

RETURN BIDS TO: RETOURNER LES SOUMISSIONS À:

MAT.DESProc2-DOSE2@forces.gc.ca

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Department of National Defence

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition au: Ministère de la défense nationale

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes cijointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prixindiqué(s).

Comments - Commentaires

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

Issuing Office - Bureau de distribution Department of National Defence DES Proc 2-5-3 Woodline Building 2 Constellation Drive

Ottawa ON

Request for Proposals No. W6369-200196 Space System Engineering and Cost Analysis

Title - Sujet				
Space System Engineering and Cost Analysis				
Solicitation No N° de l'invitation Date				
W6369-200196		2019	-12-02	
Client Reference No N° o W6369-200196	de référence du client			
GETS Reference No N° o	le référence de SEAG			
File No N° de dossier	CCC No./N° CCC - F	MS No	./N° VME	
W6369-200196				
Solicitation Closes - L'invitation Time Zone Fuseau horaire			Fuseau	
January 13, 2020		2pm Eastern Standard Time EST		
F.O.B F.A.B.				
Plant-Usine: Destina	ation: ✓ Other-Autre	:		
Address Enquiries to: - Adresser toutes questions à: Buyer Id - Id de l'acheteur				
Cherie Murray			DES Proc 2-5-3	
		No N° de FAX		
613-901-8477		()-		
Destination - of Goods, Services, and Construction: Destination - des biens.				
services et construction:				
To be inserted upon award				

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
See Herein	
Vendor/Firm Name and Address	
Raison sociale et adresse du fourniss	eur/de l'entrepreneur
Telephone No N° de	
téléphone Facsimile	
No N° 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	
fournisseur/ de l'entrepreneur (taper o	u ecrire en caracteres
d'imprimerie)	
Signature	Date



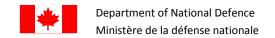


TABLE OF CONTENTS

PARI	1 - GENERAL INFORMATION	3
1.1	INTRODUCTION	
1.2 1.3	SUMMARY DEBRIEFINGS	
	2 - BIDDER INSTRUCTIONS	
	STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS	
2.1 2.2	STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS	
2.3	FORMER PUBLIC SERVANT	
2.4	ENQUIRIES - BID SOLICITATION	
2.5	APPLICABLE LAWS	
2.6	IMPROVEMENT OF REQUIREMENT DURING SOLICITATION PERIOD	8
PART:	3 - BID PREPARATION INSTRUCTIONS	8
3.1	BID PREPARATION INSTRUCTIONS	8
PART	4 - EVALUATION PROCEDURES AND BASIS OF SELECTION	9
4.1	EVALUATION PROCEDURES	9
4.2	Basis of Selection	
PART	5 – CERTIFICATIONS AND ADDITIONAL INFORMATION	11
5.1	CERTIFICATIONS REQUIRED WITH THE BID	
5.2	CERTIFICATIONS PRECEDENT TO CONTRACT AWARD AND ADDITIONAL INFORMATION	
PART	6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS	12
6.1	SECURITY REQUIREMENTS	12
PART	7 - RESULTING CONTRACT CLAUSES	13
7.1	STATEMENT OF WORK	
7.2	STANDARD CLAUSES AND CONDITIONS	
7.3	SECURITY REQUIREMENTS	
7.4	TERM OF CONTRACT	
7.5 7.6	AUTHORITIESProactive Disclosure of Contracts with Former Public Servants	
7.0 7.7	PAYMENTPAYMENT	
7.8	INVOICING INSTRUCTIONS	
7.9	CERTIFICATIONS AND ADDITIONAL INFORMATION	
7.10	APPLICABLE LAWS	18
7.11	PRIORITY OF DOCUMENTS	
7.12		
7.13	INSURANCE	19

List of Annexes to the Resulting Contract

Annex A-1, Statement of Work – Stream 1 – Constellation Design Concept

Annex A-2, Statement of Work – Stream 2 – Data Exploitation Concept

Annex A-3, Statement of Work – Stream 3 – Alternate Mission Concept

Appendix A to Annex A – Task Authorization (TA) form Appendix B to Annex A – Certifications at the TA stage;

Annex B, Basis of Payment;

Annex C, Security Requirements Check List;

List of Attachments to Part 3 (Bid Preparation Instructions):

Attachment 3.1: Electronic Payment Instruments

Attachment 3.2: Bid Submission Form

List of Attachments to Part 4 (Evaluation and Procedures and Basis of Selection):

Attachment 4.1: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 1 – Constellation Design Concept**

Attachment 4.2: Financial Proposal for **Stream 1 – Constellation Design Concept**

Attachment 4.3: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 2 – Data Exploitation Concept**

Attachment 4.4: Financial Proposal for Stream 2 – Data Exploitation Concept

Attachment 4.5: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 3– Alternate Mission Concept**

Attachment 4.6: Financial Proposal for Stream 3- Alternate Mission Concept

Attachment 4.7: Project Reference Response Template

List of Attachments to Part 5 (Certifications):

Attachment 5.1: Federal Contractors Program for Employment Equity – Certification

Attachment 5.2: Joint Venture Certification (to be used only if a Joint Venture is being proposed)

PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides Bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications and Additional Information: includes the certifications and additional information to be provided;
- Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by Bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, Security Requirements, the Security Requirements Checklist, the Electronic Payment Instruments, the Federal Contractors Program for Employment Equity - Certification, the Insurance Requirements, DND 626 Task Authorization Form and any other annexes.

1.2 Summary

1.2.1

- (a) While this requirement is in support of Canada's Whole-of-Government approach to delivering next-generation Earth Observation capabilities, the requirements listed to support the development of concept studies have been limited to DND/CAF unclassified requirements and priorities at this time. Other Government Departments and Agencies may issue other Requests for Proposals for their own requirements and priorities.
- (b) This bid solicitation is being issued to satisfy a requirement of the Department of National Defence and the Canadian Armed Forces for Space System Engineering and Cost Analysis to be conducted on the following 3 Streams to best meet the requirements as described in its Space Based Surveillance requirements documents:
 - 1- Stream 1: Constellation Design concept **Annex A-1** defines the scope of this work
 - 2- Stream 2: Data Exploitation concept Annex A-2 defines the scope of this work
 - 3- Stream 3: Alternate mission concept Annex A-3 defines the scope of this work

Bidders may submit a proposal for one or more Streams. All proposals will be evaluated using the mandatory and point rated technical evaluation criteria for each of the Streams.

Request for Proposals No. W6369-200196 Space System Engineering and Cost Analysis

Additional follow-on work may be required after the delivery of the Space System Engineering and Cost Analysis for each of the Streams. This work is optional and, if required, will be issued to the Contractor(s) through task authorization(s) under each contract.

- (c) It is intended to result in the award of up to 3 contracts for each of the 3 Streams, for a maximum total of 9 contracts. The period of each contract will be from contract award to March 31, 2020, with the option to extend the contract(s) for 2 six-month irrevocable options allowing Canada to extend the term of the contract(s).
- 1.2.2 There are security requirements associated with this requirement. For additional information, consult Part 6 Security, Financial and Other Requirements, and Part 7 Resulting Contract Clauses. For more information on personnel and organization security screening or security clauses, Bidders should refer to the <u>Contract Security Program</u> of Public Works and Government Services Canada (http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) website.
- 1.2.3 The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA).

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 10 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

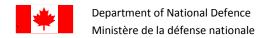
All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the <u>Standard Acquisition Clauses and Conditions Manual</u> (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works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

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The <u>2003</u> (2019-03-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of <u>2003</u>, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days Insert: 180 days



2.2 Submission of Bids

Bids must be submitted only to the Contracting Authority by the date and time indicated on page 1 of the bid solicitation to the following email address:

MAT.DESProc2-DOSE2@forces.gc.ca

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the <u>Financial Administration Act</u>, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the <u>Public Service Superannuation Act</u> (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the <u>Supplementary Retirement Benefits Act</u>, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the <u>Canadian Forces Superannuation Act</u>, R.S., 1985, c. C-17, the <u>Defence Services Pension Continuation Act</u>, 1970, c. D-3, the <u>Royal Canadian Mounted Police Pension Continuation Act</u>, 1970, c. R-10, and the <u>Royal Canadian Mounted Police Superannuation Act</u>, R.S., 1985, c. R-11, the <u>Members of Parliament Retiring Allowances Act</u>, R.S. 1985, c. M-5, and that portion of pension payable to the <u>Canada Pension Plan Act</u>, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? Yes () No ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

Request for Proposals No. W6369-200196 Space System Engineering and Cost Analysis

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

2.4 Enquiries - Bid Solicitation

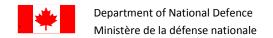
All enquiries must be submitted in writing to the Contracting Authority no later than 15 calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.5 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

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



2.6 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 10 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

As the Bidder will submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid Section II: Financial Bid Section III: Certifications

Section I: Technical Bid

In their technical bid, Bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Section II: Financial Bid

3.1.1 Bidders must submit their financial bid in accordance with the following Attachments:

Attachment 4.2 – Financial Proposal for **Stream 1 – Constellation Design Concept**Attachment 4.4 – Financial Proposal for **Stream 2 – Data Exploitation Concept**Attachment 4.6 – Financial Proposal for **Stream 3 – Alternate Mission Concept**

3.1.2 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Attachment 3.1 Electronic Payment Instruments, to identify which ones are accepted.

Request for Proposals No. W6369-200196 Space System Engineering and Cost Analysis

If Attachment 3.1 Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.3 Exchange Rate Fluctuation

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

3.1.4 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1 Technical Evaluation

Mandatory and point rated technical evaluation criteria are included in the following Attachments:

Attachment 4.1: Mandatory and point rated evaluation criteria for Stream 1 - Constellation Design concept

Attachment 4.3: Mandatory and point rated evaluation criteria for Stream 2 - Data Exploitation concept

Attachment 4.5: Mandatory and point rated evaluation criteria for Stream 3 - Alternate Mission concept

4.1.2 Financial Evaluation

4.1.2.1 Mandatory Financial Criteria

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

4.2 Basis of Selection

- 4.2.1 Basis of Selection Highest Combined Rating of Technical Merit and Price
 - 1. To be declared responsive, a bid must:

Request for Proposals No. W6369-200196 Space System Engineering and Cost Analysis

- a. comply with all the requirements of the bid solicitation; and
- b. meet all mandatory criteria.
- 2. Bids not meeting (a) or (b) will be declared non-responsive.
- 3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70% for the technical merit and 30% for the price.
- To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 70%.
- 5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30%.
- 6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
- 7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. For this example, the total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)

		Bidder 1	Bidder 2	Bidder 3
Overall Techn	ical Score	115/135	89/135	92/135
Bid Evaluated	Price	\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	115/135 x 70 = 59.63	89/135 x 70 = 46.15	92/135 x 70 = 47.70
	Pricing Score	45/55 x 30 = 24,55	45/50 x 30 = 27	45/45 x 30 = 30.00
Combined Rat	ting	84.18	73.15	77.70
Overall Rating		1st	3rd	2nd



PART 5 - CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the <u>Forms for the Integrity Regime</u> website (http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the <u>Ineligibility and Suspension Policy</u> (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid list at the time of contract award.



PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

- 1. At the date of bid closing, the following conditions must be met:
 - (a) the Bidder must hold a valid organization security clearance as indicated in Part 7 Resulting Contract Clauses;
 - (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work sites must meet the security requirements as indicated in Part 7 - Resulting Contract Clauses;
 - (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;
- 2. For additional information on security requirements, Bidders should refer to the <u>Contract Security Program</u> of Public Works and Government Services Canada (http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) website.



PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

7.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A-X". (to be inserted at contract award).

7.1.1 Optional Goods and/or Services

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor

7.1.2 Optional Task Authorizations

The Work or a portion of the Work to be performed under the Contract will be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

7.1.2.1 Task Authorization Process

- 1. The Procurement Authority will provide the Contractor with a description of the task using the DND 626, Task Authorization Form specified in Appendix A to Annex A-X (to be inserted at contract award)
- The Task Authorization (TA) will contain the details of the activities to be performed, a description of the
 deliverables, and a schedule indicating completion dates for the major activities or submission dates for
 the deliverables. The TA will also include the applicable basis (bases) and methods of payment as
 specified in the Contract.
- 3. The Contractor must provide the Procurement Authority within 10 calendar days of its receipt, the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract.
- 4. The Contractor must not commence work until a TA authorized by the Procurement Authority has been received by the Contractor. The Contractor acknowledges that any work performed before a TA has been received will be done at the Contractor's own risk.

7.1.2.2 Task Authorization Limit

The Procurement Authority may authorize individual task authorizations up to a limit of \$500,000.00, Applicable Taxes included, inclusive of any revisions.

Any task authorization to be issued in excess of that limit must be authorized by the Contracting Authority before issuance.

7.1.2.4 Canada's Obligation - Portion of the Work - Task Authorizations

Canada's obligation with respect to the portion of the Work under the Contract that is performed through task authorizations is limited to the total amount of the actual tasks performed by the Contractor.



7.1.2.5 Task Authorization - Department of National Defence

The administration of the Task Authorization process will be carried out by (*to be inserted at contract award*).

This process includes monitoring, controlling and reporting on expenditures of the contract with task authorizations to the Contracting Authority

7.2 Standard Clauses and Conditions

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

7.2.1 General Conditions

2035 (2018-06-21), General Conditions - Higher Complexity - Services, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

4006 (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information (2010-08-16), apply to and form part of the Contract.

7.3 Security Requirements

7.3.1 The following security requirements apply and form part of the Contract.

The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid Facility Security Clearance at the level of **SECRET**, issued by the Contract Security Program (CSP) of the Industrial Security Sector (ISS), Public Works and Government Services (PWGSC).

- The Contractor/Offeror personnel requiring access to sensitive work site(s) must EACH hold a valid
 personnel security screening at the level of SECRET, or RELIABILITY STATUS, as required, granted
 or approved by the CSP/ISS/PWGSC.
- 3. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of the CSP/ISS/PWGSC.
- 4. The Contractor/Offeror must comply with the provisions of the:
 - (a) Security Requirements Check List and security guide (if applicable), attached at Annex C
 - (b) Industrial Security Manual (Latest Edition).

7.4 Term of Contract

7.4.1 Period of the Contract

The period of the Contract is from date of Contract to March 31, 2020 inclusive.

7.4.2 Delivery Date

All the deliverables must be received and accepted on or before March 31, 2020.



7.4.3 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to 2 additional 6 month periods under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 15 calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Cherie Murray
Department of National Defence
DES Proc 2-5-3
Woodline Building
2 Constellation Drive
Ottawa ON

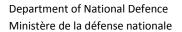
Telephone: 613-943-6844

E-mail address:cherie.murray@forces.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

7.5.2	The Procurement Authority for the Contract is: to be inserted at contract award
	(Name of Procurement Authority)
	(<i>Title</i>)
	(Organization)
	(Address)
Teleph	none:
Facsin	nile:
E-mail	·

The Procurement Authority is the representative of the department or agency for whom the Work is being carried out under the Contract. The Procurement Authority is responsible for the implementation of tools and processes required for the administration of the Contract. The Contractor may discuss administrative matters identified in the Contract with the Procurement Authority however the Procurement Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of Work can only be made through a contract amendment issued by the Contracting Authority



Request for Proposals No. W6369-200196 DG Space Engineering concept studies



The Technical Authority for the Contract is:
Name: Title: Organization: Address:
Telephone:
The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority; however, the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.
7.5.4 Contractor's Representative – to be inserted at contract award
The Contractor's Representative for the Contract is:
Name: Title: Organization: Address:
Telephone: Facsimile: E-mail address:
7.6 Proactive Disclosure of Contracts with Former Public Servants
By providing information on its status, with respect to being a former public servant in receipt of a <u>Public Service Superannuation Act</u> (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with <u>Contracting Policy Notice: 2012-2</u> of the Treasury Board Secretariat of Canada
7.7 Payment
7.7.1 Basis of Payment
7.7.1.1 Basis of Payment - Firm Price, Firm Unit Price(s) or Firm Lot Price(s)
For the Work described in Section 3.1 of the Statement of Work in Annex A-X (annex number to be inserted at contract award)



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a firm price, for a cost of \$_____ (amount to be inserted at contract award). Customs duties are excluded and Applicable Taxes are extra.

For the firm price portion of the Work only, Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

7.7.1.2 Optional Task Authorization with a Maximum Price:

For the Work described in Section 3.2 of the Statement of Work in Annex A-X (annex number to be inserted at contract award):

The Contractor will be paid for the Work specified in the authorized task authorization, in accordance with the Basis of payment at Annex B.

Canada's liability to the Contractor under the authorized task authorization must not exceed the limitation of expenditure specified in the authorized task authorization. Custom duties are excluded and Applicable Taxes are extra.

No increase in the liability of Canada or in the price of the Work specified in the authorized task authorization resulting from any design changes, modifications or interpretations of the Work will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been authorized, in writing, by the Contracting Authority before their incorporation into the Work.

7.7.2 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

7.8 Invoicing Instructions

7.8.1 Single Payment

For the Work described in Section 3.1 of the Statement of Work in Annex A-X (number to be inserted at contract award):

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

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada



7.8.2 Monthly Payments

For the Optional Work described in Section 3.2 of the Statement of Work in Annex A-X (number to be inserted at contract award):

Canada will pay the Contractor on a monthly basis for work performed during the month covered by the invoice in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work performed has been accepted by Canada.

7.9 Certifications and Additional Information

7.9.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

7.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (name of the province or territory as specified by the Bidder in its bid, if applicable, is to be inserted at contract award).

7.11 Priority of Documents

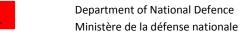
If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4006 (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information;
- (c) the general conditions <u>2035</u> (2018-06-21), General Conditions Higher Complexity Services;
- (d) Annex A-X (annex number to be specified at contract award), Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Security Requirements Check List (if applicable);
- (g) the Contractor's bid dated ______, (insert date of bid) (If the bid was clarified or amended, insert at the time of contract award:", as clarified on ______ " or ", as amended on _____ " and insert date(s) of clarification(s) or amendment(s)).

7.12 Foreign Nationals (Canadian Contractor OR Foreign Contractor)

SACC Manual clause A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)

OR



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

SACC Manual clause A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)

7.13 Insurance

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.



ANNEX "A-1"

STATEMENT OF WORK

STREAM 1 - CONSTELLATION DESIGN CONCEPT



1.0 Requirement

The Department of National Defence and Canadian Armed Forces' (DND/CAF) Director General Space (DG Space) requires an engineering and costing analysis to be conducted on a space-based surveillance system constellation design concept to best meet its requirements, as described in its draft Space-Based Surveillance Requirements document (SBS-RD) version 2.0.

2.0 Background and Scope

2.1 Background

This Statement of Work (SOW) is in support of Canada's Whole-of-Government approach to delivering next-generation Earth Observation capabilities. The requirements listed to support the development of concept studies have been limited to DND/CAF unclassified requirements and priorities at this time.

The CAF has an enduring mandate to defend Canada and North America, and contribute to an effective deterrent to threats. Concurrently, CAF must maintain the capability to reach and respond to a range of domestic and international threats and emergencies. Space systems and access are critical for surveillance to the CAF. Consequently, the CAF is dependent on the full spectrum of capabilities derived from space assets and relies on space-enabled capabilities to conduct operations at home and abroad.

2.2 Scope

DG Space requires a detailed engineering and costing analysis to be conducted on a space-based surveillance system constellation design concept that best meet its requirements, as described in its SBS-RD. Follow-on analysis may also be required.

3.0 Tasks

3.1 Engineering and costing analysis of a Constellation design concept

The Contractor must conduct a detailed review of the SBS-RD and develop an engineering and costing analysis of Synthetic Aperture Radar based constellations. The proposed design concepts must address all of the priority 1 and 2 requirements, and at a minimum, 50% of the remaining priorities 3-5 listed in the SBS-RD. A summary of these requirements and priorities are listed in Appendix B to Annex A-1.

The constellation design concepts are required to include technology that is or will be at Technology Readiness Level (TRL) 7-9 in 3-5 years, as defined in Appendix C to Annex A-1.

The engineering and costing analysis is to be written in accordance with the template in Appendix A and must at minimum include the following:

- a. Tasking, Telemetry, and Communications requirements;
- b. Communications links (frequency, bandwidth);
- c. Constellation composition, size and orbit(s);



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

- d. Recommended sensors/ sensor types, secondary payload, duty cycle, bus, frequency band(s);
- e. Detailed analysis of the sensor parameters (swath, resolution, Noise Equivalent Sigma Zero (NESZ), ambiguity, bandwidth, scene size);
- f. Technology, primary and secondary payload(s) and operating parameters across the space-based surveillance system;
- g. Identification of any possible requirements that cannot be met;
- h. Identification of all potential risks with their associated mitigation strategy, including the impact statement and probability of occurrence; and
- i. A detailed options analysis of proposed constellation design concepts including scalable cost estimates of multiple revisit times and resolutions. The cost estimates of the proposed constellation design concepts must contain a detailed description of the assumptions made in establishing the Work Breakdown Structure level 2 cost estimates. The estimates must clearly illustrate the cost-benefit analysis of the recommended design options and describe the trade-offs made with their associated costing.

3.2 Optional Professional services

The Contractor may be required to perform further analysis of the deliverables. These activities may include but are not limited to:

- a. Feasibility/trade-off studies of mission concepts including a 15 year design life;
- b. Payload compatibility assessments;
- c. SAR/EO/IR capability analysis; and
- d. Further cost and requirements scalability analysis.

4.0 Deliverables

4.1 Engineering and costing analysis of a Constellation design concept

- 4.1.1 Written Engineering and costing analysis report as per Section 3.1 of this SOW.
- 4.1.2 Presentation of the engineering and costing analysis to DND/CAF stakeholders.
- 4.1.3 Multi-media animation file which will visually demonstrate how the proposed concepts would operate. The animation must be free of all Contractor logos.

4.2 Optional professional services

Deliverables for optional professional services will be specified at time of Task Authorization.

5.0 Format of Deliverables

All deliverables must be submitted in electronic format using MS Office Suite software and written in English.

Presentation material should be in Power Point format. Documents provided in Adobe PDF format must not be protected against copy of text and figures.

All simulation scenarios that are included (e.g. with STK) must be delivered in CD-ROM, DVD-ROM, or transferred by FTP (through arrangement with the TA).



6.0Schedule of Deliverables

Reports and Documents	Due Date
Written Engineering and costing analysis report	20 March 20
Presentation of the engineering and costing	Prior to 31 March 20
analysis	

6.1 Schedule of Meetings

Meeting	Date	Location
Kick-Off	Contract Award + 1 week	DND/CAF (preferable) or telcon
Interim Review	Contract Award + 5 weeks	DND/CAF (preferable) or telcon

7.0 Acceptance

All deliverables under this SOW must be submitted to the Technical Authority for review and approval.

8.0 Work Location

All work shall be conducted at the Contractor's place of business. The presentation will take place at National Defence Headquarters, located at 101 Colonel By Drive, Ottawa, ON, or at 3500 Carling Avenue, Ottawa, ON. The time and place will be specified by the Technical Authority.

8.1 Travel

Travel will not be reimbursed under this contract.

9.0 Applicable Documents

The following documents provide additional information and guidelines that either may clarify the contents or are pertinent to the requirement of this SOW.

RD No.	Document Number	Document Title	Rev. No.	Date
RD-1.		DND/CAF Space-Based Surveillance Requirements Document	2	October 2019



Appendix A to Annex A-1. Report Template

General Instructions

Electronic Copies

Electronic documents must be prepared using the most appropriate tool (Microsoft Word, Excel, MS Project, etc.); released versions must be delivered in electronic format and may be in PDF. Documents must be delivered via email, if larger than 10 Mb direct transfer (FTP) is preferred. For direct transfer, a notification of the document's readiness and location on a contractor repository must be sent to the Technical Authority.

Electronic copies of text documents must be formatted for printing on 8.5" x 11" paper. The electronic file name and the identification number written on the document itself must have the following format:

YYYY-MM-DD PSCD-CIE ContractNumber short title

Where:

YEAR-MONTH-DAY: Date Tracking Number

PSCD: The four letter acronym of this SOW
CIE: Name of the Company (no space, no hyphen)
Contract Number: For example: _9F028-07-4200-03

Emails are to contain the SOW acronym or equivalent identifier in the "Subject" line. If necessary to send hard copy and media they are to be addressed to:

Director Space Requirements/ ISR Program Manager Director General Space National Defence Headquarters 101 Colonel By Drive Ottawa, ON. K1A 0K2

Enclosed documents must be labelled with the following information:

Company Name
Document Title
Document Number and Revision Number
SOW Number
Contract Number
Document Numbers

All pages must contain the Document Number at the top of the page. Document Numbers must include revision status and volume identification as applicable.

Document Structure and Content

Except as otherwise specified, all documents must have the overall structure as follows:

Cover/Title Page; Table of Contents;

Request for Proposals No. W6369-200196 DG Space Engineering concept studies



Scope: Applicable and Reference Documents; Body of Document; and **Annexes**

Cover/Title Page

The title page must contain the following information:

Document Number and date Revision indicator / date of Rev. **Document Title** SOW Name Contract Number

Prepared for: Director Space Requirements

Prepared by: Contractor name, CAGE Code, address, and phone number

© HER MAJESTY THE QUEEN IN RIGHT OF CANADA [YEAR]

Table of Contents

The table of contents must list the title and page number of each titled paragraph and subparagraph, at least down to the third level inclusive. The table of contents must then list the title and page number of each heading, figure, table, and annex, in that order.

Scope

This section must provide a brief overview of the Area of Interest(s) to which the document applies, and a summary of the content provided.

Applicable and Reference Documents

This section must list by Document Number and title, all applicable and reference documents. This section must also identify the source of all applicable and reference documents and the revision indicator.

Executive Summary

Body of Document

The body of the document must be prepared in accordance with the above instructions and report on the following at a minimum. Each section begins with a new page.

Constellation Design Concept

Insert Contractor reports or deliverables

Conclusion

Overall recommendation of an option based on the results described above.

Annexes

Annexes and appendices may be used to provide information published separately for convenience of organizing the document.



Appendix B to Annex A-1. Matrix of requirements and priorities

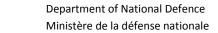
Requirements Organized by Priority:

Reqt Number/ Title	Priority
PRIORITY 1	
[Req 100.1] Compliance with GC Directives & Policies	11
[Req 100.2] Ground Infrastructure & Network Security	11
[Req 100.3] Archive	1
[Req 100.5] Secure Up/Downlinks	1
[Req 100.6] Security & Privacy of Canadians	1
[Req 100.8] Sharing with OGD, Allies and Coalition Partners	1
[Req 200.2] SBS System Manoeuvrability	1
[Req 200.6] Geo-Locating Accuracy	1
[Req 200.8] Optimized Downlink and Ground Stations Contact Management	1
[Req 200.10] Sharing of Imagery & Value Added Products	1
Req 200.12] Onboard Processing with NRT Ship Detection	1
[Req 200.23] Global Access	1
Req 200.24] Canada's Land Mass & Arctic	1
[Req 200.25] Multi-Role Operational Surveillance Capability	1
Req 200.28] Archive – Classified and Unclassified	1
[Req 300.6] Emergency Override Priority	1
[Req 300.7] Accept Low-Latency Ally Collection Request	1
Req 300.9] SAR Imagery of Land Regions	1
Reg 300.10] AWAS Coverage of North American and Arctic AOI's	1
[Reg 300.13] Produce High-Resolution Imagery - Narrow Field of View	1
[Reg 300.14] Produce High-Resolution Imagery – Wide Field of View	1
[Req 300.18] Ship Detection of Naval TG Surveillance Zones	1
[Req 300.19] Global Latency	1
[Req 300.21] EO & Other Spectral Imagery	1
Reg 300.25] UNCLAS ELINT for RMP	1
Req 300.28] Ship/Ice Discrimination	1
Req 400.1] Efficient Data Processing, Exploitation, and Dissemination (PED)	1
[Reg 400.4] Change Detection	1
Reg 400.8] Velocity Detection	1
[Req 400.14] Vessel Identification and Characterization	1
PRIORITY 2	
Req 100.4] WoG Accessibility	2
Req 200.1] Security & Protection Measures	2
Req 200.3] System Enduring Capability	2
Req 200.4] Space Mission Life	2
Req 200.5] Ground Segment Life	2
Req 200.15] Cross-Domain Connectivity	2
	2
[Req 200.17] Data Format	
[Req 200.18] Integration of Technology	2
[Req 200.19] System-of-Systems Capability	2
[Req 200.20] Direct Satellite Tasking by a Naval Task Group	2
Req 200.22] 24/7 Operations	2



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

[Req 200.27] Restricted Visibility	2
[Req 300.1] Collection Management and Planning	2
[Req 300.2] Commercial GEOINT Intelligence Systems	2
[Req 300.3] Integration of Data Acquisitions by Other SBS Systems	2
[Req 300.4] Queuing and Cross-Queuing: Automated or Semi-Automated	2
Generation of New Collection Requests	
[Req 300.8] Integrate METOC Forecasting in Overhead Collection Planning	2
[Req 300.0] Integrate METOC Porecasting in Overhead Collection Planning	2
[Req 300.11] Configuous SAR Swall Coverage [Req 300.15] AWAS coverage of DND's Global Maritime Surveillance AOIs	2
[Req 300.16] Beam Modes & Resolutions	2
	2
[Req 300.20] Low-Latency Ordering	2
[Req 300.22] Digital Elevation Model	2
[Req 300.23] CMT Coverage	
[Req 300.24] CMT Duty Cycle	2
[Req 300.27] Material Discrimination and Identification	2
[Req 300.29] Improved Charting of Navigation Hazards	2
[Req 400.3] Characterization of Snow	2
[Req 400.6] SAR Properties, Imagery and RF Emissions Analysis	2
[Req 400.7] Vessel Detection Parameters	2
[Req 400.10] Ship Wake Analysis	2
[Req 400.11] Ship Detection in all Atmospheric Conditions	2
[Req 400.12] Defeat Camouflage, Concealment and Deception	2
[Req 400.15] 3D Extraction	2
[Req 400.16] Exploit Transmission Information	2
[Req 400.18] AIS Detection Performance	2
[Req 400.19] Association Latency	2
[Req 400.20] Concurrent Surveillance	2
[Req 400.22] SBS Surveillance with Automated Detections	2
[Req 400.24] Roads and Runways Activity Assessment	2
[Req 400.25] Static Maritime Facilities	2
[Req 400.26] Ship Detection Close to Land	2
[Req 400.28] Overall Training	2
[Req 400.29] Tailored Training	2
PRIORITY 3	
[Req 100.7] Data Plan	3
[Req 200.7] Interoperability	3
[Req 200.11] Network Speed and Bandwidth	3
[Req 200.13] Low-Latency Cross-Queuing	3
[Req 200.14] Data Analysis Tools	3
[Req 200.16] Interface	3
[Req 200.21] Tactical User or Theatre Ordering Capability	3
[Req 200.26] Accessibility of Data Archive	3
[Req 200.29] Archive Life	3
[Req 300.5] Product Ordering & Delivery	3
[Req 300.26] Advanced Capabilities	3
	3
[Req 400.5] Real-time Motion of Objects	3
[Req 200.29] Archive Life [Req 300.5] Product Ordering & Delivery [Req 300.26] Advanced Capabilities [Req 400.2] SBS System Ground-Based Components	3 3 3 3





Request for Proposals No. W6369-200196 DG Space Engineering concept studies

[Req 400.23] Big Data Exploitation	3
[Req 400.27] Behavioural Information	3
PRIORITY 4	
[Req 200.9] Access the SBS Asset via Line-of-sight Communications	4
[Req 200.30] Data Archive Connectivity	4
[Req 300.12] Capacity for 50% Growth of Global AOIs	4
[Req 300.17] Rapid Beam Mode Switching	4
[Req 300.30] Receiving Tactical Orders in Theatre	4
PRIORITY 5	
[Req 500.1] R&D Community Access to Operational Data	5
[Req 500.2] Signature Library	5



Appendix C to Annex A-1. Technology Readiness Levels

Source: ISED website 10 April 2019, https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html

- Level 1: Basic principles of concept are observed and reported. Scientific research begins to be translated into applied research and development. Activities might include paper studies of a technology's basic properties.
- Level 2: Technology concept and/or application formulated. Invention begins. Once basic principles are observed, practical applications can be invented. Activities are limited to analytic studies.
- Level 3: Analytical and experimental critical function and/or proof of concept. Active research and development is initiated. This includes analytical studies and/or laboratory studies. Activities might include components that are not yet integrated or representative.
- Level 4: Component and/or validation in a laboratory environment. Basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.
- Level 5: Component and/or validation in a simulated environment. The basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.
- Level 6: System/subsystem model or prototype demonstration in a simulated environment. A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.
- Level 7: Prototype ready for demonstration in an appropriate operational environment. Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.
- Level 8: Actual technology completed and qualified through tests and demonstrations. Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.
- Level 9: Actual technology proven through successful deployment in an operational setting. Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations. Activities include using the innovation under operational conditions.



Appendix D to Annex A-1. Acronyms and Abbreviations

AWAS Active Wide-Area-Surveillance

AOI Area of Interest

CAF Canadian Armed Forces

DND Department of National Defence

EO Earth Observation
FTP File Transfer Protocol

ISR Intelligence, Surveillance and Reconnaissance

NESZ Noise Equivalent Sigma Zero

PED Processing, Exploitation, Dissemination

RFP Request for Proposal SAR Synthetic Aperture Radar

SBS-RD Space-Based Surveillance Requirements Document

SOW Statement Of Work
STK Systems Toolkit
TA Technical Authority

TCPED Tasking, Collection, Processing, Exploitation, Dissemination

TRL Technology Readiness Level
TT&C Tracking, Telemetry & Command

WBS Work Breakdown Structure



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

ANNEX "A-2"

STATEMENT OF WORK

STREAM 2 - DATA EXPLOITATION CONCEPT

1.0 Requirement

The Department of National Defence and Canadian Armed Forces' (DND/CAF) Director General Space (DG Space) requires an engineering and costing analysis to be conducted on a space-based surveillance system data exploitation design concept to best meet its requirements, as described in its draft Space-Based Surveillance Requirements document (SBS-RD) version 2.0.

2.0 Background and Scope

2.1 Background

This Statement of Work (SOW) is in support of Canada's Whole-of-Government approach to delivering next-generation Earth Observation capabilities. The requirements listed to support the development of concept studies have been limited to DND/CAF unclassified requirements and priorities at this time.

The CAF has an enduring mandate to defend Canada and North America, and contribute to an effective deterrent to threats. Concurrently, CAF must maintain the capability to reach and respond to a range of domestic and international threats and emergencies. Space systems and access are critical for surveillance to the CAF. Consequently, the CAF is dependent on the full spectrum of capabilities derived from space assets and relies on space-enabled capabilities to conduct operations at home and abroad.

2.2 Scope

DG Space requires a detailed engineering and costing analysis to be conducted on a space-based surveillance system data exploitation design concept that best meet its requirements, as described in its SBS-RD. Additional analysis may also be required.

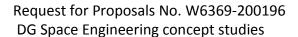
3.0 Tasks

3.1 Engineering & costing analysis of a data exploitation design concept

The contractor must conduct a detailed review of the SBS-RD and develop an engineering and costing analysis of data exploitation design concepts. The proposed design concepts must address all of the priority 1 and 2 requirements, and at a minimum, 50% of the remaining priorities 3-5 requirements listed in the SBS-RD. A summary of these requirements and priorities are listed in Appendix B.

The constellation design concept is required to include technology that is or will be at Technology Readiness Level (TRL) 7-9 in 3-5 years, as defined in Appendix C.

The engineering and costing analysis is to be written in accordance with the template in Appendix A and must at minimum include the following:





- a. Communications links (frequency, bandwidth if appropriate);
- b. Ground segment technology and configuration;
- c. Collection, data handling;
- d. Processing, Exploitation and Dissemination (PED);
- e. Data Archiving, retrieval and storage;
- f. Cross domain connectivity;
- g. Identification of any requirements that cannot be met;
- h. Identification of all potential risks with their associated mitigation strategy, including the impact statement and probability of occurrence; and
- i. A detailed options analysis of the proposed exploitation concept including scalable cost estimates. The cost estimates of the proposed design concepts must contain a detailed description of the assumptions made in establishing the Work Breakdown Structure level 2 cost estimates. The estimates must clearly illustrate the cost-benefit analysis of the recommended design options and describe the trade-offs made with their associated costing.

3.2 Optional Professional services

The Contractor may be required to perform further analysis of the deliverables. These activities may include but are not limited to:

- e. Feasibility/trade-off studies of processing, exploitation, and dissemination techniques;
- f. Communication links analysis;
- g. Data and archive requirements; and
- h. Further cost and requirements scalability analysis.

4.0 Deliverables

4.1 Engineering and costing analysis of a data exploitation design concept

- 4.1.1 Written Engineering and costing analysis report as per Section 3.1 of this SOW.
- 4.1.2 Presentation of the engineering and costing analysis to DND/CAF stakeholders.
- 4.1.3 Multi-media animation file which will visually demonstrate how the proposed concepts would operate. The animation must be free of all Contractor logos.

4.2 Optional professional services

Deliverables for optional professional services will be specified at time of Task Authorization.

5.0 Format of Deliverables

All deliverables must be submitted in electronic format using MS Office Suite software and written in English.

Presentation material should be in Power Point format. Documents provided in Adobe PDF format must not be protected against copy of text and figures.



All simulation scenarios that are included (e.g. with STK) must be delivered in CD-ROM, DVD-ROM, or transferred by FTP (through arrangement with the TA).

6.0 Schedule of Deliverables

Reports and Documents	Due Date
Written Engineering and costing analysis report	20 March 20
Presentation of the engineering and costing	Prior to 31 March 20
analysis	

6.1 Schedule of Meetings

Meeting	Date	Location
Kick-Off	Contract Award + 1 week	DND/CAF (preferable) or telcon
Interim Review	Contract Award + 5 weeks	DND/CAF (preferable) or telcon

7.0 Acceptance

All deliverables under this SOW must be submitted to the Technical Authority for review and approval.

8.0 Work Location

All work shall be conducted at the Contractor's place of business. The presentation will take place at National Defence Headquarters, located at 101 Colonel By Drive, Ottawa, ON, or at 3500 Carling Avenue, Ottawa, ON. The time and place will be specified by the Technical Authority.

8.1 Travel

Travel will not be reimbursed under this contract.

9.0 Applicable Documents

The following documents provide additional information and guidelines that either may clarify the contents or are pertinent to the requirement of this SOW.

RD No.	Document Number	Document Title	Rev. No.	Date
RD-2.		DND/CAF Space-Based Surveillance Requirements Document	2	October 2019



Appendix A. General Preparation Instructions for the Space System Engineering Analysis

General Instructions

Electronic Copies

Electronic documents must be prepared using the most appropriate tool (Microsoft Word, Excel, MS Project, etc.); released versions must be delivered in electronic format and may be in PDF. Documents must be delivered via email, if larger than 10 Mb direct transfer (FTP) is preferred. For direct transfer, a notification of the document's readiness and location on a contractor repository must be sent to the Technical Authority.

Electronic copies of text documents must be formatted for printing on 8.5" x 11" paper. The electronic file name and the identification number written on the document itself must have the following format:

YYYY-MM-DD_PSCD-CIE_ContractNumber_short title

Where:

YEAR-MONTH-DAY: Date Tracking Number
PSCD: The four letter acronym of this SOW
CIE: Name of the Company (no space, no hyphen)
Contract Number: For example: 9F028-07-4200-03

Emails are to contain the SOW acronym or equivalent identifier in the "Subject" line. If necessary to send hard copy and media they are to be addressed to:

Director Space Requirements/ ISR Program Manager Director General Space National Defence Headquarters 101 Colonel By Drive Ottawa, ON. K1A 0K2

Enclosed documents must be labelled with the following information:

Company Name
Document Title
Document Number and Revision Number
SOW Number
Contract Number
Document Numbers

All pages must contain the Document Number at the top of the page. Document Numbers must include revision status and volume identification as applicable.

Document Structure and Content

Except as otherwise specified, all documents must have the overall structure as follows:

Cover/Title Page; Table of Contents; Scope;

Request for Proposals No. W6369-200196 DG Space Engineering concept studies



Applicable and Reference Documents; Body of Document; and **Annexes**

Cover/Title Page

The title page must contain the following information:

Document Number and date Revision indicator / date of Rev. **Document Title** SOW Name Contract Number

Prepared for: Director Space Requirements

Prepared by: Contractor name, CAGE Code, address, and phone number

© HER MAJESTY THE QUEEN IN RIGHT OF CANADA [YEAR]

Table of Contents

The table of contents must list the title and page number of each titled paragraph and subparagraph, at least down to the third level inclusive. The table of contents must then list the title and page number of each heading, figure, table, and annex, in that order.

Scope

This section must provide a brief overview of the Area of Interest(s) to which the document applies, and a summary of the content provided.

Applicable and Reference Documents

This section must list by Document Number and title, all applicable and reference documents. This section must also identify the source of all applicable and reference documents and the revision indicator.

Executive Summary

Body of Document

The body of the document must be prepared in accordance with the above instructions and report on the following at a minimum. Each section begins with a new page.

Data Exploitation Concept

Insert Contractor reports or deliverables

Conclusion

Overall recommendation of an option based on the results described above.

Annexes

Annexes and appendices may be used to provide information published separately for convenience of organizing the document.



Appendix B. Matrix of requirements and priorities

Requirements Organized by Priority:

RReq 100.1 Compliance with GC Directives & Policies 1	Reqt Number/ Title	Priority
Req 100.2 Ground Infrastructure & Network Security	PRIORITY 1	
Req 100.3 Archive	[Req 100.1] Compliance with GC Directives & Policies	1
Req 100.5 Secure Up/Downlinks	[Req 100.2] Ground Infrastructure & Network Security	1
Req 100.5 Secure Up/Downlinks	[Req 100.3] Archive	1
Req 100.6 Security & Privacy of Canadians 1 Req 200.8 Sharing with OGD, Allies and Coalition Partners 1 Req 200.8 Optimized Downlink and Ground Stations Contact Management 1 Req 200.8 Optimized Downlink and Ground Stations Contact Management 1 Req 200.10 Sharing of Imagery & Value Added Products 1 Req 200.12 Onboard Processing with NRT Ship Detection 1 Req 200.23 Global Access 1 Req 200.23 Global Access 1 Req 200.24 Canada's Land Mass & Arctic 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 Req 300.6 Emergency Override Priority 1 Req 300.6 Emergency Override Priority 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.9 SAR Imagery of Land Regions 1 Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 400.11 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.4 Change Detection 1 Req 400.4 Vessel Identification and Characterization 1 Req 400.14 Vessel Identification and Characterization 2 Req 200.15 Ground Segment Life 2 Req 200.15 Ground Segment Life 2 Req 200.15 Species Domain Connectivity 2 Req 200.15 Conso-Domain Connectivity 2 Req 200.15 Data Format 2 Req 200.17 Data Format 2 Req 200.19 System-of-Systems Capability 2 Req 200.19 System-of-Systems Capability 2 Req 200.21 Direct Statellite Tasking by a Naval Task Group 2 Req 200.22 24/7 Operations 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Vi	[Req 100.5] Secure Up/Downlinks	1
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Req 200.6 Geo-Locating Accuracy 1 Req 200.8 Optimized Downlink and Ground Stations Contact Management 1 Req 200.10 Sharing of Imagery & Value Added Products 1 Req 200.12 Onboard Processing with NRT Ship Detection 1 Req 200.23 Global Access 1 Req 200.23 Global Access 1 Req 200.24 Canada's Land Mass & Arctic 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 Req 200.28 Archive — Classified and Unclassified 1 Req 200.28 Archive — Classified and Unclassified 1 Req 300.6 Emergency Override Priority 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.9 SAR Imagery of Land Regions 1 Req 300.19 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery — Wide Field of View 1 Req 300.14 Produce High-Resolution Imagery — Wide Field of View 1 Req 300.19 Global Latency 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Vessel Identification and Characterization 1 Req 400.1 Security & Protection Measures 2 Req 200.1 Security & 2 Req 200.2 Protection Measures 2 Req 200.2	[Req 200.2] SBS System Manoeuvrability	1
Req 200.8 Optimized Downlink and Ground Stations Contact Management 1		1
Req 200.10 Sharing of Imagery & Value Added Products 1		1
Req 200.23 Global Access 1 Req 200.24 Canada's Land Mass & Arctic 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 1 Req 200.28 Archive – Classified and Unclassified 1 1 Req 300.6 Emergency Override Priority 1 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.9 SAR Imagery of Land Regions 1 1 Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.13 Produce High-Resolution Imagery - Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.8 Velocity Detection 1 Req 400.8 Velocity Detection 1 Req 400.1 Vessel Identification and Characterization 1 Req 200.1] Security & Protection Measures 2 Req 200.1] Security & Protection Measures 2 Req 200.1] Security & Protection Measures 2 Req 200.15 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.16 Drata Format 2 Req 200.17 Data Format 2 Req 200.19 System Capability 2 Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.20 Zirly Restricted Visibility 2 Req 200.20 Zirly Restricted Visibility 2 Req 200.20 Zirly Restricted Visibility 2 Req 200.21 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.20 Zirly Restricted Visibility 2 Req 200.20 Zirly Restricted Visibility 2 Req 200.20 Zirly Restricted Visibility 2 Req 200		1
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Req 200.24 Canada's Land Mass & Arctic 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 1 Req 200.25 Multi-Role Operational Surveillance Capability 1 1 1 Req 200.28 Archive - Classified and Unclassified 1 1 Req 300.6 Emergency Override Priority 1 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 1 Req 300.19 Accept Low-Latency Ally Collection Request 1 1 Req 300.19 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 1 Req 300.19 Global Latency 1 1 Req 300.21 EO & Other Spectral Imagery 1 1 Req 300.25 UNCLAS ELINT for RMP 1 1 Req 300.25 UNCLAS ELINT for RMP 1 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 Req 400.14 Vessel Identification and Characterization 1 Req 200.16 Security & Protection Measures 2 Req 200.1 Security & Protection Measures 2 Req 200.1 Security & Protection Measures 2 Req 200.1 Security & Protection Measures 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.15 Integration of Technology Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.22 24/7 Operations 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted		1
Req 200.25 Multi-Role Operational Surveillance Capability		1
Req 200.28 Archive - Classified and Unclassified 1 Req 300.6 Emergency Override Priority 1 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.9 SAR Imagery of Land Regions 1 Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.29 Global Latency 1 Req 300.29 Locate Section of Naval TG Surveillance Zones 1 Req 300.29 Ship/Ice Discrimination 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.14 Vessel Identification and Characterization 1 Req 400.14 Vessel Identification and Characterization 1 Req 400.19 Security & Protection Measures 2 Req 200.19 Security & Protection Measures 2 Req 200.19 Space Mission Life 2 Req 200.15 Ground Segment Life 2 Req 200.15 Gross-Domain Connectivity 2 Req 200.16 Integration of Technology 2 Req 200.19 System-of-Systems Capability 2 Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.20 Collection Management and Planning 2 Req 300.1 Collection Management and Planning 2 Req		1
Req 300.6 Emergency Override Priority 1		1
Req 300.7 Accept Low-Latency Ally Collection Request 1 Req 300.9 SAR Imagery of Land Regions 1 Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.29 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 Req 200.1] Security & Protection Measures 2 Req 200.1] Security & Protection Measures 2 Req 200.1] Space Mission Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.19 System-of-Systems Capability 2 Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.27 Restricted Visibility 2 Req 300.1 Collection Management and Planning 2		1
Req 300.9 SAR Imagery of Land Regions 1 Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1		1
Req 300.10 AWAS Coverage of North American and Arctic AOI's 1 Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery - Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.1 Change Detection 1 Req 400.1 Vessel Identification and Characterization 1 PRIORITY 2 Req 100.4 WoG Accessibility 2 Req 200.1 Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.15 Ground Segment Life 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.27 Restricted Visibility 2 Req 300.11 Collection Management and Planning 2		1
Req 300.13 Produce High-Resolution Imagery - Narrow Field of View 1 Req 300.14 Produce High-Resolution Imagery — Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 Req 100.4 WoG Accessibility 2 Req 200.1 Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.5 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 300.1 Collection Management and Planning 2		1
Req 300.14 Produce High-Resolution Imagery – Wide Field of View 1 Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 Req 100.4 WoG Accessibility 2 Req 200.1] Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.5 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.20 Zero Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.11 Collection Management and Planning 2		
Req 300.18 Ship Detection of Naval TG Surveillance Zones 1 Req 300.19 Global Latency 1 Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.11 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.4 Change Detection 1 Req 400.14 Vessel Identification and Characterization 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 2 Req 200.1] Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.5 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.21 Req 200.22 24/7 Operations 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 300.11 Collection Management and Planning 2		
Req 300.19 Global Latency 1		
Req 300.21 EO & Other Spectral Imagery 1 Req 300.25 UNCLAS ELINT for RMP 1 Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 Req 100.4 WoG Accessibility 2 Req 200.1 Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.5 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.21 Reg 200.22 24/7 Operations 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 200.21 Collection Management and Planning 2		
Req 300.25 UNCLAS ELINT for RMP		
Req 300.28 Ship/Ice Discrimination 1 Req 400.1 Efficient Data Processing, Exploitation, and Dissemination (PED) 1 Req 400.4 Change Detection 1 Req 400.8 Velocity Detection 1 Req 400.14 Vessel Identification and Characterization 1 PRIORITY 2 Req 100.4 WoG Accessibility 2 Req 200.1 Security & Protection Measures 2 Req 200.3 System Enduring Capability 2 Req 200.4 Space Mission Life 2 Req 200.5 Ground Segment Life 2 Req 200.15 Cross-Domain Connectivity 2 Req 200.17 Data Format 2 Req 200.18 Integration of Technology 2 Req 200.19 System-of-Systems Capability 2 Req 200.19 System-of-Systems Capability 2 Req 200.20 Direct Satellite Tasking by a Naval Task Group 2 Req 200.22 24/7 Operations 2 Req 200.27 Restricted Visibility 2 Req 200.27 Restricted Visibility 2 Req 300.1 Collection Management and Planning 2		1
[Req 400.1] Efficient Data Processing, Exploitation, and Dissemination (PED) 1 [Req 400.4] Change Detection 1 [Req 400.8] Velocity Detection 1 [Req 400.14] Vessel Identification and Characterization 1 PRIORITY 2 [Req 100.4] WoG Accessibility 2 [Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.21] Restricted Visibility 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2		1
[Req 400.4] Change Detection 1 [Req 400.8] Velocity Detection 1 [Req 400.14] Vessel Identification and Characterization 1 PRIORITY 2 [Req 100.4] WoG Accessibility 2 [Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.21] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2		1
[Req 400.8] Velocity Detection 1 [Req 400.14] Vessel Identification and Characterization 1 PRIORITY 2 [Req 100.4] WoG Accessibility 2 [Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.22] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2		1
Req 400.14 Vessel Identification and Characterization 1		1
PRIORITY 2 2 [Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.22] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2		1
[Req 100.4] WoG Accessibility 2 [Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.22] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2		
[Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.22] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2	PRIORITY 2	
[Req 200.1] Security & Protection Measures 2 [Req 200.3] System Enduring Capability 2 [Req 200.4] Space Mission Life 2 [Req 200.5] Ground Segment Life 2 [Req 200.15] Cross-Domain Connectivity 2 [Req 200.17] Data Format 2 [Req 200.18] Integration of Technology 2 [Req 200.19] System-of-Systems Capability 2 [Req 200.20] Direct Satellite Tasking by a Naval Task Group 2 [Req 200.22] 24/7 Operations 2 [Req 200.27] Restricted Visibility 2 [Req 300.1] Collection Management and Planning 2	[Reg 100.4] WoG Accessibility	2
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[Req 200.27] Restricted Visibility2[Req 300.1] Collection Management and Planning2		
[Req 300.1] Collection Management and Planning 2		



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

[Req 300.3] Integration of Data Acquisitions by Other SBS Systems	2
[Req 300.4] Queuing and Cross-Queuing: Automated or Semi-Automated	2
Generation of New Collection Requests	2
[Req 300.8] Integrate METOC Forecasting in Overhead Collection Planning	2
[Req 300.11] Contiguous SAR Swath Coverage	2
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[Req 300.15] AWAS coverage of DND's Global Maritime Surveillance AOIs	
[Req 300.16] Beam Modes & Resolutions	2
[Req 300.20] Low-Latency Ordering	2
[Req 300.22] Digital Elevation Model	2
[Req 300.23] CMT Coverage	2
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[Req 300.27] Material Discrimination and Identification	2
[Req 300.29] Improved Charting of Navigation Hazards	2
[Req 400.3] Characterization of Snow	2
[Req 400.6] SAR Properties, Imagery and RF Emissions Analysis	2
[Req 400.7] Vessel Detection Parameters	2
[Req 400.10] Ship Wake Analysis	2
[Req 400.11] Ship Detection in all Atmospheric Conditions	2
[Req 400.12] Defeat Camouflage, Concealment and Deception	2
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[Req 400.26] Ship Detection Close to Land	2
[Req 400.28] Overall Training	2
[Req 400.29] Tailored Training	2
PRIORITY 3	
[Req 100.7] Data Plan	3
[Req 200.7] Interoperability	3
[Req 200.11] Network Speed and Bandwidth	3
[Req 200.13] Low-Latency Cross-Queuing	3
[Req 200.14] Data Analysis Tools	3
[Req 200.16] Interface	3
[Req 200.21] Tactical User or Theatre Ordering Capability	3
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[Req 400.13] Chemical Biological Radiation Nuclear and explosives (CBRNe)	3
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[Reg 400.21] SOM	3
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[Req 400.23] Big Data Exploitation [Req 400.27] Behavioural Information	3



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

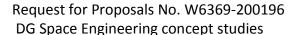
PRIORITY 4	
[Req 200.9] Access the SBS Asset via Line-of-sight Communications	4
[Req 200.30] Data Archive Connectivity	4
[Req 300.12] Capacity for 50% Growth of Global AOIs	4
[Req 300.17] Rapid Beam Mode Switching	4
[Req 300.30] Receiving Tactical Orders in Theatre	4
PRIORITY 5	
[Req 500.1] R&D Community Access to Operational Data	5
[Req 500.2] Signature Library	5



Appendix C. Technology Readiness Levels

Source: ISED website 10 April 2019, https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html

- Level 1: Basic principles of concept are observed and reported. Scientific research begins to be translated into applied research and development. Activities might include paper studies of a technology's basic properties.
- Level 2: Technology concept and/or application formulated. Invention begins. Once basic principles are observed, practical applications can be invented. Activities are limited to analytic studies.
- Level 3: Analytical and experimental critical function and/or proof of concept. Active research and development is initiated. This includes analytical studies and/or laboratory studies. Activities might include components that are not yet integrated or representative.
- Level 4: Component and/or validation in a laboratory environment. Basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.
- Level 5: Component and/or validation in a simulated environment. The basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.
- Level 6: System/subsystem model or prototype demonstration in a simulated environment. A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.
- Level 7: Prototype ready for demonstration in an appropriate operational environment. Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.
- Level 8: Actual technology completed and qualified through tests and demonstrations. Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.
- Level 9: Actual technology proven through successful deployment in an operational setting. Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations. Activities include using the innovation under operational conditions.





Appendix D. Acronyms and Abbreviations

AWAS Active Wide-Area-Surveillance

AOI Area of Interest

CAF Canadian Armed Forces

DND Department of National Defence

EO Earth Observation
FTP File Transfer Protocol

ISR Intelligence, Surveillance and Reconnaissance

NESZ Noise Equivalent Sigma Zero

PED Processing, Exploitation, Dissemination

RFP Request for Proposal
SAR Synthetic Aperture Radar

SBS-RD Space-Based Surveillance Requirements Document

SOW Statement Of Work
STK Systems Toolkit
TA Technical Authority

TCPED Tasking, Collection, Processing, Exploitation, Dissemination

TRL Technology Readiness Level
TT&C Tracking, Telemetry & Command



ANNEX "A-3"

STATEMENT OF WORK

STREAM 3 - ALTERNATE MISSION CONCEPT



1.0 Requirement

The Department of National Defence and Canadian Armed Forces' (DND/CAF) Director General Space (DG Space) requires an engineering and costing analysis to be conducted on a space-based surveillance system alternate mission type (non-SAR) design concept to best meet its requirements, as described in its draft Space-Based Surveillance Requirements document (SBS-RD) version 2.0.

2.0 Background and Scope

2.1Background

This Statement of Work (SOW) is in support of Canada's Whole-of-Government approach to delivering next-generation Earth Observation capabilities. The requirements listed to support the development of concept studies have been limited to DND/CAF unclassified requirements and priorities at this time.

The CAF has an enduring mandate to defend Canada and North America, and contribute to an effective deterrent to threats and incidents. Concurrently, CAF must maintain the capability to reach and respond to a range of domestic and international threats and emergencies. Space systems and access are critical for surveillance to the CAF. Consequently, the CAF is dependent on the full spectrum of capabilities derived from space assets and relies on space-enabled capabilities to conduct operations at home and abroad.

2.2Scope

DG Space requires a detailed engineering and costing analysis to be conducted on a space-based surveillance system alternate mission type (non-SAR) design concept that best meet its requirements, as described in its SBS-RD. Additional analysis may also be required.

3.0 Tasks

3.1 Engineering and costing analysis of an alternate mission design concept

The contractor must conduct a detailed review of the SBS-RD and develop an engineering and costing analysis of alternate mission type (non-SAR) design concepts. The proposed design concepts must address all of the priority 1 and 2 requirements, and at a minimum, 50% of the remaining priorities 3-5 requirements listed in the SBS-RD. The exception to these requirements are the revisit rates listed in Annex A and B of the SBS-RD; a reduced revisit rate of weekly should be used instead. A summary of these requirements and priorities are listed in Appendix B to Annex A-3.

The design concept is required to include technology that is or will be at Technology Readiness Level (TRL) 7-9 in 3-5 years, as defined in Appendix C to Annex A-3.

The engineering and costing analysis is to be written in accordance with the template in Appendix A and must at minimum include the following:

a. Tasking, Telemetry, and Communications requirements;



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

- b. Communications links (frequency, bandwidth);
- c. Constellation composition, size and orbit(s);
- d. Recommended sensors/ sensor types, secondary payload, duty cycle, bus, frequency band(s);
- e. Detailed analysis of the sensor parameters (swath, resolution, Noise Equivalent Sigma Zero (NESZ), ambiguity, bandwidth, scene size);
- f. Technology, primary and secondary payload(s) and operating parameters across the space-based surveillance system:
- g. Identification of any possible non-compliance or requirements that cannot be met;
- h. Identification of all potential risks with their associated mitigation strategy, including the impact statement and probability of occurrence; and
- i. A detailed options analysis of proposed constellation design concepts including scalable cost estimates of multiple revisit times and resolutions. The cost estimates of the proposed constellation design concepts must contain a detailed description of the assumptions made in establishing the Work Breakdown Structure level 2 cost estimates. The estimates must clearly illustrate the cost-benefit analysis of the recommended design options and describe the trade-offs made with their associated costing.

3.2 Optional Professional services

The Contractor may be required to perform further analysis of the deliverables. These activities may include but are not limited to:

- i. Feasibility/trade-off studies of mission concepts;
- j. Payload compatibility assessments;
- k. EO/IR capability analysis; and
- I. Further cost and requirements scalability analysis.

4.0 Deliverables

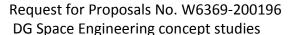
- 4.1 Engineering and costing analysis of an alternate mission type (non-SAR) design concept
- 4.1.1 Written Engineering and costing analysis report as per Section 3.1 of this SOW.
- 4.1.2 Presentation of the engineering and costing analysis to DND/CAF stakeholders.
- 4.1.3 Multi-media animation file which will visually demonstrate how the proposed concepts would operate. The animation must be free of all Contractor logos.

4.2Optional professional services

Deliverables for ad-hoc professional services will be specified at time of Task Authorization.

5.0Format of Deliverables

All deliverables must be submitted in electronic format using MS Office Suite software and written in English.





Documentation, reporting and other deliverables must be according to instructions provided in Annex A. Presentation material should be in Power Point format. Documents provided in Adobe PDF format must not be protected against copy of text and figures.

All simulation scenarios that are included (e.g. with STK) must be delivered in CD-ROM, DVD-ROM, or transferred by FTP (through arrangement with the TA).

6.0Schedule of Deliverables

Reports and Documents	Due Date
Written Engineering and costing analysis report	20 March 20
Presentation of the engineering and costing	Prior to 31 March 20
analysis	

6.1 Schedule of Meetings

Meeting	Date	Location
Kick-Off	Contract Award + 1 week	DND/CAF (preferable) or telcon
Interim Review	Contract Award + 5 weeks	DND/CAF (preferable) or telcon

7.0Acceptance

All deliverables under this SOW must be submitted to the Technical Authority for review and approval.

8.0Work Location

All work shall be conducted at the contractor's place of business. The final presentation will take place at National Defence Headquarters, located at 101 Colonel By Drive, Ottawa, ON, or at 3500 Carling Avenue, Ottawa, ON. The time and place will be specified by the Technical Authority.

8.1 Travel

Travel will not be reimbursed under this contract.

9.0 Applicable Documents

The following documents provide additional information and guidelines that either may clarify the contents or are pertinent to the requirement of this SOW.

RD No.	Document Number	Document Title	Rev. No.	Date
RD-3.		DND/CAF Space-Based Surveillance Requirements Document	2	October 2019



Appendix A to Annex A-3. General Preparation Instructions for the Space System Engineering Analysis

General Instructions

Electronic Copies

Electronic documents must be prepared using the most appropriate tool (Microsoft Word, Excel, MS Project, etc.); released versions must be delivered in electronic format and may be in PDF. Documents must be delivered via email, if larger than 10 Mb direct transfer (FTP) is preferred. For direct transfer, a notification of the document's readiness and location on a contractor repository must be sent to the Technical Authority.

Electronic copies of text documents must be formatted for printing on 8.5" x 11" paper. The electronic file name and the identification number written on the document itself must have the following format:

YYYY-MM-DD PSCD-CIE ContractNumber short title

Where:

YEAR-MONTH-DAY: Date Tracking Number

PSCD: The four letter acronym of this SOW
CIE: Name of the Company (no space, no hyphen)
Contract Number: For example: _9F028-07-4200-03

Emails are to contain the SOW acronym or equivalent identifier in the "Subject" line. If necessary to send hard copy and media they are to be addressed to:

Director Space Requirements/ ISR Program Manager Director General Space National Defence Headquarters 101 Colonel By Drive Ottawa, ON. K1A 0K2

Enclosed documents must be labelled with the following information:

Company Name
Document Title
Document Number and Revision Number
SOW Number
Contract Number
Document Numbers

All pages must contain the Document Number at the top of the page. Document Numbers must include revision status and volume identification as applicable.

Document Structure and Content

Except as otherwise specified, all documents must have the overall structure as follows:

Cover/Title Page; Table of Contents;

Request for Proposals No. W6369-200196 DG Space Engineering concept studies



Scope: Applicable and Reference Documents; Body of Document; and **Annexes**

Cover/Title Page

The title page must contain the following information:

Document Number and date Revision indicator / date of Rev. **Document Title** SOW Name Contract Number

Prepared for: Director Space Requirements

Prepared by: Contractor name, CAGE Code, address, and phone number

© HER MAJESTY THE QUEEN IN RIGHT OF CANADA [YEAR]

Table of Contents

The table of contents must list the title and page number of each titled paragraph and subparagraph, at least down to the third level inclusive. The table of contents must then list the title and page number of each heading, figure, table, and annex, in that order.

Scope

This section must provide a brief overview of the Area of Interest(s) to which the document applies, and a summary of the content provided.

Applicable and Reference Documents

This section must list by Document Number and title, all applicable and reference documents. This section must also identify the source of all applicable and reference documents and the revision indicator.

Executive Summary

Body of Document

The body of the document must be prepared in accordance with the above instructions and report on the following at a minimum. Each section begins with a new page.

Alternate Mission Type design concept

Insert Contractor reports or deliverables.

Conclusion

Overall recommendation of an option based on the results described above.

Annexes

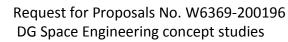
Annexes and appendices may be used to provide information published separately for convenience of organizing the document.



Appendix B to Annex A-3. Matrix of requirements and priorities

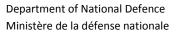
Requirements Organized by Priority:

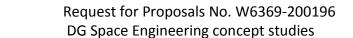
PRIORITY 1 [Req 100.1] Compliance with GC Directives & Policies [Req 100.2] Ground Infrastructure & Network Security [Reg 100.2] Archive	1
[Req 100.2] Ground Infrastructure & Network Security	1
[Dog 100 2] Archive	1
[Req 100.3] Archive	1
[Req 100.5] Secure Up/Downlinks	1
[Req 100.6] Security & Privacy of Canadians	1
[Req 100.8] Sharing with OGD, Allies and Coalition Partners	1
[Req 200.2] SBS System Manoeuvrability	1
[Req 200.6] Geo-Locating Accuracy	1
[Req 200.8] Optimized Downlink and Ground Stations Contact Management	1
[Req 200.10] Sharing of Imagery & Value Added Products	1
[Req 200.12] Onboard Processing with NRT Ship Detection	1
[Req 200.23] Global Access	1
[Req 200.24] Canada's Land Mass & Arctic	1
[Req 200.25] Multi-Role Operational Surveillance Capability	1
[Reg 200.28] Archive – Classified and Unclassified	1
[Reg 300.6] Emergency Override Priority	1
[Reg 300.7] Accept Low-Latency Ally Collection Request	1
[Req 300.9] SAR Imagery of Land Regions	1
[Req 300.10] AWAS Coverage of North American and Arctic AOI's	1
[Req 300.13] Produce High-Resolution Imagery - Narrow Field of View	1
[Reg 300.14] Produce High-Resolution Imagery – Wide Field of View	1
[Req 300.18] Ship Detection of Naval TG Surveillance Zones	1
[Reg 300.19] Global Latency	1
[Req 300.21] EO & Other Spectral Imagery	1
[Reg 300.25] UNCLAS ELINT for RMP	1
[Req 300.28] Ship/Ice Discrimination	1
[Req 400.1] Efficient Data Processing, Exploitation, and Dissemination (PED)	1
[Req 400.4] Change Detection	1
[Req 400.8] Velocity Detection	1
[Req 400.14] Vessel Identification and Characterization	1
PRIORITY 2	
[Req 100.4] WoG Accessibility	2
[Reg 200.1] Security & Protection Measures	2
[Req 200.3] System Enduring Capability	2
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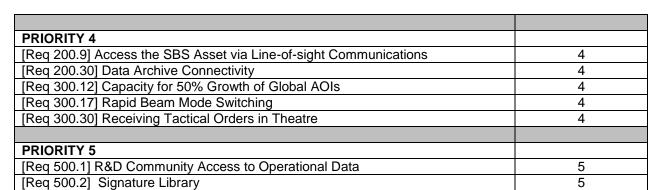




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[Req 300.2] Commercial GEOINT Intelligence Systems	2
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Appendix C to Annex A-3. Technology Readiness Levels

Source: ISED website 10 April 2019, https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html

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Level 4: Component and/or validation in a laboratory environment. Basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.

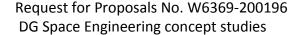
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Level 6: System/subsystem model or prototype demonstration in a simulated environment. A model or prototype that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.

Level 7: Prototype ready for demonstration in an appropriate operational environment. Prototype at planned operational level and is ready for demonstration in an operational environment. Activities include prototype field testing.

Level 8: Actual technology completed and qualified through tests and demonstrations. Technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.

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Appendix D to Annex A-3. Acronyms and Abbreviations

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TRL Technology Readiness Level
TT&C Tracking, Telemetry & Command

WBS Work Breakdown Structure

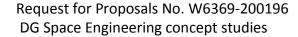


Request for Proposals No. W6369-200196 DG Space Engineering concept studies

Appendix A to Annex A - Task Authorization Form

National Defence	Défense nationale	TASK AUTHORIZATION AUTORISATION DES TÂCHES		
			Contract no N° du	contrat
All invoices/	progress claims must show	the reference Contract and Task numbers.		
		r les numéros du contrat et de la tâche.	Task no. – N° de la ti	âche
Amendment no. – N°	de la modification	Increase/Decrease – Augmentation/Réduction	Previous value – Valeur pre	écédente
To – À		TO THE CONTRACTOR		
TBD		You are requested to supply the following services in a reference contract. Only services included in the contr	ract shall be supplied aga	ainst this task.
		Please advise the undersigned if the completion date of shall be prepared in accordance with the instructions s	cannot be met. Invoices/ et out in the contract.	progress claims
		À L'ENTREPRENEUR		
Delivery location – Exp	pédiez à	Vous êtes prié de fournir les services suivants en conf ci-dessus. Seuls les services mentionnés dans le conf demande.	ormité des termes du co trat doivent être fournis à	ntrat mentionné i l'appui de cette
		Prière d'aviser le signataire si la livraison ne peut se fa doivent être établies selon les instructions énoncées d	ire dans les délais preso ans le contrat.	rits. Les factures
Delivery/Completion d	late – Date de livraison/d'achèvement			
0 1 1		Date for the Dipour le mi	epartment of National Defen inistère de la Défense nation	nale
Contract item no. Nº d'article		Services		Cost
du contrat				Prix
			GST/HST TPS/TVH	
			Total	
APPLICABLE ON specified in the co		Contract Authority signature is required when the total value	e of the DND 626 excee	ds the threshold
	QU'AUX CONTRATS DE TPSGC : L il précisé dans le contrat.	a signature de l'autorité contractante est requise lorsque la	a valeur totale du formula	ire DND 626 est
for the Depart pour le ministère	tment of Public Works and Government Ser e des Travaux publics et services gouverner	vices mentaux		
OND 626 (01-05)			Design: Forms Man	agement 993-4050

Design: Forms Management 993-4050 Conception : Gestion des formulaires 993-4062





APPENDIX B TO ANNEX A

CERTIFICATION AT THE TA STAGE

The following Certifications are to be used, as applicable. If they apply, they must be signed and attached to the Contractor's quotation when it is submitted to Canada.

1. CERTIFICATION OF EDUCATION AND EXPERIENCE

The Contractor certifies that all the information provided in the résumés and supporting material proposed for completing the subject work, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Contractor to be true and accurate.

Furthermore, the Contractor warrants that every individual proposed by the Contractor for the requirement is capable of performing the Work described in the Task Authorization.
Print name of authorized individual & sign above Date
2. CERTIFICATION OF AVAILABILITY OF PERSONNEL
The Contractor certifies that, should it be authorized to provide services under this Task Authorization, the persons proposed in the quotation will be available to commence performance of the work within a reasonable time from the date of issuance of the valid Task Authorization, or within the time specified in the TA Form, and will remain available to perform the work in relation to the fulfillment of the requirement.
Print name of authorized individual & sign above Date
3. CERTIFICATION OF STATUS OF PERSONNEL
If the Contractor has proposed any individual who is not an employee of the Contractor, the Contractor certifies that it has permission from that individual to propose his/her services in relation to the Work to be performed under this TA and to submit his/her résumé to Canada. At any time during the Contract Period the Contractor must, upon request from the Contracting Authority, provide the written confirmation, signed by the individual, of the permission that was given to the Contractor of his/her availability. Failure to comply with the request may result in a default under the Contract in accordance with the General Conditions.
Print name of authorized individual & sign above Date



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

4. CERTIFICATION OF LANGUAGE - English

The Contractor certifies that the proposed resource Authorization is/are fluent in English. The individual communicate orally and in writing in English without	al(s) proposed must be able to
Print name of authorized individual & sign above	Date



ANNEX "B"

BASIS OF PAYMENT

For optional professional services work under section 3.2 of the Statement of Work, the Contractor shall be paid per the following basis of payment:

Item number	Description	Firm all-inclusive Per diem (GST/HST Excluded)
1	All-inclusive Firm per diem price for the total of resources performing the work under Section 3.1 of the Statement of Work Option Period 1 (1 April to 30 September 2020)	\$ (price to be inserted at contract award)
2	All-inclusive Firm per diem price for the total of resources performing the work under Section 3.1 of the Statement of Work Option Period 2 (1 October 2020 to 31 March 2021)	\$ (price to be inserted at contract award)

For the purpose of this Contract, a day is defined as 7.5 hours of work, exclusive of meal breaks. Payment will be made for days actually worked, with no provision for annual leave, statutory holidays and sick leave. If time worked is more or less than a day, the all-inclusive fixed daily rate must be prorated to reflect the actual time worked in accordance with the following formula:

(Hours worked x applicable firm all-inclusive per diem rate) ÷ 7.5 hours

No overtime charges will be authorized under the Contract. All time worked will be compensated according to paragraph above.



ANNEX "C" - SECURITY REQUIREMENTS CHECK LIST

	ement	Contract Number / Numéro du contrat			
of Canada du Cana	0.001400				
	Secu	rritv Classification / Classification de sécu UNCLASSIFIED	urité		
LISTE DE V ART A - CONTRACT INFORMATION / PAE . Originating Government Department or Org Ministère ou organisme gouvernemental d'	SECURITY REQUIREMENTS CHECK LIST ÉRIFICATION DES EXIGENCES RELATIVES À L'AIREA - INFORMATION CONTRACTUELLE Janizati DND 2. Brights DND 2. Brights DND	LA SÉCURITÉ (LVERS) anch or Directorate / Direction générale	ou Di	rectio	n
a) Subcontract Number / Numéro du contra		AF/DG Space/DSR			
Brief Description of Work / Brève description		Subcontractor / Nom et adresse du sous-	traita	nt	
	studies based off of DG Space Space-	based Requirements Docu	ımeı	nt	
. a) Will the supplier require access to Contro Le fournisseur aura-t-il accès à des marc	chandises contrôlées?	✓	No.		Yes
Regulations? Le fournisseur aura-t-il accès à des donn	sified military technical data subject to the provisions of ées techniques militaires non classifiées qui sont assuje	√	No.		Yes
sur le contrôle des données techniques? Indicate the type of access required / Indique	uer le type d'accès requis		_		
a) Will the supplier and its employees require Le fournisseur ainsi que les employés au (Specify the level of access using the cha (Préciser le niveau d'accès en utilisant le		on or assets? TÉGÉS et/ou CLASSIFIÉS?	No.		Yes
 b) Will the supplier and its employees (e.g. of PROTECTED and/or CLASSIFIED inform Le fournisseur et ses employés (p. ex. ne 	cleaners, maintenance personnel) require access to rest		No No		/ Yes Oui
 c) Is this a commercial courier or delivery re- 	quirement with no overnight storage?	./	r No		Yes
	livraison commerciale sans entreposage de nuit?	V	No		Oui
Canada	upplier will be required to access / Indiquer le type d'infor		accè	S	
b) Release restrictions / Restrictions relative		Foreign / Étranger			
No release restrictions Aucune restriction relative la diffusion	All NATO countries Tous les pays de l'OTAN	No release restrictions Aucune restriction relative à la diffusion			
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Department of National Defence Ministère de la défense nationale

Request for Proposals No. W6369-200196 DG Space Engineering concept studies

Government of Canada Gouvernement du Canada

Contract Number / Numéro du contrat C.001438 Security Classification / Classification de sécurité
UNCLASSIFIED

PART A (cor	ntinued) / PARTIE A (suite)		以后,在北京 <i>年</i> 月15日6月19日			(2016) T. (201
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	cate the level of sensitivity: mative, indiquer le niveau de sensibilité	à :				
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	screened personnel be used for portion connel sans autorisation sécuritaire peu		u travail?		No Non	Yes Oui
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premise				▼	No Non	Yes Oui
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11. b) Will the	supplier be required to safeguard COM	ISEC information or assets?			, No	Yes
Le fourn	isseur sera-t-il tenu de protéger des re	nseignements ou des biens CC	MSEC?	✓	Non	Oui
PRODUCTIO	DN					
11 c) Will the n	roduction (manufacture, and/or repair an	ad/or modification) of PROTECTS	ED and/or CLASSIEIED mat	erial or equipment	No.	Vas
occur at	the supplier's site or premises?			V	Non Non	Yes Oui
	illations du fournisseur serviront-elles à la ASSIFIÉ?	a production (fabrication et/ou rep	paration evou modification)	de materiel PROTEGE		
INFORMATIO	N TECHNOLOGY (IT) MEDIA / SUF	PPORT RELATIF À LA TECHNO	DLOGIE DE L'INFORMATIO	DN (TI)		\dashv
11 d) Will the s	upplier be required to use its IT systems	to electronically process produc	o or store PROTECTED an	dar CI ASSIEIED	. No	Yes
information	on or data?			V	Non	Oui
	sseur sera-t-il tenu d'utiliser ses propres ements ou des données PROTÉGÉS et		iter, produire ou stocker elec	troniquement des		
	be an electronic link between the suppli a-t-on d'un lien électronique entre le syst			l'agence 🗸	No Non	Yes Oui
	ementale?	and informatique du fodifiliaseur	et seiai da imiliatere da de	, agonoc	.4011	- Cui
TD0/007 7	400/2004/40)	[O	(FP d / 11)			
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Page **57** of **77**



Department of National Defence Ministère de la défense nationale

Request for Proposals No. W6369-200196 DG Space Engineering concept studies

Government of Canada Gouvernement du Canada

Contract Number / Numéro du contrat C.001438

Security Classification / Classification de sécurité UNCLASSIFIED

				C - (suite)	HARMAN	Carrier Street							相位的思想		
For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's															
site(s) or premises. Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les															
								le tableau réc	capitulatif	ci-dessou	s pour	indiqu	er, pour chaq	ue catégo	rie, les
niveaux de sau	ivegai	de r	equi	s aux installati	ons du fo	urnisseur									
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Dans le cas de				ui remplissent	le formul	aire en lig	gne (par Inter	net), les répo	nses aux	questions	précé	dentes	sont automa	tiquement	saisies
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12. a) Is the descr	intion	of th	30 W	ork contained	within this	SPCI D	POTECTED	and/or CL ASS	SIEIED?					/ No	Yes
				é par la prése						QIEIÉE2				√ No	
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12. b) Will the doc	ument	tatio	n atta	ached to this S	RCI be I	PROTEC	TFD and/or C	ASSIFIED?						/ No	Yes
La document														√ Non	Oui
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TBS/SCT 350-103(2004/12)

Security Classification / Classification de sécurité UNCLASSIFIED

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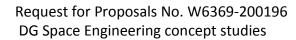
Attachment 3.1

ELECTRONIC PAYMENT INSTRUMENTS

As indicated in Part 3, clause 3.1.2, the Bidder must complete the information requested below, to identify which electronic payment instruments are accepted for the payment of invoices.

The Bidder accepts to be paid by any of the following Electronic Payment Instrument(s):

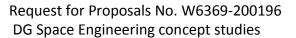
() VISA Acquisition Card;
() MasterCard Acquisition Card;
() Direct Deposit (Domestic and International);
() Electronic Data Interchange (EDI);
() Wire Transfer (International Only);
() Large Value Transfer System (LVTS) (Over \$25M)





Attachment 3.2 Bidder Submission Form

BID SUBMISSION FORM					
Bidder's full legal name					
Authorized Representative of Bidder for evaluation	Name				
purposes (e.g., clarifications)	Title				
	Address				
	Telephone #				
	Fax #				
	Email				
Bidder's Procurement Business Number (PBN) [see the Standard Instructions 2003]	<u>l</u>				
Jurisdiction of Contract: Province in Canada the bidder wishes to be the legal jurisdiction applicable to any resulting contract (if other than as specified in solicitation)					
Former Public Servants See the Article in Part 5 of the bid solicitation entitled Former Public Servant Certification for a definition of "Former Public Servant".	Is the Bidder a FPS in receipt of a pension as defined in the bid solicitation? Yes No If yes, provide the information required by the Article in Part 5 entitled "Former Public Servant Certification"				
	Is the Bidder a FPS who received a lump sum payment under the terms of a work force reduction program? Yes No If yes, provide the information required by the Article in Part 5 entitled "Former Public Servant Certification"				





Number of FTEs [Bidders are requested to indicate, the total number of full-time-equivalent positions that would be created and maintained by the bidder if it were awarded the Contract. This information is for information purposes only and will not be evaluated.] Security Clearance Level of Bidder [include both the level and the date it was granted] On behalf of the bidder, by signing below, I confirm that I have read the entire bid solicitation including the documents incorporated by reference into the bid solicitation and I certify that: 1. The bidder considers itself and its products able to meet all the mandatory requirements described in the bid solicitation; 2. This bid is valid for the period requested in the bid solicitation; 3. All the information provided in the bid is complete, true and accurate; and 4. If the bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation. Signature of Authorized Representative of Bidder	Federal Contractors Program for Employment Equity (FCP EE) Certification: If the bidder is exempt, please indicate the basis for the exemption to the right. If the bidder does not fall within the exceptions enumerated to the right, the Program requirements do apply and the bidder is required either to: (a) submit to the Department of HRSD form LAB 1168, Certificate of Commitment to Implement Employment Equity, DULY SIGNED; or (b) submit a valid Certificate number confirming its adherence to the FCP-EE. Bidders are requested to include their FCP EE Certification or signed LAB 1168 with their bid; if this information is not provided in the bid, it must be provided upon request by the Contracting Authority during evaluation. For joint ventures, be sure to provide this information for each of the members of the joint venture.	On behalf of the bidder, by signing below, I also confirm that the bidder [check the box that applies]: (a) is not subject to Federal Contractors Program for Employment Equity (FCP-EE), because it has a workforce of less than 100 permanent full or part-time employees in Canada; (b) is not subject to FCP-EE, because it is a regulated employer under the Employment Equity Act; (c) is subject to the requirements of FCP-EE, because it has a workforce of 100 or more permanent full or part-time employees in Canada, but has not previously obtained a certificate number from the Department of Human Resources and Skills Development (HRSD) (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached; OR (d) is subject to FCP-EE, and has a valid certification number as follows:				
Security Clearance Level of Bidder [include both the level and the date it was granted] On behalf of the bidder, by signing below, I confirm that I have read the entire bid solicitation including the documents incorporated by reference into the bid solicitation and I certify that: 1. The bidder considers itself and its products able to meet all the mandatory requirements described in the bid solicitation; 2. This bid is valid for the period requested in the bid solicitation; 3. All the information provided in the bid is complete, true and accurate; and 4. If the bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation.	total number of full-time-equivalent positions that would be created and maintained by the bidder if it were awarded the Contract. This information is for					
3. All the information provided in the bid is complete, true and accurate; and4. If the bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation.	Security Clearance Level of Bidder [include both the level and the date it was granted] On behalf of the bidder, by signing below, I confirm that I have incorporated by reference into the bid solicitation and I certify 1. The bidder considers itself and its products able to meet all solicitation;	that: the mandatory requirements described in the bid				
	3. All the information provided in the bid is complete, true and accurate; and 4. If the bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation.					



Attachment 4.1: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 1 – Constellation Design Concept**

Criteria	Mandatory Criteria	Statement of Compliance and Cross Reference to Proposal	MET	NOT MET
M1	The Bidder must have demonstrated experience performing a Synthetic Aperture Radar (SAR) remote sensing satellite system design concept study within the last five (5) years. The concept study must have assessed all of the following areas: 1- Tasking, Telemetry, and			
	Communications requirements; 2- Communications links (frequency, bandwidth); 3- Constellation composition, size and orbit(s); 4- Recommended sensors/sensor types, secondary payload, duty cycle, bus, frequency bands(s); 5- Detailed analysis of the sensor parameters (swath, resolution, Noise Equivalent Sigma Zero (NESZ), ambiguity, bandwidth, scene size); and 6- Detailed cost estimates.			
	To demonstrate compliance, the Bidder must provide details of the concept study using the Project Reference Response Template provided in Attachment 4.7.			
M2	The Bidder must demonstrate that the proposed resource(s) has/have a minimum of twenty (20) years' experience working with Synthetic Aperture Radars (SAR). To demonstrate compliance, the Bidder must provide a resume of each team member and provide details of the project(s), their role(s), dates and duration(s).			



Technical Point Rated Evaluation – Stream 1 – Constellation Design Concept

Criteria	Point-Rated Criteria	Evaluation Factors	Bidder	Justification (Cross-
			Self-	reference to resource
R1	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last ten (10) years designing SAR payloads. The Bidder should provide a detailed description of the project(s) and the	15 points = Demonstrated experience designing 3 or more SAR payloads 10 points = Demonstrated experience designing 2 SAR payloads 5 points = Demonstrated experience designing 1 SAR payload.	Score	resume as applicable)
	resource(s)' role in the design of SAR payload(s).	0 points = No experience		
		MAX Points = 15		
R2	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last ten (10) years	15 points = Demonstrated experience designing 3 or more satellite systems using SAR as the main payloads.		
	designing satellite systems (including both payload and space vehicle) using SAR as the main payload.	10 points = Demonstrated experience designing 2 satellite systems using SAR as the main payloads.		
	The Bidder should provide a detailed description of the project(s) and the team	5 points = Demonstrated experience designing 1 satellite system using SAR as the main payload.		
	member's role in the design of the satellite system(s) using SAR as the main	0 points = No experience		
	payload.	MAX Points = 15		
R3	The Bidder should demonstrate its experience	8 points = Demonstrated experience in all 4 stages		
	within the last ten (10) years in the completing the	6 points = Demonstrated experience in 3 stages		
	following stages for satellite systems which include SAR	4 points = Demonstrated experience in 2 stages		
	payloads:	2 points = Demonstrated experience in 1 stage		
	1- Design2- Manufacture	0 points = no experience		



Request for Proposals No. W6369-200196 DG Space Engineering concept studies

Criteria	Point-Rated Criteria	Evaluation Factors	Bidder Self- Score	Justification (Cross- reference to resource resume as applicable)
	3- Commission4- Operation	MAX Points = 8		
	The Bidder should provide details of its experience by using the Project Reference Response Template provided in Attachment 4.7.			
		Total points (out of 38)		



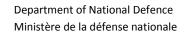
Attachment 4.2: Financial Proposal for **Stream 1 – Constellation Design Concept**

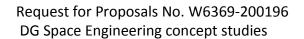
Table 1 – Firm Requirement

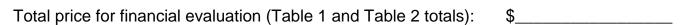
Description	Total Firm price (GST/HST excluded)
Work to be completed per Section 3.1 of the Statement of Work in Annex A-1	\$

Table 2 – Optional Professional Services

Item number	Description	Firm all inclusive Per diem (GST/HST Excluded)
1	Work to be completed per Section 3.2 of the Statement of Work in Annex A-1– Option Period 1 (1 April to 30 September 2020)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
2	Work to be completed per Section 3.2 of the Statement of Work in Annex A-1— Option Period 2 (1 October 2020 to 31 March 2021)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
	Total price of optional professional services for evaluation purposes (items 1 + 2)	\$









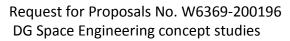
Attachment 4.3: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 2 – Data Exploitation Concept**

Criteria	Mandatory Criteria	Statement of Compliance and Cross Reference to Proposal	MET	NOT MET
M2	The Bidder must have led development of at least one concept study for a Processing, Exploitation and Dissemination (PED) system which uses space-based remote sensing and intelligence data within the last five (5) years. The concept study must have included the following: j. Communications links (frequency, bandwidth if appropriate); k. Ground segment technology and configuration; l. Collection, data handling; m. Processing, Exploitation and Dissemination (PED); n. Data Archiving, retrieval and storage; and o. Cross domain connectivity.			
M3	To demonstrate compliance, the Bidder must provide details of the concept study using the Project Reference Response Template provided in Attachment 4.7. The Bidder must demonstrate that the proposed resource(s) has/have a minimum of ton (10) years' experience working with PED.			
	ten (10) years' experience working with PED systems which use space-based remote sensing and intelligence data. To demonstrate compliance, the Bidder must provide a resume of each team member and provide details of the project(s), their role(s), dates and duration(s).			



Technical Point Rated Requirements for Stream 2 - Data Exploitation Concept

Point-Rated Criteria	Evaluation Factors	Bidder Self- Score	Justification (Cross- reference to resource resume as applicable)
The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last five (5) years designing PED systems which use space-based remote sensing and intelligence data. The Bidder should provide a detailed description of the project(s) and the resource(s)' role in the	15 points = Demonstrated experience designing 3 or more PED systems 10 points = Demonstrated experience designing 2 PED systems 5 points = Demonstrated experience designing 1 PED system 0 points = No experience MAX Points = 15		
The Bidder should demonstrate its experience within the last ten (10) years in the completing the following stages for PED systems which use space-based remote sensing and intelligence data 5- Design 6- Manufacture 7- Commission 8- Operation The Bidder should	8 points = Demonstrated experience in all 4 stages 6 points = Demonstrated experience in 3 stages 4 points = Demonstrated experience in 2 stages 2 points = Demonstrated experience in 1 stage 0 points = no experience MAX Points = 8		
	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last five (5) years designing PED systems which use space-based remote sensing and intelligence data. The Bidder should provide a detailed description of the project(s) and the resource(s)' role in the design of PED systems. The Bidder should demonstrate its experience within the last ten (10) years in the completing the following stages for PED systems which use space-based remote sensing and intelligence data 5- Design 6- Manufacture 7- Commission 8- Operation	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last five (5) years designing PED systems which use space-based remote sensing and intelligence data. The Bidder should provide a detailed description of the project(s) and the resource(s)' role in the design of PED systems. The Bidder should demonstrate its experience within the last ten (10) years in the completing the following stages for PED systems which use space-based remote sensing and intelligence data 5- Design 6- Manufacture 7- Commission 8- Operation The Bidder should provide details of its	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last five (5) years designing PED systems which use space-based remote sensing and intelligence data. The Bidder should provide a detailed description of the project(s) and the resource(s)' role in the design of PED systems. The Bidder should demonstrate its experience within the last ten (10) years in the completing the following stages for PED systems which use space-based remote sensing and intelligence data 5- Design 6- Manufacture 7- Commission 8- Operation The Bidder should provide details of its



Criteria	Point-Rated Criteria	Evaluation Factors	Bidder Self- Score	Justification (Cross- reference to resource resume as applicable)
	Project Reference Response Template provided in Attachment 4.7.			
		Total points (out of 23 points)		



Attachment 4.4: Financial Proposal for **Stream 2 – Data Exploitation Concept**

Table 1 – Firm Requirement

Description	Total Firm price (GST/HST excluded)
Work to be completed per Section 3.1 of the Statement of Work in Annex A-2	\$

Table 2 – Optional Professional Services

Item number	Description	Firm all inclusive Per diem (GST/HST Excluded)
1	Work to be completed per Section 3.2 of the Statement of Work in Annex A-2— Option Period 1 (1 April to 30 September 2020)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
2	Work to be completed per Section 3.2 of the Statement of Work in Annex A-2— Option Period 2 (1 October 2020 to 31 March 2021)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
	Total price of optional professional services for evaluation purposes (items 1 + 2)	\$

Total price for financial evaluation (Table 1 and Table 2 totals):	\$
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Attachment 4.5: Mandatory and Point-Rated Technical Evaluation Criteria for **Stream 3– Alternate Mission Concept**

Criteria	Mandatory Criteria	Statement of Compliance and Cross Reference to Proposal	MET	NOT MET
M4	The Bidder must have demonstrated experience performing an electro-optical (EO) or infrared (IR) (which much include hyper and multi-spectral) design concept study within the last five (5) years. The concept study must have assessed all of the following areas: 7- Tasking, Telemetry, and Communications requirements; 8- Communications links (frequency, bandwidth); 9- Constellation composition, size and orbit(s); 10- Recommended sensors/sensor types, secondary payload, duty cycle, bus, frequency bands(s); 11- Detailed analysis of the sensor parameters (swath, resolution, Noise Equivalent Sigma Zero (NESZ), ambiguity, bandwidth, scene size); and 12- Detailed cost estimates. To demonstrate compliance, the Bidder			
	must provide details of the concept study using the Project Reference Response Template provided in Attachment 4.7.			
M2	The Bidder must demonstrate that the proposed resource(s) has/have a minimum of fifteen (15) years' experience working with EO or IR spacecraft payloads. To demonstrate compliance, the Bidder must provide a resume of each team member and provide details of the project(s), their role(s), dates and duration(s).			



Technical Point Rated Requirements – Stream 3 – Alternate Mission Concept

Criteria	Point-Rated Criteria	Evaluation Factors	Bidder Self- Score	Justification (Cross- reference to resource resume as applicable)
R1	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last ten (10) years designing EO or IR payloads. The Bidder should provide a detailed description of the project(s) and the resource(s)' role in the design of the EO or IR payload(s).	15 points = Demonstrated experience designing 3 or more EO or IR payloads 10 points = Demonstrated experience designing 2 EO or IR payloads 5 points = Demonstrated experience designing 1 EO or IR payload. 0 points = No experience MAX Points = 15		
R2	The Bidder should demonstrate that the proposed resource(s) in M2 has/have experience within the last ten (10) years designing satellite systems (including both payload and space vehicle) which included EO or IR as the main payload. The Bidder should provide a detailed description of the project(s) and the team member's role in the design of the satellite system(s) which included EO or IR as the main payload(s).	15 points = Demonstrated experience designing 3 or more satellite systems which included EO or IR as the main payloads. 10 points = Demonstrated experience designing 2 satellite systems which included EO or IR as the main payloads. 5 points = Demonstrated experience designing 1 satellite system which included EO or IR as the main payload. 0 points = No experience MAX Points = 15		



Criteria	Point-Rated Criteria	Evaluation Factors	Bidder Self- Score	Justification (Cross- reference to resource resume as applicable)
R3	The Bidder should demonstrate its experience within the last ten (10) years in the completing the following stages for satellite systems which included EO or IR payloads: 9- Design 10- Manufacture 11- Commission 12- Operation The Bidder should provide details of its experience by using the Project Reference Response Template provided in Attachment 4.7.	8 points = Demonstrated experience in all 4 stages 6 points = Demonstrated experience in 3 stages 4 points = Demonstrated experience in 2 stages 2 points = Demonstrated experience in 1 stage 0 points = no experience MAX Points = 8		
		Total score (out of 38 points)		



Attachment 4.6: Financial Proposal for Stream 3- Alternate Mission Concept

Table 1 – Firm Requirement

Description	Total Firm price (GST/HST excluded)
Work to be completed per Section 3.1 of the Statement of Work in Annex A-3	\$

Table 2 – Optional Professional Services

Item number	Description	Firm all inclusive Per diem (GST/HST Excluded)
1	Work to be completed per Section 3.2 of the Statement of Work in Annex A-3— Option Period 1 (1 April to 30 September 2020)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
2	Work to be completed per Section 3.2 of the Statement of Work in Annex A-3— Option Period 2 (1 October 2020 to 31 March 2021)	\$
	Bidders are to provide an all-inclusive Firm per diem price for the total of resources that will perform the work under Section 3.1 of the Statement of Work	
	Total price of optional professional services for evaluation purposes (items 1 + 2)	\$

Total price for financial evaluation (Table 1 and Table 2 totals):	\$
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Email Address:

Attachment 4.7 - Project Reference Response template

Project Name:	Name of the project
Project Customer name:	Name of the project customer
Project Value (\$CDN):	The value of the project when contract was awarded
Project Start Date(mm/yyyy):	Start month and year of the project
Project Scheduled	The schedule project completion date as per the project contract.
Completion Date (mm/yyyy):	
Project Actual Completion	Actual completion date of the project or scheduled completion date if the project is still in
Date(mm/yyyy):	progress.
, , , , , , , , , , , , , , , , , , , ,	1
Project Scope and	Summary of the work undertaken to fulfill the contract
Experience:	Identify hardware/service deliverable(s) required
	Explanation of how this project experience is applicable to DND requirements
Additional Commonsts	Example: with reference to any other requirement where a reference client is requested
Additional Comments	Example: with reference to any other requirement where a reference chem is requested
	1
Project Milestones Achieved	
•	
Validator's Remarks	This is an optional section which allows the validator to provide supplementary information
(Optional)	related to the project.
· · · /	I
Validator`s contact information:	
Name:	
Company Name:	
Phone Number:	
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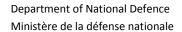
ATTACHMENT 5.1

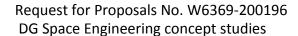
FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

(insert if applicable)

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC) - Labour's website. Date: (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.) Complete both A and B. A. Check only one of the following: () A1. The Bidder certifies having no work force in Canada. () A2. The Bidder certifies being a public sector employer. () A3. The Bidder certifies being a federally regulated employer being subject to the Employment Equity Act. () A4. The Bidder certifies having a combined work force in Canada of less than 100 permanent fulltime and/or permanent part-time employees. A5. The Bidder has a combined workforce in Canada of 100 or more employees; and () A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour. OR () A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour. B. Check only one of the following: () B1. The Bidder is not a Joint Venture. OR







() B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)