

Additional comments:

Samsung Electronics applauds the detailed and careful efforts that Ofcom is taking to investigate and facilitate this innovative approach to increase the utility of the limited radio spectrum. Samsung Electronics is also interested to ensure the proper protection of UK DTT services.

Therefore Samsung Electronics submits the following comments and observations on the proposals detailed in the consultation document:

Protection criterion

Given the fact that the authorizations to transmit are on a technology neutral basis, it is also a particular challenge for CE manufacturers to develop adequate immunity against WSD signals for future DTT receivers.

On the other hand, SAMSUNG agrees with OFCOM that specific WSD technologies can be more benign and therefore can operate under relaxed conditions. However, future WSD technologies may have a larger interference impact than the currently envisaged technologies.

It is therefore essential and OFCOM's responsibility to continuously ensure that the generic protection ratio are sufficient to cover any technology of WSD devices and sufficient to protect the DTT receivers in the market and in the field. For this purpose, regular active monitoring with a representative panel of receivers and WSD devices may be needed.

Interference Management

Although all necessary measures will be taken to avoid interference, it can be reasonably expected that some interference cases may occur. The interference clearance and management should be properly organized and resourced by OFCOM. It is also necessary to ensure the public awareness of possible WSD interference and to know how to seek help to resolve any difficulties.

As the LTE800 deployment will be performed and overseen by DMS Ltd at the same time as the WSD introduction, DTT viewers suffering interference maybe confused as to the source of that interference and about who to approach. Cooperation between the OFCOM monitoring and clearing of interference and the DMS Ltd maybe necessary, so that affected DTT viewers can reach the proper organization to resolve the problem. Some synergies between the OFCOM services and DMS could be also envisaged.

In case of interference, it should be possible to interrupt the WSD transmissions to verify that the considered device is indeed the cause for interference. If the provision of the "kill switch" is deemed to be for this purpose, it is necessary to detail under which circumstances it can be used.

Security Aspects

Master and slave connection device need to be secured in reliable way, in order to avoid any slave device being "misled" by a wrong master signal. The security between slave and master should be included in the tests of the VNS.

Particular security requirements to the WSDB server should be specified to avoid any piracy, malware which could lead to WSDs to operate outside of their intended parameters.

Robustness of devices

Robustness tests and stress tests for devices would be welcome in the VNS to ensure that device cannot enter into an "uncontrolled" state.

Installation of devices

Device Type A devices can have external antennas with different antenna gains. A priori, the antenna installer is not liable towards the OFCOM or any other body but only towards the end customer.

SAMSUNG requests clarification on how to ensure that these antennas will be accurately installed according to their parameters and that the correct antenna gain will be entered as an operating parameter.

In general, it is not clear which parameters in Table 4 can be user altered and which not. For instance, can the technology identifier be changed?

Calculation of available spectrum resources and operational parameters

SAMSUNG welcomes OFCOM's proposal that OFCOM provides calculations, as they can be rather complex and may require detailed data (e.g. topography). It would be beneficial to make these calculation methods publicly available.

These calculations need to consider not only the cumulative effects of different white space devices but also the cumulative effect with LTE800.

E2E testing of real time interference management

SAMSUNG would welcome the End to End trial under consideration by OFCOM which would help

- to test the devices under real time circumstances
- to test the robustness of the system
- to validate the calculations
- to gather experience on the time to intervene for OFCOM's organization in case of interference and on the time between interference occurrences and operation of WSD's according to the adjusted parameters

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

[no response, "see additional comments"]

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

[no response, "see additional comments"]

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

[no response, "see additional comments"]

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

[no response, "see additional comments"]

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

[no response, "see additional comments"]

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

[no response, "see additional comments"]