

February 13, 2018

Senior Director, Spectrum Planning and Engineering
Engineering, Planning and Standards Branch
Innovation, Science and Economic Development Canada
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Submitted by email: ic.spectrumengineering-genieduspectre.ic@canada.ca

Re: SMSE-018-17 – Consultation on the Technical and Policy Framework for White Space Devices

Introduction

The Board is pleased to respond to the above noted consultation. The response was developed by a Joint Working Group comprised of members of all four of the RABC Standing Committees, under the leadership of the Chair of the RABC Mobile & Personal Communications Committee. The consultation had broad interest amongst RABC members, with approximately twenty stakeholder participants actively involved in developing the response.

The RABC believes that use of White Space technology will bring a number of new wireless applications, and opportunities for further innovation in wireless technology that will benefit Canadians. Furthermore, the RABC believes that the development of White Space technology is an important first step towards enabling dynamic spectrum access sharing techniques, which will be a valuable new tool for spectrum management in the future.

Response to Questions

The Board responds below to the questions outlined in the Consultation.

Q1. ISED is seeking comments on its proposal to harmonize with the U.S. framework regarding the operation of fixed white space devices in the channels 3 and 4 (60-72 MHz).

The Board is aware that TV channels 3 and 4 were used extensively in the past to interface and connect consumer devices such as cable TV receivers and personal entertainment systems such as video cassette recorders (VCRs) to television sets.

In recent years, with the advent of digital television sets that incorporate digital TV receivers, and the proliferation of the use of HDMI and composite video cable interfaces, the number of devices using channels 3 and 4 are thought to have dropped dramatically. Furthermore, the devices

being connected by these methods are usually in extremely close proximity and normally hard-wired together using coaxial cable connections rather than using RF coupling, which would significantly limit interference from white space devices.

The Board notes that the U.S. has seen fit to proceed to allow the use of fixed White Space Devices (“WSDs”) in channels 3 and 4, and that the Board has observed no data that would indicate that Canada would have a materially different situation from that of the U.S, that would warrant a different action.

Therefore, the Board supports ISED’s proposal to harmonize with the U.S. and permit the operation of fixed WSDs in channels 3 and 4 (60-72 MHz).

Q2. ISED is seeking comments on its proposal to harmonize with the U.S. framework regarding the operation of personal/portable white space devices in channels 14 to 20 (470-512 MHz).

The Board supports ISED’s proposal to harmonize with the U.S. and permit the operation of personal/portable WSDs in channels 14 to 20 (470-512 MHz). The RABC notes that the Department intends to review the technical rules for WSDs included in RSS-222.

Q3. ISED is seeking comments regarding its proposal to limit the use of white space devices to spectrum below 608 MHz at this time.

The RABC was unable to reach consensus regarding ISED’s proposal to limit the use of WSDs to spectrum below 608 MHz. There were essentially three differing positions, those of the mobile service providers, those of the broadcasters and those of the remaining participants including CanWISP, CECA and WSD manufacturers. Each of these positions is provided below.

ISED noted that the availability of spectrum below 608 MHz will be more stable in terms of spectrum for use by WSDs, since the DTV transition plan and schedule have already been published. As well, ISED noted that in remote areas, a significant amount of spectrum below 608 MHz will continue to be available for white space.

Position of the Mobile Service Providers

RABC members from the mobile industry believe that the 617-698 MHz band will be very important for commercial mobile services in Canada going forward and should be protected from potential interference from WSDs. As such, they support ISED’s proposal to limit the use of WSDs to spectrum below 608 MHz, including any portion of the 600 MHz duplex gap (652-663 MHz) or guard band (614-617 MHz), until there is substantial, experiential evidence from the U.S. showing there will be no risk to mobile licensed users in the 600 MHz band.

Position of the Broadcasters

It will be a number of years until the 600 MHz Band begins to be deployed by mobile services. The Band is currently utilized by licensed television stations as well as unlicensed Low Power Apparatus equipment. Mobile services may not be deployed until after the completion of the Digital Television (DTV) Transition Schedule, four years from now.

Unlicensed wireless microphones (“WMs”), cameras and intercom equipment have become an integral part of local television station operations because of their flexibility and rapid deployment for news gathering, special events and in-studio uses. When television stations were required to vacate the 700 MHz Band, WMs, cameras and intercoms, also in the 700 MHz band, became obsolete. Broadcasters were thus required to make substantial investments of millions of dollars to replace wireless equipment displaced from the 700 MHz Band. Much of that new equipment operates in the 600 MHz band. When mobile services are deployed in the 600 MHz Band, broadcasters will be required to abandon these investments and, again, purchase new equipment costing millions of dollars more. One television group alone spent \$1 million to replace 700 MHz equipment and now estimates over \$1.6 million to replace 600 MHz equipment.

In the parallel Consultation on the Technical, Policy and Licensing Framework for WMs, broadcasters are encouraged by the opportunity to utilize the Duplex Gap and Guard Band exclusively for WMs. This will mitigate the impact by allowing at least some existing WM systems to continue to operate.

Restricting the use of WSD’s to spectrum below 608 MHz will allow for a gradual attrition of existing users of the 600 MHz Band until this spectrum is deployed by mobile services. This will preserve the value of equipment investments for a number of years.

Position of Remaining Participants (including CanWISP, CECA and WSD manufacturers)

These members support full harmonization with the U.S. and therefore oppose ISED’s proposal which, if adopted would constitute a significant deviation from the U.S. Adoption of ISED’s proposal will effectively prevent WSDs from being able to access a very large amount of spectrum (as much as 79MHz) that is currently available for use by WSDs in the U.S. This will be a significant impediment to the successful utilization and development of WSD technology in Canada. Lack of harmonization in the operation of WSDs will also create differing product requirements between Canada and the U.S. and have a dampening effect on both the innovation and general availability of WSD technology in Canada. These members note that the FCC did not see any difficulty in proceeding to allow the use of WSDs in most of the spectrum above 608 MHz.

Furthermore, these members believe that the proposed restriction is completely unnecessary. They respectfully submit that the rationale provided by the Department for considering this action – less stability of frequency assignments in that part of the spectrum – is an extremely weak basis on which to impose such a significant restriction.

They suggest that this also overlooks the fact that the database access methodology used to manage spectrum access by WSDs is actually an ideal mechanism to use in a less stable and rapidly changing spectrum environment precisely because of its ability to quickly adapt to changes. The database approach has been operating quite successfully in the U.S. for some time now as well as in other jurisdictions and so there is no reason to believe that it will not work just as well in Canada.

If and when mobile systems are deployed, they will be fully protected from WSDs since the spectrum and geographical information for such deployments will be entered into the white space database, and which then will prevent WSDs from operating there. It is likely to be at least a year or two before any mobile systems are deployed in these bands and when they are, there will continue to be many locations and portions of the mobile spectrum where deployment does not happen for a very long time, if at all. In the meantime, many Canadians could be benefitting from the use of WSDs in this spectrum.

There is no reason to hold back WSD access to the spectrum until there is evidence that it is working successfully with 600 MHz mobile systems in the U.S. Since 600 MHz mobile system deployment in Canada is still years away, there will be ample time to react in the unlikely event that any issues should arise in the U.S. In addition, changes can be more quickly and easily implemented than ever before via the database.

It is important to differentiate between the impact on WMs from WSD access and the impact on WMs from mobile system deployment. While users may indeed be required to replace their equipment when mobile systems are deployed in the band, there is no such need to do so because of WSD access. By simply licensing and/or registering their WM system, the database will ensure WSDs find another part of the spectrum in which to operate. Therefore there is no need for WM users to replace their equipment. Strong issue is taken with any suggestion that limiting WSD access might somehow improve the ability for WM users to continue to operate or assist them in preserving their equipment investment.

Should ISED decide to proceed to deny WSD access to the mobile portion of the spectrum, it is requested that the Department modify its proposal to at least allow WSD access to the Guard Band and Duplex Gap in harmonized fashion with the U.S. While it is recognized that this would limit exclusive access for WMs to the 653-657 MHz portion of the Duplex Gap, it is believed that this would be a more equitable outcome.

White Space ecosystem development has already been significantly impacted and slowed by the 600 MHz incentive auction activities in the U.S. and additionally in Canada by the length of time it has taken to get the first database certified. Caution is warranted on imposing further unnecessary restrictions in order to ensure that this innovative and ground-breaking new technology is properly incented and develops to its full potential for the benefit of all Canadians.

Q4. ISED is seeking comments on its proposal to continue to preclude the use of channel 37 (608-614 MHz) by white space devices.

The Board supports ISED's proposal to continue to preclude the use of channel 37 (608-614 MHz) by WSDs.

Conclusion

This response was sent to RABC Sponsor Members for ballot. Twelve of the RABC's twenty-one Sponsor Members responded as follows: 8 approved (APCO, CanWISP, CBC/Radio-Canada, CECA, CSSIF, National Defence, MAAC and Rogers), 2 approved with comment (Bell and CAB), and 2 abstained (NAV Canada and RCMP).

The Sponsor Members' comments (which form an integral part of the RABC's response) are as follows:

Bell

While we generally support the Board's comments, we take exception to the RABC's view that dynamic spectrum access sharing "will be a valuable new tool for spectrum management in the future". While it is true that whitespace dynamic spectrum access sharing may have some utility in limited amounts of prescribed spectrum (i.e., similar to Wi-Fi bands), it is uncertain whether use of these techniques, outside of the multi-operator core network sharing approach, could support the requirements of future high reliability public broadband services. With respect to the RABC's response to Question 3 regarding limiting the use of WSDs to spectrum below 608 MHz, we note that there was no consensus reached on the proposal. We support the comments in favour of restricting the use of WSDs to spectrum below 608 MHz and to allow broadcasters to continue to use wireless microphones in the spectrum above 608 MHz until such time as it is required for mobile services.

Canadian Association of Broadcasters

This consultation is closely related to the potential outcomes of SMSE-019-17 – Consultation on the Technical, Policy and Licensing Framework for Wireless Microphones. Additional comments from the CAB in regard to both of these consultations are provided in direct submissions to the Department.

The Board appreciates the opportunity to respond to this important notice.

Sincerely,



J. David Farnes
General Manager