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Via email: ic.spectrumengineering-genieduspectre.ic@canada.ca

Martin Proulx
Director General
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Innovation, Science and Economic Development Canada
235 Queen Street
Ottawa, Ontario K1A 0H5

Re: *Notice of Application Received from Globalstar Canada Satellite Co. for Ancillary Terrestrial Component (ATC) Authority in the 2.4 GHz Band (2483.5-2500 MHz)*

Rogers Communications Canada Inc. (Rogers) is pleased to provide Innovation, Science and Economic Development Canada (ISED or the Department) with the following comments in response to the *Notice of Application Received from Globalstar Canada Satellite Co. for Ancillary Terrestrial Component (ATC) Authority in the 2.4 GHz Band (2483.5-2500 MHz)*¹ (the Notice), posted on the Department's website on August 8, 2019.

Summary

It is essential that Canada's spectrum frameworks align with international standards. As such, ISED should grant authorization for Globalstar Canada Satellite Co. (Globalstar) to operate a low-power ATC service only for the 2483.5-2495 MHz portion of the 2.4GHz Band. For clarity, the Department should not authorize ATC service in the 2495-2500 MHz portion of the 2.4 GHz band. This would fully align Canada both with the U.S. Federal Communications Commission (FCC) rules and Third Generation Partnership Project (3GPP) Band 53 standards. Doing so would also provide necessary protection to both Canadian Broadband Radio Service (BRS) licensees and U.S. Educational Broadband Service / BRS licensees in border areas from out-of-band emissions (OOBE).

Policy and Technical Considerations

As outlined in the Notification, Globalstar has proposed to deploy stand-alone, low-power time division duplexing (TDD) Long Term Evolution (LTE) ATC systems in a small cell configuration in its mobile satellite service (MSS) downlink spectrum. The Department is proposing to allow this operation by adopting the same technical rules for the band as in the

¹ ISED, *Notice of Application Received from Globalstar Canada Satellite Co. for Ancillary Terrestrial Component (ATC) Authority in the 2.4 GHz Band (2483.5-2500 MHz)*; <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11521.html>.

U.S., which include power limitations, a system for controlling base stations, and limits on unwanted emissions in order to avoid and mitigate harmful interference concerns.

From a technical perspective, Rogers generally supports the Department's proposal to allow low-power ATC in a portion of Globalstar's 2.4GHz MSS spectrum and adopt similar technical rules to the U.S. This includes allowing low-power ATC operation only in the 2483.5-2495 MHz portion of Globalstar's MSS spectrum. For clarity, the Department should not allow low-power ATC service in 2495-2500 MHz, as requested by Globalstar in Canada, nor high-power ATC service, as requested by Globalstar in the U.S.²

Globalstar states that they agreed to OOB limits at 2495 MHz in the U.S., where the EBS/BRS spectrum starts at 2496 MHz, whereas Globalstar recommends that Canada adopt the same OOB limits but allow ATC operation to 2500 MHz, directly adjacent to the Canadian BRS band.³ Globalstar provides no compelling evidence in the *Application for Terrestrial ATC Authority (2483.5-2500 MHz) of Globalstar Canada Satellite Co.* (the Application) to support their request and the Department should strongly reject it for the two following reasons.

First, while Globalstar states their belief that the OOB and transmit power limits will minimize the likelihood of harmful interference to adjacent-services,⁴ their view is incorrect and could lead to potentially exacerbating interference issues in Canada and the U.S. As the Department is well aware, some Canadian BRS operators have experienced ongoing cross-border interference issues in the BRS band with a U.S. operator.

Our understanding is that the U.S. operator is looking to configure its network in some border areas to start at 2502 MHz, which would result in an effective 7 MHz guard band between its operations and the ATC operations. Even without this effective guard band of 7 MHz, there is an actual 1 MHz guard for U.S. operators. Globalstar is proposing no guard band protection for Canadian operators, and provides no compelling evidence to support their position that a guard band is not needed for Canadian BRS licensees. In fact, since the 2500-2570 MHz portion on the BRS band is designated for uplink in Canada, it is critically important to protect BRS mobile service base station receivers from ATC base station transmissions. Further, there is no guarantee that there would be no cross-border interference due to overlap with U.S. EBS operators. Adding another source of potential interference that could impact both Canadian and U.S. licensees would not be effective spectrum management, especially without a compelling reason, nor evidence, offered by Globalstar.

Second, while Globalstar requests to align with their Canadian 2.4 GHz MSS spectrum, they would be unable to economically or practically deploy in the 2495-2500 MHz range. As the Notification states, Globalstar completed the process of establishing a TDD LTE standard within 3GPP, Band 53, which is currently being certified for use in Canada. According to the Application, "Globalstar Canada, in cooperation with its technology partners, is now ready to

² FCC, *R&O 16-181: Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks; Amendments to Rules for the Ancillary Terrestrial Component of Mobile Satellite Service Systems*, para 2; https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-181A1.pdf.

³ Globalstar, *Application for Terrestrial ATC Authority (2483.5-2500 MHz) of Globalstar Canada Satellite Co.* (Application), pg 8; [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-upd-apr-2019.pdf/\\$FILE/terreStar-app-upd-apr-2019.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-upd-apr-2019.pdf/$FILE/terreStar-app-upd-apr-2019.pdf).

⁴ Globalstar, *Application*, pg 9.

certify the same initial Band 53 equipment for use in Canada.”⁵ The Band 53 standard, however, was adopted by 3GPP in TS 36.101 to operate in the 2483.5-2495 MHz range.⁶

With no standard for manufacturers to create infrastructure or handset equipment in the 2495-2500 MHz range, and lacking a large enough market to generate demand, there is no compelling reason to authorize the entire range. However, only authorizing low-power ATC operation in 2483.5-2495 MHz would align Canada with the U.S. market and 3GPP standards, as well as provide a guard band for Canadian BRS licensees that are currently experiencing cross-border interference management issues at 2500 MHz. There are multiple compelling reasons supported by substantial evidence to not authorize low-power ATC operation in Canada in the 2495-2500 MHz range.

The Notice states that ISED is considering the Application in advance of a more comprehensive review of *RP-023 Spectrum and Licensing Policy to Permit Ancillary Terrestrial Mobile Services as Part of Mobile-Satellite Service Offerings*. Rogers notes, in addition, that there is currently no Standard Radio System Plan (SRSP) covering ATC in the 2.4 GHz range. The Department could look to create a new SRSP or potentially add low-power ATC in 2483.5-2495 MHz to *SRSP-519 Technical Requirements for the Ancillary Terrestrial Component (ATC) of Mobile-Satellite Service (MSS) Systems Operating in the Bands 2000-2020 MHz and 2180-2200 MHz*. Whether SRSP-519 is modified or a new SRSP created to authorize low-power ATC in the 2.4 GHz band, the Department should also initiate a review of *SRSP-517 Technical Requirements for Broadband Radio Service (BRS) in the Band 2500-2690 MHz* to ensure adequate protection to Canadian BRS licensees. This is essential, as BRS uplink operations starting at 2500 MHz could experience potential interference from ATC downlink operations.

ATC Licences, Fees and Annual Reporting

Although the Notice states that the Department will consult on an ATC-specific fee regime in the future, the Department should prioritize establishing a spectrum licence fee regime for ATC services – as well as reviewing other satellite-related fees more generally. This will help ensure parity and fairness with other terrestrial fixed and mobile spectrum fees and ensure Canadians a fair return for the use of the public resource. The current site-specific radio station licence fee does not properly incent licence holders to deploy ATC spectrum. In fact, it does the opposite. A licensee can avoid paying fees by avoiding deployment.

This is in contrast to the manner in which other mobile spectrum bands are licensed. For example, successful auction bidders must pay for the spectrum that they successfully acquired before they implement services in the band. For mobile spectrum for which annual spectrum fees are paid, licensees must pay annual spectrum fees regardless of whether they have implemented services in the spectrum. In either case, licensees are incentivized to implement services as soon as possible in order to earn revenue and offset their auction payments and/or annual spectrum fees.

Should the Department authorize low-power ATC operations in the MSS spectrum, it should be subject to standard commercial mobile Conditions of Licence, including coverage

⁵ Globalstar, *Application*, pg 2.

⁶ 3GPP, *TS 36.101*;

<https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=2411>.

requirements achieved through deployment of terrestrial networks. Rogers recommends that the Department modify the Conditions of Licence subject to the proposals offered in our 3500 MHz comments as relates to lawful intercept, research and development, and annual reporting.⁷

Conclusion

The Department should grant authorization for Globalstar to operate a low-power ATC service only for the 2483.5-2495 MHz portion of their 2.4GHz MSS spectrum but not in the 2495-2500 MHz portion of the band. This would fully align Canada both with the U.S. FCC rules and 3GPP Band 53 standards. Doing so would create a North American regulatory standard and align with the international ecosystem that Globalstar itself states it wishes to use in Canada (i.e., 2483.5-2495 MHz). It should also provide sufficient protection to both Canadian BRS licensees and U.S. EBS/BRS licensees near the border from out-of-band emissions.

The Department should also implement a MHzPop fee on all non-auctioned ATC spectrum that Globalstar or any other licensee holds and maintain deployment requirements. This would be consistent with other commercial mobile spectrum bands and ensure a fair return to Canadian taxpayers, as well as incent timely deployment of services in the spectrum.

Rogers thanks the Department for the opportunity to share its views and participate in this process.

Yours very truly,



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⁷ Rogers Comments, *SLPB-002-19 Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band*.