Huawei Technology's Response to OFCOM's TV White Spaces A Consultation on White Space Device Requirements

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

[Huawei Response]:

We agree with the statement 5.14 that "*Efficient use of the TVWS spectrum dictates that WSDBs treat different categories of WSDs differently, so that the higher propensity of one WSD category to cause harmful interference does not constrain the use of spectrum for other WSD categories.*" However in the consultation, more stringent operational parameters are applied to lower class devices only to protect primary users from harmful interference but not between secondary TVWS systems. This may discourage the industry to implement higher class devices for applications that require specific quality of service and radio technologies. Hypothetically, a class 1 and class 4 devices could operate in each other's n+/- 2 channel where the class 4 system is not be interfered by the class 1system thanks to its spectral "cleanness" whilst the class 1 system may suffer from harmful interference and become completely unusable. Another possible scenario is that in areas where there is abundance of TVWS devices and there are less interference issues with the primary user, instead of deploying Class 1 equipments, operators could deploy lower class equipments of the same technology to save cost as they could operate the same transmission power.

We believe by not addressing the interference between secondary users, there is a potential risk that lower cost units with poorer spectral purity WSDs could squeeze other higher class devices or advanced radio technologies, out of the market. We believe that this could potentially discourage TVWS innovation in the industry. It will also lead to TVWS spectrum pollution which negates the intention set by OFCOM to efficiently use the interleaved spectrum.

Therefore we propose the following measures:

1) Higher class should be given preferential treatment

   Higher class WSDs should have priority over lower class WSDs. When WSDBs decide operational parameters, they should take interference between secondary systems into account and protect higher class WSDs from harmful interference from lower class WSDs.

2) Increase the value of the AFLRs for each class

We propose modify the value of AFLRs as in the table* below. The benefit of WSDs with higher AFLRs are:

I. better protection of both primary and secondary users and
II. increase TVWS availability and spectral efficiency

Table 1 Proposed AFLR of WSD Devices

	AFLR(dB)			
	Class 1	Class 2	Class 3	Class 4
n=+-1				
n=+-2				
|n|>=3				

*Note: Huawei would like to keep the figures in the table above confidential and not disclose the information to 3rd parties

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

[Huawei Response]: As our response to question 1, we propose to modify the value of AFLRs. In Essential test suite 6.149 section of VNS, the transmitter's unwanted emissions should be measured in the centre frequency of the out-of-block DTT channel, and the measurement bandwidth is 100KHz. However the emissions in the centre frequency block may not be accurate enough, therefore we suggest to measure the average out-of-block emission across the entire 8MHz channel.
We also suggest to specify ACS.

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

[Huawei Response]: The AFLRs of slave WSD can be lower than that of master WSDs. We also suggest to specify ACS.

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

[Huawei Response]: We agree with the proposed parameters.

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

[Huawei Response]: We agree with the OFCOM's proposed approach.

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