

Beth Creary, VP, Assistant General Counsel  
[beth@ligado.com](mailto:beth@ligado.com)  
(613)742-4151(direct dial)  
(613)301-4151

## VIA EMAIL

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Senior Director  
Spectrum Licensing and Policy Branch,  
Innovation, Science and Economic  
Development Canada  
235 Queen Street  
6th Floor, East Tower  
Ottawa, Ontario K1A 0H5

Email: [ic.spectrumauctions-encheresduspectre.ic@canada.ca](mailto:ic.spectrumauctions-encheresduspectre.ic@canada.ca).

Dear Senior Director:

**Re: Reply Comments of Ligado Networks (Canada) Inc., Ligado Networks Corp. and Ligado Networks, LLC, Consultation on a Licensing Framework for Residual Spectrum Licences in the 700 MHz, 2500 MHz, 2300 MHz, PCS and 1670-1675 MHz Bands, Canada Gazette, Part I, July 15, 2017, Notice No. SLPB-003-17**

### Introduction

1. Ligado Networks (Canada) Inc., Ligado Networks Corp. and their parent company, Ligado Networks LLC (collectively, “Ligado”), hereby submit these reply comments to the federal Department of Innovation, Science and Economic Development (“ISED” or the “Department”) in response to the consultation initiated by the Department in Notice No. SLPB-003-17, entitled *Consultation on a Licensing Framework for Residual Spectrum Licences in the 700 MHz, 2500 MHz, 2300 MHz, PCS and 1670-1675 MHz Bands*, published in the *Canada Gazette*, Part I, on July 15, 2017 (“SLPB-003-17” or the “Consultation”).

2. Ligado is a North American provider of mobile satellite services in the L-band (1626.5-1660.5 MHz and 1525-1559 MHz) with three geostationary MSS satellites (MSAT-1, MSAT-2 and SkyTerra-1) currently in operation, providing service coverage and connectivity in Canada, the United States and Mexico as well as parts of the Caribbean and South America.
3. Ligado was a pioneer in the provision of MSS services in Canada, launching Canada's first MSS satellite (MSAT-1) in 1996 through its predecessor, TMI Communications and Company, Limited Partnership. Ligado also holds an approval in principle from the Department to launch and operate the SkyTerra-2 satellite at the 107.5 WL orbital position, which will serve as a replacement satellite for MSAT-1.

#### **Ligado's Interest in this Proceeding**

4. Ligado provides these reply comments to address certain comments that were filed in this proceeding on the status of spectrum in the 1670-1675 MHz frequency range. Ligado takes no position in these reply comments on the other spectrum that is the subject of the Consultation.
5. Several parties to this proceeding have argued that the residual spectrum licences in the 1670-1675 MHz frequency range should be excluded from the residual auction because there is no equipment ecosystem for this spectrum.
6. This not an accurate characterization of this spectrum. In the United States, Ligado currently operates leased spectrum in the 1670-1675 MHz band to deliver the "Modeo" video programming service. The Modeo service uses a network of over 200 antenna sites or base stations to distribute a signal that covers more than 50% of the population. Consumers use handsets to view the video programming.

7. In addition, and as some parties to this Consultation are aware, Ligado has filed an application with the FCC seeking approval to provide terrestrial service using its L-band spectrum together with its leased spectrum in the 1670-1675 MHz frequency range. Ligado intends to use this combined spectrum to provide advanced satellite and terrestrial data services to its customers.
8. In anticipation of that, Ligado is supporting the emerging equipment ecosystem for spectrum in the 1670-1675 MHz frequency range. Specifically, Ligado is working with several equipment manufacturers to develop LTE base station equipment as well as user devices capable of operating in the 1670-1675 MHz band. Some of this equipment has already been tested by the manufacturers in question.
9. In addition, Ligado intends to move forward with its plans to standardize this band within the 3GPP in order to accelerate the development of the equipment ecosystem for this spectrum. In fact, as noted by Ecotel,<sup>1</sup> the 3GPP has already studied this band for the use of 4G-LTE (3GPP TR 36.844) -- the next step is to complete the band standardization exercise within the 3GPP.
10. In a separate but related proceeding, Ligado has also asked the FCC to allocate spectrum in the 1675-1680 MHz frequency range for mobile service (the spectrum will be shared with the existing government user) so that this spectrum can also be used with its L-band spectrum and the 1670-1675 MHz band.
11. Taken together, all of these developments are clear evidence that work is being carried out to develop spectrum in the 1670-1675 MHz frequency range.

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<sup>1</sup> Ecotel, SLPB-003-17, August 11, 2017, para. 13.

### **Residual Auction of I Block Spectrum in Canada**

12. Given the development work currently underway in relation to the I Block spectrum referenced above, Ligado disagrees with the position taken by some parties in this proceeding that it would be premature to include I Block spectrum in ISED's proposed residual spectrum auction.<sup>2</sup> While the equipment ecosystem for this spectrum may not yet be as developed as it is for spectrum in other commercial mobile bands, there are concrete plans in place that evidence active development of the spectrum in this band. Moreover, auctioning this spectrum will spark innovation and lead to the robust development of an ecosystem to support its deployment.
13. Ligado therefore believes that the I Block licences referenced in Table 5 of SLPB-003-17 should be included in ISED's proposed residual spectrum auction. However, if ISED concludes that this spectrum should not be included in the auction, Ligado submits that the Department should make this spectrum available for licensing on a first come first served ("FCFS") basis so that it does not continue to lie fallow and the economic and technological benefits of developing this spectrum can be realized. In particular, if the Department determines that the demand for I Block spectrum is not sufficient to warrant inclusion in a spectrum auction, then a FCFS licensing approach would be more appropriate.
14. With respect to the proposals made by Ecotel, Corridor Communications and the British Columbia Broadband Association<sup>3</sup> to subdivide the licences referenced in SLPB-003-17 into much smaller (e.g., Tier 4 vs Tier 2), or more fragmented, licence areas (e.g., urban vs rural), Ligado does not support these proposals in relation to I Block spectrum. As noted above, spectrum in the 1670-1675 MHz frequency range is

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<sup>2</sup> See, for example, the comments of SaskTel, SLPB-003-17, August 15, 2017; Bell Mobility, SLPB-003-17, August 15, 2017; Telus, SLPB-003-17, August 15, 2017; and Rogers, SLPB-003-17, August 15, 2017.

<sup>3</sup> See, generally, the comments of Ecotel, SLPB-003-17, August 15, 2017, Corridor Communications, SLPB-003-17, August 15, 2017, and BCBA, SLPB-003-17, August 15, 2017.

currently being developed so that it can be used terrestrially with MSS spectrum in the L-band. Since the coverage footprint of an L band MSS satellite is much larger than a Tier 4 licence area, we recommend that any I Block spectrum that is made available through ISED's proposed residual spectrum auction (or on a FCFS basis) be licensed on a Tier 2 serving area basis.

### **Auction Design and Conditions of Licence**

15. SLPB-003-17 invites interested parties to comment on the proposed design of ISED's residual spectrum auction.
16. Ligado generally agrees with the auction design proposed by the Department in SLPB-003-17. However, we offer the following comments with respect to the licence term associated with I Block spectrum licences as well as ISED's proposed spectrum deployment requirements.
17. As indicated above, spectrum in the 1670-1675 MHz frequency range is being actively developed by Ligado and an equipment ecosystem is now emerging as a result of these efforts. In light of the developments in the United States, and the need for spectrum generally, there can be no doubt that this spectrum can be used for commercial mobile broadband services in the near term.
18. In SLPB-003-17, ISED has proposed a 10 year licence term for I Block licences that are made available through the residual auction instead of a 20 year term because "there is less certainty regarding the use and ecosystem development for the 1670-1675 Block."<sup>4</sup> While Ligado is not opposed to a 10 year licence term, it agrees with Bell, Eastlink, Shaw and others<sup>5</sup> that it makes more sense to extend the licence term for I

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<sup>4</sup> SLPB-003-17, para. 23.

<sup>5</sup> See, for example, Bell Mobility, SLPB-003-17, August 15, 2017, para. 20; Shaw Communications, SLPB-003-17, August 15, 2017, para. 17; and Eastlink, SLPB-003-17, August 15, 2017, para. 12.

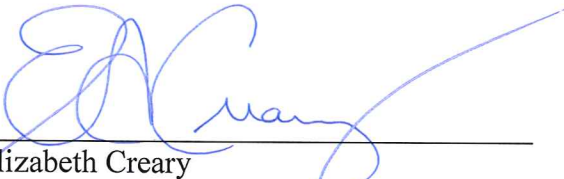
Block spectrum licences to 20 years to incentivize investment in the development of the spectrum and the related ecosystem.

19. For the same reason, we agree with other commenters that the deployment conditions for I Block licences should be similarly extended to the end of a 20-year licence term, rather than at the end of the first eight years of a 10-year licence term as currently proposed in SLPB-003-17. We note, in this regard, that the Department is proposing a 10-year deployment requirement for PCS G Block licences, which is two years longer than the proposed deployment requirement for I Block licences, even though PCS G Block spectrum has a far more developed equipment ecosystem than I Block spectrum.

### **Conclusion**

20. We wish to thank the Department for the opportunity to submit these reply comments in SLPB-003-17, and look forward to the Department's decision on the auction of residual commercial mobile spectrum.

Yours very truly,



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Elizabeth Creary  
VP, Assistant General Counsel