Comments in Response to SLPB-002-20, *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*

Submitted by

Advanced Interactive Canada Inc.
312 – 8988 Fraserton Court
Burnaby, BC V5J 5H8

October 26, 2020

Background

1. Advanced Interactive Canada Inc. (AIC) views the *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* through the lens of the following criteria:
   a. Do the questions, and resulting rules make allowances for a variety of technologies other that LTE, 5G
   b. Do the questions and resulting rules allow for equal use of, and/or preference for, spectrum that will stimulate rural and remote use in Canada?
   c.
2. The main objectives from AIC's point of view is to ensure that:
   a. both FDD and TDD systems are equally qualified for Wireless Fixed Point to Multi Point (PtMP) use in all allocated spectrum
   b. there is equal emphasis placed on sufficient spectrum for high speed services for rural and remote areas as there is for urban and sub-urban areas
   c. there is sufficient spectrum set aside for lightly licenced or unlicensed spectrum at low or no cost, so that the needs of rural and remote areas can be met
   d.
3. AIC recognizes the difficulties presented to the Department in trying to meet the needs of all Canadians, but while there are many advocates for spectrum allocations for increased services for LTE, 5G in the urban and suburban marketplace, there are few to no advocates for spectrum for the rural areas and Alternative Technologies.

4. AIC also realizes that the proposals put forward by the Department are wide ranging and complicated, and raise many technical and policy issues that are too numerous for a small company like ours to devote the time to analyse and comment on. However, while we will only comment on a few questions, we want the Department to know that we are serious in seeing the Department make decisions that will make it much easier and less costly for ISPs to provide services in rural and remote Communities. **That means easy access to sufficient spectrum, at low cost**

5. Access to low frequency spectrum which is ideal for extended coverage in sparsely populated areas is rapidly being depleted. Potential access to the 3 GHz spectrum is the best there is at this time. Consequently, we need to make a case for a large block for rural and remote use. The next available blocks could be in the 5 and 6 GHz bands, which would be less desirable.

6. In reading the Consultation we note that there is a strong bias toward allocating a very large block of spectrum to a particular technology. While AIC is in favor of ensuring that Canadian spectrum allocations can take advantage of world standards and equipment provided for those standards, we believe that allowance should also be made, where possible, for other technologies such as those developed locally to address the unique Canadian situation of a huge landmass with extremely low population density.

7. We have left many questions unaddressed, particularly those which deal with Fixed Satellite service (FSS) since there are others in the satellite field who are much more qualified than we are to answer those questions. However, we would note that FSS is essential to many remote area users, and as such should be preserved and expanded to the maximum extent possible. That is the only way ISPs can provide the required connectivity for our last mile systems in remote areas.

Q5
ISED is seeking comments on developing a flexible use licensing model for fixed and mobile services in the 3650-4000 MHz band.

In providing comments, respondents are requested to include supporting arguments and rationale.

8. AIC agrees that flexible use makes sense. Both Fixed and Mobile PtMP services are essential to all communities. However, in the past, there has been a preponderance of wireless spectrum made available for Mobile use while much less wireless spectrum has been dedicated for Fixed Service. To-date, Fixed Service has relied much more on Wired systems (e.g. DSL, cable) but these services do not reach most of the less populated areas. The need for wireless Fixed service to rural and remote homes and businesses is growing as much or more than mobile use, particularly in areas not serviced by high-speed wired systems. Wireless Fixed PtMP service needs a greatly expended WBS spectrum in order to grow; and in this spectrum space, Fixed service WBS should have preference over Mobile.

Q13
ISED is seeking comments on:
a) establishing unpaired blocks of 10 MHz for the 3650-3700 MHz band
b) establishing unpaired blocks of 10 MHz for the 3700-3980 MHz band

In providing comments, respondents are requested to include supporting rationale and arguments.

As AIC pointed out in its introductory remarks, we believe that allowance should be made for FDD paired, as well as TDD Systems for rural and remote areas. The proposed 10 MHz divisions of spectrum are acceptable, and in order to meet the minimum high-speed data requirements, block should be assigned in no less than 30 to 50 MHz groups in rural and remote areas. To make it economically viable to provide services in rural and remote areas large amounts of spectrum should be allocated to a single provided so that the provider does not have to use many towers to cover a huge area to reach an economically viable population. Also, by allowing higher power in the rural remote areas. a single tower can service a large area and thereby provide services in rural remote areas that currently are not serviced by the major telecoms and will not be serviced by the major telecoms unless ISED policies make it economically viable to provide service to Rural Canadians. Canada has unique challenges due to its vast size and extremely small rural population. ISED should be fostering uniquely Canadian policies to ensure that Rural Canadians get telecom services at affordable rates.

Q14
Subsequent to changes to the spectrum utilization described in section 7 and recognizing the need to change the current WBS licensing model, ISED is seeking comments on its proposal to displace the existing WBS licensees and designate 80 MHz of spectrum available for the development of a new shared licensing process in the 3900-3980 MHz band as described in Option 2. Specifically, ISED is seeking comments on:
a) the amount of spectrum proposed (80 MHz) under a shared spectrum licensing process

Preliminary comments on a future shared spectrum licensing process are being sought in section 9.1.4 below.

9. In keeping with our theme of allowing other technologies and expanding unlicensed or lightly licenced spectrum, and considering that the most popular spectrum for ISPs has been the WBS Spectrum, AIC suggest that ideally WBS spectrum be widely expanded, from 3650 to 3980 MHz.
   This would allow for sufficient cellular spectrum blocks in cells that would provide adjacent rural communities with sufficient spectrum for FDD systems and/or TDD systems, and would stimulate major activity in rural municipalities where there is no activity today.
   There would still be adequate space for 5G systems in the spectrum below 3400 to 3780 MHz.

   If that much spectrum for Fixed WBS is considered to be too extensive, a 230 MHz block from 3750 - 3980 MHz would be the minimum useful amount. That would provide 350 MHz from 3400 to 3750 MHz for 5G Mobile use.

Q17
ISED is seeking comments on the Tier 4 service areas that would be considered urban as defined above and as listed in annex D. and
Q18
ISED is seeking comments on whether the moratorium should be extended to include all Tier 4 service areas.

10. While this is not a direct answer to this question, AIC would like to state our preference for Tier 5 licensing for WBS licenses spectrum in the rural and remote areas. Further, we believe each license should be based on a proven coverage area basis, similar to low power TV, supported by a technical brief, with a commitment to meets the Fixed connectivity needs of all of the community.
    The Moratorium should continue until the spectrum issues of that particular spectrum have been resolved. It is essential that all existing WBS stations are listed with full technical details in the ISED SMS database so that interference analysis and coordination can take place.

Q43
ISED is seeking comments on the proposal to rely on technical limits and coordination procedures rather than mandate specific technology solutions (e.g. TDD synchronization

between systems) to address interference issues between TDD flexible use systems in the 3650-3980 MHz band.

Q44

ISED is seeking comments on whether any additional measures should be taken to limit potential interference issues between flexible use systems in the 3650-3980 MHz band.

11. In the opinion of AIC, synchronization will be required between TDD co-channel and adjacent spectrum users. In addition, physical separation will be required between systems using co-channels and adjacent channels in a mixture of FDD and TDD systems. A terrain model should be used to determine separation distance.

Q55

ISED is seeking comments on what elements from sections 7 to 10 of this consultation would still apply or need to change if ISED were to implement the Telesat proposal, in particular:
a) the proposal for maintaining the primary allocation for FSS in the 3700-4200 MHz band
b) the proposed implementation of an exemption to transition for satellite-dependent communities and the proposed changes to satellite licenses to apply it
c) the proposal for treatment of WBS incumbents
d) the proposal to issue interim authorizations for certain existing licence-exempt earth stations in the 3700-4200 MHz band
e) technical considerations for coexistence between FSS and flexible use
f) technical considerations for coexistence between flexible use and aeronautical radionavigation systems
g) the overall impact on existing users in the 3700-4200 MHz band

If ISED agrees with the Telesat proposal, WBS could be extended by a further 100 MHz (from 3980 – 4080 MHz). If that is decided, the WBS Spectrum proposed by AIC could be shifted up 100 MHz from our proposal under Q14.

********End of document********