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<b>Title - Sujet</b> GROUND SEGMENT SOLUT. (MEOSAR PROJ)	
<b>Solicitation No. - N° de l'invitation</b> W8474-16ME03/A	<b>Date</b> 2015-09-30
<b>Client Reference No. - N° de référence du client</b> W8474-16ME03	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$\$T-005-29512
<b>File No. - N° de dossier</b> 005st.W8474-16ME03	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2016-04-01</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
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<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE 101 COLONEL BY DRIVE ATTN: CHERIE MURRAY, DES PROC 2-5-3 OTTAWA Ontario K1A0K2 Canada	

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Solicitation No. - N° de l'invitation

W8474-16ME03/A

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Buyer ID - Id de l'acheteur

005st

Client Ref. No. - N° de réf. du client

W8474-16ME03

File No. - N° du dossier

005stW8474-16ME03

CCC No./N° CCC - FMS No/ N° VME

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Please see the Attached Document.



# Medium Earth Orbit Search and Rescue (MEOSAR) Project

## Request for Information (RFI)

### **Medium Earth Orbit Search and Rescue (MEOSAR) Project Ground Segment**

**Date: 27 July 2015**

Version 1.1

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# **1 Introduction**

## **1.1 General**

1.1.1 Public Works and Government Services Canada (PWGSC), on behalf of The Department of National Defense (DND), is releasing this Request for Information (RFI) as a second step to inform Industry and to seek input on the possible procurement for the Ground Segment elements for the Medium Earth Orbit Search and Rescue (MEOSAR) Project. A price and availability inquiry, file #W8474-12MS05 was posted in August 2013 to seek industry input on the Ground Segment.

1.1.2 The following details highlight Canada's vision of requirements for the MEOSAR Project. The RFI and engagement process provides Industry with the opportunity to present their capabilities and considerations regarding Canada's requirements for the MEOSAR project. Canada may use the information gathered to assist in the development of a Request for Proposal (RFP) for the Ground Segment.

1.1.3 The Engagement process will include one Industry Day planned for November 12, 13, 2015 in (location TBD within National Capital Region), consisting of a Public Industry Engagement Session followed by one-on-one meetings upon respondents' request. Following the Industry Day, the next step will be for the respondents to submit their responses to this RFI. Once the responses are received and reviewed by Canada, respondent(s) may be invited to present their responses at a Q&A one-on-one meeting with representatives of Canada, in Ottawa.

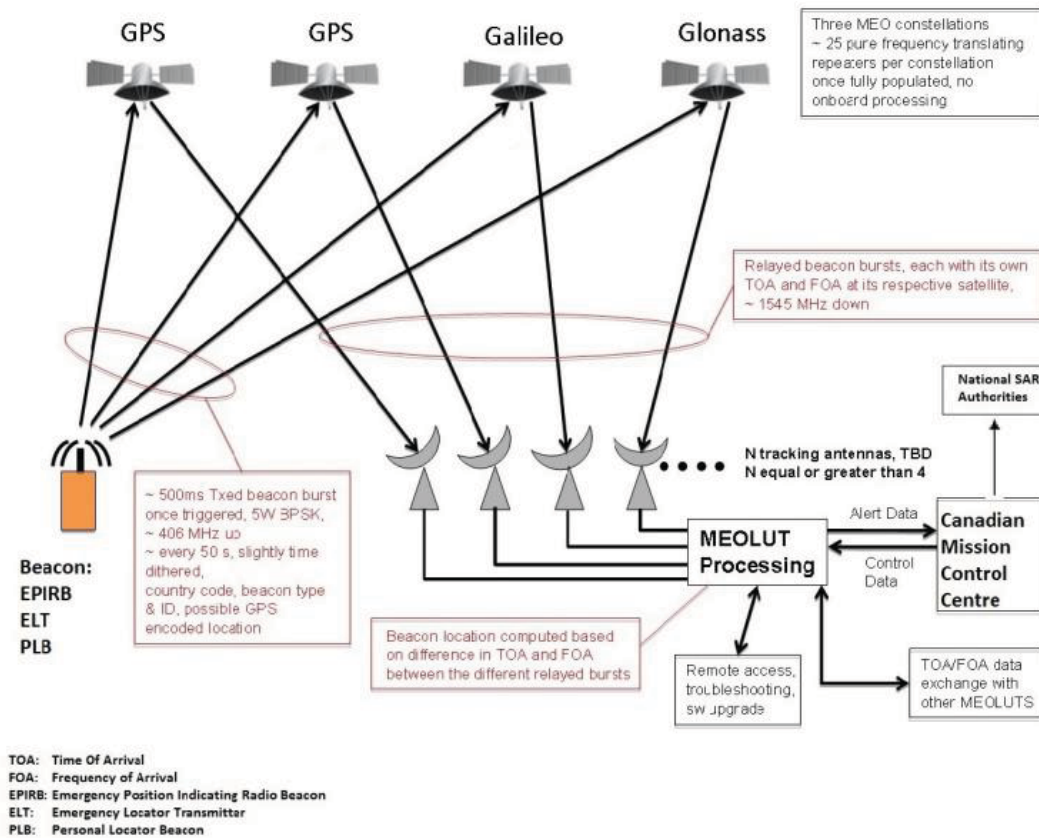
1.1.4 One of the purposes of this RFI is to register interested parties for attendance to the Industry Day and for participation in one-on-one meetings. The Request for Information section is included to provide Industry the opportunity to review and prepare written comments which may serve to facilitate the consultation process during Industry Day and one-on-one meetings. The Rules of Engagement for the Consultative Process (Industry day and one-on-one meetings) can be found under Annex "C", Engagement Participation Form.

## **1.2 Background**

1.2.1 Canada, Russia, France and the United States are part of the international COSPAS-SARSAT (C/S) system. The C/S is an international initiative for the development of a coordinated satellite system for Search and Rescue (SAR). It is a system designed to provide distress alert and location data to assist SAR operations, using satellites and ground facilities to detect and identify the transmissions of distress radio beacons and determine the geographic location of the transmitting radio beacons. The position and other related information is forwarded to the Canadian Mission Control Centre (CMCC) which will forward the information to the appropriate SAR authorities.

1.2.2 MEOSAR is the next generation of the international C/S satellite based capability supporting SAR services globally. The C/S MEOSAR system is comprised of SARR (Search and Rescue Repeater) payloads installed on each satellite of MEO Global Navigation Satellite constellation that include the United States Global Positioning System III (US GPS-III), the European Galileo, and the Russian GLONASS-K. The SAR/GPS payload will be comprised of the SAR/GPS component, Radio Frequency (RF) antennas and supporting Space Vehicle subsystems. The Ground Segment consists of satellite ground terminals or land earth stations, known in the C/S context as Local User Terminals (LUTs), which track the MEOSAR satellites,

and receive and process the transmissions of the distress radio beacons as relayed by those satellites. A simplified version of the MEOSAR system is illustrated in Figure 1 below.



**Figure 1 - The MEOSAR System**

1.2.3 To meet the required coverage for Canada's SAR area of responsibility, Canada has performed preliminary site surveys at the following locations: Masstown, NS, Goose Bay, NL, Riverbend, AB and Aldergrove, BC and it was determined that all these sites have sufficient existing space/land to support a MEOLUT. The MEOLUTs will feed their processed information to the Canadian Mission Control Center located in Trenton, Ontario and to the back-up CMCC located in Belleville, Ontario.

1.2.4 The Canadian MEOSAR SAR/GPS Repeater is currently planned to be hosted onto the United States Air Force Global Positioning System Block III satellite constellation. The SAR/GPS Repeaters will use downlinks in the L-Band to relay the beacon signals whereas the current experimental Repeaters (referred to as DASS, hosted on the US GPS-II) relay to the MEOLUTs through an S-band channel.

## 1.3 Objectives

### 1.3.1 The objectives of the MEOSAR project are:

- a. to develop and deliver the next generation of space-enhanced Search And Rescue capability by providing Search And Rescue repeaters, hosted on the US GPS- III satellites; and
- b. to ensure and enhance Canada's capability to locate emergency beacons activated by people in distress, by means of adequate ground segment infrastructure to receive and process the Search And Rescue alert signals relayed by all MEOSAR enabled satellites.

### 1.3.2 Objectives of the MEOSAR Ground Segment are:

- a. to deliver MEOLUT capability to provide coverage of all of Canada's Search and Rescue Area of Responsibility (SAR AOR). See Figure 2 below.
- b. to deliver In-Service Support (ISS) that will allow the management, control and maintenance of the above while maintaining full operational compliance with C/S and national specifications as they evolve; and
- c. to integrate the MEOLUTs into the existing Operational Canadian SARSAT infrastructure to provide a fully operational system that will provide accurate and timely location of alert beacons to the CMCC.



Figure 2 - Canada's SAR AOR

## 1.4 Current Project Milestones and Schedule

Milestones	Planning Date
Project Approval (Definition)	June 2015
Initial Operating Capability - Ground Segment (First Ground Station)	June 2018
Initial Operating Capability - Space Segment (First Repeater Delivered)	June 2021
Full Operating Capability - Ground Segment	June 2019
Full Operating Capability - Space Segment	June 2029

**Table 1 - Current Project Milestones and schedule**

## 1.5 Scope of this RFI

1.5.1 This RFI solicits industry input for the Ground Segment MEOLUTs for the MEOSAR Project.

## 1.6 Applicable Documents (AD)

### 1.6.1 COSPAS-SARSAT Applicable Documents

- AD-1 Cospas-Sarsat 406 MHz MEOSAR Implementation Plan (R.012)
- AD-2 Demonstration and Evaluation Plan for the 406 MHz MEOSAR System (R.018)
- AD-3 Specification for Cospas-Sarsat 406 MHz Distress Beacons (T.001)
- AD-4 Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard (T.007)
- AD-5 Cospas-Sarsat 406 MHz Frequency Management Plan (T.012)
- AD-6 Cospas-Sarsat Frequency Requirements and Coordination Procedures (T.014)
- AD-7 Description of the 406 MHz Payload Used in the Cospas-Sarsat MEOSAR System (T.016)
- AD-8\* Cospas-Sarsat MEOLUT Performance Specification and Design Guidelines (T.019)
- AD-9\* Cospas-Sarsat MEOLUT Commissioning Standard (T.0xx)

*Notes: AD-1 to AD-7 can be accessed on the Cospas-Sarsat website:*

<http://www.cospas-sarsat.int/en/documents-pro/system-documents>

*\* AD-8 and AD-9 may be provided upon request*

## 1.7 MEOSAR Concept of Operation

1.7.1 See Annex B for details.

## 1.8 Concept of support

1.8.1 DND's intention is that support for the ground segment will be provided in a similar manner as that currently provided for the existing LEO and GEO systems. DND perform life cycle maintenance management and first line maintenance and there is no second line maintenance. Third line maintenance is contracted. Operation and maintenance of the Ground Segment test/calibration equipment will either be performed under contract or by DND personnel.

## 2 Requirements

### 2.1 MEOSAR Ground Segment Solution

2.1.1 The following are the expected key deliverable products and services:

- a. MEOLUTs installed, integrated, tested and commissioned with the CMCC system; and
- b. In-Service Support.

### 2.2 Technical Requirements

#### 2.2.1 Ground Segment Requirements

2.2.1.1 The Ground Segment Solution must meet or exceed all of the C/S requirements. Please see section 1.6 for C/S applicable documents. Table 2 provides a summary of the key performance requirements for the MEOLUT system.

Parameter	Mandatory	Goal	Comments
Design Life	15 years	20 years	
Availability	95%	99%	Calculated
MTBF Antennas	16,000 hrs	32,000 hrs	Each antenna
MTBF Servers	80,000 hrs	100,000 hrs	Each server
Detection Probability within 10 minutes from first beacon transmission	99%	99.5%	For valid 406 MHz beacon message
Probability of TDOA/FDOA 2D Location using a single burst	90%	95%	2D= latitude/longitude
Probability of 2D Location within 10 minutes from first beacon transmission	98%	99%	2D= latitude/longitude
Location determination accuracy – single burst	Within 5 km 90% of the time	Within 5 km 95% of the time	
Location determination accuracy – in 10 minutes	Within 5 km 95% of the time	Within 5 km 98% of the time	from first beacon transmission
Capacity (for detection and location)	100 active beacons	200 active beacons	Within the coverage area of the MEOLUT
TOA Measurement accuracy	Standard deviation better than 25 Micro-seconds	Standard deviation better than 20 Micro-seconds	With beacon transmission above 35dB-Hz
FOA Measurement accuracy	Standard deviation better than 0.25 Hz	Standard deviation better than 0.20 Hz	With beacon transmission above 35dB-Hz

**Table 2 - Key Performance Requirements for the MEOLUT System**

2.2.1.2 The MEOLUT must be capable to track all C/S satellite constellations (US DASS (S-Band) & GPS-III, Galileo, and GLONASS (L-Band)), detect and decode the emergency beacon signals relayed by the MEOSAR repeaters, process and display all emergency beacon locations on the MEOLUT display and the Honeywell Global Tracking OCC-600 CMCC system.

2.2.1.3 The MEOLUTs must meet or exceed all the C/S specifications over Canada's entire SAR Area of Responsibility.

2.2.1.4 The MEOLUTs must be able to fully operate in all weather conditions that can be expected at the MEOLUT location.

2.2.1.5 The MEOLUT(s) must be available 95% of the time, over a one year period. Detailed availability requirements (e.g., maximum continuous downtime for preventative maintenance) shall be in accordance with COSPAS-SARSAT standards, see document AD-1.

2.2.1.6 Canada operates a MEOSAR-Ready Mission Control Centre (MCC) manufactured by Honeywell Global Tracking; therefore the MEOLUT system should be fully compatible with the current Honeywell Global Tracking OCC-600 Mission Control Centre software functionality to allow data fusion requirements. This compatibility is required to allow the merging of LEO/GEO/MEO data by the OCC-600 and display on a single monitor. The CMCC must also be able to monitor, control, and receive alarms from the MEOLUT equipment.

2.2.1.7 At a minimum, the implemented MEOSAR system must be able meet the C/S specifications to detect, identify, and determine the geographic location of distress radio beacon transmissions originating from anywhere within the Canadian SAR Area of Responsibility.

## **2.2.2 Probability of Detection and Location Accuracy**

2.2.2.1 For performance specifications related to the probability of detection and location accuracy refer to Annex E of C/S Applicable Document AD-1.

## **2.3 In-Service Support (ISS) Requirements**

2.3.1 In-Service Support services will be required in support of the ground segment MEOLUT system delivered in accordance with the concept of support detailed at section 1.8 and would include all preventive and corrective maintenance.

2.3.2 Provide 24/7/365 support for MEOLUTs and associated network(s); with ability to modify individual carrier transmit parameters within 30 minutes of request. There will be two networks, one between the CMCC and the MEOLUTS for alert data, control and alarm traffic. The second network would be for TOA/FOA data exchange between MEOLUTs.

2.3.3 The ISS requirements may include items such as equipment sustainment support including mid- life engineering analysis, maintenance, configuration management, the provision of spares and spares management, and software upgrades to the latest MEOLUT software release.

### **3 Contractual Information**

#### **3.1 Acquisition Strategy**

3.1.1 Canada intends to release a competitive Request for Proposal (RFP) for the delivery of the MEOLUT system which will be subject to the Agreement on Internal Trade. ([http://www.ait-aci.ca/index\\_en.htm](http://www.ait-aci.ca/index_en.htm))

3.1.2 A performance based approach will be used for reviewing and renewing the in-service support element of this contract. It is anticipated that the initial period of performance will be for a base period with options to provide up to 5 years of support.

#### **3.2 Green Procurement**

3.2.1 Respondents are requested to identify and cost potential areas of development, manufacturing and/or project delivery that leverage environmentally friendly standards and/or processes, for instance antennas operating at lower temperature without heat consumption. (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>)

#### **3.3 Value Proposition (VP) and Industrial and Technological Benefits (ITB)**

It is expected that any resultant contract(s) from any future RFP will be subject to Government of Canada Value Proposition (VP) and Industrial and Technological Benefits (ITB) Policy. This is part of Canada's Defence Procurement Strategy (DPS). (<http://www.tpsgc-pwgsc.gc.ca/app-acq/stamgp-lamsmp/sskt-eng.html>)

Interested parties in the MEOSAR procurement should be aware that any contracts that are entered into as a result of the MEOSAR procurement may contain Industrial and Technology Benefits (ITB) requirements, including a Value Proposition. Under the ITB Policy, companies awarded defence procurement contracts are required to undertake business activities in Canada, equal to the value of the contract. In addition, a core element of the ITB policy is a rated and weighted Value Proposition. Through the use of a Value Proposition, economic benefits to Canada would directly influence which bidding firm wins a contract, motivating bidders to put forward their best Value Proposition in their bid proposal. Additional information on the ITB policy including Value Proposition can be found at [www.ic.gc.ca/itb](http://www.ic.gc.ca/itb).

If it is determined that the ITB policy will not apply to procurements related to MEOSAR, other methods of leveraging economic benefits may be considered by Canada.

### **4 General Information and Terms and Conditions for Respondents**

#### **4.1 Request for Information**

4.1.1 The respondents are invited to submit a reply to the RFI that addresses each of the topics listed below. To facilitate the review of the responses to this RFI, respondents are asked to address and present the requested information in the order in which the topics are presented below.

## **4.2 Respondent Information**

4.2.1 Based on the documentation provided, the respondents should provide background information on its capability either individually or through partnership(s) or sub-contracting to deliver a ground segment MEOLUT system solution.

4.2.2 The respondents should provide the name, telephone number, and e-mail address of a representative who may be contacted for clarification or other matters related to the respondent's RFI response.

## **4.3 Proposed Ground Segment MEOLUT System**

4.3.1 The respondents should provide a complete description of their proposed Ground Segment MEOLUT System addressing hardware, software, in-service support, and infrastructure requirements and demonstrate the benefits and constraints to Canada rendered by the proposed solution. The respondents should address the number and size of antennas and optimal locations of MEOLUTs to provide full coverage of the Canadian SAR AOR, taking into consideration the long term in-service support costs of each potential location. Note: DND has a preference for the equipment to be located on its bases. Respondents may propose trade-offs- between number of and location of MEOLUTS and antennas and Area of Coverage. The respondents should include the information below.

### **4.3.2 Description of the respondent's MEOLUT system, including:**

- a. Optimal locations to provide full coverage of the Canadian SAR AOR;
- b. Antenna system and radome performance, robustness, design life, the suppliers, and distance between antennas;
- c. Hardware components (servers, etc.);
- d. Processing Software;
- e. Satellite Tracking Scheduling (STS) program including provision of overriding capability by a 3rd party program and method of receiving orbital elements;
- f. Interference monitoring;
- g. System performance including link budget, detection rate, location accuracy, maximum capacity and indicate how your system compares to the key parameters of Table 2 in paragraph 2.2.1.1 above;
- h. Capability to also process LEO and GEO data to augment the location accuracy;
- i. Accessories needed for calibration, reference beacons, GPS receiver, etc;
- j. Provide copy of the Graphic user Interface (GUI) menus showing MEOLUT functions and controls; and
- k. Estimate data link rate and daily capacity for MEOLUT-MEOLUT and MEOLUT-CMCC link.

### **4.3.3 Description of the respondent strategy to manage the following:**

- a. Interference;
- b. False beacon alerts;

- c. Weak beacon signals detectability versus LEOSAR with L-band and S-band;
- d. Capability of detecting all weak beacons that are currently detected by the LEOSAR, but not by GEOSAR;
- e. STS scheduling in a network environment (national and international);
- f. Networking with MEOLUTs from a different manufacturer;
- g. Calibration issue in local and network mode; and
- h. Capability of data to be processed by the CMCC OCC-600 interface and software.

**4.3.4 Description of the respondent's approach to address ongoing changes in the following:**

- a. MEOLUT Specifications Standards C/S T.019 (draft); and
- b. MEOLUT Commissioning Standards C/S A.0XX (draft).

**4.3.5 Description of the respondent's approach for the In-Service Support, including:**

- a. 24/7/365 technical support and troubleshooting including remote access;
- b. Problem tracking and resolution, including response times;
- c. Training plan for both technical and managerial staff;
- d. A plan for implementation of upgrades in accordance with the equipment manufacturer recommendations, and any technology refreshes;
- e. Warranty provisions; and
- f. Sparing Plan.

**4.4 Costs of Proposed MEOLUT Ground Segment System**

4.4.1 The respondents should provide budgetary cost estimates and cash flows including identification of sub-contractor costs for a proposed solution and the associated Project delivery model. The respondents should also identify any underlying assumptions used to establish these costs and cash flows.

4.4.2 Detail all hardware, software, infrastructure and services necessary to acquire, install, integrate, test and maintain the final proposed solution. Identify all costs including all associated labour (e.g. project management, engineering, quality assurance and control, training) subcontract costs, travel, General and Administrative Overhead (G&A), and profit, down to the major component level (e.g. RF Front-end and Servers, Local User Terminal, MEOLUT networking, and CMCC integration and data fusion).

**4.5 In-service Support/Maintenance**

4.5.1 Provide estimated annual costs for the in-service support proposed in your solution to include as applicable:

- a. MEOLUT preventive and corrective maintenance;

- b. Software updates/Upgrades;
- c. Pass Scheduling upgrades, licensing, and maintenance;
- d. Test equipment software upgrade, licensing, maintenance;
- e. Task authorized labour rates; and
- f. Warranty costs beyond the one year.

#### 4.6 Other Costs

4.6.1 Provide MEOLUTs Commissioning costs.

#### 4.7 Project Execution Model

4.7.1 Respondents should propose Project execution models that would provide the best value for cost. Consideration should be given to product assurance approach, essential documentation, verification approach, necessary reviews, etc.

4.7.2 Respondents should include information on schedule of milestones, risks, and required permits (e.g., export permits).

##### 4.7.3 Schedule

4.7.3.1 Respondents should provide a high level Microsoft Project schedule to implement and commission a fully integrated Ground Segment solution.

##### 4.7.4 Risks

4.7.4.1 Respondents should outline potential risks to schedule, cost and scope using the Potential Risks Matrix for the implementation of the MEOSAR system given in Table 3 below.

	Identification	Analysis		Evaluation	
Risk Categories	Risk Factor	Likelihood	Impact	Risk Response (Accept/Mitigate)	Risk Mitigation Tactics
Schedule					
Cost					
Scope					

**Table 3 - Potential Risks Matrix for Implementation of the MEOSAR System**

## **4.8 Recommendations, Suggestions or Comments**

4.8.1 Respondents should provide general feedback and/or any recommendations, inputs or comments (including technical information) that could assist Canada in developing potential future RFP documents.

## **4.9 Notes to Interested respondents**

4.9.1 Respondents should note that this RFI is not a pre-selection process. There will be no short listing of firms for purposes of undertaking any future work, as a result of this RFI. Similarly, participation in this process is not a condition or prerequisite for participation in a potential or RFP.

4.9.2 This RFI is neither a Call for Tenders, nor an RFP, and no agreement or contract will be entered into with any respondent, based on responses to this RFI. The issuance of this RFI is not to be considered in any way as a commitment by Canada, or as authority for the respondent to undertake any work which could be charged to Canada, nor is this RFI to be considered a commitment to issue potential RFPs or award eventual contracts in relation to this Project.

4.9.3 PWGSC's Fairness Monitor Policy applies to this requirement based on the dollar value and the complexity of the requirement.

## **4.10 Confidentiality**

4.10.1 Respondents are advised that any information submitted to Canada in response to this RFI may be used by Canada in the development of a subsequent competitive RFQ and/or RFP.

4.10.2 As such, respondents responding to this RFI should identify any submitted information that is to be considered as either company confidential or proprietary.

## **4.11 Contracting Authority**

4.11.1 Enquiries are to be made in writing (preferably by e-mail) to the Contracting Authority indicated below.

4.11.2 To ensure consistency and quality of information provided to respondents, the replies to enquiries will be posted through the Government buyandsell website without revealing the sources of the enquiries.

4.11.3 It should be noted that any information provided in relation to this RFI will not be binding upon Canada under any circumstances.

4.11.4 Requests for clarification or meetings should be sent to the Contracting Authority:

Alan Chan  
Supply Team Leader  
Science Procurement Directorate  
Services and Technology Acquisition Management Sector  
Acquisitions Branch  
Public Works and Government Services Canada (PWGSC)

11C1, Phase III, Place du Portage  
11 Laurier Street  
Gatineau, Quebec, Canada  
K1A 0S5  
Telephone Number: 819-956-1691  
E-mail address: [alan.chan@tpsgc-pwgsc.gc.ca](mailto:alan.chan@tpsgc-pwgsc.gc.ca)

#### **4.12 Engagement Process**

4.12.1 The Industry Engagement Process will begin with the publication on buyandsell <http://www.buyandsell.gc.ca/tenders> of this RFI. The Industry Engagement Process consists of the following events:

- a. Release of one or more RFI;
- b. Industry Day(s), if required;
- c. One-on-One meetings;
- d. Submission of the RFI responses;
- e. One-on-One Post-RFI submission meetings, if required;
- f. Release of the RFI Summary of the feedback and outcomes;
- g. Release of the draft SOW and evaluation criteria; and
- h. Release of the final RFP.

4.12.2 At any point within the Industry Engagement Process, the above-listed Industry Engagement events or their scheduling may change. Except for changes brought about by unforeseen events or adverse weather, Canada will endeavour to provide a minimum of five (5) calendar days' notice to respondents of any planned change. Industry Day, as well as all one-on-one meetings will be held at a location within the National Capital Region.

4.12.3 Proceedings from all of the consultation workshops, such as Industry Day and one-on-one meetings will be recorded. Only the information not subject to controlled goods or industry proprietary information will be summarized and published on buyandsell.

#### **4.13 Industry Day Information Session**

4.13.1 An Industry Day information session and one-on-one sessions will be held on November 12, 13, 2015 as an opportunity to pose and address questions with regards to this RFI. The Industry Day will be held at a location in Ottawa ON as scheduled with the MEOSAR Project team. These meetings will provide an opportunity for respondents to clarify the presentation and to present relevant technical input for the upcoming RFP.

4.13.2 Registration for the above events will be required on or before November 5, 2015. Upon registration, a meeting time will be allocated to each registering respondent on a first come first

served basis. To register please contact the Public Works and Government Services Canada (PWGSC) Contracting Authority listed above.

4.13.3 Attendance at the Industry Day is not required in order to submit a response to the RFI nor any follow-on RFP.

4.13.4 Questions should be submitted to PWGSC at least fifteen (15) working days before the event. All questions submitted within that time will be provided a response/addressed during the Industry Day information session. At this information session, there will also be an opportunity for interested potential respondents to seek clarifications from the MEOSAR Project Team concerning the requirements. All questions submitted after that time will be addressed through the enquiry process described in Section 4.11.4 above.

4.13.5 Please note that all parties intending to participate in the Industry Day information session and further one-on-one meetings should:

- a. Have completed and submitted a signed Rules of Engagement form to the Contracting Authority referenced above; and
- b. Register at least five (5) days in advance of the session date by contacting the Contracting Authority referenced above. Only registered participants will be allowed to participate in the information session.

4.13.6 Participants will be provided with the opportunity to arrange for one-on-one meetings with representatives from the MEOSAR Project Team, the day of the session, if time allows, or later during the period of the RFI.

#### **4.14 Costs for Responses**

4.14.1 No payment shall be made to the respondents by Canada for costs incurred in the preparation and submission of responses to this RFI or for any activities associated with the industry consultation.

#### **4.15 Delivery Address for RFI Responses**

4.15.1 Responses to this RFI should be sent to the Contracting Authority referenced above.

4.15.2 Responses should be received by the Contracting Authority twenty (20) working days after industry day(s).

4.15.3 Respondents are requested to provide their responses in one (1) PDF copy electronically. The electronic file formats of the response must be in either the readable Adobe Portable Document Format (PDF™) or in a file format that is readable by the Microsoft Office™ Suite.

4.15.4 Responses are to be submitted in either of the two Official Languages of Canada.

4.15.5 All the documentation submitted should be marked with the following:

**Name of respondent**

**MEOSOAR GROUD SEGMENT RFI Response – Reference #**

**Date (YYYY-MM-DD)**

## **Number of pages**

### **4.16 Security Requirements**

**4.16.1** The security requirements for the MEOSAR Project are still to be determined. Respondents are encouraged to familiarize themselves with potential security provisions. Details are available at: <http://www.tpsgc-pwgsc.gc.ca/services/secinfo-eng.html>.

## **ANNEX A - ACRONYMS**

Acronym	Description
AB	Alberta
AD	Applicable Document
AOR	Area of Responsibility
BC	British Columbia
CAF	Canadian Armed Forces
CM	Corrective Maintenance
CMCC	Canadian Mission Control Centre
CONOPS	Concept of Operation
CONSUP	Concept of Support
CRC	Communications Research Centre
C/S	Cospas-Sarsat
CW	Continuous Wave
DASS	Distress Alerting Satellite System
D&E	Demonstration and Evaluation
DND	Department of National Defence
DPS	Defence Procurement Strategy
EA	Environmental Assessment
ELT	Emergency Locator Transmitter
EPIRB	Emergency Position Indicating Radio Beacon
FDOA	Frequency Difference Of Arrival
FES	Front-End Server
FOA	Frequency Of Arrival
G&A	General and Administrative Overhead
GEO	Geostationary Earth Orbit
GEOLUT	Geostationary Earth Orbit Local User Terminal
GEOSAR	Geostationary Earth Orbit Search and Rescue
GNSS	Global Navigation Satellite System
GPS-III	Global Positioning System III
GUI	Graphic User interface
ICAO	International Civil Aviation Organization
IMO	International Maritime Organisation
ISS	In-Service Support
ITB	Industrial and Technological Benefits
LEO	Low Earth Orbit
LEOLUT	Low Earth Orbit Local User Terminal
LEOSAR	Low Earth Orbit Search and Rescue
LUTs	Local User Terminals
MB	Manitoba
MCC	Mission Control Centre
MEO	Medium Earth Orbit
MEOLUT	Medium Earth Orbit Local User Terminal
MEOSAR	Medium Earth Orbit Search and Rescue

MTBF	Mean Time Between Failure
NL	Newfoundland and Labrador
NS	Nova Scotia
NU	Nunavut
OCC-600	Operator Control Console 600
P&A	Price and Availability
PLB	Personal Locator Beacon
PM	Preventive Maintenance
PWGSC	Public Works and Government Services Canada
RCC	Rescue Coordination Center
RD	Reference Document
RF	Radio Frequency
RFI	Request For Information
RFP	Request for Proposal
RFQ	Request For Quote
SAR	Search and Rescue
SOW	Statement of Work
SPOCs	SAR Point Of Contacts
SS	Space Segment
STS	Satellite Tracking Scheduling
TBD	To Be Determined
TDOA	Time Difference Of Arrival
TOA	Time of Arrival
US	United States
USAF	US Air Force
VP	Value Proposition

## **ANNEX B - MEOSAR Concept of Operation Extract**

## **MEOSAR Concept of Operation**

MEOSAR is the next generation of the international COSPAS-SARSAT satellite based capability supporting Search And Rescue (SAR) services globally. MEOSAR is an evolution and refinement of the existing LEO and GEO-satellite based services. Whereas, the LEOSAR system locates active emergency beacons using Doppler shift, MEOSAR determine the location of such beacons using a combination of Time Difference Of Arrival (TDOA) and Frequency Difference Of Arrival (FDOA) techniques.

MEOSAR will provide near real-time detection and geographic location of emergency beacon signals both within Canada's SAR area of responsibility and elsewhere in the world. (The Canadian SAR area of responsibility is as defined under International Civil Aviation Organization [ICAO] agreements for aeronautical SAR and as defined under International Maritime Organisation [IMO] agreements for maritime SAR. The Canadian waters of the Great Lakes and the St. Lawrence River system are also part of the Canadian federal SAR area of responsibility. The Canadian SAR area of responsibility is described in the NATIONAL SEARCH AND RESCUE MANUAL (Appendix 1). As part of the international COSPAS-SARSAT programme, Canada's MEOSAR ground and space segments will be fully interoperable with the international COSPAS-SARSAT system. The CMCC will be capable of receiving and incorporating MEOSAR data from ground stations outside Canada, thus enabling the CMCC to process SAR events outside the Canadian SAR area of responsibility (e.g., a Canadian Forces aircraft in distress in Europe).

### **Space Segment**

The space segment will be composed of frequency-translating repeater payloads incorporated in the spacecraft of three Global Navigation Satellite System (GNSS) constellations, i.e., the US DoD GPS III, EU Galileo, Russian GLONASS, and the US Distress Alerting Satellite System (DASS) will be used until enough satellites of the other 3 satellite constellation as in orbit. It is anticipated that more than 70-75 repeaters on orbit will contribute to the global coverage. The Canadian space segment will be incorporated in the GPS III satellites.

### **Ground Segment**

The ground segment will consist of many ground stations, LUTs, located in COSPAS-SARSAT participant countries. The LUTs feed into national Mission Control Centers (MCCs), which:

- a. collect, store and sort the beacon data obtained from other LUTs and MCCs;
- b. distribute alert and location data to associated Rescue Coordination Centers (RCCs) or SAR Point Of Contacts (SPOCs); and
- c. provide data exchange within the COSPAS-SARSAT system.

The Canadian ground segment will provide the physical infrastructure and resource management capability to provide complete coverage of the Canadian SAR area of responsibility.

## **ANNEX C - Rules of Engagement**

# **Medium Earth Orbit Search and Rescue (MEOSAR) Project**

## **Solicitation #**

### **INDUSTRY CONSULTATIVE PROCESS**

#### **RULES OF ENGAGEMENT**

An overriding principle of the industry consultation is that it be conducted in a fair and equitable manner between all parties. No one person or organization must receive nor be perceived to have received any unusual or unfair advantage over the others.

All Crown documentation provided throughout the industry consultative process, which begins with the publication on the [www.buyandsell.gc.ca/procurement-data/tenders](http://www.buyandsell.gc.ca/procurement-data/tenders) of this RFI, and concludes with the dissemination of the RFI Summary of the feedback and outcomes, will be provided to all participants who have agreed to and signed the Rules of Engagement.

The Consultative Process will consist of the following events:

- a. Release of one or more RFIs;
- b. Industry Day(s), if required;
- c. One-on-One Meetings;
- d. Submission of the RFI Responses;
- e. One-on-One Post-RFI Submission Meetings, if required;
- f. Release of the RFI Summary of the feedback and outcomes;
- g. Release of the draft SOW and evaluation criteria; and
- h. Release of the final RFP.

A number of consultations will be conducted on various topics to solicit industry feedback/comments. Initially, Public Works and Government Services Canada will hold an Industry Day information session for the MEOSAR Project.

Canada will not disclose proprietary or commercially sensitive information concerning a Participant to other Participants or third parties, except and only to the extent required by law.

#### **TERMS AND CONDITIONS:**

The following terms and conditions apply to the Consultative Process. In order to encourage open dialogue, Participants agree to:

- a. Discuss their views concerning the MEOSAR requirement and to provide positive resolutions to the issues in question. Everyone shall have equal opportunity to share their ideas and suggestions;
- b. Not reveal or discuss any information to the media/newspaper regarding the MEOSAR requirement during this Consultative Process. Any media questions will be directed to the PWGSC Media Relations Office at 819-956-2315;

- c. Industry shall direct inquiries and comments to the Contracting Authority unless advised otherwise. Please note that any communication to unauthorized representatives of Canada may be subject to full disclosure by Canada on buyandsell;
- d. Canada is not obligated to issue any RFP, or to negotiate any contract for the MEOSAR Project;
- e. If Canada does release a RFP, the terms and conditions of the RFP shall be subject to Canada's absolute discretion;
- f. Canada will not reimburse any person or entity for any cost incurred in participating in this Consultative Process;
- g. All inquiries with regards to the procurement of the MEOSAR Project are to be directed to the Contracting Authority;
- h. Participation is not a mandatory requirement. Not participating in this consultative process will not preclude a bidder from submitting a proposal;
- i. If Canada proceeds with the project, a Draft RFP will be provided to Industry for its comments;
- j. Failure to agree to and sign the Rules of Engagement will result in the exclusion from participation in this Consultative Process; and,
- k. A dispute resolution process to manage impasses throughout this Consultative Process shall be adhered to as follows:

#### **DISPUTE RESOLUTION PROCESS:**

- 1. By informal discussion and good faith negotiation, each of the parties shall make all reasonable efforts to resolve any dispute, controversy or claim arising out of or in any way connected with this Consultative Process.
- 2. Any dispute between the Parties of any nature arising out of or in connection with this Consultative Process shall be resolved by the following process:
  - a. Any such dispute shall first be referred to the Participant's Representative and the PWGSC Manager managing the Industry Engagement. The parties will have 10 Business Days in which to resolve the dispute.
  - b. In the event the representatives of the Parties specified Article 2.a. above are unable to resolve the dispute, it shall be referred to the Participant's Project Director and the PWGSC Senior Director of the Division responsible to manage the Industry Engagement. The parties will have 3 Business Days to resolve the dispute.
  - c. In the event the representatives of the Parties specified in Article 2.b. above are unable to resolve the dispute, it shall be referred to the Participant's President and the PWGSC Director General, who will have 3 Business Days to resolve the dispute.

- d. In the event the representatives of the Parties specified in Article 2.c. above are unable to resolve the dispute, it shall be referred to the Participant's CEO and the PWGSC Assistant Deputy Minister, Acquisitions Branch who will have *5 Business Days* to resolve the dispute.
- e. In the event the representatives of the Parties specified in Article 2.d. above are unable to resolve the dispute, the Contracting Authority shall within 5 Business Days render a written decision which decision shall include a detailed description of the dispute and the reasons supporting the Contracting Authority's decision. The Contracting Authority shall deliver a signed copy thereof to the Participant.

By signing this document, the individual represents that he/she has full authority to bind the company listed below and that the individual and the company agree to be bound by all the terms and conditions contained herein.

**Name of Company:** \_\_\_\_\_

**Name of individual:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**E-mail:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Correspondence: ☐ French

☐ English