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SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

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Title - Sujet GROUND SEGMENT SOLUT. (MEOSAR PROJ)	
Solicitation No. - N° de l'invitation W8474-16ME03/A	**Amendment No. - N° modif.** 006
Client Reference No. - N° de référence du client W8474-16ME03	**Date** 2016-05-12
GETS Reference No. - N° de référence de SEAG PW-$$ST-005-29512	
File No. - N° de dossier 005st.W8474-16ME03	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2017-03-31**	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Chan, Alan	**Buyer Id - Id de l'acheteur** 005st
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Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) **Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)** **Signature** **Date**	

This amendment serves to publicize:

1 – questions posed and answers provided during the vendor visits to the Canadian Mission Control centre;

2 – the deck presented during the vendor visits to the Canadian Mission Control Centre; and

3 – the MEOSAR Ground Segment Summary of Findings document, which summarizes the feedback received and related outcomes from the industry engagement session.

1. What is the current timeline for the solicitation process?
   Canada anticipates posting draft Request for Proposal (RFP) documents for supplier review and feedback in May 2016, with the final RFP to be posted in Summer-Fall 2016.

2. Is there any chance that the space and ground requirements will be solicited under the same RFP?
   No, these are separate requirements to be solicited under separate RFPs.

3. Will the presentation shown during the Canadian Mission Control Centre (CMCC) site visits be made available to vendors?
   Yes, it will be posted under the current Request for Information (RFI) on the Buy and Sell website.

4. Are the Medium Earth Orbit Local User Terminal (MEOLUT) site locations to be proposed by the Contractor?
   No, Canada will publish proposed locations in the draft Statement of Work (SOW) document. Canada has decided that there will be one site in eastern Canada and one site in western Canada.

5. Will Canada provide the site plans for the proposed sites?
   Yes, Canada will provide the site locations in the draft solicitation document and the vendors are to provide detailed plans for the selected locations.

6. With respect to balancing quality of antenna vs. budget requirements: what is Canada's preference?
   The minimum performance requirements will be outlined in the draft SOW. The SOW, method of selection and the detailed evaluation criteria for the ground segment solution are still under development and will impact the weighting of technical score and financial cost. The draft evaluation criteria will be provided as part of the draft RFP documents.

7. How do we come up with the specification for the up time from the Request for Information (RFI)?
   All up time requirements derive from the COSPAS-SARSAT technical and operational documents and CMCC operations.
8. Is the experimental MEOLUT connected to the CMCC?
   Yes, Canada's experimental MEOLUT is connected to the server dedicated to Medium Earth Orbit Search and Rescue (MEOSAR) Development and Evaluation. Operationally, it has been used to supplement situational awareness in some cases.

9. Would the experimental MEOLUT be used in this second phase MEOSAR requirement?
   No, the experimental MEOLUT will not be used as part of this second phase MEOSAR requirement; it is separate from the Phase 2 solicitation and statement of work.

10. There are three different constellations (LEO, GEO, MEO) signals coming from space. How does the RCC co-ordinate the request?

It does not matter which constellation relays the signal; they are all shown on the screen simultaneously and are all responded to in the same manner. The Mission Control Centre (MCC) merges the data and sends one position to the Rescue Coordination Centre (RCC).

11. Are there any priorities for what kind of signal should be responded to first?
    No, the operating officers are experienced in in prioritizing and responding to signals in the most efficient manner.

12. How many antennas are there at the CMCC?
    There are no antennas in Trenton or in Belleville. There are three operational Low Earth Orbit Local User Terminals (LEOLUTS) (Edmonton, Churchill, Goose Bay) and two operational Geostationary Earth Orbit Local User Terminal (GEOLUTs) (Edmonton, Ottawa). There is also a LEOLUT and a GEOLUT in Ottawa, which are both used for testing and backup. There is also an experimental MEOLUT in Ottawa that will soon be using six antennas.

13. Is Local User Terminal (LUT) line of sight important?
    Yes, it is.

14. Are the LUT sites manned?
    No, the LUT sites are unmanned and the Contractor will support any incidents.

15. Is remote access to the LUTs required?
    Yes, remote access is required.

16. How is a beacon being identified?
    In most cases, Canadian beacon signals will be picked up by a Canadian ground station and sent to the CMCC. Registration data will be verified in the Canadian Beacon Registry. If the signal is picked up by a foreign MCC, it will be sent to the Canadian MCC and verified in the same manner. MCCs are linked as per COSPAS-SARSAT specifications. For smaller countries, an international registry can be used; however, it is a buyer's responsibility to register their beacon.

17. What does foreign MCC mean?
    Foreign MCC refers to foreign countries including France, Russia, etc.

18. Are all beacons registered?
    Canada does register Canadian-coded beacons using data that is typically provided by the owner. If registered, the Canadian Beacon Registry will have the information of the person who owns it, what type of beacon it is, etc. If it is a foreign beacon, Canada will have to confirm the beacon's information with a foreign MCC, it is Canada's responsibility to react to the distress signal if it is identified in our SAR area of responsibility whether the beacon is registered or not.

19. Are there any return paths for the Antenna?
    All operational LUT antennas are "receive only", they do not transmit.

20. Are there any Arctic centres to relay signals?
    No, Trenton is the centre for all requests.

21. Will MEOSAR Ground Segment use Galileo signal when it is operational as they are already running?
    The Galileo satellites that have Search and Rescue (SAR) repeaters will be used.

22. How is maintenance, testing of satellites known to Canada?
    We rely on United States' MCC (USMCC) Nodal to advise us if maintenance and testing are being done by space segment providers.

23. Who is responsible for the maintenance of the antennas on the satellites?
    For the Canadian-provided LEO Search and Rescue Repeater (SARR) packages, we have Canadian Technical Evaluation Centre (CTEC) responsible for monitoring and testing. There is no physical maintenance once the antenna is in space. SARR maintenance is very limited and CTEC sends the required commands to the USMCC, which uploads the commands to the satellite.

24. Is there any transition from LEO to MEO?
    No, the current plan is to have the two systems to operate concurrently until COSPAS-SARSAT decides to decommission the LEO system, scheduled for 2024.

25. Is backup communication required by MEOSAR?
    Yes, backup communication is required. For the MEOLUTs, they will require redundant intranet connections (GFE).

26. Merge Algorithm: no such algorithm currently exists in COSPAS-SARSAT documents. What does Canada do now?
    Canada used Confirmation of Position (COP). After COP all alert data is processed and a weighted average is used based on all the quality factors; in cases where ambiguity is not resolved (below COP) all data is forwarded to RCCs without merging.

27. How many incidents does the CMCC receive per day?
    The CMCC receives roughly 5-6 incidents per day.

28. What is the meaning of a false alarm for MEOSAR?
    False alarms are beacon alerts that occur and are not actual distress events.

29. What is the relationship between the SAR Mission Management System (SMMS) and the CMCC server?
    The SMMS is all the information technology used to support search and rescue (SAR) in Canada. This includes the network, the CMCC servers, and RCC software. The CMCC servers receive data from the ground stations, process it, and forward it to the appropriate destination (Canadian RCC or foreign MCC). It is un-classified.

30. Is SARMaster based on the Honeywell system?
    Yes, it is.

31. Are vendors expected to keep using the same interface?
    Yes, Canada will keep interfacing with the existing system as detailed in the SOW.

32. Does Contractor report availability?
    Availability reporting is required yearly as per C/S requirements.

33. Can the OCC-600 documents be released?
    No, they are proprietary to the vendor and thus cannot be released. Canada has decided that the CMCC will not be replaced; as such, vendors' bids must incorporate interfacing with the existing CMCC.

34. Is there any chance that the MCC would ever be manned by the Contractors?
    No.

35. Are there any RCC personnel staff changes?
    Yes, staff level changes; however, there is always a person on the line for the end user.

36. What is a test server?
    A test server is used to test software and updates before they are implemented.

37. What is the use of the test server?
    It is used to test new releases and configuration changes before being used operationally.

38. How often are there updates to the test server?
    There are software updates to the test server twice a year.

39. What do those updates usually contain?
    Updates may include but are not limited to new processing requirement, new updates and bug fixes.

40. Who has the responsibility of the network?
    Shared Services Canada (SSC) and DND operate the network.

41. Are there any security requirements in this part of the network?
    The network and systems are unclassified; however the network contains government standard network security.

42. How are current network issues being addresses?
    The network is under the responsibility of SSC, who would be contacted for any network issues.

43. Is the email server separate from the SSC server?

Yes, the whole Search and Rescue Network (SARNet) is self-contained.

44. Is Joint Rescue Coordination Centre (JRCC) connected to the Government of Canada Network (GoCnet)?
    No, the Ship Security Alerting System (SSAS) alerts used to go to the Government of Canada (GoC) Operational Centre through the operator by manually sending a fax. The alerts now go through email to the Transport Canada Situation Centre.

45. Has CMCC responsibility moved departments?
    CMCC remains DND's responsibility, however, the National Search and Rescue Secretariat (NSS) has moved to Public Safety.

46. Are there any buffer zones between the MCC boundaries?
    Yes, there is a buffer zone of 50 km outside of the respective boundary area for all Canadian RCCs and 25 km for Marine Rescue Submarine Centre (MRSC) Quebec. Anything within the buffer zone will be reported to both RCCs within the buffer zone.

47. Do all RCCs co-ordinate?
    Yes, the JRCC software actually shows all information to all four RCCs, so there is no question/issue of responsibility or confusion between them.

48. What is Case Form?
    The Case Form is DND-developed software that is currently used as the CMCC's case/incident management system. It provides features including a log, statistic keeping and reporting, automated Canadian Beacon Registry interface, and recording of COSPAS-SARSAT 406 information. The Case Form record of a case serves as our legal record.

49. Where does the Case Form software reside? On the same, or a different server?
    Case Form resides on a different server than the MCC software and is a standalone piece of software.

50. Can XML-type messages be used instead of Subject Identifier Type (SIT) messages?
    Messages will need to contain the SIT message fields as per C/S documents. Required formats are defined in the CMCC Concept of Operations; relevant sections will be made available with the RFP.

51. At the MCC level, is there a standard of what software the server is using?
    Yes, standard DND software must be used, currently Windows 2008 R2 enterprise edition.

52. Is the case form in addition to the voice being recorded?
    Yes.

53. Is there any intent to digitize the voice data?
    No, not at this time but voice date is recorded on digital devices.

54. Does current MCC software identify missed beacon signals, and how?
    Yes, missed beacons (beacons previously detected by other LEO passes but not detected by the current pass) are identified by a “colour change” in the beacon icon.

55. What other aspects of the LUTs, apart from the ones currently monitored and/or provided on the screen, is Canada interested in monitoring?
    Currently for day-to-day operations, GEOLUTs are referenced most often to provide updates on active beacons in near real-time. Canada is open to additional aspects that could improve CMCC work load.

56. What about physical redundancy throughout the Search and Rescue Network Operation Control Centre (SARNOCC)? Would virtualization of data servers be an option?
    The philosophy is to have physical redundancy where necessary and when technically and financially possible. SARNOCC is migrating servers to the virtual environment. For servers installed at CMCC sites, although not required, the use of virtual servers is preferred where possible.

57. Do other functions or testing occur at the CMCC (i.e. Demonstration and Evaluation tests and analysis)?
    When possible, CMCC operators will perform additional analysis; however, resources are limited and this is only done when time permits. Other functions such as ensuring the network itself is running (i.e. monitoring for network or equipment outages) and acting as first-line support are the priority tasks.

58. When new functionality/software is acquired, where does the training take place?
    Training must be performed at Trenton during multiple timeframes to accommodate operational and staffing requirements.

59. What is the CMCC’s top concern for MEOSAR?
    From a technical perspective, our current primary concern is the elimination of Phantom/Anomalous data, and the reduction of alerts detected by LEOSAR but missed by MEOSAR. From an operational perspective, our current primary concern is how best to manage this new data stream and ensure accurate and complete data can be incorporated into the system.

60. How often does the CMCC prefer to have life cycle upgrades?
    Software upgrades should occur about twice a year.

61. Support of 121.5 MHz beacons?
    As per International Civilian Aviation Organization (ICAO), 121.5 MHz are still considered distress signals by the RCCs; however those transmissions are no longer monitored by COSPAS-SARSAT satellites therefore, the CMCC is not involved in those cases.

62. How old is this infrastructure?

The LEO system was implemented in the 1980s and GEO in the 1990s. The CMCC infrastructure is newer, the MCC software is about a year old and SARMaster is in the process of being replaced.

63. Are there any alternate MCCs?
    Yes; the primary MCC server is physically located in Trenton, and Canada's alternate MCC server is physically located in Belleville. Both servers are on the same network.

64. Is the Belleville system manned?
    No, it is unmanned but fully enabled for emergency transfer.

65. Is use of the alternate site considered an urgent situation? What about site numbers/I.D. changes?
    No, as all data is always fed to both sites the CMCC operators will be able to switch between sites and remain connected to the COSPAS-SARSAT network without any changes to the site numbers/IDs or message counts.

66. How does the CMCC deal with alarms from software?
    Any alarms will remain active until an operator has responded.

67. Is the system very reliable?
    Yes, there have been few occasions that we have had to utilize the Belleville secondary server.

68. Are functions the same in Trenton as they are in Belleville?
    Yes, all are fully backed up with the exception of SARMaster, which RCCs use via a remote connection through a Citrix server.

69. Have any backup incidents occurred recently?
    The latest operational backup was about two years ago. Situations where, for example, the fibre cable was cut due to construction on highway 2 can dictate the need for a short backup while our operator drives to Belleville to activate the Belleville system. A backup exercise is performed annually.

70. What is the process if something goes wrong with the system?
    Representatives of Canada will contact Search and Rescue Network Operations Control Centre (SARNOCC) and in turn work with in-service support vendor. Life Cycle Material Manager (LCMM) is responsible for the maintenance of the system, but not the network.

71. Have both Belleville and Trenton been disabled together before?
    Yes; however, the risk has been mitigated by ensuring the sites are on separate power grids, and redundancies have been built in.

72. Why do we see international signals on the operator's screen?
    These are the beacons detected by our ground stations. LEO satellites have the Search and Rescue Processor (SARP) which stores and downloads detections to all LEOLUTs. The alerts detected for locations outside of Canada are sent to the appropriate MCC through the USMCC.

73. Does the MEOLUT need to send signals to multiple MCCs, including the United States' MCC?
    Yes; Alerts are sent to all CMCC servers, and Canada will network with the US MEOLUTs.

74. Does the CMCC need to be able to back up the USMCC?
    Yes, CMCC is required to be ready at all times to back up the USMCC responsibilities in the Western Data Distribution Region.

75. Why is the United States' backup Canada? Is it by agreement?
    In accordance with COSPAS-SARSAT requirements and that search and rescue is a critical service to both our nations, we have a bilateral agreement to provide backup services to the United States.

76. Is it often that we have to actively back up the United States' (US) server?
    No. In recent years, there has been once or twice where we backed up the US servers for a brief period while they activated their backup site.

77. Has the United States had to actively back up Canada often?
    The United States has occasionally backed up Canada for a short period.

78. Do you know if Australia has the same MEOSAR Ground Segment requirement?
    Australia also has a requirement for a MEOSAR Ground Segment solution. Some requirements are unique by country, but most are as described in COSPASS-SARSAT documents.

79. Is the Australian MCC the backup for Canada?
    The USMCC is the primary back-up for CMCC. Australia becomes Canada's nodal MCC if and when the USMCC is down.

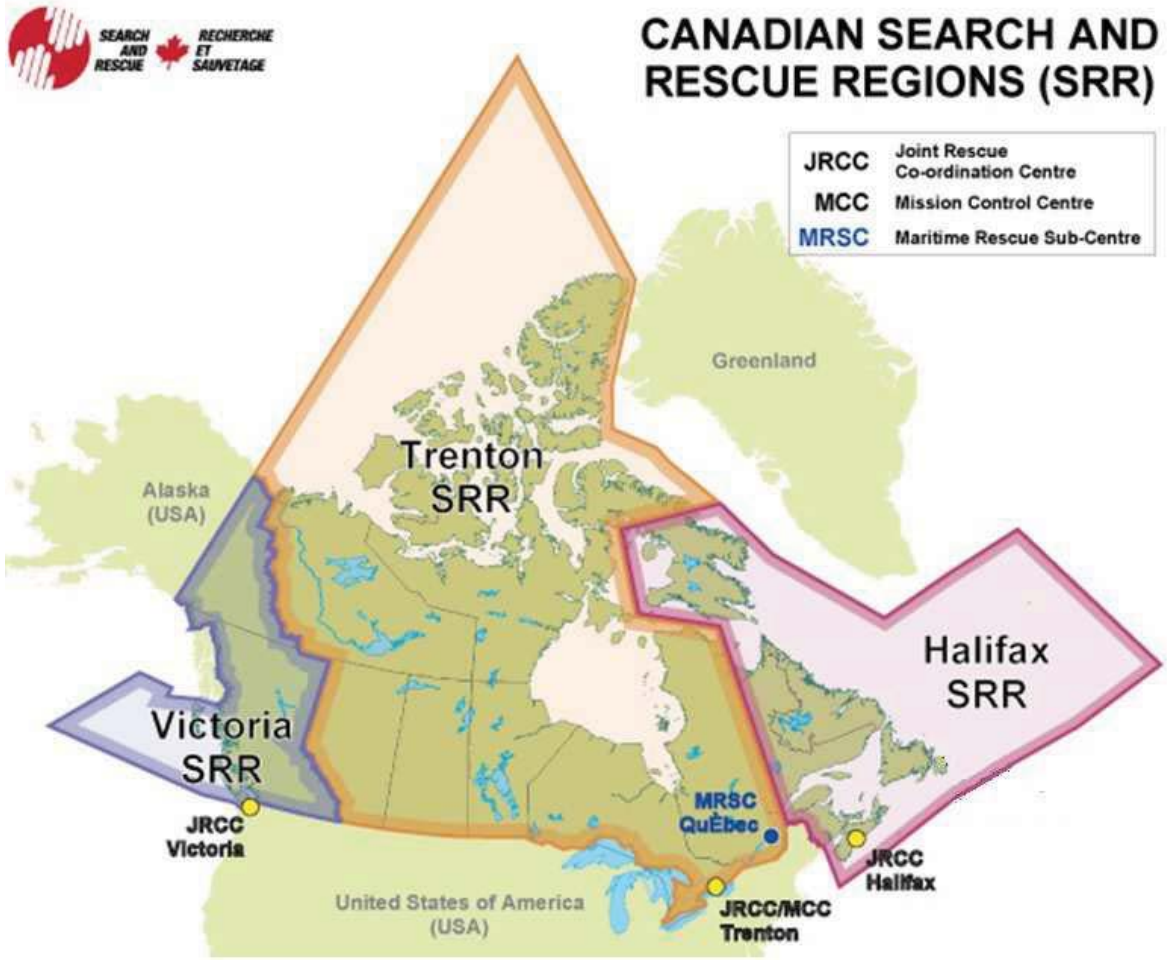
80. Is the MEOLUT Network considered as part of MEOSAR?
    Yes, we will network with the US MEOLUT, IAW T.019 for MEOLUT networking. This uses the TOA/FOA data only. Requirements will be detailed in the draft SOW.

MEOSAR Industry Visit
Canadian Mission Control Centre

Apr 13, 2016

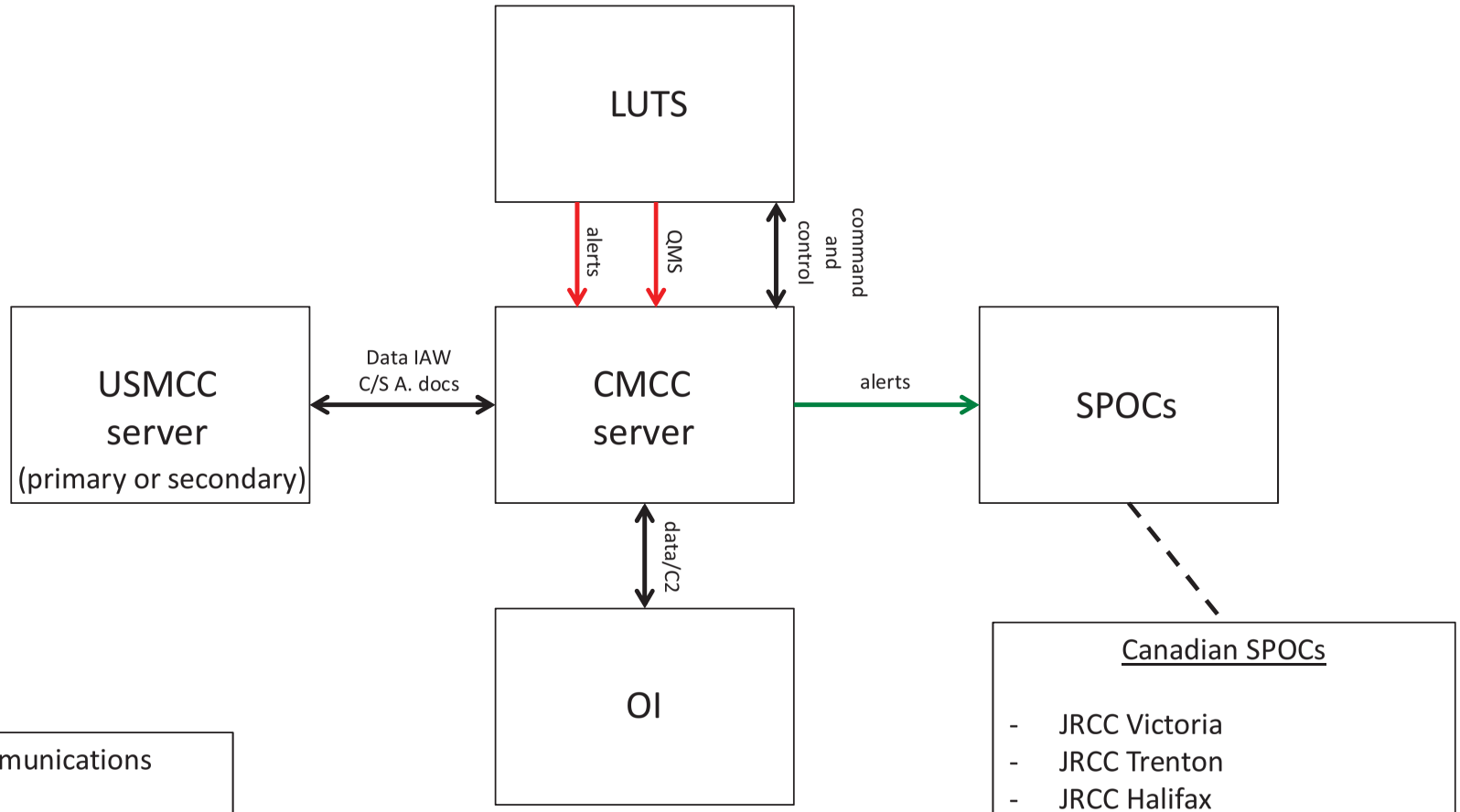
All Mission Control Centres (MCCs)

- 24/7/365 operational centres;
- Receive alerts from national LUTs and foreign MCCs;
- Validate, match and merge alerts to improve location accuracy and determine the correct destination;
- Query 406 MHz Beacon Registration Database and transmit registration info with alerts;
- Transmit alerts to Rescue Coordination Centres (RCCs), SAR Points of Contact (SPOCs) and filter redundant data;
- Perform system quality assurance monitoring and reporting;
  - CMCC sends Quality Management System (QMS) data to the US MCC.


SEARCH AND RESCUE
RECHERCHE ET SAUVETAGE
CANADIAN SEARCH AND RESCUE REGIONS (SRR)
JRCC Joint Rescue Co-ordination Centre
MCC Mission Control Centre
MRSC Maritime Rescue Sub-Centre
Greenland
Alaska (USA)
Trenton SRR
Halifax SRR
Victoria SRR
MRSC QuÈbec
JRCC Victoria
JRCC Halifax
JRCC/MCC Trenton
United States of America (USA)

USMCC RCC and SPOC Regions

Automated functions handled by CMCC server (current)



Communications

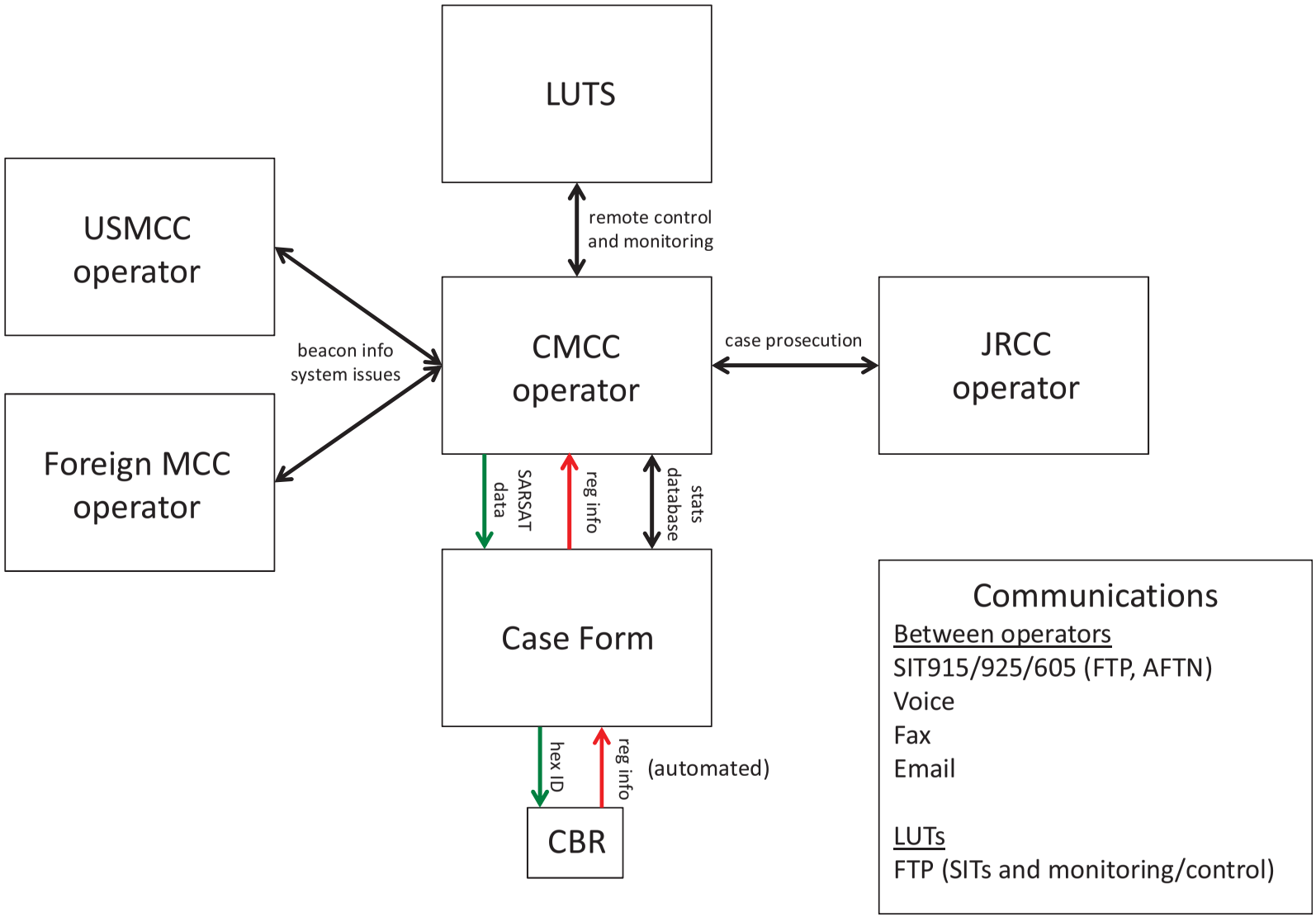
SIT messages
Primary: FTP
Secondary: AFTN

Note: no QMS when AFTN

Canadian SPOCs

- JRCC Victoria
- JRCC Trenton
- JRCC Halifax (primary/backup servers)
- MRSC Quebec
- Transport Canada Situation Centre (SSAS alerts)

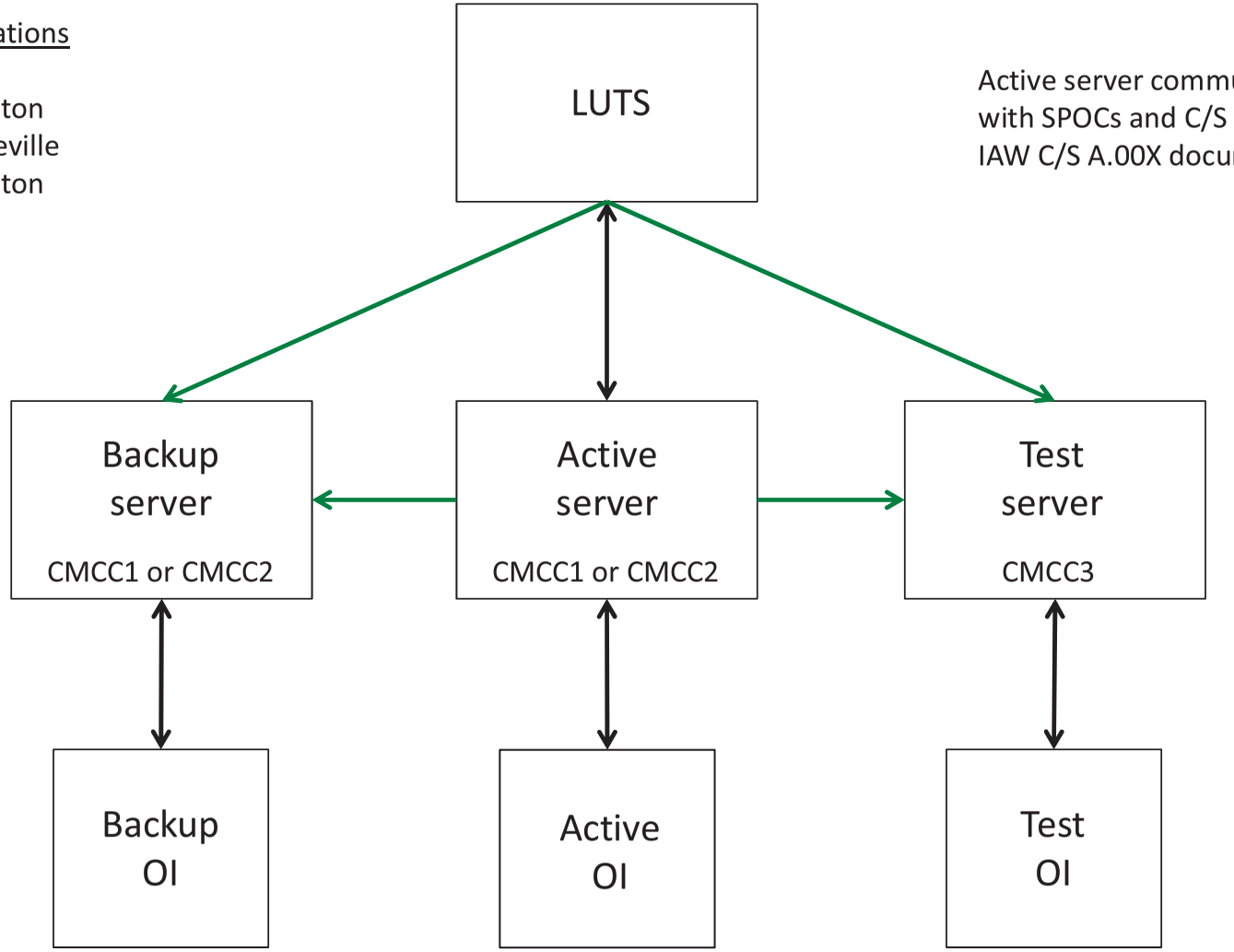
CMCC Operator interaction



Network interoperability

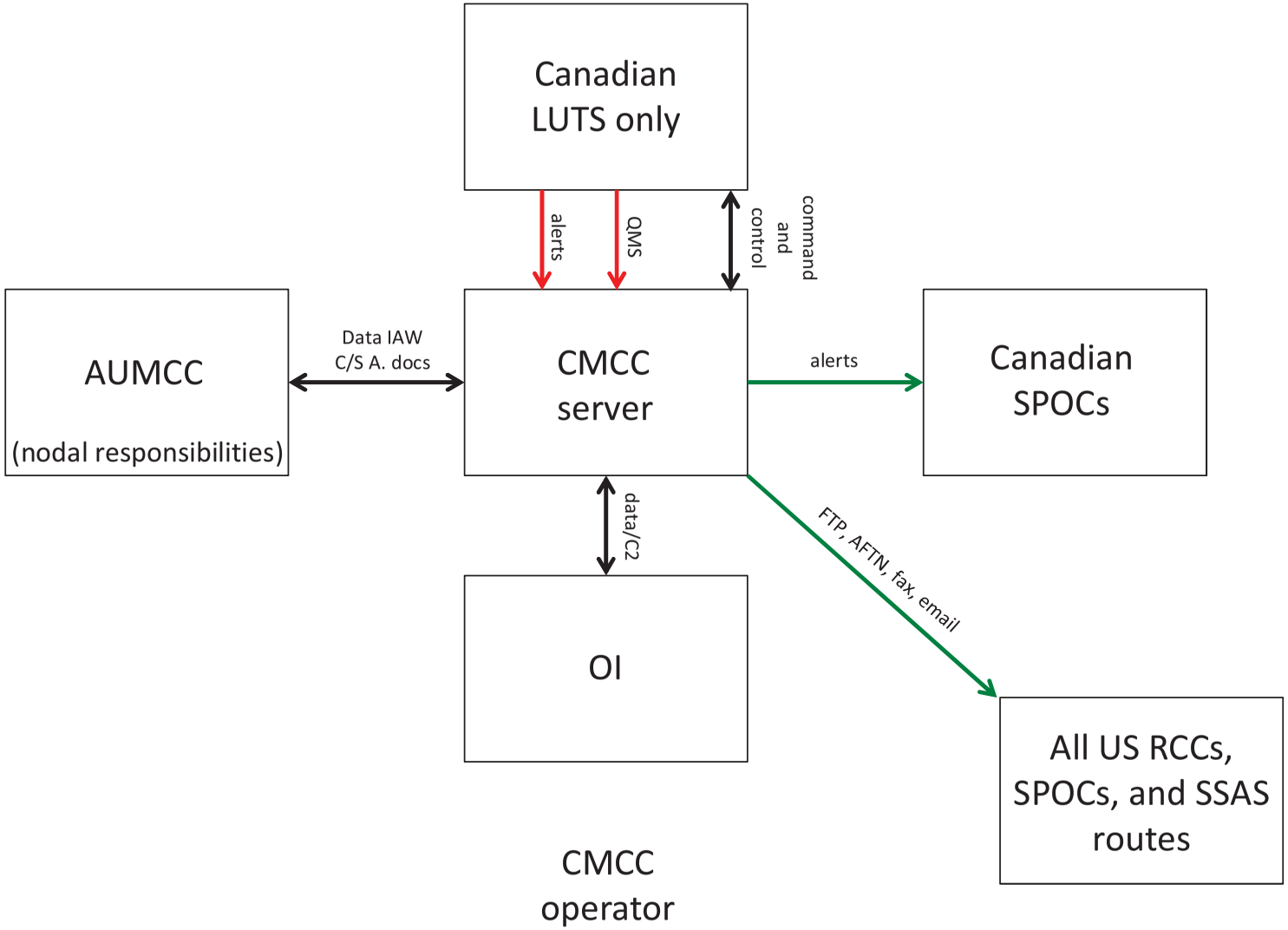
Hardware locations

CMCC1 – Trenton
CMCC2 – Belleville
CMCC3 – Trenton
OIs – both



Active server communicates with SPOCs and C/S network IAW C/S A.00X documents

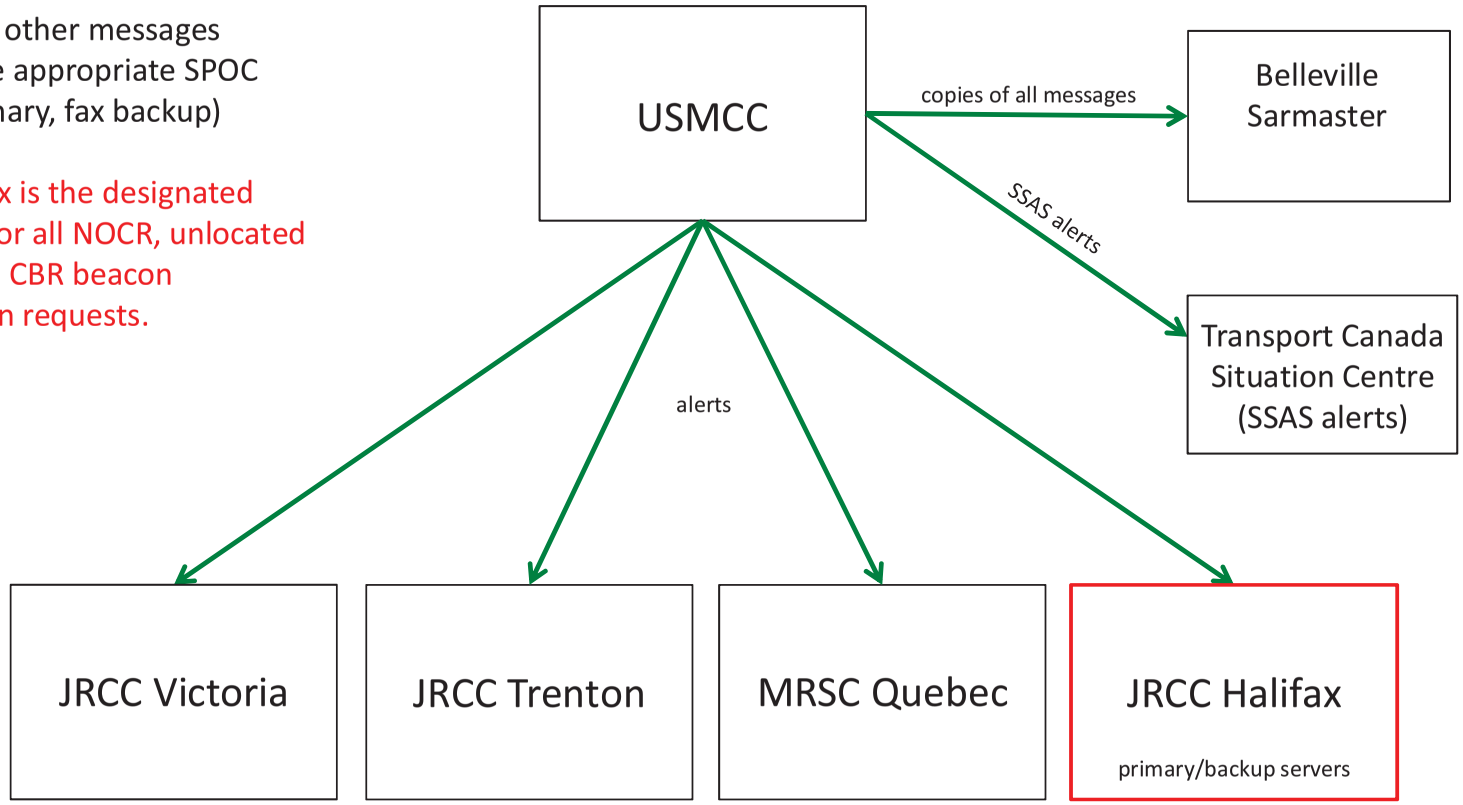
CMCC backup of USMCC



USMCC backup of CMCC

Alerts and other messages sent to the appropriate SPOC (FTPV primary, fax backup)

RCC Halifax is the designated recipient for all NOCR, unlocated alerts, and CBR beacon registration requests.



Canadian SPOCs

SARNOCC Responsibilities

- Provide Current and reliable infrastructure
  - Hardware (Capable of Virtualization, Fully Redundant Systems for each Location [client and Server])
  - Software (Windows Server 2008R2, Windows 7 x64)
- Communications between Agencies
  - AFTN, U.S. Coast Guard, USMCC, JRCC/MRSC's
  - Email and Fax Forwarding Capabilities
- Network Security
  - All information must be unclassified
  - Enterprise Editions for Software
- Centers
  - Primary: JRCC/CMCC Trenton, JRCC Halifax, JRCC Victoria
  - Sub-Centers: MRSC Quebec
- Manning
  - 1 Sergeant (Reg. Force)
  - 3 Master Corporals (Reg. Force)
  - 2 Master Corporal (Res.)
  - 2 Corporals (Res.)
  - 1 CS (vacant)

Questions

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Canada

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Industry Engagement Process for

MEOSAR Ground Segment W8474-16ME03/A

Summary of Feedback and Outcomes

www.pwgsc-tpsgc.gc.ca

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    - 4.2 Capability and Ability of Industry to Deliver a MEOSAR Ground Segment System Solution
    - 4.3 Project Execution Model
5. Conclusions
6. Next Steps

1. Introduction

Public Works and Government Services Canada (PWGSC) released a Price and Availability notice (W8474-13MSGS/A) on May 8, 2013 as a first step to inform industry of a potential procurement of a ground segment solution for the Medium Earth Orbit Search and Rescue (MEOSAR) project on behalf of the Department of National Defence (DND), as well as to seek industry input on a cost estimate for the pricing of both definition and implementation phases of the requirement.

Subsequently, PWGSC released a Request for Information (RFI) on September 28, 2015 to gain additional industry input in developing this procurement. With this RFI, PWGSC sought to:

- further inform industry of DND's MEOSAR ground segment requirement;
- obtain industry input for the refinement of the procurement strategy;
- obtain industry input on the methods of leveraging economic benefit for Canada; and,
- obtain industry input for the development and refinement of the MEOSAR ground segment system solution requirement.

An Industry Day and one-on-one meetings (Ottawa, Ontario), as well as one-on-one site visits to the Canadian Mission Control Centre (Trenton, Ontario), were also conducted as part of the project engagement activities.

Additional engagement activities will include the publication of draft Request for Proposal (RFP) documents, such as a draft statement of work, draft evaluation criteria and draft contract terms and conditions.

2. Industry Engagement Process

Price and Availability	The P&A was posted on May 8, 2013, and required that responses be submitted by July 2, 2013. Three firms responded to the P&A. Responses were received from: • Honeywell • Orbit • TSi
Industry Engagement Period	• Posting of RFI: September 28, 2015 • Industry Day: November 12, 2015 • One-on-one meetings: November 13, 2015 • RFI Responses Requested: December 10, 2015 • One-on-one CMCC site visits: February 16 and April 13, 2016 • Posting of draft solicitation documents: to be determined • Concludes with the Publication of a notice to Buy and Sell (buyandsell.gc.ca) advising industry that the period has ended or, should an RFP be issued, date of publication of the RFP.
Information disclosed under the RFI	• Preliminary information on the project background, objectives, and requirement • COSPAS-SARSAT documents applicable to the project
Participants	Twelve respondents participated in the RFI process, as well as Government of Canada MEOSAR Project team members (DND/PWGSC/Innovation, Science and Economic Development Canada [ISED]).
Participants at the Industry Day	Twelve firms were represented at the Industry Day: • ADGA Group • Com Dev International • DRS Technologies • General Dynamics • Honeywell Global Tracking • Lockheed Martin • McMurdo • MDA Corporation • Orbit • Thales Alenia • Thales Canada • Rheinmetall
Participants at the one-on-one meetings	Nine firms participated in a one-on-one meeting: • ADGA Group • DRS Technologies

	• General Dynamics • Honeywell Global Tracking • McMurdo • MDA Corporation • Orbit • Thales Alenia • Thales Canada
Questions and Answers from Industry	Seventy-four questions, excluding those posed during the CMCC site visits, were received from industry for which Canada provided responses and/or clarification.
RFI responses submitted	Four firms submitted responses to the RFI: • General Dynamics • McMurdo • Orbit • Thales
Participants at the one-on-one CMCC Site Visits	Six firms participated in the one-on-one CMCC site visits: • DRS Tech • GD • McMurdo • MDA • Orbit • Thales

3. Acronym List

AOR	Area of Responsibility
C/S	Cospass-Sarsat
CMCC	Canadian Mission Control Centre
COTS	Commercial Off-the-shelf
DND	Department of National Defence
GEO	Geostationary Earth Orbit
GEOSAR	Geostationary Earth Orbit Search and Rescue
GUI	Graphic User Interface
ISED	Innovation, Science and Economic Development Canada
ISS	In-Service Support
ITB	Industrial Technological Benefits
LEO	Low Earth Orbit
LEOSAR	Low Earth Orbit Search and Rescue
LUT	Local User Terminal
MEOLUT	Medium Earth Orbit Local User Terminal
MEOSAR	Medium Earth Orbit Search and Rescue
OCC-600	Operator Control Console 600
P & A	Price and Availability
PWGSC	Public Works and Government Services Canada
RFI	Request for Information
RFP	Request for Proposal
SAR	Search and Rescue
SME	Small and Medium Enterprise
SOW	Statement of Work
STS	Satellite Tracking Schedule
TOA/FOA	Time of Arrival/Frequency of Arrival
VP	Value Proposition

4. Summary of Feedback and Outcomes

4.1 Procurement Strategy Information

Topic 1 RFI Sections 3.3& 4.17 ITB Policy and VPs	Feedback was requested on potential for economic opportunities for Canadian suppliers in both the defence sector or in other economic sectors, both new and established, in order to assess how best to leveraging economics benefits for Canada.
Feedback	Out of four companies that responded to the RFI, two provided feedback on economic opportunities for Canadian suppliers. Both companies indicated that the MEOSAR ground segment will consist mainly of foreign-made off-the-shelf technology, which may limit economic value for Canadian suppliers. Only one company spoke to Research and Development, but stated that there would be little potential for such activities. Although one company identified potential opportunity for Canadian small and medium enterprises (SMEs), the other indicated that involvement by SMEs would be non-existent. One company stated that the value of the ground segment is too low for Canadian suppliers to carry out significant work, and recommended that Value Proposition not be applied.
Outcome	Through this industry engagement session, it was determined that the potential value of the requirement would be below the $20 million threshold for application of the Industrial and Technological Benefits (ITB) policy. Therefore, the ITB policy will not be applied for the MEOSAR ground segment.

4.2 Capability and Ability of Industry to Deliver a Ground Segment System Solution

Topic 2 RFI Section 4.2 Respondent Information	Feedback was requested on industry's capability – either individually or through partnerships/sub-contracting – to deliver a ground segment MEOLUT system solution that meets stated project requirements.
Feedback	All respondents, either individually or through partnerships/sub-contracting, indicated that they have the capability to deliver a ground segment MEOLUT system solution that meets the project requirements.
Outcome	Canada is satisfied that there are sufficient suppliers who are capable of performing the work. No further action is required by Canada following the assessment of these responses.
Topic 3 RFI Section 4.3.1-4.3.2	Feedback was requested on industry's proposed Ground Segment MEOLUT System, including: • Optimal locations to provide full coverage of the Canadian SAR

	Area of Responsibility (AOR); • Antenna system and radome performance, robustness, design life, the suppliers, and distance between antennas; • Hardware components (servers, etc.); • Processing Software; • Satellite Tracking Scheduling (STS) program including provision of overriding capability by a 3rd party program and method of receiving orbital elements; • Interference monitoring; • System performance including link budget, detection rate, location accuracy, maximum capacity and indicate how a vendor's system compares to the key parameters of Table 2 in paragraph 2.2.1.1 of the RFI; • Capability to also process LEO and GEO data to augment the location accuracy; • Accessories needed for calibration, reference beacons, GPS receiver, etc; • Provision of the Graphic User Interface (GUI) menus showing MEOLUT functions and controls; and • Estimates of data link rates and daily capacity for MEOLUT-MEOLUT and MEOLUT-CMCC links.
Feedback	Many respondents provided feedback on the items listed in Topic 2. • With respect to optimal locations for the MEOLUT systems, respondents indicated that a variety of solutions would provide full coverage of the Canadian SAR AOR; suggestions included either one or two MEOLUT sites, as well as a variety of locations. • Two respondents provided a complete description of their Local User Terminals for MEOSAR and indicated that their system(s) are capable of covering the Canadian SAR AOR. Both of these respondents recommended the use of radomes. • Some respondents provided general statements that they could provide Commercial off the Shelf (COTS) hardware for the Ground Stations. One respondent provided technical details on possible antenna options for the ground segment. • Several respondents provided details on their approaches to meet stated performance requirements. One respondent provided a detailed Link Budget; another provided a detailed Time of Arrival and Frequency of Arrival (TOA/FOA) analysis to show that location accuracy requirements can be met. • Two respondents provided a nominal and worst-case data link estimate for daily capacity needs. Respondents indicated that 1Mbps data links both to and from the MEOLUT should suffice to handle the required data streams between the MEOLUT and the CMCC.

	• Two respondents recommended that a reference beacon be procured and installed at the MEOLUT installation site(s), and that the respondents have the capability to process LEO and GEO data to augment location accuracy. These respondents indicated that they perform varying degrees of interference monitoring.
Outcome	Many technical queries were addressed in Topic 3, and Canada reviewed the information provided by each of the respondents. With respect to optimal locations for the MEOLUT systems, feedback from respondents was reviewed and considered by the project team. Canada has determined that two MEOLUT sites, one in eastern Canada and one in western Canada, will be required; the draft RFP documents will clearly identify this information.
Topic 4 RFI Section 4.3.3	Feedback was requested on industry's proposed strategies to manage the following: • Interference; • False beacon alerts; • Weak beacon signals detectability versus LEOSAR with L-band and S-band; • Capability of detecting all weak beacons that are currently detected by the LEOSAR, but not by GEOSAR; • STS scheduling in a network environment (national and international); • Networking with MEOLUTs from a different manufacturer; • Calibration issue in local and network mode; and • Capability of data to be processed by the CMCC OCC-600 interface and software.
Feedback	Several respondents provided feedback on strategies to manage the above-listed topics. One respondent provided a detailed analysis on how their processing software handles false beacon alerts, while another stated that they can meet the C/S T.019 requirement to have a ratio of anomalous data to real alerts of 1 in 10,000. In general, all respondents indicated that they are capable of networking with or using data from different MEOLUT manufacturer, including sending data that can be processed by the CMCC OCC-600 interface and software.
Outcome	Canada reviewed the technical information provided by each of the respondents. Due to the complexity and number of proprietary and non-proprietary interfaces associated with the current CMCC software, Canada has decided to retain the existing CMCC, including all interfaces, software

	and infrastructure. Vendors will be required to supply a separate Remote Operator Interface for Command and Control of the MEOLUTs. The MEOLUT alert data will be integrated and displayed by the existing CMCC software, OCC-600, as per the recently-approved C/S "A documents" addressing MEOLUT to MCC interfaces for alert data. The draft RFP documents will clearly identify this information.
Topic 5 RFI Section 4.3.4	Feedback was requested on industry's approaches to addressing ongoing changes in the following: • MEOLUT Specifications Standards C/S T.019 (draft); and • MEOLUT Commissioning Standards C/S A.0XX (draft).
Feedback	Respondents indicated that software changes are made as modifications to C/S T.019 are approved. They also confirmed that commissioning would occur per the latest version of T.020 at the time of commissioning.
Outcome	The draft RFP documents will ensure that vendors must adhere to the latest approved version of the C/S MEOLUT specification and commissioning standards. As indicated in Topic 4, Canada plans to retain the current CMCC interface and software. The draft RFP documents will clearly identify this information.
Topic 6 RFI Section 4.3.5	Feedback was requested on industry's approaches for In-Service Support (ISS).
Feedback	All respondents provided an ISS approach. Two respondents provided details on their warranties, parts obsolescence and spare parts plan. One respondent recommended that warranties and spares be purchased separately by DND. Another respondent described how it plans to address upgrades to the MCC.
Outcome	Following the assessment of the responses, it is not considered necessary to dictate a specific approach. The draft RFP documents will include ISS support for the ground segment; no further action is required by Canada.

4.3 Project Execution Model for MEOSAR Ground Segment Solution

Topic 7 RFI Section 4.7.1 Project Execution Model	Feedback was requested on proposed project execution models that would provide the best value for cost.
Feedback	Several respondents provided a project execution model with identified risks. Two of these vendors provided a project schedule, including Critical

	Design Reviews to ensure product assurance.
Outcome	Suggested models have been reviewed and considered by the project team. The draft RFP documents will clearly outline that a detailed schedule and project execution model are requirements with the prospective vendor's bid; no further action is required by Canada.
Topic 8 RFI Section 4.7.3 Schedule	Feedback was requested on proposed project schedule to implement and commission a fully-integrated MEOSAR ground segment solution.
Feedback	Some respondents provided high-level schedules for the full implementation and commissioning of the ground segment solution. One respondent's schedule indicated they would take 16 months to install two MEOLUTs and have them commissioned, while another respondent's schedule indicated that they could install a MEOLUT including site preparation/construction, and commissioning within 14 months.
Outcome	The project has determined that the respondents' proposed timelines for to installation and commissioning of the ground segment solution are reasonable. The draft RFP documents will clearly identify this information.
Topic 9 RFI Section 4.7.4 Risks	Feedback was requested on potential risks to schedule, cost and scope for implement of the MEOSAR ground segment solution.
Feedback	Three respondents presented the risk matrices, and two indicated that integration of the ground segment solution with Canada's existing CMCC OCC-600 software would be considered a high-risk element; the third indicated that it was not a high-risk element.
Outcome	The project reviewed and assessed the risks presented by the respondents. As indicated in Topic 4, Canada has decided to retain the existing CMCC, including all interfaces, software and infrastructure; the draft RFP documents will clearly identify this information.

5. Conclusion

Overall, the feedback from industry was very valuable in contributing to the development and refinement of the procurement strategy and the technical requirement.

From a procurement standpoint, the potential value of the requirement has been identified as being below the $20 million threshold for application of the ITB policy. Therefore, the ITB policy will not be applied for the MEOSAR ground segment, and there will be no Value Proposition in any resulting evaluation criteria. Instead, the Canadian Content Policy will be employed in order to leverage economic benefit to Canadians.

From a technical perspective, two key changes have resulted from this engagement process. The input received from the RFI responses prompted additional consideration on the MEOLUT site selection and the potential replacement of the existing CMCC; subsequently, Canada has determined that two MEOLUT sites, one in eastern Canada and one in western Canada, will be required. Moreover, Canada has decided to retain the existing CMCC, including all interfaces, software and infrastructure.

6. Next Steps

Draft RFP documents, which may include a draft statement of work, draft evaluation criteria and draft contract terms and conditions, will be posted on buyandsell.gc.ca for review by industry.

The Government of Canada MEOSAR project team members thank all participants for taking part in the Industry Engagement Process.

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