



Issue 1

**BT's response to the Ofcom consultation
document:**

**TV White Spaces – A consultation on white space
device requirements**

(Issued by Ofcom on 22 November 2012)

INTRODUCTION

BT is pleased to have the opportunity to comment on these latest TV White Space proposals from Ofcom. We have been fully supportive of Ofcom's plans to allow the TV White Spaces to be used for new applications. We believe that these proposals form part of an important step forward in enabling this to be achieved. However we are disappointed that some of the most important issues (such as DTT protection requirements, database operation, and enhanced operational mode) have been deferred, and we strongly encourage Ofcom to progress their proposals in these areas so that they can also be consulted on and concluded as soon as possible.

We would also like to note that many of the issues addressed in this consultation document are very closely related to the detailed operation of the white space database. Therefore our view on some aspects of the WSD requirements given in this consultation document may be affected by the proposals given in, and our response to, the future consultation on the operation of the database.

RESPONSES TO THE QUESTIONS IN THE CONSULTATION DOCUMENT

Within the "Current work on TV white spaces policy" in § 3.17 there is an explanation of the Baseline and Enhanced modes, which indicates that antenna characteristics will be addressed as part of the Enhanced mode. It is presumed that this is referring to the characteristics (particularly the gain and pointing direction, if appropriate) of the slave WSD antenna. Unfortunately this consultation document appears to include no specific reference to the antenna characteristics of the master WSD, and it is not clear whether this is because it has been assumed that reference to master WSD antenna characteristics is unnecessary. Please clarify.

Question 1: Do you agree with our approach to defining the various categories of WSDs?

We note that in § 5.18, it is stated that the device type must be declared by the manufacturer. Given that according to § 5.15, "*A type A device is one whose antennas are permanently mounted on a non-moving outdoor platform*" and "*A type B device is one whose antennas are not permanently mounted on a non-moving outdoor platform*", we do wonder how a manufacturer will be able to declare where and how the antennas are mounted by the end user. Whilst we understand the intent behind this parameter, perhaps further consideration is required regarding the definitions, and the linkage to the declaration of the device type.

With regard to the definitions of the device types, we would like to raise a further observation. There is no definition of "integral" (with regard to the antenna), and we would like to note that in some applications it will not be appropriate or possible to mount the antenna on/in the radio unit – perhaps because it is inside an appliance with a metal skin. In such cases, we would expect the (omnidirectional) antenna to be permanently connected to the radio unit by a cable, so that the antenna cannot be changed. We believe that such a configuration would be within the intended scope of Type B devices, and therefore we would like to see the term "integral antenna" defined to include omnidirectional antennas which are permanently connected to the WSD, without necessarily being within the same box as the radio equipment.

Question 2: Do you agree with our proposed sequence of operations for WSDs?

It is not clear whether or not association of a slave WSD using the generic operational parameters is considered to be essential in all cases prior to association using the specific operational parameters. However for professionally installed fixed equipment, we would like to see a clearer statement that initial operation using generic operational parameters is not required, and it would be permitted for initial association by the slave WSD to be undertaken by direct submission of the slave WSD device parameters to the WSDB. This would then allow a professionally installed fixed slave WSD to make initial association using specific operational parameters. We recognise that this *might* be the intention behind the wording in § 5.43 (“a slave WSD which associates with a master WSD over a medium other than the UHF TV band”), but in which case it is not very clear.

Whilst not necessarily conflicting with the proposals presented here, we believe that in the case of a large network of devices (with many master WSDs) operated by a single organisation, there could be significant benefits if a management system is permitted, acting on behalf of many master WSDs. Such a management system would come between the master WSDs and the WSDB, and would hold all of the information about all of the devices (both master and slave) within the network (or part of the network). The management system would interface with the WSDB on behalf of the master WSDs, and would convey the relevant operational parameters back from the WSDB to the master WSDs. Such a management system would be configured so that it would appear to the WSDB to be like a master WSD, in order to conform to the requirements, although it would actually be making requests to the WSDB on behalf of more than one master WSD. For the purposes of device testing (to the European Harmonised Standard) the management system would be tested in conjunction with the master WSD, to ensure that they work together in the appropriate manner.

Question 3: Do you agree with our proposed additional operational requirements for master WSDs?

It is stated in § 5.53 that the master WSD device parameters must be determined automatically by the master WSD. This will be appropriate for those characteristics which are embedded into the device by the manufacturer, and also for the device’s geographic location. However this may be more difficult if the master device has interchangeable antennas, since the gain and pointing direction of the antenna may not be so easy to determine automatically. We believe that some provision should be enabled to allow the antenna characteristics to be entered manually, recognising that this may need to be limited only to fixed professionally installed equipment.

The power limits in § 5.61 are based on the currently proposed method of operation for the WSDB. However we believe that in the longer term it may be possible for a more advanced approach to be taken by the WSDBs, taking account of the aggregation of interference from all devices, including those devices using multiple channels. In that case we believe that it would be possible to apply greater flexibility with regard to the maximum in-block EIRP. Therefore we propose that the approach taken with regard to the maximum in-block EIRPs should be reviewed when the procedures for the WSDBs have been agreed.

Question 4: Do you agree with our proposed additional operational requirements for slave WSDs?

We agree with the proposals, providing that provision is made to allow device parameters (at set-up) to be entered manually for professionally installed equipment.

Question 5: Do you agree with the proposed device parameters, operational parameters and channel usage parameters?

It is noted in § 6.7 that some of the device parameters will need to be internationally harmonised. We agree with this proposal, and we welcome Ofcom's suggestions for possible formats for those identifiers. However we believe that it is important to consider the implication if an unexpected or unrecognised identifier is given from the device to the database. Whilst this is primarily a problem to be addressed by the database, the possibility of such an occurrence should also be considered when proposing the format for the parameters.

In § 6.10 & § 6.11, the terms "mandatory" and "optional" are defined with regard to their use in determining the specific operational parameters. In the current wording, "mandatory" parameters are introduced as being not required to be communicated to the WSDB, which seems rather strange given that they are supposed to be "mandatory".

It would appear that the use of the terms "mandatory" and "optional" may relate to whether these parameters must be communicated by the slave WSD to the master WSD for generic operation, but this is not entirely clear. Therefore this should be clarified, perhaps in § 6.9, by defining what is meant by use of the terms "mandatory" and "optional". (Is it correct that they relate to the communication of parameters from the slave WSD to the master WSD for generic operation?).

Having defined the meaning of the two terms, § 6.10 & § 6.11 would then explain how this information is used (if available) in determining the specific operational parameters.

Question 6: Do you agree with our approach of implementing the requirements in the example SI and the draft IR and VNS?

We agree with and support the proposals presented, subject to the following comments regarding the text of the draft VNS.

Comments on the text of the draft VNS

Scope – It is stated that the VNS is "technology and application agnostic" – we believe that it would be better to write "technology and application independent", which will be clearer and more accurate.

Definitions – These provide definitions for the "Generic Operational Parameters", "Master Operational Parameters", "Slave Operational Parameters" but omit to define the "Specific Operational Parameters".

§ 5.10 Figure 1 – It is presumed that a dashed arrow indicates an optional exchange (perhaps that should be explained), in which case it would appear that the exchange of

slave CUPs to the database is optional; is that correct? Please clarify, and amend the figure if necessary.

§ 5.40 & § 5.41 – There are some unnecessary subscripts in the text

§ 5.46 – Does this definition presume that the equipment will be operating in TDD mode? If FDD operation is to be permitted, then a transceiver could be permanently in receiving mode, in which case it is not clear what would be understood by the term “unwanted emissions”. Please clarify.

§ 5.53 – Please reverse the order of § 5.53.1 and § 5.53.2, because the current ordering of the clauses does not read well, considering the opening sentence of § 5.53. (The notion of treating a WSDB as qualifying based on the number of minutes elapsed appears to be somewhat strange, and would logically make more sense as a follow on from the text currently in § 5.53.2.)

§ 5.54 – Please amend to read “A master WSD must not request operational parameters from (i.e., query) a WSDB that was not on Ofcom’s list of qualifying WSDBs when the list was last accessed.” This would address the problem arising if a WSDB has been withdrawn from the Ofcom list in the interim period (less than N minutes) since the master WSD last consulted the Ofcom list, recognising that the master WSD would not be expected to be aware that a WSDB has recently been withdrawn.

§ 5.111 – We believe that the text should read (second sentence) “If a WSD cannot report its vertical geo-location uncertainty, it shall ...”

§ 5.112 – It is presumed that a slave device with geo-location capability, but which is operating in accordance with the *generic* operational parameters (which are not location specific), would not have to comply with the provisions given in § 5.112, although this is not stated. Please clarify.

§ A1.6, Figure 8 – (which should actually be labelled as Figure 11) Same comment as for § 5.10 Figure 1.

§ A1.12 – This applies to “Slave WSDs which have already associated with a master WSD”, which is the operation which is explained in § A1.13. Therefore it would be more appropriate if the text in § A1.12 were to be located *after* § A1.13.

END