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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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<b>Title - Sujet</b> Mercury Global Anchor Stations	
<b>Solicitation No. - N° de l'invitation</b> W8474-14MG25/A	<b>Amendment No. - N° modif.</b> 010
<b>Client Reference No. - N° de référence du client</b> W8474-14MG25	<b>Date</b> 2013-10-07
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$\$ST-006-26331	
<b>File No. - N° de dossier</b> 006st.W8474-14MG25	<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 2013-10-31</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
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<b>Telephone No. - N° de téléphone</b> (819) 956-1772 ( )	<b>FAX No. - N° de FAX</b> (819) 997-2229
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This amendment is raised to address the following:

- To respond to questions received during the solicitation period; and
- To revise the solicitation accordingly, as applicable.

## **Questions and Answers**

**Q71** DAB SOW, Section 7.3.3; DAB-ILS-005, DID Sections 10.3.2.3 and 10.3.2.3.2 - Level 3 Drawings

During the Industry Engagement phase, with respect to the Level 3 Drawings requirement, Canada stated: "At a minimum, it is expected that drawings with sufficient level of detail will be finalized for CDR and approved by CANADA. The requirement for Level 3 drawings will be reviewed and amended in the final SOW." However, the final contains no amendments to the requirement for Level-3 drawings. Given the following:

1. Canada's desire for a substantially off-the-shelf solution to support its schedule, cost, and risk objectives,
2. the DAB Contractor will also provide In- Support for what is anticipated to be the life- of the system, and is therefore already obligated to prepare adequate drawings to meet its obligations, and
3. Level 3 drawings provide no value to the Crown and significantly increase the cost of the MGAS.

We recommend modifying SOW Section 7.3.3 and the DAB-ILS-005 DID to reflect a requirement for Level 1 drawings only.

If the intent was, in fact, for the Mercury Global project to pay for Level 3 drawings for new work, then we recommend modifying Section 7.3.3 and the DAB-ILS-005 DID to clarify that such drawings are only required for new work, and NOT for commercially available or off-the-shelf items.

**A71** The Crown does not require level 3 drawings as part of the contract deliverables and the DAB SOW has been amended as per items 5, 6 and 7 below. The Contractor will need to prepare adequate electrical, mechanical, structural drawings to pass provincial and municipal facility inspections for the Anchor Sites.

**Q72** DAB SOW, 7.3.3 - Engineering Drawings and Associated Lists Unbounded and uncertain scope

The RFP states: "The Contractor must prepare and deliver separate Engineering Drawings and Associated Lists for the MGAS and components, as well as for their associated support items such as recommended decontamination and support equipment, in accordance with CDRL DAB-- The minimum drawing types required are Level 3. Any other drawings, or drawing types, that the Project Authority deems necessary for effective Life Cycle Material Management, must also be included as part of the Engineering Drawings & Associated Lists package." We recommend removing the final sentence as the same Contractor provides both DAB and ISS. However, if the intent is to provide more than what is already asked in the RFP, please identify the scope that Bidders should assume in their proposals.

**A72** The Crown does not require level 3 drawings as part of the contract deliverables and the DAB SOW has been amended as per items 5, 6 and 7elow.

**Q73 ISS SOW Table 1-1 - DND Personnel for 1st line investigation**

Item 11 of the table (Anchor Site Manning) states that DND personnel will be available onsite "24/7 that could be used for 1st line problem investigation if requested". As part of the Industry Engagement, in the answers to questions issued 26-Jul-2013, Canada indicated that the option to use DND personnel would be removed from the SOW. Is that still Canada's intent? If not, how much effort by DND personnel can bidders plan for in their bids?

**A73** The Contractor is responsible for first line maintenance at the Anchor Sites and there will be no DND personnel available to provide support for problem investigations. The ISS SOW has been amended as per item 8 below.

**Q74 BEP, Table 2-1 Sec 2.3 - CDRL Reference Typos**

a. Please confirm the following corrections to CDRLs referenced in this table:

- 2.3.5 should ref DAB-SE-013 (not DAB-SE-011)
- 2.3.7 should ref DAB-SE-011 (not DAB-SE-019)
- 2.3.8 should be called Reliability Data Report (not WHS Certification Report for a 2nd time)

b. Please confirm that item 2.3.4 ("In-Service Support Transition Management Plan" – ISS-PM-005) is the same document referenced in 2.4.3 ("Transition" – ISS-PM-006) We believe that section 2.4.3 is the correct place for the reference, and has the correct CDRL number, and recommend that you delete 2.3.4.

**A74** a. Correct. The Bid Evaluation Plan has been amended as per items 2,3 and 4 below.

b. Correct. Sub-section 2.3.4 is the same document as referenced in 2.4.3. The Bid Evaluation Plan has been amended as per item 1 below.

**Q75** Attachment 2 - Financial Bid Presentation Sheet for IN-SERVICE SUPPORT, Item (2) request bidders to propose prices for the following options which are described at Paragraph 1.13 (ISS Optional Services) of the Mercury Global In-Service Support (ISS), Annes G, Statement of Work:

**1.13 ISS Optional Services**

**1.13.1** Option 1: Operational Support - Remote Monitoring and Control Support at Strategic Communications Operations Centre (SCOC) - This is an option to continue providing this service "for a period up to 5 years". Since similar support is also described and priced in the CORE work (Item 1), would the Crown please confirm whether bidders are to repeat/duplicate/add this additional, optional price at item (2)? For what period of time? 5 years?

**1.13.2** Option 2: Operational Support - Mission Planning Support at Strategic Communications Operations Centre (SCOC) - "For the second and/or third option period of ISS", the Contractor may be required to provide resources... Since similar support is also described and priced in the CORE work (Item 1), would the Crown please confirm whether bidders are to repeat/duplicate/add this additional, optional price at item (2)? For what period of time?

**A75** Regarding 1.13.1: Option 1 may be exercised at any time after the Anchor Stations are accepted until the end of the ISS Contract, including Option Periods 1 and 2.

Regarding 1.13.2: Option 2 may be exercised at any time during Option Period 1 and/or Option Period 2.

The ISS SOW has been amended as per item 11 below. Please note the earlier changes to the Financial Bid Presentation Sheet in solicitation amendment 009.

**Q76 SOW, Section 1.5.1.1 Early Access Remote Monitoring and Control Infrastructure**

The ISS SOW requires the contractor to provide a SATCOM Operator to provide SGT remote monitoring and control for two years. Please provide all of the necessary background details of the Crown's existing local (SGTs at three sites) and remote (SCOC in Ottawa) monitoring and control infrastructure.

**A76 The ISS SOW has been ammended as per item 9 below to allow a three (3) month period after contract award during which the Contractor will familiarize and train its operators on the Remote Monitoring and Control function with the assistance of DND and the incumbent Early Access Contractor. This information will be made available to the Contractor during the three month familiarization period following contract award.**

**Q77 SOW, Section 1.5.1.3 Early Access Security Architecture**

The ISS SOW requires that the Contractor must not compromise the security architecture and C&A of the system as a whole or any individual information systems supporting the MGAS. Please provide all of the necessary information on the SGT security architecture such that an assessment may be made.

**A777 The ISS SOW will be amended as per item 9 below to allow a three (3) month period after contract award during which the Contractor will familiarize and train its operators on the Remote Monitoring and Control function with the assistance of DND and the incumbent Early Access Contractor. This information will be made available to the Contractor during the three month familiarization period following contract award.**

**Q78 SOW, Section 1.5.1.4.2 Early Access staff to be trained and highly knowledgeable at Contract Award**

The ISS SOW requires that bidders provide "operator support staff that have already been trained and are highly knowledgeable on the Remote Monitoring and Control function of the MGAS" starting on day one of the MGAS contract. Please provide the all of the necessary information on the Remote Monitoring and Control function of the MGAS.

Please confirm that, for the purposes of enabling the contractor to be ready for Early Access support immediately upon Contract Award, Canada will facilitate bidder staff access to the Early Access equipment and systems prior to Contract Award.

Alternatively, the Crown may choose to have the Early Access operations and maintenance support functions begin at three (3) MACA. Given that the Crown has an existing contract for the SGT support, a three MACA transition point would allow for a reasonable phase-across between contractors and would mitigate the risk of any impact to current DND SGT operations.

**A78 The ISS SOW has been amended as per items 9 and 10 below to allow a three (3) month period after contract award during which the Contractor will familiarize and train its operators on the Remote Monitoring and Control function with the assistance of DND and the incumbent Early Access Contractor. The update will also amend the task to monitor and control the SGTs remotely as this capability is not currently available.**

**Q79 SOW, Section 1.5.2 Early Access GFE for Maintenance Support**

The ISS SOW requires that the Contractor provide maintenance support for Early Access. Please outline the details of any GFE related to the L-3 Com terminals, such as system configuration, and existing Crown-owned spares and consumables.

A79 The ISS SOW has been amended as per item 9 below to allow a three (3) month period after contract award during which the Contractor will familiarize and train their operators on the Early Access maintenance function with the assistance of DND and the incumbent Early Access Contractor.

Q80 With respect to Canada's answer for question 28.

A28 For transmission link design and analysis the following can be used:

- i. Uplink X-pol (Target/Assume a minimum 25 dB)
- ii. Downlink X-pol (Target/Assume a minimum 25 dB)
- iii. Adjacent satellite interference (Adjacent satellite)
- iv. Interference on uplink of -20.9 dBW/Hz and on downlink of the sum of -20 dBW/Hz and -32 dBW/Hz affects all links; where interference is based on Geocentric angles
- v. Uplink intermod (Assume satellite amplifiers are linearised)
- vi. Transponder intermod (Assume satellite amplifiers are linearised)

Looking at just the uplink -20.9 dBW/Hz would cause an interference level of 46.1 dBW with a 5 MHz carrier. Table 1-4 shows the Force Development and Generation Operation has a Ground 1 Baseline terminal transmitting 5 Mbps. Table 1-5 the X band Ground 1 Baseline terminal has a linear EIRP of only 40.9 dBW. This would cause negative C/I which cannot work. A similar problem occurs on the downlink where the carrier EIRP from the satellite is about 41 dBW and the interference level for a 5 MHz carrier will be almost 47 dBW.

The submarine terminal used in the Maritime Operation and the Force Development and Generation Operation will also experience negative C/I and other terminals will become interference limited.

We don't believe there is really significant X or Ka band adjacent satellite interference. I would typically use about 25 dB total for combined adjacent satellite C/I. Does DND consider it reasonable for bidders to amend the adjacent satellite C/I to 25 dB?

A80 The Adjacent Satellite allocations are baseline values assumed for WGS. The -20 dBW/Hz on the uplink is the level of interference radiated off-axis from a ground antenna in the direction of a WGS satellite. That level encounters free space loss as well as the receive antenna gain at the satellite. On the downlink, it is assumed that two satellites adjacent to a designated WGS satellite are creating interference for Anchor Station ground antennas, and would be subjected to downlink pathloss. The realistic angles of separation at these levels are ~2.5 degrees or greater. For the purposes of WGS link budgets, where appropriate or if desired, analyses could be standardised in dBW/Hz instead of integrated bandwidths.

Q81 Annex H CORE – Para 2 (pg 51) Option Period 1 – Para 2 (pg 54) Option Period 2 – Para 2 (pg 56) - ISS Basis of Payment – Operational Availability Adjustments

a. Please confirm that the calculation of Operational Availability, per Anchor Station, is that defined in the ISS SOW Table 1-1 and Section 1.3.10.4.1 (i.e. product of equipment availability and link availability)

b. The method of assessing performance described in the RFP incorporates factors that are outside the Contractor's control: i.e. the weather. While the Contractor can propose high link availability based on the ITU-R Rain model, as Canada requests, it is still only a statistical model, valid over large sample sets. Using it as a measure for basis of payment results in the Contractor assuming risk attributable to the variability of Canadian weather when such variance exceeds statistical norms. We recommend that the basis of payment be modified so that the Contractor is not penalized as a result of such variability. We recommend a method that more directly measures system performance (e.g. G/T and EIRP), based on metrics that are under the Contractor's control, either as the metric for basis of payment, or as a method to verify system performance under extreme weather conditions.

c. Section 1.3.5 of the Life Cycle Support Requirements Specification (ISS SOW, Appendix 1) provides the method to calculate operational availability of the each of the X and Ka forward and return links per anchor station. Please define how those four operational availability values, for each of seven anchor stations (i.e. 28 values) will be rolled- to determine the single value to be used for the basis of payment.

d. We observe that any method of reasonably combining those 28 values will result in a basis of payment threshold that will be significantly different than the single equipment availability number proposed by the bidders for Anchor Station Availability (Bid Eval Plan 4.2.1.1, DAB AS SRS Sec 2.4.1, DAB SOW 5.2.11.2). Please confirm that the threshold value provided for the Operations Availability Adjustment will be determined from the MGAS- Operational Availability calculation method above, not the single AS Equipment Availability.

e. The second row of each of the three tables indicates that the payment will be downward adjusted by 5%, even if the Contractor meets its bid availability (i.e. less than or equal to 99.9X%). Please confirm that this is merely a typographical error, and that payments will not be downward adjusted if Contractor meets its bid availability

f. We recognize why Canada would like to constrain the adjusted all inclusive quarterly price to no more than the quarterly ceiling price. However, because operational availability is a statistical measure, valid only over long periods of time, that will inherently disadvantage even wellperforming systems. We recommend that either:

- i. The ceiling price apply over the entire contract period; or
- ii. You apply a system of credits such that credits that the Contractor cannot claim in a given quarter can be carried forward to future quarters.

g. We recommend that you specify a tolerance for this assessment (Keeping in mind that availability is a non-linear metric).

h. We recommend that the scope of the Operational Availability Adjustments be limited to the CORE ISS line items in the basis of payment, excluding Operations Centre Support (i.e. excluding RMC and Mission Planning support). This would appropriately decouple the unrelated items of optional Operations Centre staffing from the MGAS availability Adjustments, and remove the variability in the magnitude of the Adjustments as a function of whether or not Canada exercises any of the ISS Operations Centre staffing options.

- A81
- a. Yes the calculation of Operational Availability is the product of equipment availability and link availability.
  - b. The Contractor is asked to build these risk factors into their availability calculations.

- c. On further review, CANADA notes that there is an error in sub-section 1.3.1: the Operational Availability should be 99.5%, or greater as per the Contractor's bid (excluding scheduled downtime).

The Operational Availability applies per Anchor Site, and it is derived from the product of the Anchor Station equivalent availability and the minimum RF propagation availability at the Anchor Site, regardless of frequency band and links. In essence, this accomplishes the following:

- i. By-passes the need for rolling-up multiple independent Anchor Station Availabilities; and
- ii. Fits more in line with the operation of an Anchor Site to provide communication IAW, and as long as required, for any frequency band of operation, and uplink from, or downlink to, any Anchor Station at the Anchor Site.

The single value to be used for the Basis of Payment will be the minimum Operational Availability of the three (3) Anchor Sites in the MG Anchor Segment.

- d. CANADA acknowledges that the Anchor Segment Operational Availability will be different from the Single AS Availability; hence, the clarification to part (c) of this response.
- e. Previously addressed under Solicitation Amendment 004. Please note that item 14 below amends the values of the applicable table
- f. The adjustments are to remain unchanged.
- g. The adjustments are to remain unchanged.
- h. The operational availability adjustments apply only to the CORE ISS tasks, including any areas of support this entails. Optional tasks are not subject to downward adjustment.

### **Solicitation Revisions**

1. At Attachment 1, Bid Evaluation Plan, Appendix 8, subsection 2.3.4:

DELETE: In its entirety

2. At Attachment 1, Bid Evaluation Plan, Appendix 8, subsection 2.3.5:

DELETE: CDRL DAB-SE-011  
INSERT: CDRL DAB-SE-013

3. At Attachment 1, Bid Evaluation Plan, Appendix 8, subsection 2.3.7:

DELETE: CDRL DAB-SE-019  
INSERT: CDRL DAB-SE-011

4. At Attachment 1, Bid Evaluation Plan, Appendix 8, subsection 2.3.8,

DELETE: WGS Certification Report (if Available)  
INSERT: Reliability Data Report

5. At Annex A, Statement of Work - Design and Build, section 7.3.3:

DELETE: In its entirety.

6. At Annex A, Statement of Work - Design and Build, Appendix 4:

DELETE: CDRL DAB-ILS-005 and associated row in its entirety

7. At Annex A, Statement of Work - Design and Build, Appendix 5:

DELETE: DID DAB-ILS-005 in its entirety

8. At Annex G, Statement of Work - In-Service Support, section 1.3.1, Table 1-1:

DELETE: #11 in its entirety

INSERT: The following:

11	Anchor Site Manning	The Anchor Sites will be unmanned
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9. At Annex G, Statement of Work - In-Service Support, section 3.0, subsection 1.5.1:

DELETE: Subsections 1.5.1.1, 1.5.1.2 in their entirety

INSERT: The following:

1.5.1.1 The Contractor must provide 24/7/365 SATCOM Operator on-site at SCOC in Ottawa, Ontario, to monitor and control the SATCOM Ground Terminals (SGT) for a period of two (2) years, beginning three months after contract award.

1.5.1.2 The monitoring and control support must be provided 24 hours a day, 7 days a week, and 365 days a year.

DELETE: Subsection 1.5.1.4.2 in its entirety

INSERT: The following:

1.5.1.4.2 Providing operator support staff that have already been trained and are highly knowledgeable on the Monitoring and Control function of the MGAS;

10. At Annex G, Statement of Work - In-Service Support, section 3.0, subsection 1.5.2:

DELETE: Subsection 1.5.2.1 in its entirety

INSERT: The following:

1.5.2.1 The Contractor must provide maintenance support for the Mercury Global Initial Operational Configuration known as the Early Access capability. The support is required beginning three (3) months after Contract Award and ending once the MGAS has been successfully delivered. This is anticipated to be a two (2) year period. The support includes having the Field Service Technician (FST) respond, as required, to second line SGT maintenance requests from DND.

11. At Annex G, Statement of Work - In-Service Support, section 3.0, subsection 1.13:

DELETE: Subsection 1.13.1.1 and 1.13.1.2 in their entirety



INSERT: The following:

1.13.1.1 The Contractor is asked to provide this operational support as Core work (see Section 1.4.4 3 of this Annex) beginning after the Anchor Stations have been accepted by Canada.

1.13.1.2 The Contractor must provide 24/7/365 SATCOM Operator on-site at SCOC in Ottawa, Ontario to remotely operate the Anchor Stations.

12. At Annex G, Statement of Work - In-Service Support, Appendix 1, subsection 1.3.1:

DELETE: In its entirety

INSERT: Subsection 1.3.1 as follows:

The MGAS, not including the EIE, must be accessible by users, 24 hours-a-day, 7 days-a-week, with an average availability of 99.50 percent or greater as per the Contractor's bid (excluding scheduled downtime). Operational Availability applies per Anchor Site, and it is derived from the product of the Anchor Station equipment availability and the minimum RF propagation availability at the Anchor Site, regardless of frequency band and links.

13. At Annex G, Statement of Work - In-Service Support, Appendix 1, subsection 1.3.5.:

DELETE: In its entirety

INSERT: Sections 1.3.5 and 1.3.6 as follows:

### **1.3.5 Anchor Site Operational Availability Calculation**

- 1.3.5.1 The MGAS Anchor Site Operational Availability  $A_{OS}$ , for time periods per section 1.2.4 must be calculated, in percent, as follows:

$$A_{OSx} = \text{Min}(A_{AS}) \times \text{Min}(A_{XFUL}, A_{XRDL}, A_{KFUL}, A_{KRDL})$$

Where:

$X = 1, 2 \text{ or } 3$  (Anchor Sites);

$\text{Min}(A_{AS})$  is the minimum equipment Availability of all the Anchor Stations at the Anchor Site; and

$\text{Min}(A_{XFUL}, A_{XRDL}, A_{KFUL}, A_{KRDL})$  is the minimum Link Availability of all the Anchor Stations at the Anchor Site.

### **1.3.6 Overall Anchor Segment Operational Availability Calculation**

- 1.3.6.1 The MGAS Operational Availability  $AMGO$  is the minimum Operational Availability of the three (3) Anchor Sites in the MG Anchor Segment, for time periods per section 1.2.4 calculated, in percent, as follows:

$$AMGO = \text{Min}(AOS1, AOS2, AOS3)$$

Where:

$\text{Min}(AOS1, AOS2, AOS3)$  is the minimum Operational Availability of all the Anchor Sites

14. At Annex H, Basis of Payment- In-Service Support:

Solicitation No. - N° de l'invitation

W8474-14MG25/A

Amd. No. - N° de la modif.

010

Buyer ID - Id de l'acheteur

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

W8474-14MG25

File No. - N° du dossier

006stW8474-14MG25

CCC No./N° CCC - FMS No/ N° VME

DELETE: Tables H-3, H-10 and H-18 in their entirety

INSERT: The following:

Availability Delivered for Applicable Month	Adjustment Per Month
> 99.XX% ( <i>X as per bid</i> )	+ 5%
= 99.XX% ( <i>X as per bid</i> )	-
< 99.XX% ( <i>X as per bid</i> )	- 5%
< 99.50%	- 10%

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ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME