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Spectrum Management and Telecommunications

Decisions on Changes to the Definition of Competitive and User-Defined Service Areas for Spectrum Licences

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1. Intent

1. Through the release of this document, the Department announces the decisions resulting from the consultation process undertaken in DGSO-001-15, [Consultation on Changes to the Definition of Competitive and User-Defined Service Areas for Spectrum Licences](#) (the consultation).

2. Mandate

2. The minister of Industry, 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 related to the use of spectrum resources and for ensuring the effective management of the radio frequency spectrum resource.

3. Background

3. To fulfill its mandate, the Department has operated a spectrum management system using software initially developed in the mid-1970s. The software allows the Department to manage various radio, spectrum and broadcasting licences and perform electromagnetic compatibility studies to identify potential interference prior to assigning frequencies. The software also allows the Department to invoice and accept payments for authorized licences, among other processes. The Department has recently contracted to replace the software, being approximately 40 years old, with a new customized off-the-shelf solution currently operated by other regulators around the world. This is known as the [Spectrum Application Modernization](#) project, details of which can be found at http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf10585.html.
4. As with any new system, some changes are required. As described in the consultation, the implementation of the new software requires a change to the way in which service areas for spectrum licences are constructed by using **square grid cells** in place of the current **hexagonal grid cells**.

4. Decisions Regarding Affected Elements and Mitigation Approach

5. In the consultation, the Department informed stakeholders of the impending changes, their impacts and planned mitigation strategies, and solicited comments to facilitate a smooth transition from hexagonal to square grid cells.
6. Comments were received from Rogers Communications Inc. (Rogers), TELUS Communications Company (TELUS), Bell Canada and Bell Mobility (Bell), MTS Allstream Inc. (MTS), Xplornet Communications Inc. (Xplornet) and Saskatchewan Telecommunications (SaskTel). All comments received in response to the consultation are available on the Department's [Spectrum Management and Telecommunications](#) website at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10969.html>.
7. The consultation proposed strategies to mitigate the impact to existing spectrum licensees. The strategies include:
 - (1) freezing current population values for the remainder of existing licence terms;

- (2) applying new population values based on square grid cells when calculating fees for a new or modified spectrum licence;
- (3) grandfathering existing sites falling outside of a new service area due to the transition (for site data that is uploaded by March 31, 2015); and
- (4) meeting the specified power flux density (PFD) at the new service area boundary or coordinating with the adjacent licensee if a licensee makes changes to an existing station.

4.1 Comments Received

8. All parties generally agreed with the Department's proposed mitigation strategies and recognized the Department's efforts to limit and mitigate any potential impacts on licensees as a result of the transition from hexagonal to square grid cells.
9. TELUS raised an issue regarding the accuracy of the service area populations if square and hexagonal grid cells are used in adjacent areas. As a solution, TELUS suggested that population values based on hexagonal grid cells be maintained until an entire spectrum band is renewed or until a new fee order is established. SaskTel, however, indicated that the staggered implementation approach would avoid administrative burden and overhead created if large numbers of spectrum licences needed to be modified and re-issued in a short period of time. Finally, TELUS added that, similar to their proposal related to freezing population values, any changes to the PFD requirements should be made at the time of a uniform movement to square grid cells.
10. Concerning the grandfathering of sites falling outside of a new service area, Bell noted that 'per grid cell'¹ licences were not mentioned specifically in the consultation and recommended that these be treated in the same manner. Bell also indicated that additional time should have been provided to allow licensees time to carry out a more thorough review and update site information, if required; Bell requested an extension to May 31, 2015 (from March 31, 2015), to ensure it has sufficient time to update its site information for the 3400 MHz 'per grid cell' licences.
11. Xplornet suggested that a site be grandfathered for the duration of the spectrum licence and any renewals thereof, provided that such a site remains in active use serving customers, and that the use from that site continues to be counted towards the coverage and usage requirements under the original licence. Xplornet also indicated that it would be reasonable to limit the time during which a site using 3650 MHz is grandfathered to six months, given that the band is not exclusive. Finally, it suggested that the Department encourage licensees to swap spectrum blocks to resolve matters concerning site conflicts, where it is practical to do so.

4.2 Discussion

12. With respect to the issue of accuracy of the service area populations raised by TELUS, the Department notes that any such discrepancy would be minor given that the population differential between square and hexagonal versions of licence areas is very small ($\pm 1.5\%$). Furthermore, the Department considers that TELUS's proposal to delay implementation until an entire spectrum band

¹There is a small subset of licences in the 2300/3400/3500 MHz and 38 GHz bands, whose applicable fee orders are based on the number of hexagonal grid cells, and not on population.

is renewed is impractical given that some licences in a band are still within their original licence term, while other licences in the same band have already been renewed with a different licence term. The Department further considers that applying the new population values only to new or modified licences is simpler than TELUS's proposal as it avoids the potential need for re-invoicing midway through a licence term. Accordingly, the Department considers that no change is required to the consultation proposal.

13. The Department notes that licences issued on a 'per grid cell' basis were not specifically addressed in the consultation. These are a small subset of licences in the 2300/3400/3500 MHz and 38 GHz bands, and applicable fee orders are based on the number of hexagonal grid cells, and not population.² As such, to provide clarity, the Department notes that as population is not a factor in the fee calculation for these licences, the fees will remain unchanged until new fee orders are established.
14. The grandfathering of existing sites falling within a new licence area was generally agreed upon by all commenters. The Department recognizes the importance of ensuring that licensees can continue to serve their customers from existing sites and has amended the consultation proposal to clarify this provision. Licensees can continue to offer services to customers that are within the original licence area, but fall outside the new area defined by square grid cells. Any coverage from the grandfathered site can be counted towards coverage and usage requirements under the original licence.
15. The Department notes that the 3650 MHz band is a non-exclusive, self-coordinated band with licences issued for one-year periods expiring on March 31. Licensees must apply for a new licence in the relevant area for any grandfathered site. The Department agrees with Xplornet's suggestion that licensees with affected sites should apply within six months of the implementation of the square grid cells. This will help ensure effective ongoing coordination with existing and future licensees.
16. The Department agrees with comments from Bell that extending the deadline for all licensees to update the site information database would allow licensees to ensure that their data is accurate. Furthermore, an extension to June 15, 2015, would not disrupt the transition to square grid cells, and the final list of grandfathered sites, including a list of 'per grid cell' licences, could still be published upon or prior to the implementation of the new software by early July 2015.
17. Since all parties generally agreed with the proposal to meet the specified PFD at the new service area boundary or coordinate with the adjacent licensee if a licensee makes changes to an existing station, the Department considers that no change is required to the proposal. As licensees are already operating their systems and generally work together to ensure interference-free operations, no changes are expected to be required by the large majority of licensees. Any changes that would be required in the future will likely benefit all parties involved to ensure that they can continue to serve existing customers.

² See notices DGRB-008-99, [Radio Authorization Fees for Fixed Wireless Access Systems in Rural Areas in the Frequency Range 3400-3550 MHz](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01891.html) (<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01891.html>) and DGRB-004-97, [Radio Authorization Fees for Fixed Radio Systems in the 38.4-40.0 GHz Frequency Bands](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01499.html) (<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01499.html>).

4.3 Decisions

18. In light of the discussion above and the general agreement from all commenting parties on the proposals made in the consultation, the Department considers that the proposed mitigation strategies will adequately address the transition, with minor changes to the proposed strategies described in bold in the box below.

1. The Department will freeze the existing population values for all existing spectrum licences for the remainder of their licence terms.
2. The Department will apply new population values based on square grid cells when calculating fees for a new spectrum licence, when changes are made to modify the service area of an existing spectrum licence (e.g. subdivision), or when a new fee order is established. **Fees for spectrum licences that are not based on population but instead on the number of hexagonal grid cells will remain unchanged until a new fee order is established.**
3. Sites that fall outside of the new service area but that are within the original licence area will be grandfathered **provided that the site remains in active use serving customers**. Licensees can continue to offer services to customers that are within the original licence area, but outside of the new area defined by square grid cells.
4. Licensees must meet the specified PFD at the new service area boundary or coordinate with the adjacent licensee if a licensee makes changes to an existing station.
5. As described in the consultation, the Department notes that with the modernization of the Spectrum Management System and the implementation of the new square grid cells, applications with free-form user-defined areas will no longer be accepted. All future requests for user-defined areas must conform to the square grid cell boundaries.

NOTE: Licensees are reminded that it is a condition of licence to update site information and that it must be updated prior to **June 15, 2015**, if their applicable sites are to be considered under the grandfathering provision in Decision 3 above. A revised list of grandfathered sites will be published upon or prior to the implementation of the grid cell changes. Sites not included on the list are not subject to the grandfathering provision and would be considered non-compliant if they were located outside their existing or new service area.

5. Next Steps

19. The Department will publish an updated version of the document titled [Service Areas for Competitive Licensing](#) alongside maps detailing licence areas based on square grid cells. An updated version of the Client Procedures Circular CPC-2-1-23, [Licensing Procedure for Spectrum Licences for Terrestrial Services](#), will also be published, along with details regarding the application

process, on the Department's [Spectrum Management and Telecommunications](http://www.ic.gc.ca/spectrum) website at <http://www.ic.gc.ca/spectrum>. Interested parties are encouraged to sign up for the Department's RSS feeds in order to stay informed regarding spectrum-related announcements.

6. Obtaining Copies

20. All spectrum-related documents referred to in this paper are available on the Department's [Spectrum Management and Telecommunications](http://www.ic.gc.ca/spectrum) website at <http://www.ic.gc.ca/spectrum>.