TV White Spaces - Ofcom Consultation on WSD Requirements

Red Squirrel TV Response

Red Squirrel TV (RSTV) is pleased to take this opportunity to respond to this consultation.

RSTV is a recently formed UK limited company actively developing products which it hopes will change the economics of TV transmission.

The UHF spectrum in the UK, previously dominated by TV transmission, will in future need to support many other services. As well as PMSE and the existing 6 national DTT multiplexes, the spectrum will need to support the wireless applications currently subject to an auction process and additional DTT multiplexes needed to extend the use of newer standards such as U-HDTV and 3D TV in the short term.

Due to the long range and high power of the larger DTT transmitters there are gaps where spectrum may be used for new short-range low power services. One such service is Local TV, which is the subject of a current Ofcom award process needing one channel at a number of locations. Local TV may be considered as a WSD service but without the database constraints, since it is a licensed service. Other WSD services are identified in this consultation document and further new services may well emerge.

The licensed DTT users will need to have their frequencies, transmit powers (and potentially sites) replanned in the coming years and will then continue to operate in a reduced amount of spectrum of no more than 216MHz.

Inevitably the frequencies, powers and locations left available to licensed Local TV and to other unlicensed WSD services will change as part of this process and it is desirable that the ability to change channel should be incorporated into all services and devices.

In order to maximise the value of all of the services sharing the spectrum it is impossible to look at any one in isolation or to exclude any one from consideration.

RSTV has specific interests in TV (national, regional, local and hyper local) and in machine to machine communications.

The national TV multiplexes should be replanned to be as efficient as possible to occupy the fewest possible number of channels. Studies performed by Arqiva for Ofcom in support of international co-ordination have shown that it is feasible to provide 3 ‘national’ multiplexes within the 7 channels proposed to be released for interim DTT usage. At least this efficiency should be expected in future from all TV multiplexes.

RSTV suggests that it should be feasible to operate national PSB multiplexes as SFNs in one channel and a national network of contiguous regional or local SFNs each in 3 channels. This would occupy 15 channels based on 3 national PSBs at 1 channel, 3 commercial national multiplexes with regional variations each occupying 3 channels and one local TV multiplex available everywhere occupying 3 channels. In this process it may be necessary to reduce the range of the larger transmitters and to

add transmitters in a cellular arrangement as proposed by Avanti in its Local TV multiplex application.

RSTV suggests that this process could release additional national channels that could be reserved for WSD services without such stringent coexistence constraints with DTT. It would inevitably reduce the gaps for WSD devices in the DTT spectrum but there should be an overall net benefit to all WSD services.

RSTV suggests that in the short term the existing white spaces may be used by the DTT licensees to facilitate the transition into the final frequency slots.

RSTV also suggests that local or hyper-local DTT services should be allowed to provide additional DTT multiplexes at low power within a small geographic footprint in the long run and that these transmitters might be considered as an additional WSD service.

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

Overall yes. RSTV believes that the master for the TV transmitters is likely to communicate with the slaves over another microwave channel. The slaves are DTT transmitters operating in UHF.

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

These are acceptable for RSTVs planned applications

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

Yes. RSTV considers the security issue to be particularly important.

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

RSTV's slave WSDs are transmit only in the local TV transmit application. In the M2M application there is some uncertainty. The receiver antenna could be omni or a yagi with up to 12dB gain.

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

RSTV has no comment at this stage.

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

This seems a reasonable approach.