OBS response tothe Ofcom draft spectrum plan

Approach

Question 1. Do you have any comments on the three approaches we have taken to spectrum planning for the London Games?

>In summary, we believe the overall Ofcom approach to be sound and are pleased to note the preparations are earlier than previous Games.

>The 'Top Down' approach is closest to that adopted by broadcasters in their planning.

Question 2. Do you have any comments on the scope for reducing demand by using fibre-wireless networks within venues?

>As previously noted, Broadcasters only resort to wireless technologies where wired alternatives are not practicable.

>The Ofcom proposal is acceptable provided the decisions on implementation are left to the Broadcasters.

Question 3. Do you have any comments on the scope for reducing demand by deploying a London-wide cellular receive system?

>As noted, there are two two distinct applications for such deployment:

>>a) The outside races

>>b) RHB ENG applications

>Whilst we are happy to discuss such deployment, it is imperative that the Outside Races coverage has a strong planning priority.

>What is the proposed funding of the London wide receiver network?

Question 4. Do you have any other comments on the scope for reducing demand by relying more heavily on wired communications?

>Already covered.

Question 5. Do you have any comments on the scope for maximising supply by using spectrum more efficiently?

>We support and encourage efficient use of spectrum. 'Tight' channel allocation and geographic re-use is acceptable provided no interference can be guaranteed.

Question 6. Do you have any comments on the scope for maximising supply by reusing spectrum efficiently?

We support and encourage efficient use of spectrum. 'Tight' channel allocation and geographic re-use is acceptable provided no interference can be guaranteed.

Where possible the same user should be allocated the reused frequencies so to provide an incentive for the user to co-operate in finding interference problems.

Question 7. Do you have any comments on the scope for maximising supply by using higher-frequency spectrum?

We have commented on these options in previous OFCOM questionnaires.

OBS and RHBswill certainly use technologies which have guaranteed technical performance and can be offered by the market in the quantities and pricing which appropriate to their use for the Olympic Games.

Question 8. Would you consider using free-space optics technologies?

Whilst we would not totally preclude their use, such use in broadcasting is very limited (fixed point to point only) and the consequent saving on spectrum very small.

Assumptions and summary conclusions

Question 9. Do you have any comments on our assumptions?

In general we find OFCOM's assumptions and conclusions to be quite reasonable. We would however comment as follows:

(4.14) Talkback will not require more than 12.5 KHz, however there may be telecommand applications which could require 25 KHz (telecommand bandwidth for broadcast applications will most probably be in the PMR range).

(4.15). In Beijing we used 20 MHz bandwidth links for video transmissions; we anticipate having to do the same, for certain applications, in London.

(4.23) This has been *de facto* the case in some previous Games Operations. However we cannot guarantee that we will not move wireless equipment from venue to venue if our production plan so requires.

(4.26) Again (as noted) we are happy with a tight channel assignment provided it can guarantee interference free operations.

(4.27) This point may be misleading: OBS represents all RHBs in any high level communication and general planning requirements, however we expect the RHBs will request the spectrum they need independently and directly from LOCOG/OFCOM. OBS will always help in providing coordination services for the resolution of general issues.

(4.33) We do not object use of CTCSS/CDS provided it is for use with radios for general communication purposes; for the avoidance of doubt, CTCSS/DCS cannot be used in Talkback operations or telecommand operations.To avoid misunderstandings, we strongly suggest that OFCOM clearly communicates any suggestion for use of CTCSS/CDS tones and requests the agreement of the end user.

Please also note that:

1) There may still be a requirement for SNG vehicles to transport video signals inside Olympic Park.

2) There may be a case for restricting RHB licences at certain times such as ceremonies in order to increase availability to the Host broadcaster for this period.

Private mobile radio

Question 10. Would you be willing to use LOCOG's land-radio network?

OBS and RHBs will be happy to discuss with LOCOG the potential use of such services once LOCOG announces all the technical, operational and financial conditions on this service. Provided this service covers the needs of broadcasters in the above areas we believe that broadcasters will be happy to use it.

Question 11. If not, how would you prefer to receive land-radio services?

All three options available:

A LOCOG digital trunking system

Radio through the LOCOG/OFCOM licensing scheme

Third party commercial networks

- maybe used by broadcasters

Question 12. Would you be willing to use CTCSS tones/DCS codes to allow the same channel to be used for land radio in both the Olympic Park and the River Zone?

Answered previously

To be clear, the answer is definitely no in the case of Talkback systems and Telecommand systems

Question 13. Do you have any other comments on our assessment and proposals for land radio?

A detailed description of the LOCOG digital trunking system is a pre-requisite for any further analysis in this area.

Question 14. Do you have any comments on our assessment and proposals for maritime radio?

With regard to broadcasting the Sailing events, maritime spectrum could be used for some coordination applications. However, we believe that talkback and telecommand systems will still need to operate in the standard PMR band

Audio links

Question 15. Do you have any comments on our assessment and proposals for wireless microphones and IEMs

No issues. We have also previously supported dense channel assignments. It is important however that existing equipment is sufficiently frequency agile to support any new bands.

Question 16. Do you have any comments on our assessment and proposals for talkback?

We have already expressed our concern regarding the suggested use of CTCSS/DCS codes

Question 17. Do you have any comments on ADS?

No comments

Video links

Question 18. Which bands would you prefer to use for wireless cameras?

Given the scale of our requirement, the most appropriate answer is:

All bands which satisfy the conditions we have indicated previously:

Quality guarantee

Availability of equipment in sufficient quantities

Availability of overall conditions appropriate to the Games.

In general, we concur with Ofcomwith regard to the "typical suitability" of certain bands for certain applications. An important caveat: although the presented number of available channels appears adequate, given the geographical re-use opportunities (which we strongly support), we are nevertheless concerned with regard to the availability of sufficient spectrum for the channels required for the coverage of the Outside Races, particularly in the case where it may be mandatory to use 20 MHz bandwidth.

Question 19. Which bands would you be willing to use for wireless cameras if you cannot use your preferred bands?

Please refer to our answer to the previous question

Question 20. Do you have any other comments on our assessment and proposals for wireless cameras?

Point 7.8 is unclear: do you refer to frequencies transmitted either from an aircraft or relayed by an aircraft, or both?

We can agree with the comments only if the reference is to the first option

Question 21. Which bands would you prefer to use for point-to-point links?

We will be happy to use the highest frequency with guaranteed transmission characteristics, subject to equipment availability, path lengths and required diversity.

Question 22. Which bands would you be willing to use for point-to-point links if you cannot use your preferred bands?

We have relatively small requirements for such links and we do not anticipate difficulty in their provision.

Question 23. Do you have any other comments on our assessment and proposals for point-to-point links?

No

Other guaranteed services

Question 24. Do you have any comments on our assessment and proposals for FSS?

Do you anticipate issues regarding the use of C band in the area of the IBC?

Question 25. Do you have any comments on our assessment for MSS?

As 24 above

Question 26. Do you have any comments on our assessment for RNSS?

What is the LOCOG/OFCOM thinking with regard to using licence exempt equipment within the venues? Will such equipment require to be verified/certified or not?

Question 27. Do you have any comments on our assessment and proposals for telemetry and telecommand?

Telecommand for camera remote - control will most probably be established with the use of "PMR" frequencies (in the 400 MHz bands). We expect that these frequencies will be fully managed by the same processes that are established for the rest of the Games spectrum. We do not believe that a "license-exemption" approach is appropriate to such use.

Question 28. Do you have any comments on our assessment and proposals for WLANs?

RHBs may have an expectation of setting up their own wireless LANs at venues and IBC. Encouraging the use of 5G and co-ordination of channels may be helpful.

Football venues

Question 29. Do you have any comments on our assessment or proposals for spectrum at the six football venues?

We are happy with Ofcom's approach

Cultural events

Question 30. Do you have any comments on our assessment and proposals for cultural events?

We would anticipate that Domestic broadcaster would have an enhanced interest in these events. There is insufficient information on the planned events for further comment.

Non-guaranteed services

Question 31. Do any non-guaranteed public services have spectrum requirements that cannot be met through existing allocation and assignment processes?

No comments

Question 32. Do any non-guaranteed private services have spectrum requirements that cannot be met through the market and existing assignment processes? Should we make alternative arrangements for handling such requests?

We disagree with Ofcom's placement of the potential WCATV requirements in this category. The WCATV requirements, if any, will need to be handled through the same approach as other spectrum requirements for the Games and governed by the same availability guarantees. In this regard, we would also note that the WCATV solution is the extension of an existing solution, available in all Summer and Winter Games since Athens, to use venue FM transmissions for similar purposes. FM venue transmissions will, most probably, also be required for the London Games and they should also be covered by the same guarantees as the other spectrum requirements for the broadcast operations of the Games.

Innovation and legacy

Question 33. Do you have any comments on our approach to innovation and legacy?

No comments

Operational issues

Question 34. Do you agree we should establish special licensing arrangements for users covered by the Government's spectrum guarantees? To what extent is your response based on what has worked well at past Games and comparable events?

This has been the successful approach for all recent Games. It is important however there must be close liaison between any Olympic body and the normal authority dealing with non Olympic issues.

Question 35. Do you agree that an online application process using the LOCOG rate-card ordering system is the best way for guaranteed users to apply for spectrum licences? How could the licence-application process be made optimal?

> This is standard practice and users will anticipate a similar approach for the London Games. We would like to discuss with LOCOG/OFCOM in more detail the specific features of this solution. Previously, the Host Broadcaster has helped by trialling the solution in advance of its deployment.

Question 36. How can efficient sharing and coordination between Games and non-Games spectrum use best be achieved?

> Through the deployment of frequency database available to all the relevant parties to co-ordinate the various users, both Olympic and non-Olympic.

Question 37. How can the use of licence-exempt equipment best be managed?

> We believe, based on past practice, that it will be difficult for OFCOM to guarantee avoidance of interference without controlling the use of licence exempt equipment within the venues

Question 38. Do you have any other comments on how best to license spectrum use for the London Games?

> Through close communication with all affected end users. Encouraging on time submission of requirements and rewarding the same with prompt allocations.

Question 39. How can interference management be most effective in ensuring the successful running of the London Games? Are there other measures we should consider implementing? To what extent is your response based on previous experience of similar events?

> As in previously successful Games:
>
> > Provision of efficient and fast testing programme for all transmitting equipment.
> >
> > Venue based offices for interference resolution and equipment access problems into venues.
> >
> > Training to security staff to recognise RF equipment and check stickers.
> >
> > Powers to confiscate non authorised equipment.

Test events

Question 40. Do you have any comments on our approach to test events?

In some instances OBS may need to perform RF tests outside the typical time window of the Test Events. We would expect LOCOG/OFCOM to treat such trials with the same approach as those indicated for the Test Events