Dynamic Spectrum Alliance Limited
3855 SW 153rd Drive
Beaverton, OR 97003
United States
http://www.dynamicspectrumalliance.org

November 30, 2020

Innovation, Science and Economic Development Canada
c/o Director, Spectrum Regulatory Best Practices
235 Queen Street (6th Floor, East Tower)
Ottawa ON K1A OH5

Re: Consultation on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band; August 2020; Gazette Notice No. SLPB-002-20

The Dynamic Spectrum Alliance (the Alliance) appreciates the opportunity to provide these reply comments to the Innovation, Science and Economic Development Canada (ISED) "Consultation on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band" (the Consultation).[1]

In recognition of the myriad challenges outlined in the Consultation and the widely varied responses to ISED's proposals, particularly as they relate to the future of the existing 3.65 GHz licensees and future wireless broadband services (WBS), the Alliance reiterates its position that ISED should implement existing commercially available Dynamic Spectrum Access (DSA) database solutions to facilitate access to and ongoing use of this critical mid-band spectrum. Adopting a spectrum sharing model for WBS in the 3.8 GHz Band will enable more users to access scarce and valuable spectrum resources, leading to lower-costs, lower barriers to entry, and the most effective allocation for smaller innovative businesses, farmers for agricultural connectivity, and IoT. This, in turn, enables and encourages competition and innovation by

[1] "Consultation on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band"; ISED; https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11627.html

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existing service providers as well as new entrants, including enterprises and verticals looking to deploy private networks.

Several other parties expressed concerns regarding adequate access to 3 GHz spectrum by independent service providers, including the Canadian Communication Systems Alliance (CCSA) and the Canadian Association of Wireless Internet Service Providers (CanWISP). CCSA noted, "availability of quality spectrum in those bands will be a critical enabler of the continuing competitiveness of independent WBS providers and the ability of those providers to maintain and extend their broadband networks in the rural and remote areas which many CCSA members serve."[2] Similarly, CanWISP encouraged ISED to adopt pro-competitive measures "to bring competition into the mobility market and provider subscribers with choice in services and service providers for rural subscribers."[3] The Alliance agrees with these statements and encourages ISED to leverage the innovative solutions that have already been developed to make spectrum abundant through dynamic spectrum sharing, resulting in efficient utilization of spectrum and fostering innovation and affordable connectivity for all.

The Alliance notes that there appear to be misconceptions about dynamic spectrum sharing solutions, specifically about the Spectrum Access System (SAS) solution implemented in the U.S. 3.5 GHz CBRS band, which should be clarified. First, in its comments, SaskTel stated that, "a database approach to spectrum sharing should not be considered because this would require customized equipment and devices to be designed and certified solely for the Canadian market."[4] Quite the contrary, the automated dynamic sharing database solution implemented in the U.S. CBRS band does not require any changes to standardized 3GPP equipment. Other than support for a simple application programming interface (API), commercial equipment operating in conjunction with an automated dynamic sharing system, such as the SAS, would otherwise be identical to equipment operating in other widely available commercial bands. The massive size of the CBRS equipment ecosystem highlights that there are no burdensome requirements or added equipment costs associated with SAS interaction and interference management. As explained in the Alliance's initial comments, "4G (and soon 5G) equipment is available today on a widespread basis for Band 48, the U.S. CBRS

[2] Comments of Canadian Communication Systems Alliance (CCSA), October 26, 2020, para. 11.
[3] Comments of Canadian Association of Wireless Internet Service Providers (CanWISP), October 26, 2020, para. 13.
[4] Comments of SaskTel, October 26, 2020, para 15.

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band. In fact, there are approximately 40 different vendors currently supplying equipment for the CBRS band, making it the largest LTE ecosystem."[5]

Second, SaskTel also incorrectly stated that the only reason the SAS sharing framework was adopted in the U.S. was to "protect high-priority incumbent transitory military users in the CBRS band. Such a situation does not exist in Canada, as coordination can be accomplished both with new users and with any incumbent FSS users that are still in operation."[6] As SaskTel correctly notes, the sharing framework developed for the U.S. CBRS band, to which the SAS is essential, was created to enable sharing both between military and commercial users. However, it was also designed to enable sharing between new commercial broadband users and incumbent commercial fixed satellite services and grandfathered fixed broadband users akin to Canada's 3.65 GHz licensees. Furthermore, the SAS was also implemented to enable sharing between and among the new commercial broadband users with different access rules (licensed vs. licensed-by-rule). ***ALL*** of these considerations, which are similarly present in the Canadian 3.8 GHz band, led to the decision to develop and implement the CBRS SAS sharing framework, which has proven to be extremely successful in achieving its objectives.

As the Alliance stated in its earlier comments, DSA technology, such as the SAS, can facilitate access to the 3.8 GHz spectrum by new users and minimize the administrative burdens on both ISED and industry, by solving many of the challenges identified by ISED in the Consultation, by:

- Enabling incumbent FSS services to continue to use the band and/or to transition to new sub-bands, while minimizing the use of separation distances and exclusion zones
- Accelerating access to spectrum by new users during transitions
- Streamlining coordination amongst co-channel and adjacent channel users
- Minimizing the need for guardbands
- Automating industry TDD synchronization preferences
- Facilitating cross-border coordination
- Providing opportunistic access through "use-it-or-share-it" requirements.

[5] Comments of the Dynamic Spectrum Alliance, October 26, 2020, page 4.
[6] Comments of SaskTel, October 26, 2020, para 16.

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The Alliance and its member companies have extensive experience in enabling sharing of both fixed and mobile broadband services with other commercial incumbents, such as FSS and PTP, and are ready to assist ISED in its efforts to introduce WBS in this band while maintaining access for existing users. These database technologies are widely available, sufficiently mature, scalable, and secure.[7]

We look forward to working with ISED to implement commercially proven DSA database solutions in this critical mid-band spectrum.

Best regards,

Martha SUAREZ
President
Dynamic Spectrum Alliance

[7] http://dynamicspectrumalliance.org/wp-content/uploads/2019/03/DSA_DB-Report_Final_03122019.pdf