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Vessel Radar and ECDIS Statement of Work



Canadian Coast Guard

SOW

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VESSEL RADAR AND ECDIS STATEMENT OF WORK

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Document Management

1. Authority

This document is issued by the Director General, Integrated Technical Services, CCG's National Technical Authority under delegation from the Deputy Minister, Fisheries and Oceans and the Commissioner of the Canadian Coast Guard.

2. Responsibility

- a) The Project Manager, Vessel Radar Procurement is responsible for:
 - i) the creation and promulgation of the document; and
 - ii) the identification of an Office of Primary Interest (OPI) who is responsible for the coordination and the content of the document.

- b) The OPI is responsible for:
 - i) the validity and accuracy of the content;
 - ii) the availability of this information;
 - iii) the update as needed;
 - iv) the periodical revision; and
 - v) the follow-up of all requests, comments and/or suggestions received by the originator.

3. Inquiries and/or Revision Requests

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All requests should:

- i) be clear and concise; and
- ii) reference the specific Chapter, Section, Figure or Table.

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Foreword

1. Purpose

Radar equipment is required on CCG vessels under the International Maritime Organization (IMO) Carriage Requirements detailed in the International Convention for the Safety of Life at Sea (SOLAS) of which Canada is a participating member. The radar equipment now fitted on CCG vessels has reached its end of life, and must be replaced in order to maintain CCG program integrity.

2. Scope

This Statement of Work (SOW) document details the activities and deliverables associated with the procurement of replacement Navigational Radar and Electronic Chart Display and Information Systems (Radar and ECDIS) to be installed on large Coast Guard vessels across Canada. The technical requirements of the equipment to be procured under this Statement of Work are given in the associated document, “Radar and ECDIS Technical Statement of Requirements”, which will hereinafter be referred as the TSOR.

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Chapter 1 DELIVERABLES

1.1 EQUIPMENT

1.1.1 Equipment Supplied

1.1.1.1 The Vendor *shall* supply equipment as detailed in the Technical Statement of Requirements, complete with all installation instructions, service and operator manuals, materials, parts and assemblies necessary for installation and integration.

1.1.1.2 The vendor *shall* provide proof of compliance demonstrating that all CCG's mandatory specifications are met as listed in the TSOR and the Statement of Work (SOW) at the time of bid submission.

1.1.1.3 Canada *shall* conduct an acceptance test on the system to-be supplied by the winning bid to verify its full compliance with the Radar and ECDIS TSOR before contract award. An acceptance test *shall* require proof of compliance for the following items listed in the TSOR:

#	TSOR reference	#	TSOR reference
1	2.1-2.4	8	3.6.1-3.6.2
2	3.1- 3.2	9	3.7.2- 3.7.6
3	3.3.1-3.3.3	10	3.8.1
4	3.3.5	11	3.8.3 - 3.8.6
5	3.4.4- 3.4.8	12	3.9.6
6	3.5.1-3.5.4	13	3.10.1 - 3.10.2
7	3.5.8	14	3.10.4 - 3.10.5

1.2 DOCUMENTATION & DATA

1.2.1 General

- 1.2.1.1 All documentation developed or supplied under this Contract *shall* be in reproducible hard copy and native electronic format (Microsoft Word, Excel, etc., and Autocad for all drawings).
- 1.2.1.2 The Vendor *shall* provide all documentation developed or supplied for this procurement in equally accurate Canadian English and Canadian French languages.
- 1.2.1.3 All installation instructions, service and operator manuals *shall* be supplied in searchable PDF format.
- 1.2.1.4 Applicable operator manuals *shall* also be supplied in both hard copy and electronic formats with the purchase of each unit.

1.2.2 Maintenance

- 1.2.2.1 The commercial documentation supplied with the equipment *shall* identify all necessary corrective and preventative maintenance tasks or procedures.
- 1.2.2.2 **The commercial documentation supplied with the equipment *shall* identify any special tools and test equipment required for the maintenance of the Radar/ECDIS equipment. “Special tools and test equipment” is defined as those tools which are of such a specialized nature that their use is particular to the item being procured, and includes either single or multi-purpose test units engineered, designed fabricated or modified to meet the test requirements of the equipment.**
- 1.2.2.3 **The commercial documentation supplied with the equipment *shall* identify any recommended spare parts, including Lowest Replaceable Unit (LRU) components, which will be required to maintain the Radar/ECDIS system.**

1.3 TECHNICAL TRAINING

1.3.1 Maintenance Training

- 1.3.1.1 The Vendor *shall* be able to provide a Commercial Off The Shelf (COTS) maintenance training course, to be delivered by the vendor’s representatives to the technical staff of CCG.

- 1.3.1.2 The course shall meet the following criteria:
- Class size shall be up to eight (8) students;
 - The training course shall be scheduled for normal business hours with a maximum of five and one half (5.5) hours of class time per day;
 - The course shall last no longer than five (5) working days; and
 - The course shall be offered at the CCG College, in Sydney, NS.
 - Travel and living costs for the vendor's representatives shall be included in the course price;
 - The course shall be available in both of Canada's official languages, French and English;
 - Each individual course shall be delivered in one of Canada's two official languages;
 - The choice of language for the course shall be at the discretion of CCG; and
 - Courseware shall be treated as documentation under the provisions set out in the General Conditions.

1.3.2 Operator Training

- 1.3.2.1 The vendor *shall* provide an operator computer based type specific training on the ECDIS system, with unlimited seat licenses per ECDIS system.
- 1.3.2.2 The operator computer based type specific training on the ECDIS system *shall* be available in both of Canada's official languages, English and French, as per the user's choice.



Fisheries and Oceans
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Radar and ECDIS Technical Statement of Requirements (TSOR)



Canadian Coast Guard

TSOR

Canada

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RADAR AND ECDIS TECHNICAL STATEMENT OF REQUIREMENTS

VERSION 4 – SEPTEMBER 2015

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Introduction

1. General

The Canadian Coast Guard (CCG), a Special Operating Agency of the Department of Fisheries and Oceans (DFO), owns and operates the federal government's civilian fleet. The Oceans Act gives the Minister of Fisheries and Oceans responsibility for providing:

- a) aids to navigation
- b) marine communications and traffic management services
- c) icebreaking and ice-management services
- d) channel maintenance
- e) marine search and rescue
- f) marine pollution response
- g) support of other government departments, boards and agencies by providing vessels, aircraft and other services

The Canada Shipping Act gives the Minister responsibilities for and obligations concerning:

- a) aids to navigation
- b) Sable Island
- c) search and rescue (SAR)
- d) pollution response
- e) vessel traffic services

Shipboard navigation equipment carriage requirements on CCG vessels are governed by Safety of Life at Sea (SOLAS) in International Maritime Organization (IMO) document 110E Chapter V, the Canada Shipping Act Regulations, Arctic Waters Pollution Prevention Act, and are supplemented by CCG Operations requirements.

2. Purpose

The purpose of this Technical Statement of Requirements (TSOR) is to provide the requirements to procure suitable Radar and Electronic Chart Display and Information System (ECDIS) equipment for the Canadian Coast Guard fleet. This document describes the technical and operational requirements to be met by the supplier.

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Chapter 1 SCOPE AND BACKGROUND

1.1 SCOPE

This document presents the technical requirements for Commercial-Off-The Shelf (COTS) equipment for:

- a) Radar; and
- b) ECDIS equipment for medium and large CCG Vessels.

This document is to be used in conjunction with the attached Statement of Work (SOW) during the procurement process.

1.2 BACKGROUND

The CCG fleet is composed of many different vessels of various size, weight and voyage classifications. Navigation equipment fitted varies in age and asset lifecycle stage. To meet the International and Domestic regulations, class management, CCG Operations and vessel specific equipment requirements, configurations for radar and electronic chart systems must be both scalable and adaptable.

1.2.1 Radar

Shipborne radar systems combined with other sensors provide an indication, in relation to own ship, of the position of other surface craft, obstructions and hazards, navigation aids and shorelines.

X-Band Radar (9.2-9.5 GHz) is used for target discrimination, good sensitivity and tracking performance in optimal conditions.

S-Band Radar (2.9-3.1 GHz) is used to ensure that target detection and tracking capabilities are maintained in adverse conditions of fog, rain and sea clutter.

Canada requires type-approved X-Band Radars on medium and larger vessels. Some larger vessels will also carry an S-Band Radar in addition to one or more X-Band Radar(s).

1.2.2 ECDIS

The use of paper charts for navigation purposes is being phased out as the advent of paperless electronic charting systems has increased navigational accuracy and near real time situational awareness at sea.

Canada requires a type-approved ECDIS solution to further the paperless bridge requirement initiative for its vessels.

Scope and Background

1.2.3 Multifunction Workstation

A multifunction workstation combines the normal Radar functions and the ECDIS functions in a single workstation. Operators then have identical, correct and timely navigation data available on any combination of networked multifunction workstations.

Canada requires multifunction workstations instead of individual task specific standalone equipment.

Canada requires a modular system that facilitates phased in implementation. For example, an ECDIS workstation procured in the first year is upgraded and integrated into a network of multifunction (Radar/ECDIS) workstations procured in the third year.

Chapter 2 EQUIPMENT CONFIGURATIONS

- 2.1 Multifunction workstations combining Radar and ECDIS functions *shall* be provided.
- 2.2 Standalone Radar workstations and standalone ECDIS workstations *shall* be available.
- 2.3 Workstations and equipment procured *shall* be modular and upgradeable as required by Canada. E.g. A standalone Radar or ECDIS workstation upgraded to Multifunction Workstation.
- 2.4 An upgraded system *shall* not duplicate functions or equipment unnecessarily. For example, radars upgraded to multifunction workstations will utilize existing workstation processors and network hardware.

Note: Each system is defined by the listed requirements in table 1 below.

Table 1 System Requirements List

System	Requirements
Radar	3.1.1, 3.1.2 3.2 3.4.1 to 3.4.2, 3.4.4 to 3.4.8 3.5.2 to 3.5.8 3.6 3.7 3.9 3.10.1, 3.10.3 to 3.10.4
ECDIS	3.1.3 3.2 3.4.1, 3.4.3 to 3.4.8 3.5 3.6.1 to 3.6.2 3.7.1 to 3.7.6 3.8 3.10
Multifunction Workstation	All requirements

Equipment Configurations

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Chapter 3 REQUIREMENTS

3.1 REGULATORY REQUIREMENTS

- 3.1.1 Proof of certification of transmitting radionavigation equipment in accordance with Radio Standards Specification RSS-238 by Industry Canada **shall** be supplied in the form of a Technical Acceptance Certificate (TAC), issued by the Certification and Engineering Bureau of Industry Canada, or an Industry Canada recognized body.
- 3.1.2 Radar proof of compliance **shall** be provided for the appropriate Maritime Safety Committee performance standard MSC.192(79) Annex 34 and International Electrotechnical Commission testing standard IEC 62388 referenced by the International Convention for SOLAS, and Canada Shipping Act CSA 2001, Navigation Safety Regulations SOR/2005-134.
- 3.1.3 ECDIS proof of compliance **shall** be provided for the appropriate performance MSC.232(82) and testing IEC 61174 standards referenced by the International Convention for SOLAS, and CSA 2001, Charts and Nautical Publications Regulations, 1995 SOR/95-149.

Note: Use the most current pertinent version of the International Maritime Organization (IMO), International Electrotechnical Commission (IEC), Maritime Safety Commission (MSC), and Radio Standards Specification (RSS) publications for purposes of this TSOR.

3.2 GENERAL WORKSTATION(S)

- 3.2.1 Human Interface Device (HID) controls necessary to operate the workstation **shall** be dedicated hardware including a keyboard and trackball.
- 3.2.2 HID controls **shall** allow workstation primary functions to be operated from a remote operating position in addition to the main controls.
- 3.2.3 Workstation displays **shall** be of flat panel design and available in the following sizes that meet or exceed all applicable regulatory requirements for radar and ECDIS.
- a) Display sized to accommodate approximately 250 mm circle diameter radar and ECDIS, measuring diagonally within 19 inches to 22 inches.
 - b) Display sized to accommodate approximately 320 mm circle diameter radar and ECDIS, measuring diagonally within 23 inches to 27 inches.
- 3.2.4 Workstations fitted with displays accommodating ECDIS and/or a ~250 mm circle diameter radar presentation **shall** be available as follows:
- a) Kit format where equipment is supplied at component level for installation in existing consoles.
 - b) Tabletop format where equipment display and HID are contained and supplied as a single unit for installation on top of a table or desk.

Requirements

- 3.2.5 Workstations fitted with displays accommodating ECDIS and/or a ~320 mm circle diameter radar presentation *shall* be available as follows:
- a) Kit format where equipment is supplied at component level for installation in existing consoles.
 - b) Tabletop format where equipment display and HID are contained and supplied as a single unit for installation on top of a table or desk.
 - c) Deck standing format where workstation equipment components are contained and supplied as a standalone unit for installation on a vessels deck.
- 3.2.6 The workstation *shall* be updateable to facilitate changes to IMO standards and take advantage of software upgrades or new features.
- 3.2.7 Workstations *shall* have a system accessible Compact Disc/Digital Versatile Disc (CD/DVD) drive and universal serial bus (USB) port for chart uploading, software updates, etc.
- 3.2.8 System navigators' setup preferences *shall* be transportable (e.g. USB flash drive, etc.) between compatible workstations (same or different vessel).
- 3.2.9 Workstation user and system configuration settings *shall* be downloadable in printable report format.

3.3 MULTIFUNCTION WORKSTATION(S)

- 3.3.1 Multifunction workstation software applications (e.g. Radar/ECDIS) *shall* share common information presentation style and interface logic.
- 3.3.2 Multifunction workstations *shall* include a conning display mode that presents the following IEC 61162 sensor data:
- a) Heading
 - b) Pitch and Roll
 - c) Rudder angles
 - d) Rate of Turn
 - e) Position fix
 - f) Speed
 - g) Propeller pitch
 - h) Wind speed and direction (both true and relative)
 - i) Date and time
- 3.3.3 Conning display mode screen *shall* allow select sensor information to be presented in a configurable layout.
- 3.3.4 Multifunction workstations *shall* include an alert management system that, at a minimum, manages all incoming alarm information required by performance standards adopted by the IMO for navigational equipment e.g. AIS, DGPS, Gyro, Radar, ECDIS, etc.

- 3.3.5 Multifunction workstations **shall** offer default display configurations for route monitoring, collision avoidance tasks, conning display and alarm monitoring, selectable by one operator action at each workstation.

3.4 INTERFACES

- 3.4.1 Each workstation or workstation serial interface **shall** accept a minimum of three (3) IEC 61162-1 inputs and two (2) IEC 61162-2 inputs.
- 3.4.2 In addition to the mandatory interface sentences and equipment listed in IEC 62388 Section H, the radar **shall** interface with depth sounders and wind anemometers in accordance with IEC 61162-1.
- 3.4.3 In addition to the mandatory interfaces listed in IEC 61174 Section 4.12, the ECDIS **shall** interface with depth sounders, wind anemometers, radar tracked targets (TT formerly known as Automatic Radar Plotting Aids (ARPA)), Automatic Identification System (AIS), Navtex and Autopilot, in accordance with IEC 61162-1 and IEC 61162-2.
- 3.4.4 Workstations **shall** integrate with other like workstations using redundant Ethernet network infrastructure.
- 3.4.5 An additional workstation video output port **shall** be available for mirror image video on a secondary display.
- 3.4.6 The video output for a secondary display **shall** have a native resolution matching the requirements of the following display resolutions at a minimum:
- a) 4:3 – XGA+ (1280X960) or
 - b) 5:4 – SXGA (1280X1024) or
 - c) 16:9 – HD1080 (1920X1080) or
 - d) 8:5 – WUXGA (1920X1200)
- 3.4.7 An additional HID interface port or HID interface port splitter/hub **shall** be available to allow workstation primary functions to be operated from a remote operating position in addition to the main controls.
- 3.4.8 Workstations **shall** have a minimum of one video input interface for Picture-in-Picture (PIP) application.

3.5 WORKSTATION NETWORK

- 3.5.1 Networked workstations **shall** share at least the following functions and resources:
- a) own ship navigation sensor information
 - b) display colour palette
 - c) day/night mode settings
 - d) route plans

Requirements

- e) active route monitoring
 - f) Tracked Targets (TT) formerly known as Automatic Radar Plotting Aids (ARPA)
- 3.5.2 It **shall** be possible to operate workstations independently from others on the same network.
- 3.5.3 Networked workstation navigation sensor inputs/outputs **shall** be monitored and distributed by a fully redundant data management system.
- 3.5.4 Networked workstations **shall** use a Consistent Common Reference System (CCRS) to ensure that different sensor information is distributed to the relevant parts of the network. The common reference system will ensure that all parts of the network are provided with the same data from the same source.
- 3.5.5 When multiple sensors/sources (e.g. Differential Global Positioning System DGPS #1 and DGPS #2) are available it **shall** be possible to select an individual sensor for use across networked workstations.
- 3.5.6 When a selected sensor is in use, its identification **shall** be indicated on the display.
- 3.5.7 When sensor data is compromised, it **shall** be indicated on the display.
- 3.5.8 Networked workstations **shall** use a Consistent Common Reference Point (CCRP) for all spatially related information.

3.6 POWER REQUIREMENTS

- 3.6.1 Below deck equipment such as workstations and transceivers (down mast), etc. **shall** operate on 115 VAC, $\pm 10\%$, single phase, 60 Hz $\pm 5\%$. This may be internally converted for subsystem requirements.
- 3.6.2 Each workstation **shall** be powered from and protected by a single Det Norske Veritas (DNV) or Lloyd's Register and American Bureau of Shipping (ABS) type-approved Uninterruptable Power Supply (UPS) capable of handling a twenty (20) minute blackout at 100% load.
- 3.6.3 X band transceivers (up-mast) and turning units **shall** accept the following input power:
- a) 115 VAC, $\pm 10\%$, single phase, 60 Hz $\pm 5\%$ and
 - b) 220 VAC, single phase, $\pm 10\%$, 60 Hz $\pm 5\%$
- 3.6.4 S band transceivers (up-mast) and turning units **shall** accept the following input power:
- a) 115 VAC, $\pm 10\%$, single phase, 60 Hz $\pm 5\%$ and
 - b) 220 VAC, single phase, $\pm 10\%$, 60 Hz $\pm 5\%$ and
 - c) 220 VAC, three phase, $\pm 10\%$, 60 Hz $\pm 5\%$ or 440 VAC, three phase, VAC, $\pm 10\%$, 60 Hz $\pm 5\%$

3.7 FAULT DIAGNOSIS AND SERVICING

- 3.7.1 System maintenance philosophy and maintenance task performance *shall* be “repair by replacement” to lowest replaceable unit (LRU).
- 3.7.2 Diagnostic software and hardware *shall* be provided to assist system maintainers in troubleshooting.
- 3.7.3 Workstations *shall* have a “protected technician mode” to allow software installations, operating system management, backups, etc.
- 3.7.4 Workstation maintenance access *shall* be password protected.
- 3.7.5 Workstations *shall* be equipped for default base level system recovery with recovery instructions.
- 3.7.6 Workstations *shall* be equipped with system imaging tools or configuration management tools to back up and restore the current system configuration.
- 3.7.7 For maintenance purposes, an override switch for S band antenna rotation and Radio Frequency (RF) transmission *shall* be available as a separate lockable switch.
- 3.7.8 A radar performance monitor *shall* be provided with each turning unit.

3.8 ELECTRONIC CHARTS

- 3.8.1 Workstations *shall* be able to utilize Electronic Navigational Charts (ENC) vector chart formats released by Canadian Hydrographic Services (CHS), National Oceanic and Atmospheric Administration (NOAA) and other members of the International Hydrographic Office (IHO), built to the IHO’s S-57 standard
- 3.8.2 Workstations *shall* be able to utilize Raster Navigation Charts (RNC) produced by CHS and NOAA in the BSB format, meeting the requirements for ECDIS operating in Raster Chart Display System (RCDS) mode within the following time limits:
 - a) BSB v3 (Unencrypted BSB charts from CHS and NOAA) no later than twelve (12) months from contract award date.
 - b) BSB v4 (Encrypted BSB charts from CHS) no later than twelve (12) months from contract award date.

Note: Encryption source code and sample BSB v4 charts are available for development purposes upon signing a non-disclosure agreement with CHS.

- 3.8.3 Workstations *shall* have the option to select manual or automatic chart loading.
- 3.8.4 Electronic chart installations, updates and corrections on one workstation *shall* automatically replicate to other workstations if selected.
- 3.8.5 Workstation S-57 chart presentation shall utilize selectable chart information layers (e.g. base display, standard display, full display) that allow filtering of chart information features displayed.

Requirements

- 3.8.6 User configured S-57 chart presentation modes **shall** be available that allow the selection of specific chart information features for vessel operational environments such as open sea, anchoring, confined waters, etc.

3.9 RADAR PERFORMANCE

3.9.1 Antennas

- 3.9.1.1. X Band radar antenna **shall** be provided in the following approximate lengths:

a) Four (4) to five (5) foot

Note: X Band radar antenna measuring four (4) feet in length will not be used for navigation and are not required to meet regulatory requirements listed in 3.1.2.

b) Five (5) to Six (6) foot

c) Eight (8) foot

- 3.9.1.2. S Band radar antenna **shall** be approximately twelve (12) feet in length or less.

- 3.9.1.3. High speed X band radar antenna rotation rates **shall** be available for high speed craft operating at speeds of greater than 30 Knots.

3.9.2 Transceivers

- 3.9.2.1. X-Band transceivers operating in the 9.2 – 9.5 GHz range **shall** be provided with nominal output powers of ten (10) kW and twenty-five (25) kW.

- 3.9.2.2. S-band transceivers operating in the 2.9 – 3.1 GHz range **shall** be provided with nominal output power of thirty (30) kW.

- 3.9.2.3. X and S-band radar systems **shall** be compatible with radar beacons, SARTs and radar enhancers.

- 3.9.2.4. All radar transceiver configurations **shall** be combined up-mast scanner/transceiver unit.

- 3.9.2.5. A high power X-band (~25 kW) and S-Band (~30 kW) transceiver configuration option **shall** also be down-mast/bulkhead mounted.

- 3.9.2.6. Radars **shall** be capable of eliminating or suppressing mutual interference caused by other on-board radar(s), operating in the same band. The method used to suppress mutual interference may include, but not be limited to, the use of a mutual interference suppression trigger input to momentarily suppress or delay the video at each display.

3.9.3 Interswitching

- 3.9.3.1. An interswitching feature **shall** allow up to three (3) radar transceivers to be operated and displayed from up to four (4) workstations in any combination.

3.9.4 Tuning

- 3.9.4.1. Automatic tuning capabilities *shall* be provided.

3.9.5 Composite Radar Function

- 3.9.5.1. Where multiple radars are fitted, a composite 360 degree radar picture *shall* be available by combining radar signals from multiple transceivers to eliminate sector blind spots.
- 3.9.5.2. When using the composite radar function, control of all transceivers *shall* be possible from a single workstation.

3.9.6 Signal Processing and Clutter Suppression

- 3.9.6.1. Advanced signal processing techniques and automatic clutter suppression techniques *shall* be used to enhance the capability of identifying small targets in a cluttered environment such as ice, sea, and rain, without having to manually adjust clutter or gain.
- 3.9.6.2. Manual clutter suppression techniques *shall* also be available to the operator.

3.10 NAVIGATION TOOLS

3.10.1 Voyage Records

- 3.10.1.1. Workstations *shall* allow the playback of approximately six (6) hours of recorded voyage data under normal operating conditions.
- 3.10.1.2. Saved voyage records *shall* be transportable by USB flash drive and playable on other PCs running the ECDIS software.
- 3.10.1.3. Automatic deletion of unneeded voyage records by maximum storage time or file size *shall* be possible.

3.10.2 Routes

- 3.10.2.1. It *shall* be possible to create a destination from given coordinates and plot a temporary route from the vessel's location to that destination.
- 3.10.2.2. Routes *shall* be transportable (e.g. USB flash drive, etc.) between compatible workstations (same or different vessel).
- 3.10.2.3. An active route *shall* supply Estimated Time of Arrival (ETA) to the end of the route and to the end of the current waypoint.
- 3.10.2.4. Search and Rescue (SAR) route pattern generation *shall* be available.
- 3.10.2.5. SAR pattern generation *shall* incorporate operator selectable parameters such as limits of total search area, starting point, type of search pattern and turning points.

Requirements

3.10.3 Target Tracking

- 3.10.3.1. Workstations **shall** be capable of acquiring and automatically tracking a minimum of seventy-five (75) targets.
- 3.10.3.2. Of the seventy-five (75) targets tracked, workstations **shall** be capable of tracking a minimum of forty (40) active AIS targets.
- 3.10.3.3. Fusible radar TT (ARPA) and AIS targets **shall** be possible to avoid presentation of two (2) target symbols for the same physical target.

3.10.4 Chart Radar

- 3.10.4.1. Chart radar as described in MSC.191 (79) para 7.2.2, Display of Chart Information on Radar **shall** be available.
- 3.10.4.2. Chart radars **shall** be able to utilize S-57 Electronic Navigational Charts (ENC) vector charts released by members of the International Hydrographic Office (IHO).

3.10.5 Radar Overlay on Charts

- 3.10.5.1. Multifunction workstation chart display **shall** be capable of incorporating appropriately scaled radar information as an overlay.

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Requirements**Appendix A GLOSSARY****Table 2 Glossary**

ABS	American Bureau of Standards
AIS	Automatic Identification System
ARCS	Admiralty Raster Charts Service
ARPA	Automatic Radar Plotting Aids
BSB	Raster Charts in .bsb format
CCG	Canadian Coast Guard
CCRP	Consistent Common Reference Point
CCRS	Consistent Common Reference System
CD	Compact Disc
cd/m ²	Candela per square metre
COTS	Commercial off the Shelf
CPA	Closest Point of Approach
CSA	Canada Shipping Act
CSMA/CD	Carrier Sense Multiple Access with Collision Detection
DFO	Department of Fisheries and Oceans
DGPS	Differential Global Positioning System
DHCP	Dynamic Host Configuration Protocol
DNC	Digital Nautical Chart
DNV	Det Norske Veritas
DVD	Digital Versatile Disc
DVI-I	Digital Visual Interface – Interlaced
ECDIS	Electronic Chart Display and Information System
ECS	Electronic Chart System
ENC	Electronic Navigational Charts
ETA	Estimated Time of Arrival
GUI	Graphical User Interface
HID	Human Interface Device

Requirements

IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IHO	International Hydrographic Office
IMO	International Maritime Organization
INS	Integrated Navigation System
IPv4	Internet Protocol Version 4
KTS	Knots
LRU	Lowest Replaceable Unit
MSC	Maritime Safety Committee
OPI	Office of Primary Interest
PC	Personal Computer
PIP	Picture in Picture
RF	Radio Frequency
RNC	Raster Navigational Charts
RSS	Radio Standards Specification
S-57	A vector interchange format used for maritime charts. The currently common profile is known as ENC
S-63	International Hydrographic Organization standard for encrypting and securing electronic navigational chart data
SAR	Search and Rescue
SLP	Service Location Protocol
SNMP	Simple Network Management Protocol
SOLAS	Safety of Life at Sea
SOW	Statement of Work
TAC	Technical Acceptance Certificate
TSOR	Technical Statement of Requirement
TT	Target Tracking <i>Note: Target Tracking (TT) as defined in MSC.192 (79) has replaced Automatic Radar Plotting Aids (ARPA), which is defined by IMO Assembly resolution A.823 (19).</i>
UPS	Uninterruptible Power Supply
USB	Universal Serial Bus
V	Volt
VA	Volt Amps

Requirements

VAC	Volts alternating Current
VGA	Video Graphics Array

ANNEX C

**SAMPLE PWGSC-TPSGC 942, CALL-UP AGAINST
A STANDING OFFER FORM**

**RADAR AND ELECTRONIC CHART DISPLAY AND
INFORMATION SYSTEMS**

F7048-140120



Call-up Against a Standing Offer Commande subséquente à une offre à commandes

Ship to - Expédier à

To the supplier: The standing offer identified below is accepted as follows: You are required to supply the goods or services, or both, shown below at the prices or on the pricing basis stated and in accordance with the other conditions stated in the standing offer. Only goods or services, or both, included in the standing offer will be supplied in the call-up against the standing offer.

Supplier - Fournisseur

Au fournisseur: L'offre à commandes indiquée ci-dessous est acceptée selon les modalités suivantes : Vous devez fournir les biens ou les services, ou les deux, indiqués ci-dessous selon les prix ou la base de tarification établie, et conformément avec les autres conditions stipulées dans l'offre à commandes. Seuls les biens ou les services, ou les deux, inclus dans l'offre à commandes seront fournis dans la commande subséquente à l'offre à commandes.

Security: The call-up includes security provisions.

Sécurité : La demande comprend des exigences en matière de sécurité.

NO YES If YES, attach a SRCL to the call-up
NON OUI Si OUI, joindre une LVERS à la demande

Invoices must be sent in accordance with - Les factures doivent être envoyées selon :

The detailed instructions in the standing offer The address shown in the "Ship to" block Special instructions below
Les instructions détaillées dans l'offre à commandes L'adresse indiquée dans la case « Expédier à » Les instructions particulières ci-dessous

Each shipment must be accompanied by a packing or delivery slip. All invoices, bills of lading and packing slips must show the following reference numbers.

Financial Code(s) - Code financier(s)

Chaque expédition doit être accompagnée d'un bordereau d'emballage ou de livraison. Les factures, connaissements et bordereaux d'emballage doivent tous porter les numéros de référence suivants.

Standing Offer No. - N° de l'offre à commandes

Requisition No. - N° de demande
Order. Off. - Bur. dem. YY - AA Serial No. - N° de série

Client Reference No. (optional)
N° de référence du client (facultatif)

The representative of the identified User signing the call-up form must indicate his or her physical address. This address will constitute the address most connected with the supply and will determine, where applicable, the place of supply for this procurement.
Le représentant de l'utilisateur désigné qui signe le formulaire de commande subséquente doit indiquer son adresse municipale, qui constituera l'adresse la plus associée à l'approvisionnement et qui déterminera, le cas échéant, le lieu d'approvisionnement pour cette commande.

Amendment No. N° de modification	Previous Value (\$) Valeur précédente (\$)	Value of increase or decrease (\$) Valeur de l'augmentation ou diminution (\$)	Total estimated expenditures or revised Total des dépenses estimatives ou révisées
-------------------------------------	---	---	---

Item No. N° de particelle	NATO Stock No. / Item Description N° de nomenclature de l'OTAN / Description de l'article	U. of I. U. de d.	Quantity Quantité	Unit Price Prix unitaire (\$)	Extended Price Prix calculé (\$)

Special Instructions - Instructions particulières

Total

For further information, call - Pour renseignements supplémentaires, contacter		Delivery required by - Livraison requise le (YYYY-MM-DD) (AAAA-MM-JJ)
Name - Nom	Telephone No. - N° de téléphone	

For internal purposes only - Pour usage interne seulement
Pursuant to subsection 32(1) of the *Financial Administration Act*, funds are available.
En vertu du paragraphe 32(1) de la *Loi sur la gestion des finances publiques*, des fonds sont disponibles.

Approved for the Minister - Approuvé pour le Ministre

Signature (Mandatory - Obligatoire) Date (YYYY-MM-DD - AAAA-MM-JJ)

Signature (Mandatory - Obligatoire) Date (YYYY-MM-DD - AAAA-MM-JJ)



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard
MECTS-#3531401

Garde côtière
canadienne

Vessel Radar and ECDIS Evaluation Plan



Canadian Coast Guard

EP

Published under the Authority of:

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Fisheries and Oceans Canada
Canadian Coast Guard
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GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM – EVALUATION
PLAN

FINAL – SEPTEMBER 2015

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Chapter 1 PROPOSAL EVALUATION

1.1 EVALUATION PROCESS

The successful bidder will be selected based on a best-value basis determined through the following evaluation process:

1. To be considered responsive, a bid must meet all of the MANDATORY requirements of this solicitation. Bids not meeting ALL THE MANDATORY requirements given in both the Statement of Work and the Technical Statement of Requirements, and attested to in the accompanying Compliance Matrices (see Chapter 2 – Evaluation Plan; Mandatory Requirements M4 and M5) will be given no further consideration.
2. Bids will be evaluated in the following order:
 - i. Evaluations of proposal – All Terms and Conditions have been met.
 - ii. Evaluation of Technical Mandatory Requirements as detailed in section Annex D – Evaluation Plan;
 - iii. An Acceptance Test may be conducted at Canada’s discretion, as per paragraph 1.2.3 of this document;
 - iv. Price.

1.2 TECHNICAL EVALUATION

1.2.1 Phase 1- Mandatory Requirements and Proof of Compliance

Bidder's Name:				
Mandatory Requirement	Section	Bidder's Response	Met / Not Met	Proof of compliance
M1. Transmitting radio approved by Industry Canada and possesses a Technical Acceptance Certificate (TAC)	TSOR 3.1.1			Recent Copy of TAC and supporting documentation
M2. Equipment is approved by Transport Canada	TSOR 3.1.2			Recent copies of certification and supporting documentation
M3. Equipment is type-approved for ECDIS	TSOR 3.1.3			Recent Copies of Certification and supporting documentation
M4. Compliance Matrix for Statement of Work	2.1			Supporting documentation to prove compliance
M5. Compliance Matrix for Technical Statement of Requirements	2.2			Supporting documentation to prove compliance

For M4, and M5, bidders shall provide a Compliance Matrix, indicating their compliance to each one of the mandatory requirements of the Statement of Work (SOW) and Technical Statement of Requirements (TSOR).

An example of a Compliance Matrix has been included in chapter 2 for demonstration purposes only.

The bidders shall provide a separate column within the compliance matrix to capture information related to proof of compliance. To satisfy this criteria of technical evaluation, bidder shall provide in that column, references to the supporting proof of compliance documentation e.g. certification copies, product brochures, GUI screen-shots, product pictures, system specifications, as appropriate with their bid. Bidder must prove compliance to each item M1-M5 with appropriate supporting documentation, to show that all CCG's mandatory specifications are met as listed in the Technical Statement of Requirements (TSOR) and the Statement of Work (SOW) at the time of bid submission.

It is the responsibility of the bidders to clearly reference and list the proof of compliance documentation in order for Canada to validate that their proposed solution meets all MANDATORY requirements given in both the Statement of Work and the Technical Statement of Requirements, and attested to in the accompanying Compliance Matrices (see Chapter 2 of Annex D – Evaluation Plan; Mandatory Requirements M4 and M5). Mandatory requirements can be identified with a *shall* throughout Annex A – Statement of Work and Annex B – Technical Statement of Requirements.

Bids failing to provide adequate proof of compliance to all MANDATORY requirements given in both the Statement of Work and the Technical Statement of Requirements, and attested to in the accompanying Compliance Matrices (see Chapter 2 of Annex D – Evaluation Plan; Mandatory Requirements M4 and M5) will be given no further consideration in this phase.

1.2.2 Acceptance test

At the discretion of Canada, an acceptance test may be conducted at the contractor's facility to seek demonstration of the proposed Commercial of the Shelf (COTS) solution. Only bids having met all Technical Mandatory Requirements in the Technical Evaluation, listed in 1.2.1, shall continue on to this stage of the Evaluation. The Acceptance Test shall be conducted by Canada's authorized personnel. The contractor shall be asked to set up the proposed equipment as per their bid proposal and facilitate live product demonstration and testing to seek compliance to the Annex B - TSOR requirements listed below:

#	TSOR reference	#	TSOR reference
1	2.1-2.4	8	3.6.1-3.6.2
2	3.1- 3.2	9	3.7.2- 3.7.6
3	3.3.1-3.3.3	10	3.8.1
4	3.3.5	11	3.8.3 - 3.8.6
5	3.4.4- 3.4.8	12	3.9.6
6	3.5.1-3.5.4	13	3.10.1 - 3.10.2
7	3.5.8	14	3.10.4 - 3.10.5

2.2 TECHNICAL STATEMENT OF REQUIREMENTS

Sample Compliance Matrix - Technical Statement of Requirements				
Item Reference	Item Description	Compliant (Y/N)	Comments	Proof of compliance
3.1.1	Proof of certification of transmitting radio-navigation equipment in accordance with Radio Standards Specification RSS-238 by Industry Canada shall be supplied in the form of a Technical Acceptance Certificate (TAC), issued by the Certification and Engineering Bureau of Industry Canada, or an Industry Canada recognized body.	Y		
3.1.2	Radar proof of compliance shall be provided for the appropriate Maritime Safety Committee performance standard MSC.192(79) Annex 34 and International Electrotechnical Commission testing standard IEC 62388 referenced by the International Convention for SOLAS, and Canada Shipping Act CSA 2001, Navigation Safety Regulations SOR/2005-134.	Y		
3.2.1	Human Interface Device (HID) controls necessary to operate the workstation shall be dedicated hardware including a keyboard and trackball.	Y		
Etc.				

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Solicitation No. - N° de l'invitation
F7048-140120/001/QF
Client Ref. No. - N° de réf. du client
F7048-140120

Amd. No. - N° de la modif.
File No. - N° du dossier
103qf7048-140120

Buyer ID - Id de l'acheteur
103qf
CCC No./N° CCC - FMS No./N° VME

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4. Payment
5. Invoicing Instructions
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8. Use and Translation of Written Materials

List of Attachments:

Schedule 1	Pricing Schedule
Annex A	Statement of Work
Annex B	Technical Statement of Requirement
Annex C	Sample PWGSC-TPSGC 942, Call-up Against a Standing Offer form
Annex D	Evaluation Plan

PART 1 - GENERAL INFORMATION

1. Introduction

The Request for Standing Offers (RFSO) is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;
- Part 3 Offer Preparation Instructions: provides offerors with instructions on how to prepare their offer to address the evaluation criteria specified;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Financial and Insurance Requirements: includes specific requirements that must be addressed by offerors; and
- Part 7 7A, Standing Offer, and 7B, Resulting Contract Clauses:
 - 7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;
 - 7B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer.

The attachments include the Pricing Schedule, the Statement of Work, the Technical Statement of Requirements, sample PWGSC-TPSGC 942, Call-up Against a Standing Offer form and the Evaluation Plan.

The requirement is subject to the provisions of the Agreement on Internal Trade (AIT). The World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-Peru Free Trade Agreement (CPGTA) and the Canada-Chile Free Trade Agreement (CCFTA) do not apply due to the nature of the requirement.

2. Summary

The Canadian Coast Guard (CCG) has a requirement to procure replacement Navigational Radar and Electronic Chart Display and Information Systems (Radar and ECDIS) to be installed on large Coast Guard vessels across Canada under the International Maritime Organization (IMO) Carriage Requirements. The equipment currently fitted on CCG vessels is no longer supported and has reached its end of life.

Public Works and Government Services Canada (PWGSC) intends to put in place a five (5) year National Individual Standing Offer (NISO), with two (2) additional one (1) year option periods, to procure the required Radar and ECDIS equipment. The NISO will also include provisions to obtain Maintenance and Operation Training for CCG technical staff.

Solicitation No. - N° de l'invitation
F7048-140120/001/QF
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File No. - N° du dossier
103qf7048-140120

Buyer ID - Id de l'acheteur
103qf
CCC No./N° CCC - FMS No./N° VME

As per the Integrity Provisions under section 01 of Standard Instructions 2006 and 2007, offerors must provide a list of all owners and/or Directors and other associated information as required. Refer to section 4.21 of the Supply Manual for additional information on the Integrity Provisions.

For services requirements, Offerors must provide the required information as detailed in article 2.3 of Part 2 of the Request for Standing Offers (RFSO), in order to comply with Treasury Board policies and directives on contracts awarded to former public servants.

The requirement is subject to a preference for Canadian goods and/or services.

3. Security Requirement

There is no security requirement associated with this requirement.

4. Debriefings

Offerors may request a debriefing on the results of the request for standing offers process. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of the results of the request for standing offers process. The debriefing may be in writing, by telephone or in person.

PART 2 - OFFEROR INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the Request for Standing Offers (RFSO) by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the clauses and conditions of the Standing Offer and resulting contract(s).

The 2006 (2015-07-03) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 120 days

2. Submission of Offers

Offers must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the Request for Standing Offers.

Due to the nature of the Request for Standing Offers, transmission of offers by facsimile to PWGSC will not be accepted.

3. Enquiries - Request for Standing Offer

All enquiries must be submitted in writing to the Standing Offer Authority no later than **ten (10)** calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.

Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that offerors do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

4. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Offerors may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their offer, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the offerors.

PART 3 - OFFER PREPARATION INSTRUCTIONS

1. Offer Preparation Instructions

Canada requests that the offeror provide their offer in separately bound sections as follows:

Section I: Technical Offer (three (3) hard copies and two (2) soft copies on CD);
Section II: Financial Offer (one (1) hard copy and two (2) soft copies on CD);
Section III: Certifications (one (1) hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial offer only. No prices must be indicated in any other section of the offer.

Canada requests that offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, offerors should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Offer

In their technical offer, Offerors should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Offer

The offeror must submit their financial offer in accordance with Schedule 1 - Pricing Schedule. The total amount of Applicable Taxes must be shown separately.

Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid non-responsive.

Section III: Certifications

The offeror must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

- (a) Offers will be assessed in accordance with the entire requirement of the Request for Standing Offers including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the offers.

Evaluation of Price

1. The price of the offer will be evaluated as follows:
 - a. Canadian-based offerors must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded.
 - b. foreign-based offerors must submit firm prices, Canadian customs duties, excise taxes and Applicable Taxes excluded. Canadian customs duties and excise taxes payable by Canada will be added, for evaluation purposes only, to the prices submitted by foreign-based offerors.
2. Unless the Request for Standing Offers (RFSO) specifically requires offers to be submitted in Canadian currency, offers submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the RFSO closing date, or on another date specified in the RFSO, will be applied as a conversion factor to the offers submitted in foreign currency.
3. Although Canada reserves the right to issue the Standing Offer either on an FOB plant or FOB destination, Canada requests that offerors provide prices FOB their plant or shipping point and FOB destination. Offers will be assessed on an FOB destination basis.
4. For the purpose of the RFSO, offerors with an address in Canada are considered Canadian-based offerors, and offerors with an address outside of Canada are considered foreign-based offerors.

Reference Annex "D" - Evaluation Plan for further details.

PART 5 - CERTIFICATIONS

Offerors must provide the required certifications and additional information to be issued a standing offer.

The certifications provided by Offerors to Canada are subject to verification by Canada at all times. Canada will declare an offer non-responsive, will have the right to set-aside a standing offer, or will declare a contractor in default if any certification made by the Offeror is found to be untrue whether made knowingly or unknowingly during the offer evaluation period, during the Standing Offer period, or during the contract period.

The Standing Offer Authority will have the right to ask for additional information to verify the Offeror's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Standing Offer Authority will render the offer non-responsive, result in the setting aside of the Standing Offer or constitute a default under the Contract.

1. Certifications Required with the Offer

Offerors must submit the following duly completed certifications as part of their offer.

1.1 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Offeror must provide with its offer, a completed [Declaration Form](http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form](http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

1.2 Additional Certifications Required with the Offer

1.2.1 Canadian Content Certification

This procurement is conditionally limited to Canadian goods.

Subject to the evaluation procedures contained in the request for standing offer, offerors acknowledge that only offers for items with a certification that the item(s) offered are Canadian goods, as defined in clause [A3050T](#), may be considered.

Failure to provide this certification completed with the offer will result in the item(s) offered being treated as non-Canadian goods.

- Offerors must clearly identify beside each item listed in the request for standing offer document which items meet the definition of Canadian good and complete the following certification.

The Offeror certifies that:

() the item(s) offered and identified as Canadian goods are Canadian goods as defined in paragraph 1 of clause [A3050T](#).

1.2.1.1 Canadian Content Definition

1. Canadian good: A good wholly manufactured or originating in Canada is considered a Canadian good. A product containing imported components may also be considered Canadian for the purpose of this policy when it has undergone sufficient change in Canada, in a manner that satisfies the definition specified under the North American Free Trade Agreement (NAFTA) Rules of Origin. For the purposes of this determination, the reference in the NAFTA Rules of Origin to "territory" is to be replaced with "Canada". (Consult Annex 3.6 (9) of the *Supply Manual*.)

2. Canadian service: A service provided by an individual based in Canada is considered a Canadian service. Where a requirement consists of only one service, which is being provided by more than one individual, the service will be considered Canadian if a minimum of 80 percent of the total bid price for the service is provided by individuals based in Canada.

3. Variety of goods: When requirements consist of more than one good, one of the two methods below is applied:

- a. aggregate evaluation: no less than 80 percent of the total bid price must consist of Canadian goods; or,
- b. item by item evaluation: in some cases, the bid evaluation may be conducted on an item-by-item basis and contracts may be awarded to more than one supplier. In these cases, suppliers will be asked to identify separately each item that meets the definition of Canadian goods.

4. Variety of services: For requirements consisting of more than one service, a minimum of 80 percent of the total bid price must be provided by individuals based in Canada.

5. Mix of goods and services: When requirements consist of a mix of goods and services, no less than 80 percent of the total bid price must consist of Canadian goods and services (as defined above).

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6 (9), Example 2, of the *Supply Manual*.

6. Other Canadian goods and services: Textiles: Textiles are considered to be Canadian goods according to a modified rule of origin, copies of which are available from the Clothing and Textiles Division, Commercial and Consumer Products Directorate.

2. Certifications Precedent to the Issuance of a Standing Offer and Additional Information

The certifications and additional information listed below should be submitted with the offer, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Standing Offer Authority will inform the Offeror of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the offer non-responsive.

2.1 Integrity Provisions – List of Names

Offerors who are incorporated, including those submitting offers as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Offeror.

Offerors submitting offers as sole proprietorship, as well as those submitting offers as a joint venture, must provide the name of the owner(s).

Offerors submitting offers as societies, firms or partnerships do not need to provide lists of names.

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F7048-140120

Amd. No. - N° de la modif.
File No. - N° du dossier
103qf7048-140120

Buyer ID - Id de l'acheteur
103qf
CCC No./N° CCC - FMS No./N° VME

2.2 Federal Contractors Program for Employment Equity - Standing Offer Certification

By submitting an offer, the Offeror certifies that the Offeror, and any of the Offeror's members if the Offeror is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada-Labour's website.

Canada will have the right to declare an offer non-responsive, or to set-aside a Standing Offer, if the Offeror, or any member of the Offeror if the Offeror is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of issuing of a Standing Offer or during the period of the Standing Offer.

PART 6 - FINANCIAL REQUIREMENTS

1. Financial Capability

1.1 Financial Capability Requirement: The Offeror must have the financial capability to fulfil this requirement. To determine the Offeror's financial capability, the Standing Offer Authority may, by written notice to the Offeror, require the submission of some or all of the financial information detailed below during the evaluation of offers. The Offeror must provide the following information to the Standing Offer Authority within fifteen (15) working days of the request or as specified by the Standing Offer Authority in the notice:

- a. Audited financial statements, if available, or the unaudited financial statements (prepared by the Offeror's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Offeror's last three fiscal years, or for the years that the Offeror has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
- b. If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Standing Offer Authority, the Offeror must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Standing Offer Authority requests this information.
- c. If the Offeror has not been in business for at least one full fiscal year, the following must be provided:
 - i. the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - ii. the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Standing Offer Authority requests this information.
- d. A certification from the Chief Financial Officer or an authorized signing officer of the Offeror that the financial information provided is complete and accurate.
- e. A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Offeror outlining the total of lines of credit granted to the Offeror and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Standing Offer Authority requests this information.

1.2 If the Offeror is a joint venture, the financial information required by the Standing Offer Authority must be provided by each member of the joint venture.

1.3 If the Offeror is a subsidiary of another company, then any financial information in 1. (a) to (e) above required by the Standing Offer Authority must be provided by the ultimate parent company. Provision of parent company financial information does not satisfy the requirement for the provision of the financial information of the Offeror, and the financial capability of a parent cannot be substituted for the financial capability of the Offeror itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.

1.4 Financial Information Already Provided to PWGSC: The Offeror is not required to resubmit any financial information requested by the Standing Offer Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:

- A. the Offeror identifies to the Standing Offer Authority in writing the specific information that is on file and the requirement for which this information was provided; and

B. the Offeror authorizes the use of the information for this requirement.

It is the Offeror's responsibility to confirm with the Standing Offer Authority that this information is still on file with PWGSC.

1.5 Other Information: Canada reserves the right to request from the Offeror any other information that Canada requires to conduct a complete financial capability assessment of the Offeror.

1.6 Confidentiality: If the Offeror provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c. A-1, Section 20(1) (b) and (c).

1.7 Security: In determining the Offeror's financial capability to fulfil this requirement, Canada may consider any security the Offeror is capable of providing, at the Offeror's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

PART 7 - STANDING OFFER AND RESULTING CONTRACT CLAUSES

A. STANDING OFFER

1. Offer

The Offeror offers to fulfil the requirement in accordance with the Statement of Work at Annex A and the Technical Statement of Requirements at Annex B.

2. Security Requirement

There is no security requirement associated with this requirement.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Standing Offer and resulting contract(s) by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2005 (2014-09-25) General Conditions - Standing Offers - Goods or Services, apply to and form part of the Standing Offer.

3.2 Standing Offer Reporting

The Offeror must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Standing Offer. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card. The report will include, but not be limited to, the client issued Call-up Number, the item(s) ordered, quantity of each item ordered, the value of each Call-up and any comments regarding the individual Call-up.

The Offeror must provide this data in accordance with the reporting requirements detailed below. If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Offeror must still provide a "nil" report.

The data must be submitted on a "quarterly basis" to the PWGSC Standing Offer Authority.

The quarterly reporting periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31;

4th quarter: January 1 to March 31.

The data must be submitted to the PWGSC Standing Offer Authority no later than 15 calendar days after the end of the reporting period.

4. Term of Standing Offer

4.1 Period of the Standing Offer

The period for making call-ups against the Standing Offer is for five (5) years from the date of award of Standing Offer, _____ (dates to be inserted after Standing Offer award).

4.2 Extension of Standing Offer

If the Standing Offer is authorized for use beyond the initial period, the Offeror offers to extend its offer for two (2) additional one (1) year periods, from _____ to _____. All terms and conditions remain the same, but the pricing will be subject to negotiation prior to its use beyond the initial period.

The Offeror will be advised of the decision to authorize the use of the Standing Offer for an extended period by the Standing Offer Authority ninety (90) days before the expiry date of the Standing Offer. A revision to the Standing Offer will be issued by the Standing Offer Authority.

5. Authorities

5.1 PWGSC Standing Offer Authority

The PWGSC Standing Offer Authority is:

Public Works and Government Services Canada
Acquisitions Branch
Electronics, Simulators and Defence Systems Division
11 Laurier Street, Place du Portage III, 8C2, Gatineau, QC K1A 0S5 Canada
Attention: Kathie Eddy
Telephone: 819-956-0768
Facsimile: 819-956-5650
E-mail: kathie.eddy@tpsgc-pwgsc.gc.ca

The PWGSC Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, he is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

5.2 Project Authority

The Project Authority for the Standing Offer is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____ - ____ - _____
Facsimile: ____ - ____ - _____
E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up under the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

5.3 CCG Requisition Authority

The CCG Requisition Authority for the Standing Offer is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____ - ____ - _____
Facsimile: ____ - ____ - _____
E-mail address: _____

The CCG Requisition Authority is responsible for reviewing and approving each Call-up, within the CCG delegation of authority, prior to issuance to the Standing Offer holder.

5.4 Offeror's Representative

General Enquiries and Delivery Follow-up: *(to be completed after Standing Offer award)*

Company Name: _____
Address: _____
Contact Name: _____
Position: _____
Telephone: _____
Facsimile: _____
E-mail: _____

6. Identified Users

The Identified User authorized to make call-ups against the Standing Offer is the **Canadian Coast Guard**.

All call-ups against the Standing Offer will be generated by the **CCG Requisition Authority**.

7. Call-up Procedures

The CCG regional representative will prepare the Call-up document and submit to the CCG Requisition Authority for authorization, up to \$25,000.00 CAD (Goods and Services Tax or Harmonized Sales Tax included). The Call-up will then be forwarded to the supplier by e-mail, with a c.c. to the PWGSC Standing Offer Authority.

Any call up over the \$25,000.00 CAD (Goods and Services Tax or Harmonized Sales Tax included) limit must also be approved by the PWGSC Standing Offer Authority, as well as the CCG Requisition Authority, prior to submitting to the supplier.

8. Call-up Instrument

The Work will be authorized or confirmed by the Identified User(s) using form PWGSC-TPSGC 942, Call-up Against a Standing Offer.

9. Limitation of Call-ups

Call-ups above **\$25,000.00 CAD** (Goods and Services Tax or Harmonized Sales Tax included) will be authorized by the Standing Offer Authority in accordance with the departmental delegation of authority.

Individual Call-ups shall not exceed **\$1,000,000.00 CAD** (Goods and Services Tax or Harmonized Sales Tax included).

10. Financial Limitation - Total

The total cost to Canada resulting from call-ups against the Standing Offer must not exceed the sum of **\$7,000,000.00 CAD** (Goods and Services Tax or Harmonized Sales Tax included) unless otherwise authorized in writing by the PWGSC Standing Offer Authority. The Offeror must not perform any work or services or supply any articles in response to call-ups which would cause the total cost to Canada to exceed the said sum, unless an increase is so authorized.

The Offeror must notify the PWGSC Standing Offer Authority as to the adequacy of this sum when 75 percent of this amount has been committed, or 4 months before the expiry date of the Standing Offer, whichever comes first. However, if at any time, the Offeror considers that the said sum may be exceeded, the Offeror must promptly notify the PWGSC Standing Offer Authority.

11. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- a) the call up against the Standing Offer, including any annexes;
- b) the articles of the Standing Offer, including its schedules;
- c) the general conditions 2005 (2015-09-03), General Conditions - Standing Offers - Goods or Services;
- d) the general conditions 2010A (2015-09-03), General Conditions - Goods (Medium Complexity);
- e) the supplemental general conditions 4001 (2013-01-28), Hardware Purchase, Lease and Maintenance;
- f) the supplemental general conditions 4003 (2010-08-16) Licensed Software;
- g) Annex A, Statement of Work;
- h) Annex B, Technical Statement of Requirements
- i) the Offeror's offer dated _____ (*insert date of offer*).

12. Certifications

12.1 Compliance

The continuous compliance with the certifications provided by the Offeror with its offer and the ongoing cooperation in providing associated information are conditions of issuance of the Standing Offer (SO). Certifications are subject to verification by Canada during the entire period of the SO and of any resulting contract that would continue beyond the period of the SO. If the Offeror does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Offeror in its offer is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and set aside the Standing Offer.

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File No. - N° du dossier
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Buyer ID - Id de l'acheteur
103qf
CCC No./N° CCC - FMS No./N° VME

13. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

B. RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer.

1. Statement of Work

The Contractor must provide the items or perform the Work described in the call-up against the Standing Offer.

2. Standard Clauses and Conditions

2.1 General Conditions

2010A (2015-09-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

2.2 Supplemental General Conditions

4001 (2013-01-28) Hardware Purchase, Lease and Maintenance, apply to and form part of the Contract.

4003 (2010-08-16) Licensed Software, apply to and form part of the Contract.

3. Term of Contract

3.1 Delivery Date

Delivery must be completed in accordance with the call-up against the Standing Offer.

4. Payment

4.1 Basis of Payment - Firm Unit Prices

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit prices, as specified in Schedule 1. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

4.2 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Standing Offer Authority before their incorporation into the Work.

4.3 Method of Payment - Multiple Payments

Canada will pay the Contractor upon completion and delivery of units in accordance with the payment provisions of the Contract if:

(a) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

(b) all such documents have been verified by Canada; and

(c) the Work delivered has been accepted by Canada.

4.4 Discretionary Audit - Non-commercial Goods and/or Services

The estimated amount of profit included in the Contractor's price or rate certification is subject to audit by Canada, before or after payment is made to the Contractor under the conditions of the Contract. The purpose of the audit would be to determine whether the actual profit earned on a single contract if only one exists, or the aggregate of actual profit earned by the Contractor on a series of negotiated firm price and fixed-time rate contracts performed during a particular period selected, is reasonable and justifiable based on the estimated amount of profit included in earlier price or rate certification(s). If the audit demonstrates that the actual profit is not reasonable and justifiable, as defined above, the Contractor must repay Canada the amount found to be in excess.

5. Invoicing Instructions

5.1 The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

5.2 Invoices must be distributed as follows:

(a) The original and one (1) copy must be forwarded to:

Canadian Coast Guard
200 Kent Street
Ottawa, Ontario, Canada K1A 0E6
Station: _____
Attention: _____ (to be inserted after Standing Offer award)
for certification and payment;

(b) One (1) copy must be forwarded to the appropriate consignee(s) and;

(c) One (1) copy must be forwarded to the Standing Offer Authority.

6. Delivery, Inspection and Acceptance

6.1 Excess Goods

The quantity of goods to be delivered by the Contractor is specified in the call-up against the Standing Offer. The Contractor remains liable for any shipment in excess of that quantity whether the excess quantity is shipped voluntarily or as a result of an error by the Contractor. Canada will not make any payment to the Contractor for goods shipped in excess of the specified quantity. Canada will not return the said goods to the Contractor unless the Contractor agrees to pay for all the costs related to the return, including but not limited to administrative, shipping and handling costs. Canada will have the right to deduct such costs from any invoice submitted by the Contractor.

6.2 Incomplete Assemblies

The Contractor must not ship incomplete assemblies unless the authorization for such shipment has been obtained before from the Contracting Authority.

6.3 Marking

The Contractor must ensure that the manufacturer's name and part number are clearly stamped or etched on each item for positive identification purposes.

6.4 Labelling

The Contractor must ensure that the manufacturer's and specification numbers appear on each item, either printed on the container or on an adhesive label of highest commercial standard affixed to the container.

6.5 Inspection and Acceptance

The Consignee at destination is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

7. Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Call-up and delivered:

Delivered Duty Paid (DDP), (destination address to be included in the Call-up), Incoterms 2000 for shipments from a commercial contractor.

The Contractor must ship the goods prepaid, including all delivery charges to (destination address to be included in the Call-up). Prepaid transportation costs must be shown as a separate item on the invoice, supported by a certified copy of the prepaid transportation bill of lading.

8. Use and Translation of Written Material

8.1. Unless provided otherwise in the Contract, copyright in any written material used, produced or delivered under the Contract belongs to its author or rightful owner. Canada has the right to use, copy and disclose, for government purposes, the written material related to the Work that is delivered to Canada.

8.2. If the Contract does not require the delivery of any written material in both of Canada's official languages, Canada may translate the written material into the other official language. The Contractor acknowledges that Canada owns the rights on the translation and that Canada is under no obligation to provide the translation to the Contractor. Canada agrees that any translation must include any copyright and any proprietary right notice that was part of the original. Canada acknowledges that the Contractor is not responsible for any technical errors or other problems that may arise as a result of the translation.

Schedule 1 – Pricing Schedule

Radar and Electronic Chart Display and Information Systems (ECDIS)

F7048-140120

SCHEDULE 1 - PRICING SCHEDULE

All prices included herein are provided in the following currency _____ (customs duties included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable).

TSOR Ref.	Item	Quantity	Estimated Delivery Time	Year 1 Pricing	Year 2 Pricing	Year 3 Pricing	Year 4 Pricing	Year 5 Pricing
2.1, 3.2, 3.3	Multifunction workstation including Radar and ECDIS software applications, CPU, HID	1						
2.2, 3.2	Standalone Radar workstation including Radar software application, CPU, HID	1						
2.2, 3.2	Standalone ECDIS workstation including ECDIS software application, CPU, HID	1						
2.3	Standalone ECDIS workstation upgraded to multifunction workstation including Radar software application	1						
2.3	Standalone Radar workstation upgraded to multifunction workstation including ECDIS software application	1						
2.3, 3.10.4	Radar or ECDIS workstation upgraded to include Chart Radar software application	1						
3.2.2	HID for remote operating station	1						
3.2.3 a)	Display sized to accommodate ~250 mm circle diameter radar and ECDIS (19" to 22" measured diagonally)	1						
3.2.3 b)	Display sized to accommodate ~320 mm circle diameter radar and ECDIS Display (23" to 27" measured diagonally)	1						
3.2.4 a)	Kit installation format for workstation with display sized to accommodate ~250 mm circle diameter	1						

3.9.2.6	Mutual interference suppressor	1							
3.9.3	Interswitch	List QTY 1 of each unique equipment model							
3.9.5	Composite Radar	1							
SOW Ref.									
1.3.1	Maintenance Training Course (English)	1							
	Maintenance Training Course (French)	1							
1.3.2	Operator CBT Training (English)	1							
	Operator CBT Training (French)	1							

Note: Do not duplicate pricing.
E.g. If composite radar functionality is incorporated in the interswitch, include the cost of the interswitch with the composite radar option and without.
E.g. If the interswitch functionality is incorporated in the network infrastructure, include the cost of the interswitch as \$0 with note indicating functionality included elsewhere.