Intellect response to the Ofcom Consultation:

White space device requirements

About Intellect

Intellect is the trade association for the UK technology industry. In 2007, the industries Intellect represents accounted for 8% of UK GDP, £92bn of Gross Added Value and employed 1.2m people.

Intellect provides a collective voice for its members and drives connections with government and business to create a commercial environment in which they can thrive. Intellect represents over 750 companies ranging from SMEs to multinationals. As the hub for this community, Intellect is able to draw upon a wealth of experience and expertise to ensure that its members are best placed to tackle challenges now and in the future.

Our members' products and services enable hundreds of millions of phone calls and emails every day, allow the 60 million people in the UK to watch television and listen to the radio, power London's world leading financial services industry, save thousands of lives through accurate blood matching and screening technology, have made possible the Oyster system, which Londoners use to make 28 million journeys every week, and are pushing Formula One drivers closer to their World Championship goal.

In the past 12 months 14,500 people have visited Intellect's offices to participate in over 550 meetings and 3,900 delegates have attended the external conferences and events we organise.

Response

Preliminary remarks

Intellect is pleased to have the opportunity to comment on these draft proposals for the operation of TV White Space Devices (WSD) in the UK. With increasing pressure on making available new spectrum opportunities, Intellect welcomes Ofcom's proposals to facilitate the opening of the TV broadcasting band for white space devices subject to the avoidance of harmful interference to incumbent licensed users, DTT and PMSE.

The current consultation only addresses the white space device requirements. However, the protection of existing services depends, as well as this, on the correct operation of the database and appropriate coexistence criteria.

Ofcom plans to consult on the second and third of these items during the first half of 2013. Ofcom may therefore need to revisit the proposals made in the current consultation in the light of responses to these later consultations.

Intellect notes that Ofcom is also undertaking work on emission masks for mobile broadband devices operating in the proposed 700MHz band. Intellect believes that Ofcom should apply consistent criteria for coexistence of DTT with mobile broadband and white space devices.

Specific Responses

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

Recognising that a technology neutral approach has been adopted, which we fully support, we understand that there could be a broad range of different TVWS devices, with differing capabilities. We believe that the set of device categories proposed fully address the range of possible device characteristics, and therefore we agree with the approach adopted by Ofcom.

However we do note that according to clause 5.15, Type A devices are defined as having antennas which "are permanently mounted on a non-moving outdoor platform" while Type B devices "are not permanently mounted …". Clause 5.18 then identifies that device type is a manufacturer's declaration. However we believe that it will not be possible for a manufacturer to identify where the antenna is mounted (i.e. permanently on a non-moving platform, and whether or not it is indoors or outdoors). The status is unclear for a device with external antennas that are not intended to be permanently mounted. These issues would be clarified by modifying the definitions in the Voluntary National Specification to read:

- Type A WSD: A WSD which has one or more external antennas or which is intended to be permanently mounted to a building or structure.
- Type B WSD: A WSD which has an integral antenna and which is not intended to be permanently mounted to a building or structure.

The manufacturer's declaration can be confirmed by a conformance assessment that looks for the presence of mounting fixing points or accessories, information on permanent mounting in the product literature, or the presence of external antennas or antenna connectors on the device.

These definitions also need to be added to the Interface requirement, and corresponding changes should be made to clauses 5. (3) (e) and 6. (3) (d) of the Statutory Instrument.

Ofcom propose that both Master and Slave categories of devices must have the capability to receive and transmit over the relevant frequencies. We ask that Ofcom clarifies that it is also possible to have WSDs which will receive only. There will need to be methods employed to determine where, when and how to receive data. This can be done in many ways and does not have to be carried out solely over white space communication channels (for example through means such as an independent wired or wireless network)."

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

The sequence of operations proposed for WSDs appears to be correct, and appropriate.

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

We agree with the proposed additional operational requirements for master WSDs, with one possible exception:

Clause 5.53 states that the device parameters must be "determined automatically" by the master WSD. It is our understanding that some of these may be "hard-wired" into the device during its manufacture, whilst others such as the antenna location can be determined automatically. We presume that antenna gain and direction are also required and therefore seek clarification as to whether these are also to be "determined automatically" by the master WSD, or specified at installation.

We also note that the values for AFLR that are proposed in Tables 1 and 2 of the consultation document would result in maximum transmit powers that are insufficient for many TVWS applications in many parts of the country (including, but not limited to, DTT fringe reception areas), if they were applied in conjunction with the maximum out of band levels for protection of DTT contained in a paper that Ofcom submitted to a recent meeting of ITU (JTG 4-5-6-7/91-E, the first table numbered Table 12). These out of band levels were derived using a worst case analysis (minimum coupling loss). Intellect recommends that Ofcom repeats this analysis with more representative assumptions.

Clauses 5.68 – 5.70 propose measures for security of the communication between a master WSD and the website containing Ofcom's qualifying list of WSDs. The use of the HTTPS protocol is a necessary but not sufficient condition for this security; it provides security once a link is established, but does not prevent a master WSD from communicating with a spoof database. Intellect recommends that Ofcom seeks expert advice on this important issue.

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

We agree with the proposed additional operational requirements for slave WSDs.

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

Clause 6.7 contains several parameters which will "need to be internationally harmonised", which we would endorse, although this does raise some questions about which body/ies or organisation(s) would be responsible for such parameters. In particular, the draft VNS gives some examples of Technology Identifiers, which seem quite appropriate. However Ofcom should give some consideration to how the database should react in the event that an unrecognised Technology Identifier is received, which would be possible for such free form use of the identifier field.

Clause 6.10 states that some of the parameters are “mandatory”, and then states that if those parameters are not communicated to the WSDB then the database will not generate specific operational parameters for the slave device. This is rather surprising, since it is our understanding that many (if not all) of the parameters should be specified in all cases, irrespective of whether or not specific operational parameters are required by the slave device. Please clarify.

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

We are in agreement with the proposed approach of implementing the requirements in an SI, IR and VNS.

There is a difference of views however among our member companies on the spurious emission limits given in clause 5.44 which have been taken from the draft ETSI Harmonised Standard and the latest version of the ECC Recommendation 74-01. Some consider these to be appropriate on the basis that these are the more stringent spurious limits which have been agreed in CEPT to be used in the mobile services for Short Range Devices, RLANs, CB, Cordless Telephones and Radio Microphones.

Others however consider that the transmitter unwanted emissions outside the 470-790MHz band, as defined in section 5.44 of the VNS, do not provide adequate protection of mobile base stations. This is in the context of the possibility of Type A WSD emissions in mobile uplink bands causing continuous desensitisation of nearby base stations. Instead they propose the limit of - 61 dBm/ 100 kHz as suggested in its coexistence studies by 3GPP, for the frequency ranges 832 MHz to 862 MHz, 880 MHz to 915 MHz, 1710 MHz to 1785 MHz, 1920 MHz to 1980 MHz and 2500 MHz to 2620 MHz.

End