

Decision on TerreStar's Application for a Tier 1 Spectrum Licence in the 1695–1710 MHz Frequency Band and in the PCS Block H (1915–1920 MHz/ 1995–2000 MHz)

February 15, 2018

1. Intent

1. Through the release of this document, Innovation, Science and Economic Development Canada (ISED) announces the decision related to the [*Notice of Application Received from TerreStar Solutions Inc. for a Tier 1 Spectrum Licence in the 1695–1710 MHz Frequency Band and in the PCS Block H \(1910–1915 MHz/1995–2000 MHz\)*](#) (the Notice).

2. Legislative mandate

2. The Minister of ISED, through the [*Department of Industry Act*](#), the [*Radiocommunication Act*](#) and the [*Radiocommunication Regulations*](#), with due regard to the objectives of the [*Telecommunications Act*](#), is responsible for spectrum management in Canada. As such, the Minister is responsible for developing goals and national policies for spectrum utilization and for ensuring the effective management of the radio frequency spectrum resource.

3. Policy objectives

3. ISED is guided by the policy objectives of the [*Telecommunications Act*](#), and the [*Spectrum Policy Framework for Canada*](#) (SPFC), which has the objective of maximizing the economic and social benefits that Canadians derive from the use of the radio frequency spectrum. The enabling guidelines of the SPFC state that spectrum management practices, including licensing methods, should respond to changing technology and marketplace demands. In addition, these guidelines state that spectrum policy and management should support the efficient functioning of markets by permitting the flexible use of spectrum to the extent possible, by making spectrum available for use in a timely fashion and by ensuring that appropriate interference protection measures are in place.
4. ISED recognizes that Canadians want three things from their telecom services: high-quality services, ubiquitous coverage and affordable prices. Mobile communications have become integrated into the daily lives of Canadians as they increasingly rely on mobile services to access a variety of mobile applications, such as multi-media services, social networking and Internet browsing, on a day-to-day basis to do business, connect with others, and manage finances, health and homes.
5. ISED endeavours to harmonize spectrum use with international allocations and standards, except where Canadian interests warrant a different determination. Harmonization leads to larger markets and lower manufacturing costs of equipment due to economies of scale, which results in reduced costs and increased availability for Canadian consumers.

4. Background

6. TerreStar Solutions Inc. (TerreStar) is a Canadian mobile satellite service (MSS) provider who is partnered with DISH Networks (DISH) in the United States. TerreStar was assigned 40 MHz of AWS-4

spectrum in 2014 throughout Canada to enable it to deploy satellite and terrestrial services, including services in rural areas. This spectrum consists of the 2000-2020 MHz and 2180-2200 MHz frequency bands, spectrum that is also held by DISH in the United States.

7. TerreStar was given the option to use the AWS-4 spectrum as downlink, uplink or both. TerreStar selected to designate all the assigned spectrum as downlink spectrum.
8. DISH acquired spectrum at auction in the PCS Block H frequency band in 2014 and in the 1695-1710 MHz frequency band in 2015.
9. The Third Generation Partnership Project (3GPP) approved Band 66 and Band 70, which both include AWS-4 spectrum. Band 66 pairs uplink spectrum in the 1710-1780 MHz frequency band with downlink spectrum in the 2110-2200 MHz frequency band, of which the upper 20 MHz is held by TerreStar (2180-2200 MHz) in AWS-4. Band 70 pairs uplink spectrum in the 1695-1710 MHz frequency band with downlink spectrum in the 1995-2020 MHz frequency band, of which the upper 20 MHz is held by TerreStar (2000-2020 MHz) in AWS-4.
10. In the United States, the Federal Communications Commission (FCC) has licensed spectrum comprising both Band 66 and Band 70 for mobile wireless communications. Mobile wireless operators using spectrum in Band 70 are required to coordinate with incumbent federal meteorological satellite (MetSat) users within pre-defined protection zones.
11. The Notice sought comments regarding TerreStar's application requesting spectrum licences for spectrum in the 1695–1710 MHz frequency band along with spectrum in the upper portion of the PCS Block H (1995-2000 MHz), depending on the geographic location, to combine with its AWS-4 holdings. This would allow TerreStar to harmonize its holdings with DISH's holdings.
12. Neither the 1695–1710 MHz frequency band nor the PCS Block H frequency band is currently licensed for mobile use in Canada; there is no licensing process and no applicable fees for either band. The 1675-1700 MHz frequency band is currently used in several locations across Canada for MetSat services and studio transmission links.

5. Comments received

13. Responses to the Notice were received from 13 organizations; the [comments](#) and [reply comments](#) can be viewed online.
14. DISH, SSI Micro Ltd. and Xplornet Communications Inc. (Xplornet) supported the application, noting that the currently underused spectrum should be put to use for both MSS and terrestrial services as a means to improve broadband wireless services. Xplornet added that the application presents an opportunity to unlock spectrum for one purpose in urban areas and another use in rural and remote areas, which is to improve broadband and wireless services for rural and remote Canadians. In general, those who supported the application considered that coordination with MetSat services could be achieved through TerreStar's proposed protection zones.

15. Natural Resources Canada (NRCan) and the Meteorological Service of Canada (MSC) were opposed to the application and raised concerns about the potential for interference. MSC noted that, given the nature of mobile services and the number of MetSat receiving stations, significant constraints would have to be imposed on the mobile services and that such constraints may not be practical. NRCan and MSC also noted that, internationally, the World Radiocommunication Conference in 2015 (WRC-15) did not support a mobile allocation in the 1695-1710 MHz frequency band because of the existing MetSat earth stations located worldwide.
16. Omnispace noted that TerreStar knew of the limitations of pursuing downlink-only terrestrial operations in its MSS spectrum when it chose a downlink-only configuration last year, and argued that TerreStar cannot now use operational constraints of its own making as the basis for securing additional spectrum.
17. BC Broadband Association (BC Broadband), Bell Mobility (Bell), Québecor Média Inc. (Québecor), Rogers Communications Canada Inc. (Rogers), Saskatchewan Telecommunications (SaskTel), Shaw Communications Inc. (Shaw) and TELUS also opposed the application. BC Broadband submitted that the application would undermine the investments of small rural wireless Internet service providers, and noted that if the spectrum was made available for fixed wireless services, then it should be auctioned for that purpose so that market forces could be used to allocate the spectrum. Further, these respondents generally noted that the allocation of the frequency bands should only be done following public consultation and an auction process. In general, these respondents agreed with the proposal to align the Canadian band plan with international changes, but noted that the spectrum has value as it can be used for mobile or fixed services.
18. In addition, Bell and Rogers recommended that ISED wait before licensing the spectrum. Bell suggested waiting until the U.S. deployment is better understood so that current users of the 1695-1710 MHz spectrum would not be displaced unnecessarily and the most efficient use of the spectrum would be clarified. Rogers noted that it would prefer ISED wait until March of 2020 in order to monitor developments with DISH, the equipment ecosystem and TerreStar's deployment strategy for its AWS-4 spectrum.
19. TerreStar offered to revise its application to limit its use of some of the spectrum to six zones for the purposes of coordination with MetSat licensees. TerreStar maintained that it is best positioned to use the requested spectrum in Canada and that it would be beneficial to Canadians for licences to be issued to TerreStar as soon as possible. TerreStar noted that it would be willing to pay licence fees for this spectrum once ISED developed the appropriate licence fee regime for this band.
20. TerreStar argued that its spectrum in the 2000-2020 MHz portion of the AWS-4 frequency band would be orphaned if the application was not approved and that it would not be able to proceed with its service deployment plan, including its near-term plan to provide fixed wireless broadband services to rural and remote communities in Canada.

6. Discussion

21. ISED notes that, in the United States, these spectrum frequencies were assigned using auction processes in which DISH acquired the PCS Block H and the 1695-1710 MHz frequency bands.

22. ISED fully supports the objective of providing services to Canadians, and notes that TerreStar’s proposal to develop its AWS-4 spectrum by aligning with Band 66 and Band 70, as is possible in the United States, could achieve this objective.
23. ISED notes that the [Framework for Spectrum Auctions in Canada](#) states that “in instances where the demand for spectrum is expected to exceed supply, a competitive licensing process, such as an auction, is generally used.” Given that the majority of respondents opposed the application, indicating that the spectrum has value to them, ISED considers that there is enough evidence of competing demand for the bands in the application to determine that a first-come, first-served licensing process would not be appropriate at this time.
24. Accordingly, ISED considers that further public consultation is required in line with the principles outlined in the SPFC, including the priority and timing of spectrum releases to ensure they are aligned with and reflective of market and technology developments, maximizing the use of spectrum and fostering innovation.
25. ISED notes that, in an effort to ensure that Canada is well prepared to meet the spectrum needs associated with the rapid growth of innovative technologies and services, it launched the [Consultation on the Spectrum Outlook 2018 to 2022](#) in October 2017, which seeks comments on future technology advancements and associated spectrum demand, as well as on the proposed release of specific spectrum bands, and the timing thereof, to meet these future needs. The Consultation invites comments on the priority and timing of the use of the frequency bands included in this application.
26. In light of the above, ISED considers that assigning the spectrum at this time is premature.

7. Decision concerning the application

D-1: The application from TerreStar is denied.

8. Going forward

27. ISED may consider a future consultation for the release of the frequency bands included in the application following the [Consultation on the Spectrum Outlook 2018 to 2022](#) process. In light of this decision, ISED encourages all stakeholders to present their views in that process.