

Howard Slawner

350 Bloor Street East, 6th Floor
Toronto, ON M4W 0A1
howard.slawner@rci.rogers.com
o 416.935.7009
m 416.371.6708

June 23, 2017

Via email: ic.spectrumoperations-operationsduspectre.ic@canada.ca

Senior Director
Spectrum Management Operations Branch
Innovation, Science and Economic Development Canada
300 Slater Street
Ottawa, Ontario K1A 0C8

Re: *Notice of Application Received from TerreStar Solutions Inc. for a Tier 1 Spectrum Licence in the 1695-1710 MHz Frequency Band and the in PCS Block H (1910-1915 MHz/1995-2000 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 *Notice of Application Received from TerreStar Solutions Inc. for a Tier 1 Spectrum Licence in the 1695-1710 MHz Frequency Band and the in PCS Block H (1910-1915 MHz/1995-2000 MHz)*¹ (the Notice), posted on the Department’s website on May 25, 2017.

Summary

It is essential that Canada’s spectrum framework align with international standards. As such, ISED should take the necessary measures, as requested by TerreStar Solutions Inc. (“TerreStar”), to enable 3GPP’s Band 70 plan for operation in Canada. This includes making available the 1695-1710 MHz and 1995-2000 MHz spectrum blocks to be used in conjunction with the 2000-2020 MHz AWS-4 block. This will put into operation spectrum that is currently being unused or underused to deliver services across the country, including rural regions, while taking advantage of international standards and equipment.

However, TerreStar’s request for additional free spectrum runs completely against Canadian spectrum policy. It would provide an unfair subsidy at the expense of Canadian taxpayers and distort competition with national, regional, and small mobile and fixed wireless providers. Rather, this new spectrum should be awarded through open auction processes as Tier 2 or Tier 3 service areas, with TerreStar and auction winners negotiating a market-based solution to enable Band 70 deployment.

¹ ISED, *Notice of Application Received from TerreStar Solutions Inc. for a Tier 1 Spectrum Licence in the 1695–1710 MHz Frequency Band and the in PCS Block H (1910–1915 MHz/1995–2000 MHz)* (Notice); <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11297.html>.

Should the Department however grant TerreStar's application for the additional spectrum without a competitive process, TerreStar should at the minimum be required to exchange their current 2180-2200 MHz AWS-4 spectrum for the new spectrum. The returned spectrum should be then awarded by the Department through an open auction process on a Tier 2 or Tier 3 level and subject to standard conditions of licence, including terrestrial deployment requirements. TerreStar should also begin paying the standard spectrum fees for commercial mobile spectrum for all their licenses. Under Band 70, the licenses will be used primarily as a typical wireless service and should therefore be treated no differently and be subject to the same obligations as the licenses held currently by wireless carriers.

Background

In December 2014, the Department issued the *Decision on a Policy, Technical and Licensing Framework for Mobile Satellite Service and Advanced Wireless Service (AWS-4) in the Bands 2000-2020 MHz and 2180-2200 MHz*.² This policy framework permitted licensees to build terrestrial mobile wireless networks as completely separate networks from mobile satellite systems operating in the band. Following the policy decision, the incumbent mobile-satellite service (MSS) licensee, TerreStar, received a Tier 1 Ancillary Terrestrial Component (ATC) AWS-4 spectrum licence spectrum licence for no upfront cost. TerreStar is the sole Canadian AWS-4 ATC licensee, holding a 20-year licence for two 10+10 MHz blocks of spectrum (40MHz total).

Also resulting from the policy, TerreStar themselves elected to have the duplex direction of the 2000-2020 MHz spectrum as downlink, creating a licence with no uplink. In February 2017, TerreStar submitted an application to the Department requesting additional spectrum, again with no upfront cost, in order to have uplink spectrum and protection. Specifically, TerreStar has requested:

- i. 10 MHz of spectrum in the 1695-1710 MHz frequency range (specifically 1700 – 1710MHz) located outside of protection zones for use in most areas of the country;
- ii. 5 MHz of spectrum in the 1695-1710 MHz frequency range to be used in certain designated Canadian “protection zones” [...]; and
- iii. 5 MHz of H Block spectrum in six of the protection zones [...].³

AWS-4

Before addressing TerreStar's application for additional spectrum to be used in conjunction with their ATC AWS-4 spectrum licence, the Department must first update the AWS-4 policy. As the uses for AWS-4 spectrum evolve, so must the policy and licence conditions governing the spectrum.

To begin with, the Department should establish a spectrum licence fee that is in line with other commercial mobile access bands and ensure Canadians a fair return for the use of the public

² ISED, *Decision on a Policy, Technical and Licensing Framework for Mobile Satellite Service and Advanced Wireless Service (AWS-4) in the Bands 2000-2020 MHz and 2180-2200 MHz*, [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/AWS-4_Dec2014-e.pdf/\\$file/AWS-4_Dec2014-e.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/AWS-4_Dec2014-e.pdf/$file/AWS-4_Dec2014-e.pdf)

³ Para 10. TerreStar, *Application by TerreStar Solutions Inc. (“Terrestar”) for a tier 1 spectrum licence for limited [sp] spectrum in the 1695 – 1710 MHz band*, [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/\\$FILE/terreStar-app-2017.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/$FILE/terreStar-app-2017.pdf).

resource. In the Department's original AWS-4 framework consultation, a number of commenters argued that "for the spectrum to be useful, it should be auctioned to all comers for the provision of commercial mobile services."⁴ Instead, TerreStar was granted a spectrum licence covering all of Canada at no cost. The current site-specific radio station licence fee does not properly incent licence holders to deploy the ATC AWS-4 spectrum. In fact, it does the opposite. A licensee can avoid paying fees by avoiding deployment. As TerreStar has not deployed services in the spectrum, this suggests that they have not yet paid the Department anything to acquire or hold the ATC AWS-4 licence.

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.

In addition, the current Tier 1 licence should be converted to either Tier 2 or Tier 3 service areas to align with other commercial mobile bands. This will allow for greater flexibility for TerreStar or other licence holder to meet the licence deployment requirements themselves or explore licence transfers or subordination in order for other providers to put the spectrum into operation.

1695-1710 MHz & PCS Block H: Technical Policy

From a strictly technical policy perspective, Rogers supports measures by the Department to pair AWS-4 spectrum with the unpaired 1695-1710 MHz frequency band along with downlink portion of PCS Block H (1915-1920/1995-2000 MHz).⁵ Combining spectrum blocks from these three bands will enable the implementation of service using Third Generation Partnership Project (3GPP) Band class 70. From a technical perspective, Band 70 has already undergone thorough analysis by 3GPP for feasibility. Using the AWS-4 spectrum for Band 70 and harmonizing technical rules with the U.S. will allow Canadians to benefit from greater economies of scale, cross-border roaming and simpler cross-border coordination.

There is no alternative that is as optimal for the lower block AWS-4 spectrum (2000-2020 MHz). Taking the required regulatory steps to permit Band 70 usage in Canada will enable up to 40 MHz of mid-band spectrum that has been standardized by 3GPP for LTE and Narrow Band Internet of Things (NB-IoT) service.

Enabling Band 70 however could result in half of the AWS-4 spectrum initially remaining unutilized, an inefficient use of the total AWS-4 spectrum. The 2180-2200 MHz spectrum is not currently compatible for CA usage with Band 70. As TerreStar states in their application, they are "currently licensed for the downlink of Band 66 spectrum (2180 – 2200 MHz) but [do]

⁴ Page 10, ISED, *Decision on a Policy, Technical and Licensing Framework for Mobile Satellite Service and Advanced Wireless Service (AWS-4) in the Bands 2000-2020 MHz and 2180-2200 MHz*, [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/AWS-4_Dec2014-e.pdf/\\$file/AWS-4_Dec2014-e.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/AWS-4_Dec2014-e.pdf/$file/AWS-4_Dec2014-e.pdf)

⁵ Note: 1910-1915 MHz is part of the PCS G block and 1915-1920 MHz is the uplink for the PCS H block.

not have a licence or arrangement for uplink frequencies, which would make its licensed spectrum useful.”⁶

However, facilitating Band 70 does not mean that the upper AWS-4 spectrum will be orphaned. While the upper block of the AWS-4 spectrum cannot be used by TerreStar, it can currently be used as a supplemental downlink in Carrier Aggregation (CA) with licence holders in 3GPP bands 2, 5, 7, and 12 (or, PCS, Cellular, BRS, and MBS spectrum, respectively), as well as other licensed bands.

Therefore, as part of the allocation and allotment processes of the 1695-1710 MHz & PCS Block H spectrum, the Department should re-allocate the 2180-2200 MHz spectrum to the AWS-3 band. Adopting this technical proposal could allow all of the current AWS-4 spectrum (40MHz) to be more easily used while only stranding 5MHz of the PCS H Block (1915-1920 MHz). This solution appears to be the most efficient option to allow for near term deployment of the spectrum bands and blocks involved in the Notice.

The Department should take steps to ensure the incumbent meteorological receiving stations using the 1675-1700 MHz frequency band are protected from interference. 3GPP has engineered Band 70 specifically to mitigate interference to existing satellite operators in the U.S. and it would bring the same interference protection to Canadian METSAT operators. However, any other protection measures should not be so overly restrictive that they *de facto* prevent the deployment of new services near those locations.

1695-1710 MHz & PCS Block H: Licensing Policy

The 1695-1710 MHz and PCS Block H spectrum should be awarded through an open auction process. This would allow the spectrum to go to operators that most value the spectrum and are properly incentivized to deploy services in a timely manner, while also ensuring a fair return for Canadians. Granting TerreStar additional commercial access spectrum for free is unfair to Internet Service Providers (ISPs) already serving rural and remote subscribers, including wireless ISPs. It is also unfair to both national and ‘fourth carrier’ mobile service providers who have acquired their spectrum in competitive processes or, at least, at some reserve price, or are required to pay annual spectrum licence fees.

In the past 5 years, Rogers alone has spent over \$3.3 billion on spectrum at auctions, and has paid hundreds of millions more in annual spectrum fees. Since 2014, non-national mobile carriers and ISPs – including small, regional operators looking to serve rural Canadians – have spent over \$591M in auction fees. TerreStar does not appear to even have registered as an applicant in these auctions, even when the Department created rules specifically to incent the entry of new operators. Instead, they have elected to seek spectrum at no cost.

As stated in the application, “TerreStar and a partner [are] proposing to provide, in the short term, fixed wireless terrestrial services in Canada’s remote, rural and underserved regions

⁶ Para 7. TerreStar, *Application by TerreStar Solutions Inc. (“TerreStar”) for a tier 1 spectrum licence for limited [sp] spectrum in the 1695 – 1710 MHz band*, [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/\\$FILE/terreStar-app-2017.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/$FILE/terreStar-app-2017.pdf).

using certain segments of spectrum within Band 70.”⁷ It should be highlighted that in addition to the ISM 2.4GHz unlicensed band and lightly licensed WBS 3650-3700 MHz band, the Department has made additional lightly licensed spectrum available in 5150-5250 MHz band that can be used for fixed wireless access in rural and remote areas today. If TerreStar needs access to free spectrum, the Department has just made 100MHz of unlicensed spectrum available that TerreStar could access, which already has a robust fixed wireless device ecosystem. Providing additional free commercial spectrum to TerreStar will confer a substantial subsidy at the expense of Canadian taxpayers and provides TerreStar with an unfair advantage over service providers that must pay for the use of their spectrum.

Rogers fully supports the objective of rendering reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada.⁸ However, MSS is a better technology option to ensure that the approximately 1% of Canadians that are not served by terrestrial networks have remote mobile connectivity. Providing fixed wireless service in remote areas can be better addressed using unlicensed or lightly licensed spectrum. Auctioning the returned spectrum would allow commercial mobile operators the ability to acquire more spectrum to serve Canadians in urban and suburban areas where capacity is most constrained while also deploying in rural areas and along major transportation corridors. TerreStar could still pursue their proposed business model of providing service in rural and remote areas using unlicensed or lightly licensed spectrum.

If TerreStar were to be granted new spectrum without a competitive process to use as uplink with their lower block AWS-4 spectrum, the Department should at least require TerreStar to return the 2180-2200 MHz spectrum block in exchange for the new licences. The Department should then move forward with the required regulatory processes to allocate the returned upper block spectrum as part of the AWS-3 spectrum band and award it through an open auction process.

Further, any spectrum in the Notice that TerreStar retains that has not been acquired through auction should be subject to a commercial mobile spectrum licence fee rate which applies on a MHzPops basis. As explained above, site-specific licensing fees can serve as a disincentive to deploy services in the spectrum in a timely manner. A spectrum licence fee which applies on a MHzPops basis will not only incent TerreStar to deploy in a timely manner, it also ensures Canadian taxpayers receive a fair return for the spectrum.

Regardless of how it is awarded, the 1695-1710 MHz and PCS Block H spectrum should be licensed on a Tier 2 or Tier 3 service area basis, which is the Department’s standard policy with commercial mobile spectrum. Licensing the spectrum on a Tier 2 or Tier 3 service area instead of Tier 1 would make initial spectrum licensing and deployment, and transfers in the secondary market, more efficient. Any new Tier 2 or Tier 3 spectrum licences issued for this spectrum should not be subject to any transfer restrictions. These new spectrum licences should be subject to standard commercial mobile conditions of licence, including coverage requirements achieved through deployment of terrestrial networks.

⁷ Para 6. TerreStar, *Application by TerreStar Solutions Inc. (“TerreStar”) for a tier 1 spectrum licence for limited [sp] spectrum in the 1695 – 1710 MHz band*, [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/\\$FILE/terreStar-app-2017.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/terreStar-app-2017.pdf/$FILE/terreStar-app-2017.pdf).

⁸ *Telecommunications Act*, Section 7(b).

Conclusion

TerreStar's request for additional free spectrum runs completely against Canadian spectrum policy, providing an unfair subsidy at the expense of Canadian taxpayers and distorting competition between TerreStar and large and small service providers. The Department should take steps to align Canadian spectrum with international standards by making available the 1695-1710 MHz and 1995-2000 MHz spectrum blocks to be used in conjunction with the 2000-2020 MHz AWS-4 block for 3GPP Band 70. However, this new spectrum should be awarded through an open auction process on a Tier 2 or 3 basis, with TerreStar and auction winners negotiating to determine a market-based solution.

Should TerreStar's application be granted without a competitive process, based on a technical decision to more easily enable Band 70 operation in Canada, the Department should require at a minimum that TerreStar return the AWS-4 upper block (2180-2200 MHz). The returned spectrum should then be awarded through an open auction process on a Tier 2 or Tier 3 level and subject to standard conditions of licence, including deployment requirements.

The Department should implement a MHzPop fee on all non-auctioned AWS-4 or Band 70 spectrum that TerreStar 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,

A handwritten signature in black ink, appearing to read "Howard Slawner". The signature is fluid and cursive, with a long horizontal stroke at the end.

Howard Slawner
Vice President – Regulatory Telecom
HS/pg