TV white spaces: approach to coexistance

British Sky Broadcasting Group plc ('Sky') Response

1. Sky welcomes the opportunity to respond to Ofcom's consultation on the implementation of TV white spaces ("the Consultation").

2. Sky strongly believes that the introduction of white space communications will be of great benefit to the UK, and that it is therefore of paramount importance that the starting conditions are not unnecessarily onerous. Over-protection for certain groups based on the cascading of worst case protection elements should be avoided, when it is clear that doing so would unnecessarily hinder the launch of this dynamic innovation. As such, the protection measures that Ofcom ultimately selects should be based on substantive evidence.

3. We therefore broadly welcome Ofcom's proposed approach to white space devices as set out in the Consultation, which takes a proportionate approach to coexistence based on the available evidence. Although the wider industry remains concerned at the significant delays that the process has suffered, we consider that policy on TV white spaces is now moving in the right direction and better fulfils Ofcom's relevant duties.

4. Ofcom has an opportunity to make the UK a world leader in this area, influencing the viability of technology on global scale and becoming the country that others look to as an example of progressive, market-led regulation.

5. Sky is also a member of the Dynamic Spectrum Alliance, and supports the submission made by that organisation in response to the Consultation. This response is made in addition to the submission from the DSA.

6. This response focuses on the general approach Ofcom has adopted in respect of coexistence (i.e. questions 1-4). We do not provide specific comments in response to the technical questions set out in the Consultation.

The economic and social potential of white space devices is significant

7. TV white space applications have already demonstrated their value and the underlying dynamic spectrum access has great potential to enable innovation in technology, services and applications. Roll-out of commercial white space applications is accelerating in the US, while there have been trials in a number of other territories including the UK, South Africa and Singapore.

8. Many studies have highlighted the significant benefits that white space devices and shared spectrum approaches more generally can be expected to deliver. For example, an SCF report for the European Commission estimated that if the right regulatory conditions for shared access were to be put in place, the net increase in value to the European economy would be of

the order of several hundred billion Euros over nine years (a median value of €776 billion was suggested)[1].

9. This is unsurprising given that commonly agreed forecasts of connectivity show rapid and substantial growth. For example Cisco projects that by 2017 there will be 19 billion networked devices globally, up from 12 billion in 2012[2]. Other estimates which take into account an 'internet of things' put the figure as high as 100 billion connected devices[3]. It is clear that white space communications will need to be enabled on a global basis if these predicted expansions are to be supported.

Realising the full potential of white space devices requires a supportive environment

10. Given the nascent nature of white space applications, the regulatory framework needs to be proportionate and flexible in order to encourage innovation and accommodate different approaches.

11. In general, Sky considers that Ofcom's proposals are sensible and realistic, taking a proportionate approach to ensuring a low probability of harmful interference to other spectrum users in and around the UHF TV band.

12. We accept the proposed parameters relating to power levels, interference and protection as a pragmatic starting point for co-existence testing. In particular, we are encouraged that the right lessons appear to have been learned from previous interference predictions which proved to be wildly overcautious (between LTE and DTT).

13. In light of the failings of previous predictions, Sky considers that these parameters should be rigorously tested in the field in order to confirm their suitability, with subsequent adjustments (either more permissive or more restrictive) being based on these findings. Ofcom's practical approach should not be undermined by endless theoretical argument about worst case scenarios as it has in the past.

14. Below we include some specific detailed comments relating to Ofcom's proposals.

In home antennas

15. Sky welcomes Ofcom's proposed approach to accounting for viewers using indoor aerials.

16. Sky considers that public expectations allow for the adjustment of set top antennas to maintain reception as conditions change periodically. We would also note the wide variation of in the performance of these devices and the extensive Government advice which sets out clearly the limitations of indoor antennas. In light of these factors, Ofcom's approach is entirely proportionate.

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1 SCF Associates Ltd, 'Perspectives on the value of shared spectrum access', February 2012, http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/scf_study_shared_spectrum_access_20120210.pdf

2 Cisco Visual Networking Index, 2013. Available at: http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html.

3 See the report by Richard Thanki "The Economic Significance of Licence- Exempt Spectrum to the Future of the Internet", June 2012.

17. Sky also notes Ofcom's statement that it is the householder's responsibility to ensure that it has an adequate aerial and receiver installation and that it should ensure its aerial is aligned with the designated transmitter for their location. We agree with this assessment.

Spectrum availability

18. Ofcom needs to ensure that its permissive approach is applied consistently across its white space policy. Sky considers that in respect of channel availability, some of Ofcom's proposals are too restrictive and risk stifling the potential of new white space applications.

19. In general, Sky welcomes the proposed level of available channels for white space devices across the UK. But we retain concerns around the anticipated levels in areas such as London and Glasgow.

20. In the case of London, we note that PMSE accounts for a significant reduction in the number of channels available. Ofcom should take necessary steps to ensure that allocation of the spectrum which PMSE utilise – currently overseen by JFMG – is kept appropriately up-to-date and that channels are only unavailable to white space devices for as long as they are being actively used by PMSE applications

21. Ofcom outlines an important principle by confirming that protection should only be applied to one transmitter per pixel. Alternatives, such as the digital satellite services from Freesat or Sky, are available to consumers that wish to receive public service broadcasts that are not from their designated transmitter.

22. In the longer term, Sky considers that additional steps should be taken to ensure that spectrum availability for white space devices is maximised. In particular, the DTT platform (which acts as the biggest constraint to white space devices in the UHF band) should be subject to ongoing appraisal with regard its spectrum efficiency. Where appropriate, steps such as the adoption of more efficient transmission standards should be taken to optimise the use of these frequencies, in line with Ofcom's duties.

Adjacent channel selection performance of DTT receivers

23. Ofcom have commissioned a study on DTT Receiver Performance that focuses on adjacent channel selection (ACS)[4]. This report notes that there is a wide variation in the performance of receivers in this regard, with some equipment being particularly out of step with today's 'best in class' performance.

24. Using protection ratios required by the worse performing receivers would serve to severely restrict white space availability. Sky considers that appropriate regulatory incentives should be introduced to ensure that all new DTT receivers can achieve appropriate levels of reception performance.

Sky **Dec 2013**

[4] Not yet published, but presented at Ofcom's stakeholder workshop on 25th November