



Statement of Requirements for Calibrated Loop Antenna Kit

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Issued by IRSC Chair

Spectrum and Telecommunications Sector

Canada

1. Scope

This Statement of Requirements (SOR) details the requirements for Calibrated Loop Antenna Kit(s).

1.1 BACKGROUND

Innovation, Science and Economic Development Canada (ISED), Spectrum and Telecommunications Sector (STS) is currently modernizing its aging radio frequency test and measurement equipment portfolio under the auspices of the Pulsar program. This equipment is used to monitor, localize and measure technical parameters of radio emissions for radio interference, compliance and enforcement work.

STS Officers are often required to make calibrated field strength measurements in the commercial broadcast bands. Antenna kits currently in use have reached end-of-life and can no longer be reliably repaired and calibrated. This necessitates their replacement to ensure this measurement capability is maintained going forward.

1.2 Instructions

The following instructions apply to this specification:

- a) Requirements, which are identified by the word “**must**,” are mandatory. Deviations will not be permitted.
- b) Where a technical specification or requirement is identified in the mandatory technical specifications, proof of compliance must be provided with the RFP response-

1.3 Definitions

The following definitions apply to the interpretation of this Statement of Requirements:

Technical Authority – The government official responsible for technical content of this SOR.

Calibrated Loop Antenna Kit – A complete pre-kitted package of all hardware including all parts such as the loop antenna, loop antenna mounts/holders/mechanical hardware, baluns, interconnecting cables, calibration charts (i.e. K-factor calibration tables/graphs by frequency), and a compact/rugged carrying case in a complete manufactured state in accordance with the SOR.

Proof of Compliance is defined as an unaltered manufacturer’s document, such as a product marketing brochure, operating manual, service manual, measurement guide or product data sheet. The document must provide detailed information on each requirement.

Where a proof of compliance document is not available for a specific requirement, an attestation as a separate document signed by a representative of the Original Equipment Manufacturer (OEM) detailing how the specific requirement is met must be provided.

1.4 Technical Specifications

The contractor must provide the requested antenna kits in accordance with the technical specifications detailed in Appendix 1 – Mandatory Technical Specifications for Calibrated Loop Antenna Kits.

1.5 Standard Design

The calibrated loop antenna kit must be the manufacturer’s latest in production model.

1.6 Identification

The following information must be permanently marked in a visible and protected location on the kit: manufacturer's name, model and serial number.

1.7 Equipment Documentation

1.7.1 Full documentation on the contents of the kit including installation, operations, maintenance, complete replacement parts list and unit specific antenna K-factor calibration charts/graphs, must accompany each kit, shipped to each location.

1.7.2 Any available documentation (i.e. operator’s/maintenance manuals, K-factor charts/graphs) must be provided in French or English.

Any documentation should be bilingual (English/French).

If the contractor is only able to provide the documentation in one language, written permission of the copyright holder of the documents to use and translate any copyrighted material must be provided to the Government of Canada for translation.

1.8 Accessibility Requirements

The manuals must be delivered in an accessible format, in compliance with the Harmonised European Standard, EN 301 549 (2018) (https://www.etsi.org/deliver/etsi_en/301500_301599/301549/02.01.02_60/en_301549v020102p.pdf) for accessible Information and Communication Technology (ICT), clause 10 for non-web documents.

Any other instructions that are provided with the kits must conform to the standards for web-based documents, electronic documents, and hard copies.

The provision of facilities, tools and services, and all associated costs to make the components and deliverables of this project accessible, must be at the contractor's expense.

For practical guidance on creating accessible documents, refer to these Accessible Document Guides (<https://a11y.canada.ca/en/>).

1.9 Equipment Lifecycle

Lifecycle of this equipment must be 10 years from the date of delivery and acceptance of goods as ordered and received undamaged.

1.10 Calibration and Maintenance Support

1.10.1 The contractor must ensure the capability to provide parts, repair and calibration services for 10 years from the date of delivery and acceptance of the equipment.

1.10.2 Initial factory calibration for each antenna must be included as part of the original delivery.

1.10.3 Any subsequent calibration support is not part of this contract.

1.11 List of Deliverables

1.11.1 Calibrated Loop Antenna Kits

Description	Quantity
Calibrated loop antenna kits, as specified in the Statement of Requirements	26 units
The contractor must deliver all units by February 29, 2024.	

1.12 Shipping

1.12.1 Shipping Report

The contractor must provide the Technical Authority a shipping report in the form of an Excel spreadsheet (Excel 2007 or later). At a minimum, this report must include:

- a) Model number
- b) Serial number
- c) Contract number
- d) Date of shipment
- e) Method of shipment
- f) Shipment tracking number

This report must be available to ISED at the time the shipments are shipped. The spreadsheet must be updated each time a shipment is being processed by the contractor.

Appendix 1 – Mandatory Technical Specifications for Calibrated Loop Antenna Kits

(Reference: Appendix 2 – Definitions and Glossary Syllabus)

Item #	Hardware	Required Specifications
Antenna Kit		
1	Calibrated Loop Antenna Kit	A complete pre-kitted package of all hardware including all parts such as the loop antenna, loop antenna mounts/holders/mechanical hardware, baluns, interconnecting cables, calibration charts (i.e. K-factor calibration tables/graphs by frequency) and a compact/rugged carrying case in a complete manufactured state in accordance with the Statement of Requirements.
Antennas		
2	Antenna Calibration	The antenna must be individually calibrated in accordance with ANSI C63.5 or IEEE Standard 291.
3	Antenna Documentation	The antenna must come with a chart showing the magnetic correction factors for the operating frequency range.
4	Minimum Frequency	The minimum operating frequency of the antenna must be less than or equal to 9 kHz.
5	Maximum Frequency	The maximum operating frequency of the antenna must be greater than or equal to 30 MHz.
6	Antenna Power Handling	The antenna must be capable of handling input power greater than or equal to 20 watts.
7	Antenna RF Connector Type	The RF connector must be type BNC, female.
8	Nominal Antenna Impedance	The nominal antenna impedance must be 50 ohms.
9	Passive Antenna	The loop antenna must be passive.
10	Antenna Shielding	The antenna must include electrostatic (Faraday) shielding.
11	Antenna Mounting Base	The mounting base of the antenna must accept a tripod mount with standard 1/4" x 20 thread.
12	Minimum Antenna Dimension	The minimum antenna loop diameter must be greater than or equal to 56 cm.
13	Maximum Antenna Dimension	The maximum antenna loop diameter must be less than or equal to 61 cm.
14	Antenna Weight	The maximum individual antenna weight must not exceed 1.8 Kg.
Antenna Carrying Case		
15	Storage Case	The contractor must provide a hard transit case with form-fitting padding for the safe storage of the antenna.

Appendix 2 – Definitions and Glossary Syllabus

Definitions	
Calibrated Loop Antenna Kit	A complete pre-kitted package of all hardware including all parts such as the loop antenna, loop antenna mounts/holders/mechanical hardware, baluns, interconnecting cables, calibration charts (i.e. K-factor calibration tables/graphs by frequency) and a compact/rugged carrying case in a complete manufactured state in accordance with the Statement of Requirements.
Glossary	
cm	Metric unit of length in centimeters
K-factor	Antenna correction factor in dB versus operating frequency
kg	Metric unit of mass in kilograms
BNC	Type BNC RF connector
RF	Radio Frequency