Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

RETURN RESPONSES TO:
RETOURNER LES RÉPONSES À:

Space Programs Directorate
6767 route de l'Aéroport
Longueuil, Quebec, Canada
J3Y 8Y9

Direction des programmes spatiaux
6767 route de l'Aéroport
Longueuil (Québec) Canada
J3Y 8Y9

REQUEST FOR INFORMATION (RFI)

Title – Sujet

INDUSTRY INVOLMENT IN THE CANADIAN SPACE AGENCY SATELLITE OPERATIONS

Solicitation No. - Nº de l'invitation	Amendment No. - Nº modif.
9F013-18-0219/A	N/A
Client Reference No. - Nº de référence du client	**Date**
9F013-18-0219	July 09, 2017
GETS Ref. No. - Nº de réf. de SEAG	
File No. - Nº de dossier	**CCC No./Nº CCC - FMS No/Nº VME**
9F013-18-0219	N/A

Solicitation Closes - L'invitation prend fin : | **Time Zone Fuseau horaire**

at - à **2:00 pm**
On - le **Thursday, September 17, 2017**
Eastern Daylight Time (EDT)

F.O.B - F.A.B.

Plant-Usine : ☐ **Destination :** ☒ **Other-Autre :** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur :**
Bruno Bergeron	MTD100
Telephone No. - Nº de telephone:	**E-mail address- Adresse Courriel:**
450-926-4562	Bruno.Bergeron@canada.ca

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
Canadian Space Agency
6767 route de l'Aéroport
Longueuil, Quebec, Canada
J3Y 8Y9

Comments – Commentaires

Instructions : See Herein
Instructions : Voir aux présentes

Vendor / Firm Name and Address
Raison sociale et adresse du fournisseur / de l'entrepreneur

Delivery Required - Livraison exigée:	**Delivery Offered – Livraison proposée :**
See herein	

Vendor / Firm Name and Address
Raison sociale et addresse du fournisseur / de l'entrepreneur:

Telephone No. - Nº de telephone:
Facsimile No. - Nº de télécopieur:

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**

Issuing Office - Bureau de distribution

Space Programs Directorate (Mtd Division)
6767 route de l'Aéroport
Longueuil, Quebec, Canada
J3Y 8Y9

Canada

1 INTRODUCTION

Public Works and Government Services Canada (PWGSC), (also referred to as ''Public Services and Procurement Canada'' (PSPC)), is releasing this Request for Information (RFI) on behalf of the Canadian Space Agency (CSA) to consult with all interested parties on possible scenarios for the involvement of industry in the CSA Satellite Operations Centre.

Currently the CSA is operating SCISAT (http://www.asc-csa.gc.ca/eng/satellites/scisat/default.asp), NEOSSat (http://www.asc-csa.gc.ca/eng/satellites/neossat/default.asp), and M3MSat (http://www.asc-csa.gc.ca/eng/satellites/m3msat/default.asp). As well CSA is also contributing to RADARSAT-2 operations. It is expected that with the upcoming addition of the 3 satellites Radarsat Constellation Mission (RCM) and other potential missions, the volume and complexity of the satellite operations at the CSA may increase. RCM operations are critical for the Government of Canada

The prime objective of this RFI is to seek information and industry feedback that will assist the Government of Canada (GC) in identifying effective business models to engage industry in supporting CSA's satellite operations, while providing opportunities for possible industry use of government installations excess capacity, if any. Industry involvement in the CSA Satellite Operations Centre could potentially allow access by a firm to Government of Canada satellite operations capacity for commercial use. This RFI is gathering information to assess the viability of this scenario. Capacity may ultimately not become available for commercial use.

The reader should take note that this RFI is applicable only to CSA operations and assets under its management and specifically excludes satellite infrastructure owned or operated by other Government of Canada departments.

2 CONSIDERATIONS

Respondents are asked to consider the following contextual information in responding to this RFI.

Applicability of trade agreements to any future steps of an eventual procurement process will be evaluated at the appropriate time.

2.1 ROLE OF INDUSTRY

As per the Space Policy Framework, the CSA seeks to position the private sector at the forefront of space activities and seeks progress through partnerships with industry. The CSA also recognizes that the Canadian companies along with their people and technology are key to building Canada as a world-leading innovation economy. In this context, the CSA seeks to foster an innovative, diversified and competitive industry involved in satellite operations activities and to optimize and enhance the efficiency of satellite operations at the CSA Satellite Operations Centre (CSA-SOC). CSA is considering how industry could support the Government team in fulfilling its obligations related to stewardship of Canadian satellite systems, and to its commitments to partners in Canada and in the world.

2.2 REGULATORY CONSIDERATIONS

Please note that the Remote Sensing Space Systems Act and its regulations as well as the Radiocommunication Act and its regulations apply, as appropriate, to satellite operations in Canada, including those that are the responsibility of the CSA.

2.3 PARTNERSHIPS

Partnerships are a key factor in the success of Canadian space activities. The CSA entertains regular interactions with not only international partners (e.g. space agencies, other organizations) from other countries, but also various other GC Departments, industry and academia stakeholders, as part of the operations workflow at the Centre.

Canada is a signatory to various international agreements related to space that are influencing the structure of mission operation services, such as the Charter of Space and Major Disasters, or various existing supporting agreements between the CSA and foreign agencies on launch and early orbit phase, or other inter-agency partnerships leveraging cross-utilization of ground segment system resources. Collaboration with foreign space agencies is particularly essential during early mission phases and anomaly support.

To ensure efficiency of operations, the CSA intends to increase international collaboration by participating to international bodies and communities of practice, to take part in the establishment of interoperability standards, and multi-lateral cooperation agreements.

2.4 CSA SATELLITE OPERATIONS FACILITIES AND RESOURCES

As a steward of GC-owned infrastructure and satellite assets, the CSA holds facilities and core resources dedicated to satellite mission operations.

2.4.1 Satellite Operations Centre

The facilities comprise a Satellite Operations Centre (CSA-SOC) located at the CSA headquarters in Longueuil, QC, with the ground systems related to functions such as (but not limited to) mission planning, data production, spacecraft and payload control, spacecraft health and safety, and satellite sensor calibration. Through international arrangements, interdepartmental agreements, and commercial contracts, the CSA-SOC also has access to data downlink and Telemetry, Tracking, and Control (TT&C) infrastructure deployed elsewhere in Canada and abroad.

2.4.2 CSA Core Resources

CSA core resources for satellite operations exercise critical activities by which CSA ensures stewardship of and accountability towards government-owned space and ground based assets. To that end, CSA core resources manage CSA facilities and infrastructure as a sustainable and efficient satellite operations environment. CSA core resources are responsible for:

- Ensuring alignment of satellite operations with GC and CSA priorities;
- Managing risks related to satellite missions and contracts;
- Managing regulatory and policy frameworks applicable to operating satellite assets, for example: data policy, access control;
- Defining and upholding service delivery standards to mission stakeholders;
- Enabling and managing partnerships with other GC Departments and foreign agencies as per national and international agreements;
- Acting as the operational authority; providing and managing expertise and capacity for tasks such as but not limited to, satellite health and safety actions, data production and delivery, life-cycle management, anomaly investigation, establishment of requirements for future missions, development and implementation of best operations practices, management of operations-related knowledge and contracts, delivery of training, integration of contractor teams into the operations cycle;
- Leading mission ground segment and space segment philosophy development and evolution, for example in areas such as artificial intelligence and automation.
- Acting as a custodian of the documents, policies, procedures, and know-how related to the operations of the missions under its authority to ensure continuity and sustainability of satellite operations.

Together with the CSA facilities, the CSA core resources form an operational centre into which contracted industries are integrated to carry out satellite operation functions. These core resources (functions) would remain with the CSA in any future satellite operations business model. Integration of contractor’s personnel with CSA core resources shall facilitate information exchange in support of GoC accountability and knowledge management

2.5 GENERIC SATELLITE OPERATIONS FUNCTIONS

In a multi-mission environment, satellite missions can have varying levels of risk, readiness, maturity and operational requirements. Missions are also technically diverse and tend to last much longer than their nominal life span[1], over the course of which requirements for the operations change and new missions are generally added.

To support satellite operations the following functions are normally required:

- Configuration management
- Data calibration
- Data product generation
- Data reception
- Flight dynamics analysis
- Ground segment engineering
- Network/communication and systems administration
- Order handling
- Physical and systems security and controls
- License management
- Data preservation and archive management
- Security and Systems
- Spacecraft control
- Spacecraft and payload planning
- Spacecraft engineering
- Systems engineering
- Systems maintenance
- Telemetry, Tracking and Commanding

The performance of these functions may be required on a 24/7 basis, and at various security clearance levels, up to SECRET.

[1] For example, RADARSAT-1 lasted more than three times its design lifetime, from 1995 to 2013.

3 REQUEST FOR INFORMATION

''Eligible Respondents'' to this Request for Information (RFI) are defined as a ''company'' (or a consortia) with the capabilities to potentially address the needs of the CSA for any part or all of satellite operations functions.

Respondents are invited to submit a reply to the RFI answering the questions and presenting their comments on the two proposed scenarios or by presenting a new scenario or scenarios. To facilitate the review of the responses to this RFI, respondents are asked to address and present their comments in a way that either refers to the proposed scenarios, a new scenario and/or the satellite operation functions.

3.1 RESPONDENT INFORMATION

Provide background information on:

- Your company (or consortium members that would be created for such a project);
- Company/consortium management team;
- Company/consortium experience with projects of similar size and scope (with metrics such as number of employees, budget);
- Key company metrics (e.g. employees, revenues, etc.)
- Security clearance level
- The functions covered by the projects, referring to section 2.5 when possible.

Provide the name, title, telephone number, and e-mail address of a representative who may be contacted for clarification or any other information related to your response.

3.2 SCENARIOS

Two scenarios for possible Industry engagement scenarios are proposed for consideration:

Scenario A: Managed Operations Services for Satellite Missions. This scenario would rely on a Prime Contractor to fulfill operational functions of a specific satellite mission or a group of missions under GC authority. The Prime Contractor would form an industrial team/consortium to perform groups of related operational functions set out in section 2.5 required for specific mission or a group of missions.

Scenario B: Managed Operation Services for Operational Functions. This scenario relies on a number of contractors to fulfill a specific operational function or a group of functions set out in section 2.5 across all the satellite missions under GC authority. Contractors can in turn subcontract certain functions to complete their portfolio.

In any scenarios (as described above or a new Respondent proposed scenario), furnished CSA facilities and core resources should be assumed to remain the responsibility of the CSA as per section 2.4.

3.3 RFI QUESTIONS

Below are questions for which the CSA would like inputs from Industry. These inputs will be considered in selecting model(s) of engaging industry to support satellite operations at the CSA:

Q1 Skillsets, Functions, and Facilities

a) Referring to Section 2.5, which skillsets/functions can your company provide for satellite operations services?

b) Is there a functional area which is not identified in Section 2.5 for which your company could provide satellite operations services? If so, provide details on function(s) and skillset(s) required/available.

c) Under these skillsets/functions your company provides, how would you qualify your level of expertise, and experience (e.g., examples of experience, number of years, number of staff and/or qualifications)?

d) What kind of pertinent facilities (e.g. access to ground stations) do you possess or have already access to and can use in providing satellite operations services to the CSA?

Q2 Scenarios Analyses

Provide comprehensive description and pros and cons analysis of the scenarios (A, B, and other proposed by you, if that is the case) to provide satellite operations services to the CSA. Indicate your preferences, if any, and justifications for your preferences.

Q3 Resources Adaptability

Describe, under each preferred scenario(s), the means by which your company would allow for resource flexibility and mobility to promote economies of scale and efficiencies in a multi-mission environment, and to adjust to potentially sharp changes in resource requirements. In your answer and per section 3.2, you can assume your company is a prime contractor (under scenario A), a contractor (under scenario B), a subcontractor (under either scenarios), or other relevant organization if a different scenario has been proposed.

Q4 Sustainable Operations

a) A key element for GC is to maintain, over the duration of satellite missions, a healthy competitive environment by ensuring long-term sustainability in the areas of knowledge management and training for satellite operations support. Assuming that over the life of a mission, there may be multiple iterations of competitive procurement of operations services, propose means by which the GC can ensure proper knowledge management and knowledge transfer between industry partners in between contract transitions in order to maintain continuity of the operations.

b) Describe, under preferred scenario(s), your views on how best to integrate operational teams, with respect to operational sustainability, training of personnel, knowledge transfer and management, responsibility and risk sharing, and management of best practices.

Q5 Risks and Responsibilities

a) Under the preferred scenario(s), what is a risk sharing profile (which satellite operations related risks are assumed by GC and which by Contractor(s)) and how is risk profile implementation supported by payments for services scheme.

b) What would be the governance/decision making framework to ensure that there would be no effective risk transfer of Contractor's risks to GC and GC will at all times maintain its ability to exercise fully its authorities and responsibilities.

c) In a multi-mission environment, missions may have various maturity levels with some missions having settled into well-known service demands and goals, and other, less established missions with less predictable service demands which may yet become better defined as mission evolves. How should operation service levels be measured in order to provide meaningful indicators in this context?

Q6 Productivity and Innovation

Under the preferred scenario(s), what approach(es) would you propose to promote productivity enhancements and innovation in the context of on-going satellite operations, evolving missions, and evolving technology.

For the preferred scenario(s), please elaborate on the means to share the benefits of innovation and productivity gain with the GC or Industry partners.

Q7 Contract Type

a) Under preferred scenario(s), would your company prefer to provide satellite operations services under a firm fixed price type of contract, or on a cost reimbursable type of contract?
b) How do you propose payments (including bonus and penalty) for services be linked to service delivery performance and how can performance be objectively measured? What indicators would be used?
c) What technical information about missions would you need in order to be able to provide proposals (technical and cost)?

Q8 Contractual Reporting - Experience

a) Do you have experience working under contract with the GC, as a prime contractor, or as a subcontractor? Please qualify this experience and risk sharing.

b) If the answer is yes, do you have experience working with other on-site or off-site contractors assigned on the same project and also under the GC? Please qualify this experience and risk sharing.

Q9 Use of Excess Capacity

If available, would you envision benefits from having access to GC-furnished installations to use excess capacity that might be available to either expand your business and/or increase efficiency and/or offer economies of scale? If so how would you consider offsetting costs for any GC missions impacted?

Q10 Other pertinent Information

Provide any other information you consider pertinent to the subject of satellite operations at the CSA.

3.4 COMPETITIVE PROCUREMENT PROCESS

Based on the responses received and on other key considerations related to CSA priorities, the CSA may consider further steps with a view to meeting future CSA satellite operation requirements. The CSA may then decide to move forward by initiating one or more competitive procurement processes.

3.5 RECOMMENDATIONS, SUGGESTIONS OR COMMENTS

Please provide general feedback and/or any recommendations, inputs or comments that could assist the CSA in developing future Request for Proposals.

4 NOTES TO INTERESTED RESPONDENTS

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 of any firm in an eventual Request for Quote or Request for Proposal.

This RFI is neither a Call for Tenders, nor a Request for Proposal , and no agreement or contract will be entered into with any contractor, 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 eventual RFQs or RFP’s or award eventual contracts.

Canada shall not be bound by anything stated in this RFI. Canada reserves the right to change all or any parts of this RFI as deemed necessary.

Canada reserves the right to contact the respondents to this RFI to obtain clarifications on the respondent's response if required.

5 CONFIDENTIALITY

Potential respondents are advised that any information submitted to the CSA in response to this RFI may be shared amongst several Federal departments and/or central agencies and could also be used by in the subsequent development of internal approval documents and/or a subsequent competitive RFQ or RFP.

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

6 COSTS FOR RESPONSES

No payment or compensation of any kind shall be made to the respondents by Canada for costs incurred in the preparation and submission of responses to this RFI.

7 REQUESTS FOR CLARIFICATION DURING THE RFI PERIOD

Enquiries are to be made only in writing, by e-mail, only to the PSPC Contracting Authority indicated below.

Enquiries must be received no less than ten (10) working days prior to the RFI closing date to allow sufficient time to provide a response and/or to prepare a meeting. Enquiries received after that time might not be answered prior to the RFI closing date.

To ensure consistency and quality of information provided to respondents, the replies to enquiries will be made public through the Government Electronic Tendering Service (GETS), (buyandsell.gc.ca), without revealing the sources of the enquiries. Such Q&As will be published in both official languages. Canada will ensure that any published questions and answers will not contain any confidential or proprietary information.

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

Requests for clarification should only be sent to the Contracting Authority:

Bruno Bergeron
Supply Manager

Space Programs Directorate
Québec Region
Public Services and Procurement Canada (PSPC)

6767 Route de l'Aéroport
Longueuil, Québec, Canada
J3Y 8Y9
Telephone Number: 450-926-4562
E-mail: Bruno.Bergeron@canada.ca

This RFI may be the object of modifications during the response period. In such event, such modifications would be published on the Government Electronic Tendering Service (GETS) (buyandsell.gc.ca). It is the respondent's sole responsibility to verify, at regular intervals and using the GETS, if such modifications have been published or not and to verify if questions and answers in relation to this RFI have been published or not.

8 DELIVERY ADDRESS FOR RFI RESPONSES

Responses to this RFI shall be sent to the Contracting Authority indicated in Section 7 above.

The closing date to submit a response is: **September 17, 2018, 2:00 pm EDT**.

Respondents are requested to provide their responses in one (1) printed copy and one (1) copy on CD-ROM or USB key. The only accepted electronic file formats for the response must be in either the Adobe Portable Document Format (PDF)TM or in a file format that is readable by the Microsoft Office Suite.

The electronic copy is required in order to facilitate the distribution of the RFI responses to PSPC, CSA or other Federal Government departments. Responses can be submitted in one of the two official languages of Canada (English or French).

Please ensure that all the documentation submitted be marked with the following:

Name of Respondent:
INDUSTRY INVOLMENT IN THE CANADIAN SPACE AGENCY SATELLITE OPERATIONS / RFI Response - Reference # 9F044-16-0998
Date (YYYY-MM-DD)

9 REQUESTS FOR EXTENSION TO THE RFI CLOSING DATE

Any request for a time extension to the RFI closing date will be considered provided the request is received in writing by the PSPC representative (see Section 7) no later than five (5) working days prior to the RFI closing date. A favorable response, if granted, will be communicated on the Government Electronic Tendering Service (''GETS'') (https://buyandsell.gc.ca), showing the revised closing date. The request, if rejected, will be directed to the originator by the PSPC representative.

10 SECURITY REQUIREMENTS

Respondents are encouraged to familiarize themselves with potential security provisions which may eventually require clearances at the SECRET and COMSEC SECRET levels. Details are available at:

- http://www.tpsgc-pwgsc.gc.ca/services/secinfo-eng.html
- https://www.cse-cst.gc.ca/en/publication/list/comsec

11 CONTROLLED GOODS PROVISIONS

Future satellite operations may likely require the production of or access to controlled goods that are subject to the Defence Production Act. The Respondents are encouraged to familiarize themselves with the provisions of the Controlled Goods Program (CGP) at the earliest opportunity. Details on how to register under the CGP are available at: http://ssi-iss.tpsgc-pwgsc.gc.ca/dmc-cgd/index-eng.html.

12 TECHNICAL ASSISTANCE AGREEMENTS (TAAS) AND INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR) PROVISIONS

Future satellite operations may likely require the production of or access to controlled goods that are subjected to the ''International Traffic in Arms Regulations'' (ITAR) of the Government of the United States of America for which ''Technical Assistance Agreements'' (TAA) may be required to be in place in advance of Bid Evaluation in order that the bidder can insure that ITAR-Controlled material may be included in its proposed solution. Respondents are encouraged to familiarize themselves with the ITAR provisions and TAA requirements at the earliest opportunity. Details are available at: https://www.pmddtc.state.gov/regulations_laws/itar.html

END OF RFI