There is no inclusion in this section of the BBC News and Radio's significant requirements during London 2012 for high power wireless microphones (that is, between 500 mW and 1 W eirp) and wide area talkback. There are several areas of the BBC that would expect to use wireless microphones without associated wireless cameras. We would assume that each wireless microphone used for news gathering purposes will have an associated demand for a talkback channel. We would suggest that Ofcom should consult the comprehensive assignment data from London 2012 as a starting point for understanding likely demand levels –we expect that those levels may be comparable to Glasgow 2014.
- 2.15 The following is missing from the requirements:
- 12 high powered wireless microphones;
  - 12 wide area talkback;
  - Up to 12 SNG trucks of mixed conventional and VSAT variants to include all BBC (including BBC Scotland) satellite facilities that may operate inside games venues; and
  - News helicopter and use of talkback.
- 2.16 Section 6.9: This is unlikely to have a material impact on broadcasters' requirements as we generally require licensed and exclusive frequencies.
- 2.17 Section 7.6: It is essential for a successful planning and delivery of the Games that the BBC retains its production flexibility and responsiveness by maintaining its existing annual assignments - in the same way as during London 2012.
- 2.18 Section 7.9: The BBC's (and, indeed, other broadcasters') use of wireless cameras has been adversely affected by the loss of access to the 2.6 GHz band. This is a broader strategic concern for the PMSE sector which we have raised at length with Ofcom over the past few years. At events such as the Glasgow 2014, we are concerned that no editorial or production issues should arise as a result of the loss of this spectrum for PMSE use. As stated above, any replacement spectrum which is made available for PMSE must be within existing equipment tuning ranges as the BBC would not be able, for commercial reasons, to invest in new equipment for such a short time period.
- 2.19 The BBC currently makes use of digital wireless microphones so the scope for further spectrum efficiencies is limited.
- 2.20 Section 7.28: The BBC anticipates using only HD wireless cameras.
- 2.21 Section 7.29: Whilst the BBC constantly strives to improve the efficiency with which it uses spectrum, it does not envisage that further dramatic improvements will be realised ahead of Glasgow 2014. On a point of detail, the BBC would currently consider 1080P acquisition unlikely for this event.
- 2.22 Section 7.31 & 7.32: The BBC very much endorses manufacturers' and rental companies' view.
- 2.23 Section 7.41: Establishing point to point optical links presents specific technical challenges and, as a result, is not always quick to set up.
- 2.24 Section 8.6: The BBC understands that there is a lack of rental equipment which tunes between channels 31 and 37. We will therefore need to have clarity on whether there are any implications for broadcasters and the wider spectrum plan.
- 2.25 Section 8.7: As stated above, any additional frequencies that are made available for broadcasting use should be consistent with tuning ranges in existing equipment. Ofcom should further note that there is a risk that any manufacturer modifications for the purpose of retuning to alternative frequencies might lead to a loss of equipment functionality.
- 2.26 Section 8.8: Wireless microphones for BBC Radio will be requested at 1W eirp. Associated talkback use will be requested at 4W. At London 2012 a number of 25 kHz channels were assigned together with 12.5 kHz channels. These 25 kHz channels, in particular, proved vital for broadcasting use and we will require the same bandwidth for Glasgow 2014.

- 2.27 Section 8.20: The assumption that the Host Broadcaster will co-ordinate all spectrum requirements is an unusual approach from previous games where this responsibility has fallen to the organising committee, Ofcom or other regulatory entity. We would welcome further discussions with Ofcom as to how they expect such an arrangement to work in practice.
- 2.28 Section 8.28: The approach and processes used at the test events should clearly be consistent to and fully aligned with those adopted at the events themselves.
- 2.29 Section 8.30: As stated above, the BBC will require clarity over how the detailed spectrum plan is being developed. Additionally we will, of course, need information as to what enforcement provisions will be put in place during the games.

### **Additional BBC Comment**

We understand the regulator's legal requirement to issue full licences to licensees. However, we would also request that as the BBC is issued with a very large numbers of assignments, an approach could be explored as to whether a concise summary of BBC assignments could also be issued. This is a point of detail which is likely to be best addressed in further discussions with Ofcom over the coming months.

### 3. Responses to Questions.

1. Yes. Although we consider that all available comparators have some limitations.
2. We broadly agree, although it is based on snapshot information which doesn't always effectively capture actual user requirements. However, on a point of detail, the spectrum demand estimate table 3.2 may not have included business as usual spectrum demand for BBC Scotland as well as BBC News airborne downlink demand.
3. Data from past events offers a good starting point for any spectrum demand assessment. However that data will inevitably need to be refined on the basis of individual responses, taking into account the specific circumstances of the event being considered.
4. Not known.
5. Wireless links provide flexibility to editorial and production teams. This is highly valued in the broadcast arena and it is unlikely that there will be a significant shift towards wired communications. Therefore, spectrum policy and planning should assume no significant shift towards wired communications from those used in the London Olympics.
6. The BBC recognises the importance of ensuring that high spectrum demand is facilitated by efficient spectrum planning. With that in mind, we would make the rather obvious point that *effective* spectrum planning is dependent, in no small part, on the level of experience of those doing the planning. The BBC looks forward to discussing with Ofcom how we can best ensure that such experienced personnel will be made available to ensure a technically robust spectrum plan.
7. We repeat the point made elsewhere in this response to the importance of making frequencies available that are within the tuning ranges of existing equipment.
8. Yes the BBC would and already does as and when applicable.
9. Subject to clarifications requested above, the planning assumptions appear to be broadly correct.
10. On trunk radio.
11. Yes, but on PMR only.
12. Yes addressed though the section by section responses.
13. Yes addressed though the section by section responses
14. No
15. All regular commercially available standard bands that are appropriate for the requirements, in particular, those in the 2 GHz bands (2025-2110 MHz and 2200-2300 MHz).
16. The BBC would be unwilling to use alternatives because of the hardware implications mentioned elsewhere in this response.
17. The BBC believe that there were significant limitations on the radio camera frequencies that were made available in the main stadium for London 2012 and are keen to ensure this is not repeated. We look forward to discussing the details of this with Ofcom.

18. Spectrum at 5 GHz and 7 GHz are commercially available standard bands that are appropriate for the requirements.
19. None known at this stage
20. No
21. No
22. No
23. No
24. No
25. As stated above, we would like early certainty about the availability of Wi-Fi with line of site to the field of play and guaranteed quality of service for broadcaster usage. This will ensure that multimedia journalists can operate effectively.
26. We have some significant concerns about this proposal. A large and highly complex event requires much more co-ordination and planning than normal PMSE spectrum licencing. It is intrinsic to such an event where spectrum is backed by a guarantee, that proper advance planning is done. Any lack of spectrum availability could cause major issues to the broadcast production.

The specialist unit set up in Ofcom during London 2012 proved very effective at allocating suitable frequencies to the various broadcasters. They set a timescale for frequency applications and then ensured that sufficient spectrum was made available before planning the detailed allocation - published well in advance. Without a 'special regime' of some sort, this coordination could not have been done. Glasgow 2014 is undoubtedly a smaller scale project than London 2012 but still of a different magnitude than normal business for JFMG. The competing needs of the Host Broadcaster, RHBs, non-RHBs covering the games and the BAU users (both annual and ad-hoc licences) can only be balanced by a single specialist team as we had during London 2012. Whoever this frequency assignment body is, a single point of contact and a consistent approach through the planning phases is vital to achieving our objectives.

We are therefore requesting a meaningful dialogue between Ofcom, Games planners and Broadcasters. Structured information-sharing will be needed to ensure that issues are identified and resolved in good time. Ofcom, in particular, will need to resolve conflicts which will, no doubt, arise between games and non-games users.

27. It is important to treat the Home Broadcaster distinctly from the RHBs as their requirements are different. Both these parties are covered by the guarantee but each stakeholders' interests need to be carefully considered and balanced. Ideally technical coordination should be done by a statutory body such as Ofcom or JFMG as opposed to the Home Broadcaster.
28. Although we think there will be lower spectrum demand in Glasgow 2014 than London 2012, the expected demand will still be significant. This will be in an environment where less suitable spectrum will be available for use. As a result, the complexity and need for careful and detailed co-ordination and planning at Glasgow 2014 will be equally important as with London 2012.
29. Interference management during the London Olympics was effective and the BBC advocates a similar approach and a similar response to incidents.
30. As stated elsewhere in this response, we expect that approaches and processes used at test

events to be, not only aligned with those used at the Games itself, but also across those test events as far as possible.