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DSA
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DSA response to the consultation on TV White Spaces rules for Trinidad and Tobago

Introduction

The Dynamic Spectrum Alliance (DSA) is a global organization advocating for laws and regulations that will lead to more efficient and effective spectrum utilization.[1] The DSA's three goals are closing the digital divide globally, enabling the Internet of Things and alleviating the "spectrum crunch".

Use of television white spaces by wireless devices under a class license will further the Telecommunications Authority of Trinidad and Tobago's (the Authority) important spectrum policy goals, including improving spectrum utilization, extending the reach of wireless broadband to unserved and underserved areas, supporting ubiquitous mobility, and promoting innovation in wireless technologies. Moreover, as the Authority explains in its consultative document, the use of geolocation databases means that these white space devices (WSDs) can operate without causing harmful interference to protected entities.

The DSA applauds the vision of the Authority in becoming one of the early adopters of these technological innovations to advance important broadband connectivity objectives. In light of the decisions in recent years by the Federal Communications Commission (USA), Industry Canada, Ofcom (UK) and IDA (Singapore) to implement TV white space regulations, the Authority's decision to establish an Authorisation Framework for the Accommodation of White Space Radiocommunications Devices is particularly forward-looking and timely.

The Authorisation Framework includes a number of rules that have the potential to enable the residents and businesses of Trinidad and Tobago to benefit from WSD technology. However, there are two aspects of the draft rules – only permitting fixed WSD and requiring a 1W WSD to operate on the third adjacent channel to an over-the-air broadcaster rather than on the second adjacent channel as allowed under the rules in other countries – which threaten to unnecessarily constrain the ability of WSDs to expand access to broadband. In order to make the most efficient use of spectrum and enable use cases unique to personal / portable WSDs and the benefits they bring, we therefore call on the Authority to make changes in the two areas outlined below.

Expand Rule 4 to allow for personal / portable as well as fixed devices to ensure innovation and diversity in white space devices

Rule 4 of the draft Framework only allows for fixed operations and does not permit personal / portable devices. The Authority mentions three reasons for not allowing personal / portable WSDs at this time. The first two – "the current device ecosystem" and "the expected applications of WSDs in Trinidad and Tobago" – do not seem to provide a reason to prohibit personal / portable WSDs; indeed, by allowing them now, the Framework would provide the space and regulatory certainty for the ecosystem and applications to develop more broadly. And

[1] Our membership spans multinationals, small-and medium-sized enterprises, and academic, research, and other organizations from around the world, all working to create innovative solutions that will increase the amount of available spectrum to the benefit of consumers and businesses alike. A full list of DSA members is available on the DSA's website at www.dynamicspectrumalliance.org/members/.

we do not see any evidence for the third reason given by the Authority – prohibiting personal / portable WSDs "to protect incumbent service providers". As the Authority itself recognizes, personal / portable WSDs can operate using a geo-location database.

It is therefore unnecessarily limiting to omit personal / portable WSDs from the Framework. To do so would needlessly stymie the development of a rich white space ecosystem in Trinidad and Tobago, making the ecosystem less equipped to respond to the variety of needs these technologies could address in the country. Recognizing both fixed *and* personal / portable devices as distinct permitted categories would give the Authority the flexibility to establish different rules for each class if it decides such an approach would be beneficial.

Revise rules 18 and 19 to reduce the minimum spectral separation required between WSDs and over-the-air broadcast channels

Table 2 and Table 3 provide the parameter limits for WSD operations on channels adjacent to digital television broadcasting services and on channels adjacent to analogue television broadcasting services respectively. The channel size is 6 MHz.

For WSD devices operating on channels adjacent to a digital television broadcasting service, the maximum radiated power is 16 dBm Effective Isotropic Radiated Power (EIRP) on the first adjacent channel, 20 dBm EIRP on the second adjacent channel, and 36 dBm EIRP on the third adjacent channel. For comparison, in the United States, a 16 dBm EIRP fixed WSD can operate on the first adjacent channel, a 20 dBm EIRP fixed WSD can operate with a 3 MHz separation from an over-the-air broadcast channel, a 30 dBm EIRP fixed WSD can operate on the second adjacent channel to an over-the-air broadcaster in urban areas and at up to 40 dBm EIRP in rural areas.[2]

In fact, a trial in Cape Town, South Africa[3] in which several DSA members participated, demonstrated that adjacent channel operation at a power of 36 dBm EIRP in an 8 MHz channel did not cause harmful interference to incumbent users. More information about the Cape Town trial can be found in a document submitted by Google to the African Telecommunications Union.[4]

The net result of requiring such a large spectral buffer between the 36 dBm EIRP fixed WSDs typically used outdoors for point-to-point and point-to-multipoint communications is an unnecessary reduction in the amount of spectrum available for this affordable broadband technology and less efficient spectral utilization of the band. The DSA believes that the Authority should consider authorizing a 36 dBm EIRP transmitter in urban areas on the second adjacent channel to broadcast services and a 40 dBm EIRP in rural areas on the second adjacent channel to broadcast services.

Sincerely,

Kalpak Gude, President, Dynamic Spectrum Alliance

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[2] United States Code of Federal Regulations, Title 47, Chapter xx, Part 15, Section 709

[3] http://www.tenet.ac.za/tvws/recommendations-and-learnings-from-the-cape-town-tv-white-spaces-trial

[4] Enabling Use of Television White Spaces Study in respect of DSA and TVWS, Google, August 2015, pages 15-17 and 23, document AfriSWoG-3 Input Doc 1, available at http://atu-uat.org/30th-september-to-2nd-october-2015/#