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Spectrum Management and Telecommunications

Consultation on Expanding Licensing Procedure CPC 2-5-01 to include Global Navigation Satellite System (GNSS) Active Repeater Stations

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1. Intent

1. This focused consultation seeks comments from the Radio Advisory Board of Canada (RABC) and the Canadian Positioning, Navigation, and Timing Board (PNTB) on proposed amendments to ISED's Client Procedures Circular (CPC) 2-5-01, currently titled [*Licensing Procedure for Global Positioning System \(GPS\) Active Repeater Stations*](#).

2. Legislative mandate

2. The Minister of Innovation, Science and 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 for spectrum resource use and for ensuring effective management of the radio frequency spectrum resource.

3. Policy Objectives

3. Pursuant to Client Procedures Circular CPC-2-5-01, Issue 1, *Licensing Procedure for Global Positioning System (GPS) Active Repeater Stations*, GPS active repeater stations are licensed by Innovation, Science and Economic Development Canada (ISED). These stations meet the definition of "radio apparatus", whereas passive repeaters do not require licensing as they do not amplify received radio signals.
4. The consultation seeks comments on proposed revisions to CPC-2-5-01 issue 1, originally published in 2010. This revision would expand the scope by including access to other Global Navigation Satellite System (GNSS) and address the licensee's role in interference avoidance.
5. This consultation also references the requirements of the [*Service Fees Act \(SFA\)*](#) and updates to current requirements for the [*Spectrum Management System \(SMS\)*](#), ISED's online application system.

4. Background

6. The Global Positioning System (GPS) as we know it, was made operational by the United States in the 1990s. Since then, other administrations have launched

similar satellite constellations such as the European Galileo satellite navigation system. These Global Navigation Satellite Systems, or GNSS, which include the GPS, provide a valuable service for specialist users who need to position equipment and assets at a very high level of precision. GNSS have a number of capabilities and advantages that are important not only to public safety, but also to commercial users.

7. ISED's current licensing procedure for GPS active repeater stations, outlined in the Client procedures Circular CPC-2-5-01, Issue 1 does not account for other satellite systems other than the GPS system. As such ISED proposes to expand the scope of the CPC by permitting GNSS active repeaters in areas of poor reception.
8. GNSS users depend on reliable signals to provide positioning, navigation, and timing information for their critical systems. ISED proposes to strengthen the interference guidelines to ensure continued protection of such critical systems.
9. Moreover, ISED will also update CPC-2-5-01, Issue 1 to include the [Service Fees Act \(SFA\)](#) requirements for annual fee adjustments by the Consumer Price Index; and new data entry guidelines for the Spectrum Management System (SMS).

5. Proposed Amendments to CPC-2-5-01

5.1 Expand scope of the CPC to allow other global navigation satellite systems

10. GPS is one of several types of GNSS. As such ISED proposes to remove GPS restrictions by permitting other GNSS signals for GNSS active repeaters.
11. GNSS serves a variety of important purposes (e.g. aeronautical radionavigation, ground-based positioning information, timing system synchronization) and it is crucial that harmful interference not be caused to such systems. In this regard ISED is not in favour of the widespread deployment of GNSS active repeaters due to their potential (however limited) to interfere with other radio devices in the GNSS service.
12. ISED would authorize GNSS active repeater stations as fixed stations in the radiodetermination service, as defined in the [Radiocommunication Regulations](#), on a non-standard, no protection, no interference basis. Licences for GNSS active repeater stations would normally be issued to public safety agencies only, such as police, fire and emergency medical services. These conditions and parameters are currently in use for GPS systems and would apply in the same way to all GNSS systems.

13. Should the scope of the licensing procedure be expanded to include access to other navigation satellite systems, ISED would change the title of the CPC-2-5-01 to *Licensing Procedure for Global Navigation Satellite System (GNSS) Active Repeater Stations*.

Q1. ISED invites comments on the proposal to expand the scope of the CPC to allow GNSS active repeaters to utilize signals of other global navigation satellite systems.

5.2 Proposed inclusion of language regarding interference avoidance

14. To properly manage licensing of GNSS active repeaters while avoiding or minimizing interference to other nearby systems, ISED proposes that proponents be required to follow an updated process, as well conditions of licence to that effect.

15. The proposed wording in the CPC is as follows:

Applicants shall use sound engineering practices to ensure minimal radiation of amplified signals outside of the building at the specified station location. Such practices should consist of, but are not limited to:

- locating the indoor antenna as far as possible from windows, doors or other openings;
- placing the indoor antenna as close as possible to the GNSS receiver being served;
- using a high gain transmitting indoor antenna directed at the GNSS receiver being served;
- reducing amplifier gains and/or use external attenuators to reduce the output power to the minimum level required for detection by the GNSS receiver being served; and
- placing the outdoor antenna in such a way as to shield it as much as possible from undesired signals.

16. Proposed conditions of licence are as follows:

1. GNSS active repeater stations are authorized on a non-standard basis and cannot claim protection from, or cause interference to, other radio systems.
2. GNSS active repeater stations are authorized for GNSS signal distribution only within the building at the location specified on the licence.

3. Radiated power must be kept to the minimum level required to ensure proper reception of the GNSS signal within the building at the location specified on the licence.
4. Appropriate measures shall be taken to limit retransmission of non-GNSS frequencies and overloading of the active repeater.
5. The licensee must use sound engineering practices to ensure minimal re-radiation of the GNSS signal outside of the building at the location specified on the licence. Upon request from ISED, the licensee must perform field tests to assess the potential for interference to GNSS receivers outside the authorized location.
6. With respect to reported cases of interference, the licensee must immediately cease operation of the GNSS active repeater station upon request from ISED.

Q2. ISED invites comments on the proposed language regarding interference avoidance and proposed conditions of licence.

5.3 Inclusion of *Service Fee Act* requirements and new guidelines for online applications

17. Should the scope of the CPC be broadened to include all GNSS active repeaters, licence fees will be the same as those for GPS active repeaters, and charged as fixed stations in the radiodetermination service, as outlined in subparagraph 62(1)(a)(iv) of the [Radiocommunication Regulations](#).
18. Certain sections of the SFA which came into force in 2018, require departments to adjust fees annually by the April All-items Consumer Price Index (CPI) published by Statistics Canada in May of each year. ISED's Spectrum and Telecommunications Sector updates its fees to account for the CPI adjustment on April 1 of each year as per the SFA. When calculating or recalculating licence fees, licensees must use the individually adjusted rates, which are published on the [Spectrum and telecommunications fees web page](#).
19. The SFA is not referenced in the current version of the CPC and clarity with regards to fees is important. As such the upcoming revision will include reference to the SFA.
20. The current licensing procedure, Issue 1, does not take into account changes to Spectrum Management System (SMS). The revised version of the CPC will provide new data entry guidelines to allow licence applications for GNSS active repeater stations to be submitted through SMS online system, by using the radiodetermination licence application form.

6. Next Steps

21. ISED will consider the comments received for Q1 and Q2 in its update of CPC-2-5-01. As this is a targeted consultation, comments will not be posted on the ISED web site.

7. Submitting Comments

22. The RABC and PNTB may provide comments in electronic format (Microsoft Word or Adobe PDF) by email to: spectrumoperations-operationsduspectre@ised-isde.gc.ca.

23. Submissions may be addressed to:

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

8. Obtaining Documents

24. All spectrum-related documents referred to in this document are available on ISED's [Spectrum Management and Telecommunications](#) website.