



**BBC response to Ofcom's Consultation on  
*The licensing of manually configurable  
white space devices operating in the UHF  
TV band***

April 2015

## Overview

The BBC welcomes the opportunity to respond to Ofcom's consultation, Manually configurable white space devices (MCWSDs), published on 27 April 2015.

Ofcom will be aware from our previous constructive engagement on the broader issue of TV White Spaces (TVWS) that we are keen to see the most efficient use of UHF spectrum while ensuring the integrity of existing services for viewers and audiences. In that spirit, we fully support measures which can secure the most efficient use of this spectrum. We recognise that – with an appropriate regime of licensing and interference management to robustly protect DTT and PMSE – there is an opportunity to explore whether the deployment of WSDs could offer real consumer benefits.

The proposals set out in this most recent consultation represent a departure from the approach that has guided Ofcom's approach to TVWS and which has underpinned much of the regulatory and technical work over the last decade. By proposing to licence WSDs, Ofcom appears to be favouring an approach it has specifically precluded in the past. Accordingly, it is appropriate that Ofcom takes a precautionary approach. With this in mind, we have set out a number of concerns on Ofcom's proposals more fully below.

We recognise that the proposed licensing regime is intended to be an exceptional, interim measure allowing for further technical work to be conducted into devices which can geo-locate and thus benefit from the full flexibility of the TVWS framework. It is therefore essential that this licensing regime does nothing to entrench manually configurable devices in the UHF at the expense of incumbent users nor disincentivises the development of licence-exempt devices.

The starting point must be remaining realistic about the size of the challenge for geo-location of indoor devices. We would query Ofcom's expectations of early compliance suggested in the below sections and welcome further details of the factors and evidence underlying Ofcom's assessment:

Ofcom states in paragraph 4.14,

*“We expect that equipment that meets our licence exemption regulations will be developed shortly”.*

then in paragraph 4.24:

*“We expect devices that comply with the licence exemption to be developed within the next three years”.*

The BBC believes that the *potential* for viable indoor access to White Space spectrum will require significant research and development into technologies other than GPS. Given the likely investments involved in such further technical work, it is important that a licensing regime for MCWSDs is not designed in a way which offers an artificially ‘painless’ and cheap long-term alternative. Particularly of concern is the low cost and nature of the MCWSD licence, which allows an unlimited number of devices to be deployed by the licensee and his sub-contractors and given the period for which the licence remains in force. We also note that the proposed licence product has no end date. We suggest instead a fixed term licence with an option to renew.

We are concerned that a review in 3 years may have a scope so broad that it would entrench these new services in UHF interleaved spectrum by allowing them to acquire a status which would give equal (or even greater) rights of access to frequency than either DTT or PMSE. We also note according to the draft licence in Annex [6] such a review could only result in a 5 year notice of termination of the licence. We propose that the licence be issued only for a period of 3 years, which would be more in keeping with the spirit of the transitional nature of MCWSDs.

With that in mind, we would welcome confirmation from Ofcom that both DTT and PMSE will continue to have higher priority access to UHF spectrum than MCWSDs even after any 3 year review on the future licensing of MCWSD.

### **Quality Assurance of MCWSDs installations**

Significant weight is placed on a proposed quality assurance regime to mitigate risks. However, we consider that, in the first instance, Ofcom would need to err further on the side of caution in these circumstances and perhaps

restrict the installation of MCWSDs to the licensee itself. This could specifically be reviewed at a later date.

The nature of MCWSDs carries a risk of misconfiguration, either wilful or inadvertent, and interference to incumbent services, which would require investigation by the regulator or the BBC's Radio and TV Investigation Service. Such costs are likely to increase with the size of the MCWSD deployment. Licence costs should reflect total cost to Ofcom including possible access and inspection work (as anticipated in Section 9 of the draft licence). It may therefore be more appropriate to relate the cost of a licence to the number of MCWSDs associated with it. Paragraph 5.18 appears to allow a form of low-cost spectrum leasing to take place, which we consider to be inappropriate for this kind of deployment given the scope for incorrect (either wilful or inadvertent) manual intervention. Reports from the United States suggest misconfiguration of MCWSDs affects over one third of all installations. Ofcom should also consider making available relevant MCWSD data it collects through the licensing regime to organisations responsible for consumer enquiries about TV reception including the BBC, DUK and at800.

### **European Harmonization of Dynamic Spectrum Access in the UHF band**

As the World Radiocommunications Conference (WRC-15) approaches we are reminded constantly of the need for regional and even global harmonisation measures to be put in place to maximise the value of spectrum for new and innovative uses. The 800 MHz band was harmonised in the EU for IMT on that basis; the 700 MHz band will be cleared of DTT in due course as it is made available for IMT in Region 1, and pressure is being applied to the remainder of the broadcasting band (470-694 MHz) as mobile operators and manufacturers seek a globally harmonised set of frequencies.

On 19 March 2015, a workshop was convened in Brussels to discuss the prospects for spectrum sharing within the EU. At that session it was clear that, within Europe, only the UK is promoting dynamic sharing in the UHF band. Where there is any European interest elsewhere in new spectrum sharing arrangements, it is focussed on a licensed shared access (LSA) model and the drive for a common approach is toward the 2.3 GHz band.

With that in mind, it appears that the UK approach is diverging from that of other European administrations and therefore the scope for harmonization is small, reinforcing our concerns that the incentives to develop fully compliant WSDs, that will reliably geo-locate, may become undermined by the ease of accessing spectrum through MCWSDs.

## **Conclusion**

The BBC recognises that geolocation has not been successfully implemented in current WSD technology. Seeking to overcome this, particularly for indoor deployment where GPS cannot be used, will require significant research and development investment as a minimum.

Alternative geolocation services (e.g. WiFi Access Points, Cellular networks) may provide a solution but the deployment and reliability of such services requires further consideration.

Against this background, the BBC accepts there may be some benefits in licensing manually configured WSDs, strictly as an interim arrangement. However we have a number of concerns regarding the details of Ofcom's current proposals:

1. The broad scope and low cost of the proposed MCWSD licence along with the lack of European harmonisation is likely to disincentivise the development of innovative geolocation services.
2. The low cost of the proposed licence fee seems incompatible with the costs of investigating misconfigured devices, which are increasingly likely in a large network manually configured by one or more sub-contractors. The cost of the licence should to some extent reflect the likely costs of investigating cases of interference, and should therefore be related to the number of devices being licensed.
3. Regarding the proposed review of MCWSDs in 3 years, the draft licensing terms would not allow the transitional arrangements to be brought to a timely conclusion, if that should be the result of the review. There is a risk that MSWSDs could acquire an elevated licence status which could cause significant risk to both DTT and PMSE.



#### 4. Responses to questions

*(Q1) Do you agree with our assessment of the likely costs and benefits of our proposal to license MCWSDs as a transitional arrangement? Please provide any available evidence to support your response.*

We understand the benefits of allowing MCWSDs but we have some concerns about the costs associated with investigating mis-configured installations. We feel a more tightly controlled licensing regime would be appropriate. As explained, we feel that the licence cost should be tiered according to the number of installations and that the use of sub-contractors will require careful control.

*(Q2) If you agree that Ofcom should allow MCWSDs to operate in the UHF TV band within the TVWS framework, how long do you believe that the licensing regime would need to be in place?*

Whilst we are not in full agreement with Ofcom's proposal, we accept that there may be conditions under which such transitional use may be beneficial. In this case we believe that the licence should be issued for a period of 3 years at which time the licensing regime should be reviewed.

*(Q3) If you agree that Ofcom should allow MCWSDs to operate in the UHF TV band within the TVWS framework, when do you believe it would be appropriate to conduct a review to assess whether there is an ongoing need to license MCWSDs?*

This should be addressed in the review of the licensing regime after a period of 3 years. We would welcome clarification of the nature and scope of this review.

*(Q4) Do you agree with the proposed terms of the draft licence as set out in Annex 5 and as discussed below?*

The draft licence terms require additional controls in the following areas:



1. The BBC Radio and Television Interference Service <sup>1</sup>(RTIS) should have live access to details of all MCWSD installations to manage interference reports.
2. The installer should be obliged to demonstrate compliance with the quality assurance process and the licensee should be responsible for any failings made by the installer.

*(Q5) Do you think it would be beneficial for the licensing regime for MCWSDs to cover both masters and slaves?*

Yes – it seems sensible that if such a regime is to be introduced that it should cover both master and slave devices.

*(Q6) Do you agree that our licensing regime should only apply to type A devices?*

Yes, we agree – this licensing regime should not be applied to type B devices.

*(Q7) Do you agree with our approach to allow a number of MCWSDs under the control of a single licensee to be subject to a single licence?*

As discussed, the proposed licence cost does not adequately cover the cost and risks associated with a large deployment by a single operator and should be tiered if this is to be adequately addressed.

*(Q8) Do you agree that the proposal for specific licence terms will mitigate the risks posed by the use of MCWSDs?*

Specific licence terms may mitigate risks provided that Ofcom establish a strict oversight and policing function to ensure compliance.

Additional controls are required to prevent subsequent reconfiguration / misconfiguration of the MCWSDs by a third party.

*(Q9) Do you consider the proposed licence terms are appropriate and*

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<sup>1</sup> The BBC's Radio & Television Investigation Service fulfils the BBC's duties under Paragraph 82 of the Agreement between the BBC and the Secretary of State.

*proportionate?*

Given the immature nature of the technology, we believe additional controls are necessary as detailed above.

*Q10) Do you have any comments on our proposal to require applicants for licences to deploy MCWSDs to supply details of their QA process on application?*

This is absolutely necessary and we would be particularly concerned with the use of unqualified sub-contractors. We note there are no mechanisms to train or certify installers for this new technology and this carries additional risks.

*(Q11) Do you agree with the proposed technical conditions of the draft licence?*

The draft proposals appear reasonable but will require further review as the technology develops. Careful policing will be required for initial deployments.

*Q12) Do you have any comments on the proposed duration for this licence ?*

The current proposals amount to a spectrum lease of at least 8 years duration. We feel this would be inappropriate given the interim nature of the proposed licensing. We believe that the license should be issued for a period of 3 years.

*Q13) Do you have any comments on our proposed licence fee of £1,500?*

A fixed fee irrespective of the number of deployments does not correctly account for spectrum and interference management, which is proportional to the number of WSDs and not the number of licenses. This should be tiered according to the size of the deployment and the associated risks. MCWSDs will require careful monitoring and the costs should reflect this.

*Q14) Do you have any comments on our proposed five year minimum notice*

*period for revocation for spectrum management reasons?*

This is considered too long and it may be appropriate to discontinue MCWSD licences after the proposed three-year period. This is discussed above.

*Q15) Do you believe there is likely to be an ongoing need for white space devices that allow some level of manual configuration? Please give reasons for your answer.*

We believe that geo-location of indoor WSDs may continue to be problematic. However, we feel that the use of MCWSDs should be reviewed after the three year period as discussed.

*Q16) Do you believe there is merit in exploring allowing enhanced operation through a licensing regime in the future and if so what additional capabilities should be allowed?*

We think that the additional uncertainties associated with manually configuring parameters such as antenna gain and orientation are even more problematic than for location, and so we do not feel that the licensing regime proposed in this consultation is appropriate for enhanced operation. It may be that more rigorous licensing regimes could be developed for such a requirement.

ENDS.