Comments of

TerreStar Solutions Inc.

Consultation on a Policy, Technical and Licensing Framework
for Use of the Bands 2000-2020 MHz and 2180-2200 MHz

Canada Gazette, Part I, SMSE-011-14 (May 31, 2014)

June 23, 2014
I. Introduction

1. In accordance with the procedures set out in Consultation on a Policy, Technical and Licensing Framework for Use of the Bands 2000-2020 MHz and 2180-2200 MHz, Canada Gazette, Part I, SMSE-011-14, published on May 31, 2014 (the “Consultation Document”), TerreStar Solutions Inc. (“TerreStar”) is pleased to submit the following comments in response to the questions posed in the Consultation Document.

2. TerreStar is a Canadian wireless carrier that is authorized by the Department to provide Mobile Satellite Service (“MSS”) to Canadians in the 2 GHz S band, and to use the same spectrum to provide mobile wireless services on a terrestrial basis in accordance with the Department’s current rules for Ancillary Terrestrial Component (“ATC”) operations as set out in Spectrum and Licensing Policy to Permit Ancillary Terrestrial Mobile Services as Part of Mobile-Satellite Service Offerings, RP-023, May 2004 (“RP-023”). TerreStar’s business case is based on offering services through open networks and network partnering.

3. Through this consultation, the Federal Government has clearly demonstrated its leadership in proposing to modify its existing ATC/MSS policies (as set out in RP-023) in order to promote competition in Canada’s wireless markets and to allow this band to be used by non-incumbents to deliver all of the benefits that flow from a vibrant and sustainably competitive market, including increased customer choice, greater supplier responsiveness, lower prices and enhanced levels of product and service innovation.

4. TerreStar is extremely supportive of the proposals contained in the Consultation Document, including the Department’s proposed changes to RP-023, and urges the Department to move quickly to finalize rules for the S-band in order to allow companies that can use this spectrum to offer new and innovative services in the band, to quickly take advantage of the equipment ecosystem being developed for the North American market so that they can offer the benefits of competition to Canadians.

5. In addition TerreStar also encourages the government to continue the important work of actively monitoring the competitive wireless environment and to take appropriate steps whenever it believes that competition is being stifled.
6. Set out below are TerreStar’s specific comments on the questions posed in the Consultation Document.

II. Responses to Questions Posed in the Consultation Document

A-1 *Industry Canada proposes to adopt the 2 GHz band plan and the block pairing shown in Figure 2.*

7. Harmonizing the Canadian band plan with that of the FCC is critical to ensuring Canadian access to the equipment ecosystem being developed for North America. TerreStar therefore fully supports the adoption of the 2 GHz band plan and block pairing proposed by the Department.

B-1 *Industry Canada proposes to maintain the provision of MSS in this band.*

8. TerreStar agrees that MSS is an important service for Canadians. Indeed, it is the only technology currently available to enable mobile communications in most of those areas of the country that are out of reach of terrestrial networks. As noted by the Department in its Consultation Document, “[The] Canadian geography includes large areas with low population density, and the majority of its territory is not covered by terrestrial networks”.

9. The provision of MSS is a key element of TerreStar’s business plan, and it is committed to offering MSS services in rural and underserved communities throughout the Canadian coverage footprint of the EchoStar T1 satellite. As such, TerreStar supports maintaining MSS in this band.

B-2 *Industry Canada proposes to remove the dual-mode requirement in the 2 GHz band, and to modify RP-023 and RSS-170 accordingly.*

10. In order to take advantage of the equipment ecosystem that is being developed for the North American market and, in particular to enable the most effective provisioning of both MSS and ATC services to users with multi-band phones, TerreStar fully supports the removal of the dual-mode requirement in the 2 GHz band. Indeed, as noted by the Department, “the obligation for ATC licensees to provide dual-mode terminals increases the cost of the terminals compared to terrestrial-only phones and hinders the ability of MSS offerings to compete with cellular mobile systems.” Modification of this rule not only ensures the economic viability of MSS and ATC terrestrial systems in Canada, it maximizes the utility of the spectrum between these services thus delivering the most efficient use of the spectrum and enabling a greater degree of product and service innovation in
provisioning services to the Canadian public.

11. TerreStar therefore supports the elimination of the dual-mode handset requirement in order to allow ATC licensees to provide terrestrial-only terminals in the bands 2000-2020 MHz and 2180-2200 MHz. For the same reasons TerreStar supports timely modification of RP-023 and RSS-170 to reflect these policy changes.

**B-3 Industry Canada proposes to modify the spectrum and licensing policy principles on the implementation of ATC mobile services in RP-023 with regard to the 2 GHz band.**

12. TerreStar believes that modifying the spectrum and licensing policy principles on the implementation of 2 GHz ATC mobile services in RP-023 is necessary to take advantage of the developing North American equipment ecosystem for services in this band, especially with respect to the delivery of high speed data (LTE). Modifying these policies and rules, that present regulatory barriers to the provision of ATC services in the 2 GHz band, will promote use of the band for mobile broadband and foster competition.

**B-4 Industry Canada proposes that the deployment of ATC service not constrain the deployment of MSS.**

13. TerreStar agrees that the deployment of ATC must not constrain the deployment of MSS, regardless of whether the ATC band is used for uplink or downlink operations. The provision of MSS is clearly in the public interest as it is the means by which many remote and underserved communities will receive improved voice and data communications. However, as noted in the Consultation Document, it is critical that the operation of both MSS and ATC networks be tightly coordinated in order to mitigate interference between the MSS and ATC services.

**C-1 Industry Canada proposes to extend the spectrum assigned in existing 2 GHz MSS licences and ATC authorization to 2000-2020 MHz and 2180-2200 MHz.**

14. TerreStar is of the view that for spectrum efficiency and interference mitigation reasons, Industry Canada’s proposal to extend the spectrum assigned in existing 2 GHz MSS licences and ATC authorization to 2000-2020 MHz and 2180-2200 MHz bands is the best decision for a harmonized North American service for ATC and MSS services. This approach will provide service providers and equipment manufacturers with the ability to design their services and devices that can grow and evolve with the usage requirements of their customers. Indeed, as noted by
the Department, because of the uncertainty regarding the characteristics of the ecosystem in the S-band, it is important that Canadian licences align with those issued in the United States, in order to ensure availability of devices.

15. TerreStar also believes that this approach is the only way to prevent or mitigate interference between MSS and ATC operations. Because the same spectrum is shared by both the terrestrial and MSS operations, TerreStar supports the Department’s view that this spectrum should not be auctioned as it would jeopardize the provision of both MSS and mobile broadband services in Canada. It is necessary that the management of both the MSS and ATC spectrum be by the same entity. As noted by the Department in its Consultation Document, “[T]his supports competition in the mobile wireless services industry and encourages investment in the provision of wireless services to virtually all of Canada.”

C-2 Industry Canada proposes to issue new spectrum licences to incumbent 2 GHz licensees, with terms commencing on April 1, 2015, that reflect the proposed revisions to the band plan and new conditions of licence if a letter indicating interest is received from both incumbents.

16. In order to take into account the time needed by the Department to analyze submissions in this Consultation and to render a determination, TerreStar believes that issuing licences to MSS and ATC incumbents with terms commencing on April 1\textsuperscript{st}, 2015 is a prudent approach. Furthermore, as noted elsewhere in this submission, TerreStar supports the Department’s proposed revisions to the band plan and its proposed conditions of licence.

C-3 Industry Canada proposes that the ATC licensee be allowed to decide if the use of the band 2000-2020 MHz will be for uplink or downlink operations and notify Industry Canada by May 20, 2016; and further proposes that the decision apply to all of Canada and for the rest of the licence term.

17. TerreStar agrees with the Department’s proposal to permit the ATC licensee to decide if the use of the band 2000-2020 MHz will be for uplink or downlink operations. This is the most practical approach for the use of this spectrum in Canada and the United States. TerreStar also agrees with the Department’s proposal that the ATC licensee be required to notify the Department by May 20, 2016 of the licensee’s decision regarding uplink and downlink operations in the band, and that the decision apply for all of Canada for the remainder of the licence term.
Industry Canada proposes a Tier 1 Service Area for the MSS and ATC spectrum licences.

18. The EchoStar T1 satellite covers Canada and it is TerreStar’s intention to offer service on a national basis. TerreStar supports the Department’s view that large tier sizes are necessary to accommodate high-speed mobile applications operating on a wide-area basis and that larger geographic service areas enable efficient large-scale networks due to economies of scale. In addition, the propagation characteristics of the 2 GHz band are conducive to high mobility applications. Accordingly, TerreStar believes that it is both logical and efficient that licences be issued for Tier 1 service areas.

Industry Canada proposes that spectrum licences in the 2 GHz band have a licence term of 20 years.

19. TerreStar notes that 20 year licence terms are becoming typical for an entire range of licences, including both terrestrial mobile licences as well as licences for FSS and BSS satellite systems, as most recently reflected in Licensing of Space Stations, CPC-2-6-02, Issue 3 (Provisional), November 2013. Given these developments, TerreStar believes that MSS and associated ATC authorizations should have licence terms of 20 years each. Having matching licence terms will reduce uncertainties associated with the development of services in the 2 GHz band as well issues arising from the use of replacement satellites.

Industry Canada proposes that the licensees not be permitted to transfer any of the ATC spectrum to a large wireless service provider for the term of the licence. For any other transaction, the transferability and divisibility provisions outlined in Section 5.6.4 of CPC-2-1-23 will apply to any ATC spectrum transfers.

20. TerreStar supports the government’s competition agenda and agrees with the intent of these conditions although it notes that any transaction involving ATC spectrum with a large wireless provider – or any other provider - would be subject, in any event, to CPC-2-1-23 as well as the Department’s Framework Relating to Transfers, Divisions and Subordinate Licensing of Spectrum Licences for Commercial Mobile Spectrum, DGSO-003-13, June 2013. As such, it is not clear whether additional rules are required.

TerreStar notes that the licence term of 20 years is a long period of time and it is difficult to accurately forecast that far into the future. For instance, market conditions could evolve in a way that transfers that may be unacceptable today may become suitable in future years as market conditions evolve. In addition, and
more immediately, the proposed condition could prohibit spectrum swaps or other network arrangements that may result in more efficient spectrum use without affecting the competitive landscape. As a consequence, if the Department believes that an additional prohibition on licence transfers is necessary, TerreStar proposes that the 20 year limitation on transfers be qualified in the following way: “unless it can be demonstrated to the Department’s satisfaction that such a transfer results in better or more efficient use of spectrum and does not have a material impact on the level of competitive in the market overall”. This language would allow the Department to adjust to changing dynamics in the market, without imposing long regulatory delays.

C-7 Industry Canada is proposing deployment obligations for MSS licensees, within 5 years, to ensure that MSS is available and being offered throughout Canada.

21. TerreStar agrees with the Department’s proposal for the timely deployment of MSS services in Canada and, in particular, the obligation to provide MSS services within 5 years of the issuance of the MSS spectrum licence (i.e., by March 31, 2020).

C-8 In case of an emergency leading to the lack of availability of the satellite for the provision of the MSS, Industry Canada proposes to give the satellite operator 48 months to replace the satellite in order to continue MSS operations.

22. TerreStar notes that the EchoStar T1 satellite belongs to a generation of MSS satellites that are far more complex than the predecessor generations. In fact, the newest generation of MSS satellites is arguably more complex than the current generation of FSS and BSS satellites. Therefore, a 48 month replacement period should be treated as a desirable target, but one which should be considered alongside the unique design characteristics and technical complexities associated with MSS satellites.

C-9 Industry Canada proposes that the ATC licensee be required to demonstrate that, within 5 years, MSS is available and being offered in the Tier 1 area; this condition would apply for the term of the licence provided that the EchoStar T1 satellite or its replacement is operational.

23. Given the high priority that is placed by the Government on provision of service to rural and underserved Canadians, TerreStar understands the reasons why Industry Canada is proposing that ATC licensees demonstrate that, within 5 years of licence issuance, MSS is available and is being offered in the Tier 1 area and that this condition should apply for the entire term of the licence provided that the EchoStar T1 satellite or its replacement is operational.
24. TerreStar believes that the regulatory environment and incentives already in place, with respect to MSS in Canada and in the US, are sufficient to ensure that MSS service will be delivered in Canada. The proposed condition may present difficulties for TerreStar’s financing, network partner agreements and wholesale customers.

**C-10** *Industry Canada is proposing deployment obligations for ATC licensees, within 5 years and 10 years, as specified in Annex C.*

25. TerreStar believes that consumers deserve a choice of service providers and that development of spectrum in the S-band is critical to the Federal Government’s policy objective of promoting competition in Canada’s mobile wireless markets. TerreStar believes that it would be contrary to public policy if this spectrum was warehoused or allowed to lay fallow. TerreStar, therefore, agrees with the deployment obligations for ATC with 5 and 10 years as specified in Annex C of the Consultation Document.

**C-11** *Industry Canada proposes that an interim site licensing procedure be used for radio stations operated by the ATC licensees until a spectrum licence fee is finalized.*

26. Given the fact that no permanent spectrum fee has been established for ATC licensees, TerreStar agrees with the government’s proposal to apply the site licensing procedure and fee that it currently used for radio stations operated by ATC licensees until a spectrum licence fee can be finalized. More specifically, TerreStar agrees that, on an interim basis, a site licensing fee of $232 per channel should be applied in metropolitan areas and that site licensing fee of $106 should be applied per channel in non-metropolitan areas.

**D-1** *Industry Canada proposes to develop technical rules for the 2 GHz band, harmonizing with the U.S. rules to the extent feasible and to issue the applicable SRSP and RSS.*

27. The timely development of harmonized technical rules with the US for the 2 GHz band is critical to the development of this band for the benefit of Canadians. TerreStar urges the Department to prioritize the development of these rules through the Radio Advisory Board of Canada (RABC) and that this exercise be completed within a 3 month timeframe.
III. Conclusion

28. TerreStar supports the Department’s proposals for the S-band as set out in the Consultation Document. These proposals will maximize the economic and social benefits that Canadians will derive from the use of the radio frequency spectrum, and are consistent with objectives that the Department has previously identified as ones that will guide its decisions on the use of the 2 GHz band, including

- robust investment and innovation by wireless telecommunications carriers so that Canadians benefit from world-class networks and the latest technologies;
- sustained competition in the wireless telecommunications services market so that consumers and businesses benefit from competitive pricing and choice in service offerings; and
- availability of these benefits to Canadians across the country, including those in rural areas, in a timely fashion.

29. TerreStar is keen to develop its service offerings in the S-band band and, therefore, urges the Department to move quickly to finalize the rules for this band so that consumers and businesses can reap the benefits of greater competition in Canada’s mobile wireless sector, including increased customer choice, greater supplier responsiveness, lower prices and enhanced levels of product and service innovation.

30. TerreStar thanks the Department for the opportunity to submit these comments and looks forward to reviewing the submissions of other parties to this proceeding.