



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Travaux publics et Services gouvernementaux
Canada

Voir dans le document/

See herein

NA

Québec

NA

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

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 aux: Travaux Publics et Services Gouvernementaux Canada

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 ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Oue
800, rue de La Gauchetière Ouest
7e étage, suite 7300
Montréal
Québec
H5A 1L6

Title - Sujet MOTS Support-Phase VII-O&M20-21	
Solicitation No. - N° de l'invitation 9F054-190231/A	Date 2020-06-05
Client Reference No. - N° de référence du client 9F054-190231	
GETS Reference No. - N° de référence de SEAG PW-\$MTB-550-15754	
File No. - N° de dossier MTB-0-43009 (550)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2020-07-02	Time Zone Fuseau horaire Heure Avancée de l'Est HAE
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Mirfatahi, Kaveh	Buyer Id - Id de l'acheteur mtb550
Telephone No. - N° de téléphone (514) 260-4106 ()	FAX No. - N° de FAX (514) 496-3822
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: AGENCE SPATIALE CANADIENNE 6767 ROUTE DE L AEROPORT 9F054-Space Exploration Operations & Infrastructure ST HUBERT Québec J3Y8Y9 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée Voir doc.	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/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 signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

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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, the Security Requirements Checklist, the Non-Disclosure Agreement, the Bid Submission Form, the Electronic Payment Instruments, the Technical Evaluation Criteria the Federal Contractors Program for Employment Equity - Certification, the Task Authorization Form and any other annexes.

1.2 Summary

Title

MOTS Support Phase VII

Description

The Canadian Space Agency (CSA) has a requirement for software development services for its Mobile Servicing System (MSS) Operations and Training Simulator (MOTS) Phase VII to ensure that the functional capabilities implemented during the previous six phases are maintained, and enhanced when required, so that the performance of the MOTS continues to meet the requirements of all clients.

Period of the Contract

The initial contract period is from contract award to March 31, 2023. There will be two (2) additional option periods to extend the contract. The first one will be from April 1, 2023 to March 31, 2024. The second one will be from April 1, 2024 to December 31, 2024.

Trade Agreements

The requirement is not subject to the provisions of any trade agreement.

Security Requirements

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 [Contract Security Program](http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) of Public Works and Government Services Canada (<http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html>) website”.

Canadian Content

This requirement is limited to Canadian services.

Federal Contractors Program

The Federal Contractors Program (FCP) for employment equity applies to this procurement; refer to Part 5 – Certifications and Additional Information, Part 7 - Resulting Contract Clauses and the annex titled Federal Contractors Program for Employment Equity - Certification.”

Electronic Bidding

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.”

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 15 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 [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<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 [2003](#) (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 [2003](#), 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 Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified below by the date and time indicated on page 1 of the bid solicitation:

PWGSC Québec Region Bid Receiving Unit

Only bids submitted using epost Connect service will be accepted. The Bidder must send an email requesting to open an epost Connect conversation to the following address:

TPSGC.RQReceptionSoumissions-QRSupplyTendersReception.PWGSC@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

It is the Bidder's responsibility to ensure the request for opening an epost Connect conversation is sent to the email address above at least six days before the solicitation closing date.

Bids transmitted by facsimile or hardcopy to PWGSC will not be accepted.

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

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 ten (10) 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 Quebec.

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 ten (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

The Bidder must submit its bid electronically in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

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

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

Bids transmitted by facsimile or hardcopy will not be accepted.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Section I: Technical Bid

The technical bid consists of the following:

- i. **Bid Submission Form:** Bidders are requested to include the "Attachment 1 to Part 3 – Bid Submission" Form with their bids. It provides a common form in which bidders can provide information required for evaluation and contract award, such as a contact name, the Bidder's Procurement Business Number, the Bidder's status under the Federal Contractors Program for Employment Equity, etc. Using the form to provide this information is not mandatory, but it is recommended. If Canada determines that the information required by the Bid Submission Form is incomplete or requires correction, Canada will provide the Bidder with an opportunity to do so.

- ii. **Security Clearance:** Bidders are requested to submit the following security information for each of the proposed resources with their bids on or before the bid closing date:

SECURITY INFORMATION:

Name of individual as it appears on security clearance application form: _____

Level of security clearance obtained: _____

Validity period of security clearance obtained: _____

Security Screening Certificate and Briefing Form file number: _____

If the Bidder has not included the security information in its bid, the Contracting Authority will provide the Bidder with an opportunity to submit the security information during the evaluation period. If the Bidder has not submitted the security information within the period set by the Contracting Authority, its bid will be declared non-responsive.

- iii. **Substantiation of Technical Compliance:**

The technical bid must substantiate the compliance of the bidder and its products and services with the specific requirements of "Attachment 1 to Part 4 – Technical Evaluation Criteria" which is the requested format for providing the substantiation. The substantiation must not simply be a repetition of the requirement(s), but must explain and demonstrate how the Bidder will meet the requirements and carry out the required Work. Simply stating that the Bidder or its proposed solution or product complies is not sufficient. Where Canada determines that the substantiation is not complete, the Bidder will be considered non-responsive and disqualified. The substantiation may refer to additional documentation submitted with the bid - this information must be referenced in the Bidder's submitted copy of Attachment 1 to Part 4, where Bidders are requested to indicate where in the bid the reference material can be found, including the title of the document, and the page and paragraph numbers; where the reference is not sufficiently precise, Canada may request that the Bidder direct Canada to the appropriate location in the documentation.

- iv. **For Proposed Resources:** The technical bid must include résumés for the resources as identified in "Attachment 1 to Part 4 – Technical Evaluation Criteria" The same individual must not be proposed for more than one Resource Category. The Technical bid must demonstrate that each proposed individual meets the qualification requirements described (including any educational requirements, work experience requirements, and professional designation or membership requirements). With respect to the proposed resources:

- A. Proposed resources may be employees of the Bidder or employees of a subcontractor, or these individuals may be independent contractors to whom the Bidder would subcontract a portion of the Work
- B. For educational requirements for a particular degree, designation or certificate, Canada will only consider educational programs that were successfully completed by the resource by the time of bid closing. If the degree, designation or certification was issued by an educational institution outside of Canada, the Bidder must provide a copy of the results of the academic credential assessment and qualification recognition service issued by an agency or organization recognized by the Canadian Information Centre for International Credentials (CICIC).

- C. For requirements relating to professional designation or membership, the resource must have the required designation or membership by the time of bid closing and must continue, where applicable, to be a member in good standing of the profession or membership throughout the evaluation period and Contract Period. Where the designation or membership must be demonstrated through a certification, diploma or degree, such document must be current, valid and issued by the entity specified in this solicitation. If the entity is not specified, the issuer must be an accredited or otherwise recognized body, institution or entity at the time the document was issued. If the degree, diploma or certification was issued by an educational institution outside of Canada, the Bidder must provide a copy of the results of the academic credential assessment and qualification recognition service issued by an agency or organization recognized by the Canadian Information Centre for International Credentials (CICIC).
- D. For work experience, Canada will not consider experience gained as part of an educational program, except for experience gained through a formal cooperative program at a post-secondary institution.
- E. For any requirements that specify a particular time period (e.g. two (2) years) of work experience, Canada will disregard any information about experience if the technical bid does not include the relevant dates (month and year) for the experience claimed (i.e., the start date and end date). Canada will evaluate only the duration that the resource actually worked on a project or projects (from his or her start date to end date), instead of the overall start and end date of a project or a combination of projects in which a resource has participated.
- F. For work experience to be considered by Canada, the technical bid must not simply indicate the title of the individual's position, but must demonstrate that the resource has the required work experience by explaining the responsibilities and work performed by the individual while in that position. In situations in which a proposed company, team or resource worked at the same time on more than one project, the duration of any overlapping project time period will be counted only once toward any requirements that relate to the company's, team's or resource's length of experience.

V. **Customer Reference Contact Information:**

- A. The Bidder must provide customer references. The customer reference who must each confirm, if requested by Canada the facts identified in the Bidder's bid, as required by Attachment 1 to Part 4 – Technical Evaluation Criteria.
- B. The form of question to be used to request confirmation from customer references is as follows:

"Has [the Bidder] provided your organization with [describe the services and, if applicable, describe any required time frame within which those services must have been provided]?"

☐ *Yes, the Bidder has provided my organization with the services described above.*

☐ *No, the Bidder has not provided my organization with the services described above.*

____ *I am unwilling or unable to provide any information about the services described above.*

- C. For each customer reference, the Bidder must, at a minimum, provide the name, the telephone number and e-mail address for a contact person. Bidders are also requested to include the title of the contact person. If there is a conflict between the information provided by the customer reference and the bid, the information provided by the customer reference will be evaluated instead of the information in the bid. If the named individual is unavailable when required during the evaluation period, the Bidder may provide the name and contact information of an alternate contact from the same customer.
- vi. **Corporate Profile:** The Bidder is requested to provide a corporate profile, which should include an overview of the Bidder and any subcontractors, and/or authorized agents of the Bidder that would be involved in the performance of the Work on the Bidder's behalf. The Bidder is requested to provide a brief description of its size, corporate structure, years in business, business activities, major customers, number of employees and their geographic presence. This information is requested for information purposes only and will not be evaluated.

Section II: Financial Bid

3.1.1 Bidders must submit their financial bid in accordance with the Pricing Schedule detailed in the Basis of Payment in Annex B.

3.1.2 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Attachment 2 to Part 3 – Electronic Payment Instruments, to identify which ones are accepted.

If Attachment 2 to Part 3 – 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 Price Breakdown

Bidders are requested to detail the following elements for expenses in the performance of each task, milestone or phase of the Work, as applicable:

- (a) **Labour:** For each individual and (or) labour category to be assigned to the Work, indicate: i) the hourly rate, inclusive of overhead and profit; and ii) the estimated number of hours. For the estimated number of hours, the amount of effort for the Lead Project Engineer is specified in Annex B – Basis of Payment, while the total estimated effort by the remaining resources is indicated. This number of hours is to be distributed by between the resources or resource categories proposed by the supplier. The sum of the hours of effort for these resource or resource categories must match the one indicated in the Basis of Payment.

NOTE: Variation in Resource Rates By Time Period: For any given Resource Category, where the financial tables provided by Canada allow different firm rates to be charged for a resource category during different time periods: (i) the rate bid must not increase by more than 3% from one time period to the next, and (ii) the rate bid for the same Resource Category during any subsequent time period must

not be lower than the rate bid for the time period that includes the first month of the Initial Contract Period

- (b) Equipment: Specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable.
- (c) Materials and Supplies: Identify each category of materials and supplies required to complete the Work and provide the pricing basis.
- (d) Travel and Living Expenses: Indicate the number of trips and the number of days for each trip, the cost, destination and purpose of each journey, together with the basis of these costs which must not exceed the limits of the National Joint Council (NJC). With respect to the NJC's Directive, only the meal, private vehicle allowances specified in Appendices B, C and D of the Directive <http://www.njc-cnm.gc.ca/directive/travelvoyage/index-eng.php>, and the other provisions of the Directive referring to "travellers", rather than those referring to "employees", are applicable. The Treasury Board Secretariat's Special Travel Authorities, <https://www.canada.ca/en/treasury-board-secretariat/services/travel-relocation/special-travel-authorities.html>, also apply.
- (e) Subcontracts: Identify any proposed subcontractor and provide for each one the same price breakdown information as contained in this article.
- (f) Other Direct Charges: Identify any other direct charges anticipated, such as long distance communications and rentals, and provide the pricing basis.
- (g) Applicable Taxes: Identify any Applicable Taxes separately.

3.1.4 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06) Exchange Rate Fluctuation

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

Mandatory and point rated technical evaluation criteria are included in Attachment 1 to Part 4.

Bidders should complete a self-evaluation (see Attachment 1 to Part 4), and substantiate their evaluation by referring to appropriate sections in their proposal for additional details.

4.1.2 Financial Evaluation

For bids deemed technically responsive, as defined in article 4.2 Basis of Selection, financial bids submitted in response to this RFP will be evaluated as per the total value calculated in as per Annex B – Basis of Payment.

The estimates included in the pricing schedule detailed in Annex B – Basis of Payment on the annual estimate of work hours per resource category are provided for bid evaluation price determination purposes only.

For bid evaluation purposes, the calculated price of a bid will be determined in accordance with the detailed pricing schedule in Annex B

4.2 Basis of Selection

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria.
 - c. obtain the required minimum points specified for each criterion for the technical evaluation, and
 - d. obtain the required minimum of 65 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 420 points.

2. Bids not meeting (a) or (b) or (c) and (d) 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 60% for the technical merit and 40% for the price.
4. 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 60%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
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 60/40 ratio of technical merit and price, respectively. The total available points equals 50 and the lowest evaluated price is \$100,000 (100).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		45/50	34/50	35/50
Bid Evaluated Price		\$120,000	\$110,000	\$100,000
Calculations	Technical Merit Score	45/50 x 60 = 54	34/50 x 60 = 40.8	35/50 x 60 = 42
	Pricing Score	100/120 x 40 = 33.33	100/110 x 40 = 36.36	100/100 x 40 = 40
Combined Rating		54 + 33.33 = 87.33	40.8 + 36.36 = 77.16	42 + 40 = 82
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 [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) 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 [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<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](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) 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.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex titled Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that:

() the service offered is a Canadian service as defined in paragraph 2 of clause [A3050T](#).

5.2.3.1.1 *SACC Manual* clause [A3050T](#) (2018-12-06) Canadian Content Definition

5.2.3.2 Status and Availability of Resources

SACC Manual clause [A3005T](#) (2010-08-16) Status and Availability of Resources

5.2.3.3 Education and Experience

SACC Manual clause [A3010T](#) (2010-08-16) Education and Experience

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

1. Before award of a contract, 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. Bidders are reminded to obtain the required security clearance promptly. Any delay in the award of a contract to allow the successful Bidder to obtain the required clearance will be at the entire discretion of the Contracting Authority.
3. For additional information on security requirements, Bidders should refer to the [Contract Security Program](http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) of Public Works and Government Services Canada (<http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html>) website.

6.2 Financial Capability

SACC Manual clause [A9033T](#) (2012-07-16) Financial Capability

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 and the Contractor's technical bid entitled _____, dated _____.

7.1.1 Task Authorization

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 Technical Authority will provide the Contractor with a description of the task using the "Task Authorization" form specified in Annex D.
2. 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 Technical 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 Technical 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 Technical Authority may authorize individual task authorizations up to a limit of \$300 000, 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.

7.1.2.3 Periodic Usage Reports - Contracts with Task Authorizations

The Contractor must compile and maintain records on its provision of services to the federal government under authorized Task Authorizations issued under the Contract.

The Contractor must provide this data in accordance with the reporting requirements detailed below. If some data is not available, the reason must be indicated. If services are not provided during a given period, the Contractor must still provide a "nil" report.

The data must be submitted on a quarterly basis to the Contracting Authority.

The quarterly periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31; and

4th quarter: January 1 to March 31.

The data must be submitted to the Contracting Authority no later than 15 calendar days after the end of the reporting period.

Reporting Requirement – Details

A detailed and current record of all authorized tasks must be kept for each contract with a task authorization process. This record must contain:

For each authorized task:

- i. the authorized task number or task revision number(s);
- ii. a title or a brief description of each authorized task;
- iii. the total estimated cost specified in the authorized Task Authorization (TA) of each task, exclusive of Applicable Taxes;
- iv. the total amount, exclusive of Applicable Taxes, expended to date against each authorized task;
- v. the start and completion date for each authorized task; and
- vi. the active status of each authorized task, as applicable.

For all authorized tasks:

- i. the amount (exclusive of Applicable Taxes) specified in the contract (as last amended, as applicable) as Canada's total liability to the contractor for all authorized TAs; and
- ii. the total amount, exclusive of Applicable Taxes, expended to date against all authorized TAs.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<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

[4002](#) (2010-08-16) Supplemental General Conditions – Software Development or Modification Services apply to and form part of the Contract.

7.2.3 Non-disclosure Agreement

The Contractor must obtain from its employee(s) or subcontractor(s) the completed and signed nondisclosure agreement, attached at Annex D, and provide it to the Contracting Authority with a Copy to the Project Authority before they are given access to information by or on behalf of Canada in connection with the Work

7.3 Security Requirements

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid Designated Organization Screening (DOS) with approved Document Safeguarding and Production Capabilities at the level of PROTECTED B, issued by the Contract Security Program (CSP), Public Works and Government Services Canada (PWGSC).
2. The Contractor/Offeror personnel requiring access to PROTECTED information, assets or site(s) must EACH hold a valid RELIABILITY STATUS, granted or approved by the CSP, PWGSC. Until the security screening of the Contractor personnel required by this Contract has been completed satisfactorily by the CSP, PWGSC, the Contractor/ personnel MAY NOT HAVE ACCESS to PROTECTED information or assets, and MAY NOT ENTER sites where such information or assets are kept, without an escort.
3. The Contractor MUST NOT utilize its Information Technology systems to electronically process, produce or store PROTECTED information until the CSP, PWGSC has issued written approval. After approval has been granted or approved, these tasks may be performed at the level of PROTECTED B.
4. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of the CSP, PWGSC.
5. 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, 2023 inclusive.

7.4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to two (2) additional periods under the same conditions. The first period is from April 1, 2023 to March 31, 2024. The second period is from April 1, 2024 to December 31, 2024. 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 30 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.

7.4.3 Transition Period

The Contractor acknowledges that the nature of the services provided under the Contract requires continuity and that a transition period may be required at the end of the Contract. The Contractor agrees that Canada may, at its discretion, extend the Contract by a period of twelve (12) months under the same conditions to ensure the required transition. 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.

The Contracting Authority will advise the Contractor of the extension by sending a written notice to the Contractor at least 30 calendar days before the contract expiry date. The extension 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:

Kaveh Mirfatahi
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch, Quebec Region
Place Bonaventure
800 de la Gauchetière Ouest
Suite 7300, Portail Sud-Ouest, Montréal, Québec H5A 1L6

Telephone: 514-260-4106
Facsimile: 514-496-3822
E-mail address: kaveh.mirfatahi@pwgsc-tpsgc.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 Project Authority

The Project Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____-____-_____
Facsimile: ____-____-_____
E-mail address: _____

The Project 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 Project Authority; however, the Project 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.

7.5.3 Contractor's Representative

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 [Public Service Superannuation Act](#) (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 [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

7.7 Payment

7.7.1 Basis of Payment

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 TA must not exceed the limitation of expenditure specified in the authorized TA. Customs duties are included and Applicable Taxes are extra.

No increase in the liability of Canada or in the price of the Work specified in the authorized TA 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 Limitation of Expenditure

1. Canada's total liability to the Contractor under the Contract for all authorized Task Authorizations (TAs), inclusive of any revisions, must not exceed the sum of \$ 4,095,620.00. Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada will be authorized or paid to the Contractor unless an increase has been approved, in writing, by the Contracting Authority.
3. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
 - a. when it is 75 percent committed, or
 - b. four (4) months before the contract expiry date, or
 - c. as soon as the Contractor considers that the sum is inadequate for the completion of the Work required in all authorized TAs, inclusive of any revisions, whichever comes first.
4. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority, a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

7.7.3 Method of Payment

7.7.3.1 Progress Payments

For Tasks where no milestone is defined:

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work up to 90 percent of the amount claimed and approved by Canada if:
 - (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111 (<https://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - (b) the amount claimed is in accordance with the Basis of payment;
 - (c) the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
 - (d) all certificates appearing on for PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.
3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the right to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

7.7.3.2 Milestone Payments

For Tasks where milestones are defined:

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Task signed before the beginning of the work, and attached to the claim, and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment using [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
- c. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.7.4 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);

7.7.5 Discretionary Audit

SACC Manual clause [C0101C](#) (2010-01-11) Discretionary Audit – Non-commercial Goods and/or Services

7.7.6 Time Verification

SACC Manual clause [C0711C](#) (2008-05-12) Time Verification

7.8 Invoicing Instructions

1. The Contractor must submit a claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment.

Each claim must show:

- a. all information required on form [PWGSC-TPSGC 1111](#);
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- c. a list of all expenses;
- d. expenditures plus pro-rates profit or fee;
- e. the description and value of the milestone claimed as detailed in the Contract (if applicable);

Each claim must be supported by:

- a. a copy of time sheets to support the time claimed;
 - b. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
 - c. a copy of the monthly progress report.
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
 3. The Contractor must prepare and certify **one (1) original and two (2) copies** of the claim on form [PWGSC-TPSGC 1111](#), and forward:
 - a) the **original and one (1) copy** to the Canadian Space Agency at the address shown on page 1 of the Contract under "Invoices" (Financial Services Section) for appropriate certification by the Project Authority identified herein after inspection and acceptance of the Work takes place; and,
 - b) **one (1) copy of the original** progress claim to the Contracting Authority identified under the section entitled "Authorities" of the Contract.
 4. The CSA's Financial Services Section will then forward **the original and one (1) copy** of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.
 5. The Contractor must not submit claims until all work identified in the claim is completed.

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.

7.9.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms 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 Quebec.

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 [4002](#) (2010-08-16) Software Development or Modification Services;
- (c) the general conditions [2035](#) (2018-06-21) General Conditions - Higher Complexity – Services;
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Security Requirements Check List
- (g) Annex D, Non-disclosure Agreement;
- (h) the signed Task Authorizations (including all of its annexes, if any);
- (i) the Contractor's bid dated _____, (*insert date of bid*).

7.12 Foreign Nationals (Canadian Contractor)

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

7.13 Insurance

SACC Manual clause [G1005C](#) (2016-01-28) Insurance - No Specific Requirement

7.14 SACC Manual Clauses

SACC Manual clause [B1501C](#) (2018-06-21) Electrical equipment

SACC Manual clause [B9028C](#) (2007-05-25) Access to Facilities and Equipment

7.15 Limitation of Liability- Information Management/Information Technology

1. This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees. This section applies regardless of whether the claim is based in contract, tort, or another cause of action. The Contractor is not liable to Canada with respect to the performance of or failure to perform the Contract, except as described in this section and in any section of the Contract pre-establishing any liquidated damages. The Contractor is only liable for indirect, special or consequential damages to the extent described in this section, even if it has been made aware of the potential for those damages.
2. **First Party Liability:**
 - a. The Contractor is fully liable for all damages to Canada, including indirect, special or consequential damages, caused by the Contractor's performance or failure to perform the Contract that relate to:
 - i. any infringement of intellectual property rights to the extent the Contractor breaches the section of the general conditions entitled "Intellectual Property Infringement and Royalties";

- ii. physical injury, including death.
- b. The Contractor is liable for all direct damages caused by the Contractor's performance or failure to perform the Contract affecting real or tangible personal property owned, possessed, or occupied by Canada.
- c. Each of the Parties is liable for all direct damages resulting from its breach of confidentiality under the Contract. Each of the Parties is also liable for all indirect, special or consequential damages in respect of its unauthorized disclosure of the other Party's trade secrets (or trade secrets of a third party provided by one Party to another under the Contract) relating to information technology.
- d. The Contractor is liable for all direct damages relating to any encumbrance or claim relating to any portion of the Work for which Canada has made any payment. This does not apply to encumbrances or claims relating to intellectual property rights, which are addressed under (a) above.
- e. The Contractor is also liable for any other direct damages to Canada caused by the Contractor's performance or failure to perform the Contract that relate to:
 - i. any breach of the warranty obligations under the Contract, up to the total amount paid by Canada (including Applicable Taxes) for the goods and services affected by the breach of warranty; and
 - ii. any other direct damages, including all identifiable direct costs to Canada associated with re-procuring the Work from another party if the Contract is terminated either in whole or in part for default, up to an aggregate maximum for this subparagraph (ii) of the greater of 0.75 times the total estimated cost (meaning the dollar amount shown on the first page of the Contract in the block titled "Total Estimated Cost" or shown on each call-up, purchase order or other document used to order goods or services under this instrument), or \$1,000,000.

In any case, the total liability of the Contractor under paragraph (e) will not exceed the total estimated cost (as defined above) for the Contract or \$1,000,000, whichever is more.
- f. If Canada's records or data are harmed as a result of the Contractor's negligence or willful act, the Contractor's only liability is, at the Contractor's own expense, to restore Canada's records and data using the most recent back-up kept by Canada. Canada is responsible for maintaining an adequate back-up of its records and data.

3. Third Party Claims:

- a. Regardless of whether a third party makes its claim against Canada or the Contractor, each Party agrees that it is liable for any damages that it causes to any third party in connection with the Contract as set out in a settlement agreement or as finally determined by a court of competent jurisdiction, where the court determines that the Parties are jointly and severally liable or that one Party is solely and directly liable to the third party. The amount of the liability will be the amount set out in the settlement agreement or determined by the court to have been the Party's portion of the damages to the third party. No settlement agreement is binding on a Party unless its authorized representative has approved the agreement in writing.

- b. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada by the amount finally determined by a court of competent jurisdiction to be the Contractor's portion of the damages to the third party. However, despite paragraph (a), with respect to special, indirect, and consequential damages of third parties covered by this section, the Contractor is only liable for reimbursing Canada for the Contractor's portion of those damages that Canada is required by a court to pay to a third party as a result of joint and several liability that relate to the infringement of a third party's intellectual property rights; physical injury of a third party, including death; damages affecting a third party's real or tangible personal property; liens or encumbrances on any portion of the Work; or breach of confidentiality.
- c. The Parties are only liable to one another for damages to third parties to the extent described in this paragraph 3.

7.16 Directive on Communications with the Media

1. Definitions

"Communication Activity(ies)" includes: public information and recognition, the planning, development, production and delivery or publication, and any other type or form of dissemination of marketing, promotional or information activities, initiatives, reports, summaries or other products or materials, whether in print or electronic format that pertain to the present agreement, all communications, public relations events, press releases, social media releases, or any other communication directed to the general public in whatever form or media it may be in, including but without limiting the generality of the preceding done through any company web site.

2. Communication Activities Format

The Contractor must coordinate early on with the Canadian Space Agency (CSA) all Communication Activities that pertain to the present contract.

Subject to review and approval by the CSA, the Contractor may mention and/or indicate visually, without any additional costs to the CSA, the CSA's participation in the contract through at least one of the following methods at the complete discretion of the CSA:

- a. By clearly and prominently labelling publications, advertising and promotional products and any form of material and products sponsored or funded by the CSA, as follows, in the appropriate official language:

"This program/project/activity is undertaken with the financial support of the Canadian Space Agency."

"Ce programme/projet/activité est réalisé(e) avec l'appui financier de l'Agence spatiale canadienne."

- b. By affixing CSA's corporate logo on print or electronic publications, advertising and promotional products and on any other form of material, products or displays sponsored or funded by the Canadian Space Agency.

Any and all mention or reference to the Canadian Space Agency in addition to those specified above in (a) and (b) must be specifically accepted by the CSA prior to publication.

The Contractor must obtain and use a high resolution printed or electronic copy of the CSA's corporate identity logo and seek advice on its application, by contacting the project authority as mentioned in Paragraph 7.5.2 of this contract.

3. Communication Activity Coordination Process

The contractor must coordinate with the CSA's Directorate of Communications and Public Affairs all Communication Activities pertaining to the present contract. To this end, the contractor must:

- a. As soon as the Contractor intends to organize a Communication Activity, send a Notice to the CSA's Directorate of Communications and Public Affairs. The Communications Notice must include a complete description of the proposed Communication Activity. The Notice must be in writing in accordance with the clause Notice included in the general conditions applicable to the contract. The Communications Notice must include a copy or example of the proposed Communication Activity.
- b. The contractor must provide to the CSA any and all additional document in any appropriate format, example or information that the CSA deems necessary, at its entire discretion to correctly and efficiently coordinate the proposed Communication Activity. The Contractor agrees to only proceed with the proposed Communication Activity after receiving a written confirmation of coordination of the Communication Activity from the CSA's Directorate of Communications and Public Affairs.

The Contractor must receive beforehand the authorization, approval and written confirmation from the CSA's Directorate of Communications and Public Affairs before organizing, proceeding or hosting a communication activity

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

ANNEX A

STATEMENT OF WORK

Canadian Space Agency Space Station Program

MOTS Statement of Work (SOW)

Phase VII Sustaining Engineering

Revision A

May 20, 2020



**Canadian Space
Agency**

**Agence Spatiale
Canadienne**

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PREFACE

This document is under the control of the CSSP Control Board. Any proposed changes must be made in accordance with the CSSP Configuration and Data Management Plan CSA-SS-PL-0022.

2020-05-22



Prepared by:

Stéphane Rondeau
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REVISION HISTORY

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A	Per CSACR1839 <ul style="list-style-type: none">Updated the references to the applicable documents, the GFE list and the format of the deliverables.Produced a French version of the SOW which is required by PSPC for the MOTS Phase VII RFP.	SR	May 20, 2020

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1 INTRODUCTION

1.1 PURPOSE

The purpose of Mobile Servicing System (MSS) Operations and Training Simulator (MOTS) Phase VII contract is to provide sustaining engineering to ensure that the functional capabilities implemented during the previous six phases are maintained, and enhanced when required, so that the performance of the MOTS continues to meet the requirements of all clients.

1.2 BACKGROUND

As a partner of the International Space Station (ISS) Program, the Canadian Space Agency (CSA) is contributing space-based manipulator equipment, the MSS, to serve as one of the core systems of the Space Station. Canada has also constructed an Exploration Ground Infrastructure (EGI) to support MSS operations, training, logistics, ground processing, and sustaining engineering activities. A major element of the EGI is the MSS Simulation Facility (MSF), which hosts the MOTS.

The primary purpose of MOTS is to provide a high fidelity real-time simulation of the MSS on-orbit behaviour to allow, without being limited to, the CSA personnel to perform the following tasks:

1. Complete MSS generic training for both crew and ground support personnel,
2. Develop and validate MSS operational procedures,
3. Analyze MSS anomalous behaviour,

2 DOCUMENTS AND CONVENTIONS

2.1 APPLICABLE DOCUMENTS

The following documents of the exact issue date and revision level shown are applicable and form an integral part of this document to the extent specified herein.

Document Number	Revision	Title
CSA-SSMOC-SOP-18927714	Rev IR	MOTS Standard Operating Procedure (SOP)
CSA-SS-PL-0219	Rev IR	MOTS Intellectual Property (IP) Secure Software Integration Plan (IPSSIP)

2.2 CONVENTIONS

The following verbs, as used in this document, have specific meaning as indicated below:

- “must” indicates a mandatory requirement.
- “should” indicates a preferred but not mandatory alternative.
- “may” indicates an option.
- “will” indicates a statement of intention or fact.

The Fiscal Year (FY) is the twelve (12) months period from the 1st April to the 31st March.

3 WORK DESCRIPTION

3.1 GENERAL

The Contractor must:

- a. Provide Project Management, Safety and Product Assurance activities.
- b. Provide System Engineering, Configuration Management (CM) and Software Design and Development activities.
- c. Provide a design, development, integration, and test team with the skills and knowledge necessary to address each of the areas of expertise defined in Table 3-1.
- d. Provide as-and-when-required support for operations.
- e. Recommend upgrades to the MOTS to ensure future operability and reliability of the MOTS.
- f. Prepare and release one (1) MOTS Software build every three (3) months for a total of four (4) Regular MOTS Software builds per FY as defined in the MOTS Standard Operating Procedure (SOP) (CSA-SSMOC-SOP-18927714), with the CM released items making up a MOTS Software build being as defined in Appendix G.
- g. Prepare and release an additional Urgent MOTS Software build when requested by the Technical Authority (TA) as defined in the MOTS SOP (CSA-SSMOC-SOP-18927714), with the CM released items making up the MOTS Software build being as defined in Appendix G. As an indication, 1 such Urgent MOTS Software build has been requested per FY on average over the last 5 years, with each one implementing only 1 or 2 System Action Request (SAR) compared to 15 SARs implemented on average for a regular MOTS Software build.

3.2 INVESTIGATION & SAR BOARD

The Contractor must support CSA's SAR Review Board (SRB) processes, as defined in the MOTS SOP (CSA-SSMOC-SOP-18927714).

More specifically to the MOTS SAR Process, the following items are repeated here from the MOTS SOP (CSA-SSMOC-SOP-18927714) in order to highlight their importance to the CSA. Note that in the case of conflict between this document and the CSA-SSMOC-SOP-18927714 document, the SOW must take precedence.

The Contractor must:

- a. Support the TA in the definition of the scope of each of the planned builds of MOTS, each build being defined by an approved set of SARs.
- b. Support the establishment of a clear and objective list of Pass/Fail criteria for each SAR to be implemented, this list being captured using a "List of Verifies" (LOV) in the format shown in Figure B-1 – "Individual SAR LOV Format" of the Appendix B.

- c. Provide an Investigation Report (IR) in the format shown in Figure B-2 – "Individual SAR IR Format" of the Appendix B, for each of the SAR investigation Action Item (AI) assigned to the Contractor, reporting the following information:
 - a. Cause of the problem,
 - b. Suggested solution,
 - c. Status of the availability of the Government Furnished Information (GFI)¹ or the Government Furnished Equipment (GFE)² required,
 - d. Estimated quote in hours for task completion. Note that this estimated quote must include all the hours associated with the SAR, excluding the hours spent by the Contractor to investigate the SAR and the hours spent by the Contractor's Integration Specialist (IS) to perform the integration of the SAR solution within the MOTS build.
 - e. Estimated risk for task completion stated as Low, Medium or High.
- d. Recommend the number of hours that must be set aside for the risk provision allocated for each build of MOTS.
- e. Provide the number of hours available for each build of MOTS.
- f. Support the MOTS build "freeze" process by providing a verification of the resource allocation for the individual development team members.
- g. Design, develop, integrate and test the implemented solution for each approved and assigned SAR.
- h. Raise a SAR when a problem with the MOTS is witnessed, or as defined in the MOTS SOP (CSA-SSMOC-SOP-18927714). The format of the SAR must be as defined in Figure J-8 – "Individual SAR Format" of the Appendix J
- i. Raise an Engineering Change Notice (ECN) when a change to the MOTS Software build has been implemented, or as defined in the MOTS SOP (CSA-SSMOC-SOP-18927714). The format of the ECN must be as defined in Figure J-9 – "Individual ECN Format" of the Appendix J

¹ GFI can take many forms, including, but not limited to; data (such as Computer Aided Design (CAD) data, mass property data, etc.), software tools, licenses, source code, etc.

² GFE can take many forms, including but not limited to; computers, peripherals, etc.

3.3 IP SECURITY

The TA will identify any sensitive files integrated into MOTS that have an Intellectual Property (IP), which is to be protected. The eight (8) current examples of such sensitive files requiring this extra level of protection are:

1. the MSS Flight Software (FSW) source code,
2. the International Traffic in Arms Regulations (ITAR) H-II Transfer Vehicle (HTV) Overlay source code,
3. the ITAR HTV CAD data,
4. the ITAR HTV Mass Property data,
5. the ITAR Dragon CAD data,
6. the ITAR Dragon Mass Property data,
7. the ITAR Cygnus CAD data,
8. the ITAR Cygnus Mass Property data.

For any such sensitive files identified by the TA, the Contractor must protect and handle them as defined in the MOTS Intellectual Property (IP) Secure Software Integration Plan (IPSSIP) (CSA-SS-PL-0219).

More specifically to the MOTS IPSSIP, the following items are repeated below in bullets a. to f., from the MOTS IPSSIP (CSA-SS-PL-0219) in order to highlight their importance to the CSA. Note that in the case of conflict between this document and the CSA-SS-PL-0219 document, the SOW must take precedence.

The Contractor must:

- a. Perform the steps described in section 5.1 "Software Integration and Test" of the MOTS IPSSIP (CSA-SS-PL-0219) on top of the regular MOTS SOP (CSA-SSMOC-SOP-18927714), for the sensitive files identified by the TA.
- b. Ensure the successful extraction and decryption of the sensitive files performed by the TA on the CSA premises are never compromised.
- c. Ensure that un-encrypted sensitive files as source code and source data, reside on MOTS only within the Intellectual Property Secure (IPS) and the Windows IPS (WIPS) repositories.
- d. Ensure that sensitive files integrated into MOTS reside only as encrypted files when outside the IPS and WIPS repositories, including within the Simex repository.
- e. Ensure not to disclose in whole or in part any sensitive files to any of its director, officer or employee, unless that individual needs the sensitive files for work in connection with this SOW and is legally bound to keep confidences, or with the explicit consent of the TA duly expressed in writing.

- f. Ensure the un-encrypted sensitive files as source code and source data, are kept within the premises of the CSA Headquarters, located at 6767 route de l'Aéroport, Saint-Hubert, Quebec, and not taken off the premises of the CSA Headquarters, not communicated or transferred outside the premises of the CSA Headquarters, and not caused to leave the premises of the CSA Headquarters, in whole or in part, on any material support and in any way whatsoever, without the explicit consent the TA duly expressed in writing.

3.4 DOCUMENTATION

The Contractor must:

- a. Modify and deliver the MOTS System Specification Document (SSD) to reflect how the approved SARs have added to or modified the MOTS software or hardware requirements. The content of the SSD must be as defined in Figure C-3 – "MOTS SSD TOC" of the Appendix C. As an indication, 1 such SSD update has been requested every 2 FYs on average over the last 10 years.
- b. Deliver a MOTS Version Description Document (VDD) with each of the MOTS builds, describing the exact content of each of the MOTS builds. The content of the VDD must be as defined in Figure I-7 – "MOTS VDD TOC" of the Appendix I.

More specifically to the MOTS SAR Process, the following items are repeated here from the MOTS SOP (CSA-SSMOC-SOP-18927714) in order to highlight their importance to the CSA. Note that in the case of conflict between this document and the CSA-SSMOC-SOP-18927714 document, the SOW must take precedence.

The Contractor must:

- c. Modify and deliver the System Design Document (SDD) to reflect how the approved SARs have added to or modified the MOTS software or hardware architecture and design. The content of the SDD must be as defined in Figure D-4 – "MOTS SDD TOC" of the Appendix D. As an indication, 1 such SDD update has been requested every FY on average over the last 10 years.
- d. Revise, amend and deliver the required end-to-end test procedures prior to each of the MOTS Formal Qualification Test (FQT) events to include the changes requested by the TA during the previous FQT events. The format must be as defined in Figure E-5 – "End-to-End Test Procedure Format" of the Appendix E. As an indication, the changes requested by the TA to the end-to-end test procedures during each FQT require less than 1 day to implement.
- e. Produce for each SAR a "Procedure Of Verification" (POV) verifying all the items in the LOV for the corresponding SAR.
- f. Prepare the individual SAR POVs following the format defined in Figure F-6 – "Individual SAR POV Format" of the Appendix F.
- g. Prepare the individual SAR POVs such that the expected results which are part of the SAR's LOV items are in bold typeface, while the remainder of the POV is not in bold typeface, as shown in Figure F-6.
- h. Include in each of the POVs the Portable Computer System (PCS) specific information in the format shown in Figure F-6.

- i. Support the TA in the preparation of a Test Readiness Review (TRR) meeting and package, where all the required individual SAR POVs, and all the end-to-end test procedures are reviewed prior to the commencement of the FQT.

3.5 FORMAL QUALIFICATION TESTING

The following MOTS FQT related items are repeated here from the MOTS SOP (CSA-SSMOC-SOP-18927714) in order to highlight their importance to the CSA. Note that in the case of conflict between this document and the CSA-SSMOC-SOP-18927714 document, the SOW must take precedence.

The Contractor must:

- a. Use the PCS laptops and its PCS pages provided by CSA to perform all the individual SAR POVs and the end-to-end tests.
- b. Execute fully all individual SAR POVs once prior to the MOTS FQT, making sure all the items of the SRB approved LOV have been fully implemented and tested to function as expected.
- c. Execute fully all the end-to-end test procedures once prior to the MOTS FQT.
- d. Support the MOTS TRR meeting to be held prior to each of the MOTS FQTs, to verify that:
 - a. A finalized MOTS TRR package has been prepared and is distributed to the testing team prior to the commencement of the MOTS FQT.
 - b. The MOTS TRR package has all the required individual SAR POVs verified to cover all LOV items, and all the required end-to-end test procedures verified to include all prior requested modifications.
 - c. A MOTS software and hardware audit has been done to make sure all required software configuration items are properly loaded on all the hardware configuration items used during the MOTS FQT.
- e. Coordinate with the TA the execution of all individual SAR POVs and end-to-end test procedures.
- f. Execute fully all the individual SAR POVs during the MOTS FQT, and demonstrate that all the items of the SRB approved LOV have been fully implemented and tested to function as expected.
- g. Execute fully all the end-to-end test procedures during the MOTS FQT.
- h. Deliver to the TA during the FQT, the FQT Test Result items defined in Appendix H.
- i. Support the MOTS Formal Qualification Review (FQR) meeting (to be held following the MOTS FQT and prior to the MOTS build release) to verify that:
 - a. All the individual SARs pass all LOV items successfully.
 - b. All the required end-to-end test procedures pass successfully.

3.6 TECHNICAL SUPPORT TO USERS

The TA will notify the Contractor five (5) calendar days prior to each of the formal events when their technical support will be required, specifying the type of support required as well as the dates and times when it is required. Should the notification by the TA be provided less than five (5) calendar days prior to a formal event, the Contractor will provide the requested support on a best effort basis. CSA reserves the right to change the schedule at any time without penalty.

The 4 types of technical support required from the Contractor are defined as follows:

- a. On Site Regular Hours Support: The Contractor's Technical Support (TS) Point Of Contact (POC) must be available and within the immediate vicinity³ of the MOTS simulator during regular business hours⁴ on regular business days⁵.
- b. On site Irregular Hours Support: The Contractor's TS POC must be available and within the immediate vicinity of the MOTS simulator outside the regular business hours on regular business days, or any time on non-regular business days⁶.
- c. Off Site Irregular Hours Phone Support: The Contractor's TS POC must be available by telephone outside the regular business hours on regular business days, or any time on non-regular business days. The Contractor's TS POC is not required to go on the MOTS simulator site.
- d. On-Call Irregular Hours Support: The Contractor's TS POC must be available by telephone outside the regular business hours on regular business days, or any time on non-regular business days. Once called, the Contractor's TS POC must reach the MOTS simulator site within 1 hour.

In order to support the MOTS users, the Contractor must:

- a. Coordinate with the TA and provide the type of support requested on the dates and times specified by the TA.
- b. Provide to the TA the name and contact information of the Contractor's TS POC.
- c. Ensure the Contractor's TS POC is trained and proficient with the MOTS system in order to quickly resolve common recurrent problems and minimize any delays to the formal events.

³ Immediate vicinity means that the Contractor's TS POC can be reached in person within 5 minutes, and that he or she can come to the MOTS site within 10 minutes.

⁴ Regular business hours are defined as from 8:00 to 17:00.

⁵ Regular business days are defined as each Monday to Friday of the year, with the exception of the 11 Public Service Statutory holidays.

⁶ Non-regular business days are defined as each Saturday and Sunday of the year, as well as the 11 Public Service Statutory holidays.

3.7 TRAIN-THE-TRAINER SUPPORT

The term Train-The-Trainer (TTT) is used to refer to the training provided to the MOTS Users about how to use the MOTS. The Contractor, upon request from the TA, must provide MOTS subject matter expert(s) that are trained and proficient with the MOTS system in order to:

- a. Support the preparation of or prepare MOTS specific TTT course material. Figure K-10 – "MOTS TTT Course Topics" of the Appendix K provides a list of possible topics on which the Contractor may be requested to support the preparation of or prepare MOTS specific TTT course material. Is it expected that CSA may request a review and update of the provided TTT course material once every 3 FYs.
- b. Conduct MOTS specific TTT training session(s) as requested by the TA. It is expected that 1 to 4 MOTS specific TTT training sessions will be conducted per FY, with each session lasting approximately half a day or less.

The TA will notify the Contractor when their training support will be required, specifying the dates and times. CSA reserves the right to change the schedule at any time without penalty.

3.8 MANAGEMENT

The Contractor management system must:

- a. Track hours associated with all SARs, correlating the hours to each of the following items as applicable:
 - a. Hours spent by the Contractor investigating SARs, including writing the IR, writing the LOV or any other tasks related to the investigations. This must include all hours associated with SARs prior to their approval.
 - b. Hours spent by the Contractor developing and implementing the approved SARs,
 - c. Hours spent by the Contractor performing the integration of the approved SARs within the MOTS build, including unit level testing and system level testing. Hours spent by the Contractor's IS must be shown separately.
 - d. Hours spent by the Contractor documenting the approved SARs, including writing the individual POV, or any other documents, reports, e-mails, test procedures, associated with the SARs.
- b. Track "Used Risk Hours" associated with all SARs, the hours spent by the Contractor beyond the estimated quote in hours for task completion provided in the IR.
- c. Track hours not associated with the SARs, correlating the hours to each of the following items as applicable:
 - a. Hours spent by the Contractor performing direct on site TS POC tasks for Training and Mission Operations MOTS users during formal events as well as during non-formal MOTS user sessions.
 - b. Hours spent by the Contractor performing computer administration related tasks, including Operating System (OS) administration at the Contractor's sites.

- c. Hours spent by the Contractor supporting the MOTS FQT, including loading the MOTS build software on all the hardware configuration items to be used, executing end-to-end test procedures prior to the TRR, executing the individual SAR POVs and the end-to-end test procedures during the FQT, supporting the TRR and FQR meetings, support the preparation of the MOTS TRR package.
- d. Hours spent by the Contractor attending the various meetings with CSA, including the MOTS SRB, the Graphical User Interface (GUI) design meetings, the kick-off meetings, etc.
- e. Hours spent by the Contractor attending internal MOTS design meetings.
- f. Hours spent by the Contractor preparing documents not directly associated with any one SAR, including writing or updating the end-to-end test procedures, writing or updating the SSD and the SDD, generating the MOTS VDD, writing or updating the MOTS specific TTT course material or any other documents, reports, e-mails, test procedures.
- g. Hours spent by the Contractor Management for determining the number of hours available from the Contractor's team for each of the MOTS builds, for the verification of the Contractor's resource allocation to support a tentative MOTS build, for writing the Release Progress Report, for supervising and coordinating the work, for personnel management, for preparing invoices, or any other tasks specific to the Contractor Management,
- h. Hours spent by the Contractor to perform other miscellaneous items such as special investigations or tasks requested by the TA. A description of the tasks performed must be provided. As an indication, approximately 3 such miscellaneous tasks have been requested over the last 10 years, with each one requiring less than 1 day to perform.
- i. Hours spent by the Contractor to conduct MOTS specific TTT training session(s) requested by the TA.

The Contractor Management must:

- a. Manage Phase VII to achieve program performance such that:
 - a. All the individual SARs pass all LOV items successfully.
 - b. All the required end-to-end test procedures pass successfully.
 - c. All the MOTS Phase VII deliverables are delivered within cost, and schedule goals.
- b. Establish an organization responsible for performing the work.
- c. Submit a Release Progress Report, (one (1) report via e-mail prior to each MOTS SRB) which provides details of all the hours of the current MOTS build tracked by the Contractor management system as defined above. The format of the Release Progress Report must be as defined in Table L-1 – "Actual Hours Spent" and in Figure L-11 – "Planned vs Actual Costs" of the Appendix L.

- d. Submit a Quarterly Report, (one report for each invoice) which provides final details of all the hours of the MOTS builds tracked by the Contractor management system as defined above. The content of the Quarterly Report must be as defined in Figure M-12 – "Quarterly Report TOC", and the format must be as defined in Figure M-13 – "Planned vs Actual Cost (Per Release)" and Figure M-14 – "Planned vs Actual Cost (Cumulative)" of the Appendix M.
- e. Manage and protect the GFI loaned by CSA with due care and attention.
- f. Manage the GFE loaned by CSA with due care and attention and inform the TA of any problems, breakdown or required maintenance of the GFE. The TA will then inform the Contractor's Management of the disposition to follow as required.
- g. Return the GFI and GFE to CSA when requested by the TA or when it is no longer required.

3.9 CONTRACTOR TEAM CAPABILITIES

In order to ensure that the contractor team has the capabilities to implement the approved SARs, the Contractor must provide a design, development, integration, and test team with the skills and knowledge necessary to address each of the areas of expertise, capabilities, programming language, Commercial Off-The-Shelf (COTS) tools, Open Sources, and OS defined in Table 3-1.

TABLE 3-1 – "MOTS PHASE VII REQUIRED CAPABILITIES"

Area of Expertise	Work Type in ISAR	Description of the Capability	Programming Language(s), COTS Tool(s), OpenSource(s), & OS(s) Used
Visual Database	GRAPHICS	The Contractor must be capable of implementing a visual graphics database supporting the addition of new details or new objects such as Orbital Replaceable Units (ORU), modules and spacecrafts.	3DSMax (2019 and later), SolidWorks (2019 and later), Easy Ogre Exporter, Creator, Substance Painter, Zbrush, Git, Unity (2018 and later), Photoshop, Polytrans, Windows.
Visual Effects	VR	The Contractor must be capable of maintaining the current MOTS Ogre rendering engine, taking ownership of the new MOTS HORUS Unity based rendering engine and implementing new visualization effect including shadowing, depth-of-field, blur, vertical smear, lens flairs, 3D textures, etc.	C#, C++, Cg shading language, Unity (2018 and later), Visual Studio (2008, 2017 and later), AMQP, Rabbit MQ, Protocol Buffer, Git, Kdiff, UML, Visio, Ogre, CEGUI, Windows.
Dynamics	DYNAMICS	The Contractor must be capable of implementing free space dynamics and contact dynamics supporting the grappling, handling, berthing, and mating of any payload or ORU.	FORTTRAN, C, SWIFT, Vortex Editor, Vortex Player, Python, Visual Studio, Visual Studio Code, GDB, Matlab, Octave, Windows, Linux.

Area of Expertise	Work Type in ISAR	Description of the Capability	Programming Language(s), COTS Tool(s), OpenSource(s), & OS(s) Used
MSS Emulated Control System	CONTROLS	The Contractor must be capable of implementing MSS control systems to represent or emulate the flight MSS control systems as well as be capable of implementing MSS Discrete Messages and ISS Caution and Warning messages.	FORTTRAN, C, Linux.
MSS Flight Software	CONTROLS	The Contractor must be capable of testing the provided vSAIF VMs which encapsulates the MSS Flight Software, debugging the MOTS-vSAIF interface and integrating new versions of the MSS flight software directly in MOTS if necessary.	FORTTRAN, C, C++, Ada, Windows, Linux.
PCS	PCS	The Contractor must be capable of integrating new versions of the NASA PCS software, and of the NASA MDMSIM software.	C, 1553, Linux.
Cameras	CAMERAS	The Contractor must be capable of implementing video component models that impact MSS operations (cameras, video routing, etc) and tuning the camera model parameters.	C, Linux.
Flights	FLIGHTS	The Contractor must be capable of implementing initialization files and jobs to represent ISS configurations.	Linux.
Recons	RECON	The Contractor must be capable of integrating new versions of the MSS related files (Recon files, GUI Config files, SysDef files, etc) and implementing their supporting software (mappers, loader, builders, load on the fly, etc).	C, Linux.
Overlays	OVERLAYS	The Contractor must be capable of implementing visual overlays to represent flight overlays.	C#, C, C++, Cg shading language, Unity (2018 and later), Ogre, Visual Studio (2008, 2017 and later), Git, Windows.
Malfunctions	MALS	The Contractor must be capable of implementing MSS Malfunction behavior.	FORTTRAN, C, Linux.
Telemetry	FEATURES	The Contractor must be capable of implementing telemetry to support integration with other facilities and tools (SOSC, PCS).	FORTTRAN, C, 1553, Linux.
Scripts	FEATURES	The Contractor must be capable of implementing scripting tools (ODF, kinematic sequencer, autosequence builder, snapshot, hop-to, record and playback, etc).	FORTTRAN, C, Linux.
GUIs	FEATURES	The Contractor must be capable of implementing MOTS specific GUIs and Web UIs to support Training (CSA & NASA) and Mission Operations activities (MOTS Sammi pages, MOTS Qt pages, NASA Pearl and Python Apps, VUP, etc).	C, C++, JavaScript web interface, Vue.js, HTML, Java 8, Java SpringBoot Web Server, Rest API, Sammi, Qt, QML, Perl, Python, Linux, Windows.
External Interfaces	FEATURES	The Contractor must be capable of implementing interfaces required for the integration of MOTS with the other MOC facilities (sockets, ISP server, etc).	C, C++, Sockets, AMQP, Rabbit MQ, Protocol Buffer, Qt, Linux.

Area of Expertise	Work Type in ISAR	Description of the Capability	Programming Language(s), COTS Tool(s), OpenSource(s), & OS(s) Used
Hardware Interfaces	FEATURES	The Contractor must be capable of implementing the interfaces required for the integration of the various MOTS hardware components (MOTS IO daemon for HCs and D&C Panels, video router daemon, etc).	C, C++, Sockets, Threads, Qt, 3DxSoftware, 1553, Windows, Linux.
System Admin	IT	The Contractor must be capable of supporting the software administration, including upgrade of COTS products (OS, Sammi, CAELIB, debuggers, etc).	VMware, Simex, Git, Shell Scripts, Makefiles, Windows, Linux.
Porting	IT	The Contractor must be capable of porting the MOTS software, including COTS products (OS, Sammi, CAELIB, debuggers, etc) from an operating system to another (e.g. from Unix to Linux or Windows) and from a hardware platform to another (e.g. from Dell to IBM).	VMware, Simex, Git, Shell Scripts, Makefiles, Windows, Linux.
Training	DOC	The Contractor must be capable of preparing TTT course material and conduct TTT training sessions to MOTS Users.	Word, PowerPoint, Windows.

4 ON-SITE OFFICE SPACE

The CSA will provide up to five (5) office spaces for the Contractor's personnel, each including a Personal Computer (PC) with CSA network and Internet access, desk, chair, and telephone.

5 GOVERNMENT FURNISHED EQUIPMENT

Table A-1 in Appendix A identifies the GFE loaned by CSA to the Contractor for the work to be performed under this contract, either at the Contractor's facility, or on the MOTS site itself. These items have already been acquired by or delivered to the Contractor's facility during the previous MOTS Phase VI contract (Contract Number: 9F054-140569/001/MTB). All GFE remains the property of CSA and is to remain at the Contractor's facility until either one of the following event occurs:

1. The TA requests for the GFE to be returned,
2. The GFE is no longer required.

6 DELIVERABLES

The MOTS Phase VII deliverables must include, but not be limited to, the items listed in Table 6-1 – "MOTS Phase VII Deliverables" with the indicated content or format and at the indicated delivery frequency.

TABLE 6-1 – "MOTS PHASE VII DELIVERABLES"

Deliverable ID	Deliverable Description	Deliverable Format/Content	Delivery Frequency
Investigation & SAR Board			
1	LOV and IR for each assigned AI.	Ref to Appendix B	Every MOTS SRB
2	Number of hours available from the Contractor's team.	E-mail	Every MOTS build
3	Verification of the Contractor's resource allocation to support a tentative MOTS build.	E-mail	Every MOTS build
Documentation			
4	MOTS SSD	Ref to Appendix C	In a MOTS build when requested by the TA.
5	MOTS SDD	Ref to Appendix D	In a MOTS build when requested by the TA.
Formal Qualification Testing			
6	MOTS End-to-End Test Procedures	Ref to Appendix E	Every MOTS build
7	POV for each assigned SAR	Ref to Appendix F	Every MOTS build
8	MOTS Software Build	Ref to Appendix G	Every MOTS build
9	MOTS FQT Test Results	Ref to Appendix H	Every MOTS build
10	MOTS VDD	Ref to Appendix I	Every MOTS build
11	SARs and ECNs	Ref to Appendix J	Every MOTS build
Training			
12	MOTS TTT course material/information	Ref to Appendix K	In a MOTS build when requested by the TA.
13	MOTS TTT training sessions.	N/A	In a MOTS build when requested by the TA.
Management			
14	Release Progress Report.	Ref to Appendix L	Every MOTS SRB
15	Quarterly Report with the associated invoices.	Ref to Appendix M	Quarterly.

7 SCHEDULE

From the deliverable items shown in Table 6-1 – "MOTS Phase VII Deliverables" the Contractor must produce:

- a. Deliverable items 1, 14 in time for each of the MOTS SRBs.
- b. Deliverable items 2, 3, 6, 7, 8, 9, 10, 11 during each of the MOTS build cycles.
- c. Deliverable item 4, 5, 12, 13 during a MOTS build cycle when requested by the TA.
- d. Deliverable item 15 every three (3) months.

8 LIST OF ACRONYMS

This list contains the acronyms contained in this document. Those not contained in this list may be categorized as trademark or standard names used in the software industry.

AI	Action Item
CAD	Computer Aided Design
CAELIB	Canadian Aviation Electronics Library
CM	Configuration Management
Config	Configuration
COTS	Commercial Off-The-Shelf
CSA	Canadian Space Agency
CSSP	Canadian Space Station Program
D&C	Display & Control
ECN	Engineering Change Notice
EGI	Exploration Ground Infrastructure
FQR	Formal Qualification Review
FQT	Formal Qualification Test
FSW	Flight Software
FY	Fiscal Year
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GS	Ground Segment
GUI	Graphical User Interface
HC	Hand Controller
HTV	H-II Transfer Vehicle
IO	Input/Output
IP	Intellectual Property
IPS	Intellectual Property Secure
IPSSIP	Intellectual Property Secure Software Integration Plan
IR	Investigation Report
IS	Integration Specialist
ISAR	Intranet System Action Request
ISS	International Space Station
ITAR	International Traffic in Arms Regulations
LOV	List of Verifies
MDMSIM	Multiplexer/De-multiplexer Simulator
MOC	MSS Operations Complex

MOTS	MSS Operations & Training Simulator
MSS	Mobile Servicing System
MSF	MSS Simulation Facility
N/A	Not Applicable
NASA	National Aeronautics and Space Administration
ODF	Operations Data File
ORU	Orbital Replaceable Unit
OS	Operating System
PC	Personal Computer
PCS	Portable Computer System
PIS	Portable Instructor Station
POC	Point Of Contact
POV	Procedure Of Verification
QT	Q Toolkit™
Recon	Reconfiguration
SAR	System Action Request
SDD	System Design Document
SIM	Simulation Models
SOSC	Space Operations Support Center
SOW	Statement Of Work
SRB	SAR Review Board
SSD	System Specification Document
SysDef	System Definition
TA	Technical Authority
TOC	Table Of Content
TRR	Test Readiness Review
TS	Technical Support
TTT	Train-The-Trainer
VDD	Version Description Document
VR	Visual Renderer
VUP	Volatile Update
WIPS	Windows Intellectual Property Secure

APPENDICES

A GOVERNMENT FURNISHED EQUIPMENT

The GFE for the MOTS Phase VII contract is described in Table A-1. All equipment will remain at the Contractor's facility until either one of the following event occurs:

1. The TA requests for the GFE to be returned,
2. The GFE is no longer required.

TABLE A-1 – "GOVERNMENT FURNISHED EQUIPMENT"

Item #	Description	CSA Asset #	Label	Manufacturer	Model / Part #	Serial #	Quantity	Total Value
1	Cisco ASA 5506-X Firewall (ASA5506-SEC-BUN-K9)	2042911	N/A	Cisco	ASA 5506	JMX2150G0MD	1	\$1,529.99
2	Dell UltraSharp 24-inch LCD Monitor	2040665	MOTS-L3 / L3 Monitor 1	Dell	U2412Mc	CN-0HT5N3- 64180-64F- 0H7S-A02	1	\$384.00
3	Dell UltraSharp 24-inch LCD Monitor	2040681	MOTS-L3 / L3 Monitor 2	Dell	U2412Mc	CN-0HT5N3- 64180-64F- 0HDS-A02	1	\$384.00
4	Dell UltraSharp 24-inch LCD Monitor	2040686	MOTS-L3 / L3 Monitor 3	Dell	U2412Mc	CN-0HT5N3- 64180-64N- 1SRL-A02	1	\$384.00
5	Dell UltraSharp 24-inch LCD Monitor	2040650	MOTS-L3 / L3 Monitor 4	Dell	U2412Mc	CN-0HT5N3- 64180-64N- 1SIL-A02	1	\$384.00
6	Alienware Aurora R6 Gaming Desktop PC CPU: Intel Core i7-7700K 4 cores@4.2 GHz Memory: 16GB DDR4@2400 MHz Video Card: NVIDIA GeForce GTX 1080 with 8GB GDDR5X Software: - Windows 10 - Visual Studio 2008	2041876	L3-GFX01	Dell	D23M	7S8JXK2	1	\$2,883.90
7	Alienware Aurora R6 Gaming Desktop PC CPU: Intel Core i7-7700K 4 cores@4.2 GHz Memory: 16GB DDR4@2400 MHz Video Card: NVIDIA GeForce GTX 1080 with 8GB GDDR5X Software: - Windows 10	2041894	L3-GFX02	Dell	D23M	7S8NXK2	1	\$2,883.90

Item #	Description	CSA Asset #	Label	Manufacturer	Model / Part #	Serial #	Quantity	Total Value
8	Alienware Aurora R6 Gaming Desktop PC CPU: Intel Core i7-7700K 4 cores@4.2 GHz Memory: 16GB DDR4@2400 MHz Video Card: NVIDIA GeForce GTX 1080 with 8GB GDDR5X Software: - Windows 10	2041875	L3-GFX03	Dell	D23M	7S9MXK2	1	\$2,883.90
9	Dell Precision Tower 7910 PC CPU: 2 x Xeon E5-2650v4 12 cores@2.20 GHz Memory: 64GB DDR4@2400MHz Video Card: NVIDIA GeForce GTX 1080 with 8GB GDDR5X Software : - Windows 10 - vMware Workstation 14 Pro	2041357	MOTS-L3	Dell	D02X	3LT6CH2	1	\$5,744.14
10	Netgear ProSage 16-Port Switch	2042912	SW-MOTS-L3	Netgear	JGS516 v2	4CU17A5B00012	1	\$179.99
11	Dell Optical Mouse - USB	N/A	N/A	Dell	09RRC7	CN-09RRC7-48723-29K-0GW1-A04	1	\$15.00
12	Dell Optical Mouse - USB	N/A	N/A	Dell	09RRC7	CN-09RRC7-48723-29K-0GW8-A04	1	\$15.00
13	Dell Optical Mouse - USB	N/A	N/A	Dell	09RRC7	CN-09RRC7-48723-29K-0GXB-A04	1	\$15.00
14	Dell Optical Mouse - USB	N/A	N/A	Dell	09RRC7	CN-09RRC7-48729-374-0M23-A06	1	\$15.00
15	Dell KB212-B Black Keyboard - USB	N/A	N/A	Dell	04G481	CN-04G481-71616-39A-090W	1	\$15.00
16	Dell KB212-B Black Keyboard - USB	N/A	N/A	Dell	04G481	CN-04G481-71616-61I-1VN3	1	\$15.00

Item #	Description	CSA Asset #	Label	Manufacturer	Model / Part #	Serial #	Quantity	Total Value
17	Dell KB212-B Black Keyboard - USB	N/A	N/A	Dell	04G481	CN-04G481-71616-61I-23BD	1	\$15.00
18	Dell KB212-B Black Keyboard - USB	N/A	N/A	Dell	04G481	CN-04G481-71616-39A-02CC	1	\$15.00
19	DVI Cable Male/Male	N/A	N/A	N/A	N/A	N/A	4	N/A
20	Power Cord Male/Female	N/A	N/A	N/A	N/A	N/A	9	N/A
21	Ethernet Cable Male/Male	N/A	N/A	N/A	N/A	N/A	5	N/A
22	Raritan Dominion KVM with server rack brackets	2044252	KVM.L3.E GLSPACE. GC.CA 10.159.1.32	Raritan	DKX3-108	HKN8B00007	1	\$2,364.57
23	Raritan Dominion KVM USB-HDMI Dongle	N/A	N/A	Raritan	D2CIM-DVUSB-HDMI	HUX8C00875	4	\$811.36
24	HDMI Cables 10ft/3m	N/A	N/A	StarTech	HDDMM10	N/A	4	\$45.00
25	Raritan KVM Power Cord 6FT-blk	N/A	N/A	Raritan	259-07-0005-00	N/A	2	N/A
26	APC Switched Rack PDU with server rack brackets	2044251	APC.L3.EG I.SPACE.G C.CA 10.159.1.31	APC by Schneider Electric	AP7900B	ZA1818040279	1	\$647.02
27	Network Patch cable for APC PDU	N/A	N/A	N/A	N/A	N/A	1	N/A
28	CSA Laptop loaned to Guillaume Parent (with power supply, mouse and bag)	2039657	N/A	Dell	LATITUDE E6440	3MD0T32	1	\$1,287.00
29	CSA Laptop loaned to Isabelle Jean (with power supply, mouse and bag)	2040172	N/A	Dell	LATITUDE E6440	CS94J72	1	\$1,093.95
30	CSA Laptop loaned to Stéphane Bériault (with power supply, mouse and bag)	2040174	N/A	Dell	LATITUDE E6440	F644J72	1	\$1,093.95
31	CSA Laptop loaned to Byung No Min (with power supply, mouse and bag)	2039658	JACKSON9	Dell	LATITUDE E6440	4TD8T32	1	\$1,287.00
32	CSA Laptop loaned to François Bélanger (with power supply, mouse and bag)	2045226	N/A	Dell	LATITUDE 7300	C6WHP13	1	\$1,364.12

Item #	Description	CSA Asset #	Label	Manufacturer	Model / Part #	Serial #	Quantity	Total Value
33	CSA Laptop loaned to Mike Huculak (with power supply, mouse and bag)	2040188	N/A	Dell	LATITUDE E6440	8XR3J72	1	\$1,093.95
34	CSA Laptop loaned to Corey Miles (with power supply, mouse and bag)	2038480	N/A	Dell	LATITUDE E6440	9G9ZTZ1	1	\$1,099.00

B LOV & IR FORMAT FOR DELIVERABLE ID 1

The format that must be followed for an LOV is shown below in Figure B-1 – "Individual SAR LOV Format".

LOV for MOTS SAR-xxxx (Vx) *The Title field from iSAR*

REVISION HISTORY		
Rev.	First & Last Name	Date
V1	G. Parent	07 December, 2018
V2	M. Huculak	12 December, 2018

Document setup instruction (*delete this textbox after completion*):

1. In the **Document Properties** → **Summary tab**, change:
 - a. **Title**: replace xxxx with the SAR number.
 - b. **Subject**: enter the Title field from iSAR
 - c. **Comments**: replace x (in Vx) with the current version number (the last one from the **REVISION HISTORY** table above)
2. In the **REVISION HISTORY** table above fill the last row (starting from first row for V1) with current Rev., your Name and Date.
3. Use the preset styles for Sections, Verifies, etc. below to create **List of Verification** (the Sections are optional, if not needed delete them).
4. **Save the file under title**:
LOV for MOTS SAR-xxxx (Vx) - The Title field from iSAR
 as Word Document (*.docx) type.

LOV for MOTS SAR-xxxx

Vx

LIST OF VERIFICATION

Section 1 Title 1 (section is optional, only if applicable)

- √ 1. Verify that item 1 is displayed as shown in Figure 1.
- √ 2. Verify that item 2 is expected result 2.
- √ 3. Verify that item 3 is expected result 3.
- √ 4. ...
- √ 5. ...

Section 2 Title 2 (section is optional, only if applicable)

- √ 6. Verify that item N is expected result N...
- √ 6 Note! 1 Additional information or helpful notes.
- √ 7. ...
- √ 8. ...



FIGURE 1 - FIGURE TITLE

FIGURE B-1 – "INDIVIDUAL SAR LOV FORMAT"

The format that must be followed for an IR is shown below in Figure B-2 – "Individual SAR IR Format".

<p style="text-align: center;">Investigation Report for MOTS SAR ##### <i>SAR Title</i> V1- <i>Original Author - Original Date</i> V2- <i>Change Author - Change Date</i> ...</p> <p>1. Investigation Results</p> <p>The cause of the problem is ...</p> <p>The solution suggested for implementation is made up of:</p> <ul style="list-style-type: none">a) ...b) ... <p>2. Status of GFI & GFE</p> <p>All the GFI and GFE required by this SAR are available and have been verified, <i>or</i> The following GFI and GFE items are still missing before we can proceed with the implantation of this SAR: ...</p> <p>3. Estimate</p> <ul style="list-style-type: none">a) XXX hrsb) XXX hrs <p>Total: XXX hrs</p> <p>4. Risk Factor</p> <ul style="list-style-type: none">a) High Riskb) Low Risk

FIGURE B-2 – "INDIVIDUAL SAR IR FORMAT"

C MOTS SSD TABLE OF CONTENTS FOR DELIVERABLE ID 4

The Table Of Contents (TOC) of the SSD to be delivered should include, but is not limited to, the items shown below in Figure C-3 – "MOTS SSD TOC".

Table of Contents

1.	Scope	
1.1.	Identification	
1.2.	Document Overview	
1.3.	Conventions	
2.	Documents	
2.1.	Parent Documents	
2.2.	Applicable Documents	
2.3.	Reference Documents	
2.4.	MOTS Specification Tree	
3.	System Definition	
3.1.	MOTS Overview	
3.1.1.	Background	
3.1.2.	Users	
3.1.3.	User Needs and Utilization Scenarios	
3.1.3.1.	Operations	
3.1.3.1.1	MSS Product Development	
3.1.3.1.2	Operations Planning and Analysis	
3.1.3.1.3	New Operational Concepts	
3.1.3.2.	Training	
3.1.3.2.1	Skills Training	
3.1.3.2.2	Generation of Lesson Plans	
3.1.3.2.3	Training Performance Evaluation	
3.1.4.	System Modes of Operation	
3.1.4.1.	Online	
3.1.4.2.	Offline	
3.1.5.	Operational and Support Environment	
3.2.	System Requirements	
3.2.1.	Functional Requirements	
3.2.1.1.	Training	
3.2.1.2.	Operations	
3.2.1.2.1	Procedures Development	
3.2.1.2.2	MSS On-Orbit Display Development	
3.2.1.2.3	Operations Data Files (ODF) Procedures	
3.2.1.3.	Session Planning	
3.2.1.3.1	Simulation Scripting	
3.2.1.3.2	Lesson Planning (DELETED)	
3.2.1.4.	Session Control	
3.2.1.4.1	General	
3.2.1.4.2	Initialization	
3.2.1.4.3	Control and Display	

3.2.1.4.4	Freeze Function
3.2.1.4.5	Snapshot Function
3.2.1.4.6	Overrun Function (DELETED)
3.2.1.4.7	Run-time Parameters
3.2.1.4.8	Switches
3.2.1.4.9	Malfunction Insertion
3.2.1.4.10	Simulation Process
3.2.1.4.11	Crew Station (CS) Record and Playback
(DELETED)	
3.2.1.5.	Session Monitoring
3.2.1.5.1	Basic Monitoring
3.2.1.5.2	Intelligent Monitoring (DELETED)
3.2.1.6.	Data Collection and Analysis
3.2.1.6.1	Data Collection
3.2.1.6.2	Off-line Data Processing and Analysis
3.2.1.6.3	High Speed Data Logging (DELETED)
3.2.1.7.	Network Services
3.2.1.8.	Time Synchronization (DELETED)
3.2.1.9.	Audio-Video Teleconference (DELETED)
3.2.1.10.	Video Monitoring, Recording and Distribution
3.2.1.11.	Simulated Audio (DELETED)
3.2.1.12.	System Administration
3.2.1.13.	Reconfiguration
3.2.1.13.1	Development Environment
3.2.1.13.2	Configuration Management
3.2.1.14.	Visualization
3.2.1.14.1	General
3.2.1.14.2	Image Generation
3.2.1.14.3	Display Effects
3.2.1.14.4	Lighting Effects
3.2.1.14.5	Visualization Database
3.2.1.14.6	Visualization of Simulation Objects
3.2.1.15.	Latency
3.2.1.16.	Interfaces
3.2.1.17.	Simulation Models (SIM)
3.2.1.17.1	Dynamics Models
3.2.1.17.2	Kinematics Model
3.2.1.17.3	Arm Control Model
3.2.1.17.4	Latching End Effector (LEE) Control Model
3.2.1.17.5	Joint Control Model
3.2.1.17.6	MBS Control Model
3.2.1.17.7	Video Equipment Control Model
3.2.1.17.8	Power Model
3.2.1.17.9	Thermal Model
3.2.1.17.10	Telemetry Model
3.2.1.17.11	SSRMS Supported Configurations

3.2.1.17.12	SPDM Supported Configurations
3.2.1.17.13	MT Control Model
3.2.1.17.14	Free-flyer Control Model
3.2.1.17.15	MRCS (RWS OCS) Control Model
3.2.1.17.16	Space Station Control Model
3.2.1.17.17	SPDM OTCM Control Model
3.2.1.17.18	Passive Mechanical Devices Models
3.2.1.17.19	Flight Software
3.2.1.17.20	Flight Products
3.2.2.	H/W System Requirements
3.2.2.1.	Configuration Requirements
3.2.2.1.1	Computer System
3.2.2.1.2	Workstations
3.2.2.1.3	Video Recording and Distribution Equipment
3.2.3.	General Requirements
3.2.3.1.	Computer S/W
3.2.3.2.	Commonality and Standards
3.2.3.3.	Human Factors Engineering (HFE)
3.2.3.3.1	Anthropometric Considerations
3.2.3.3.2	Safety
3.2.3.3.3	Environment
3.2.3.3.3.1	Noise
3.2.3.3.3.2	Thermal
3.2.3.3.3.3	Radiation
3.2.3.3.4	Human Computer Interface (HCI)
3.2.3.3.4.1	General
3.2.3.3.4.2	Display Devices
3.2.3.3.4.3	Control and Input Devices
3.2.3.4.	Growth and Evolution
3.2.3.5.	Compatibility
3.2.3.5.1	Data Exchange
3.2.3.5.2	Simulation Support S/W
3.2.3.6.	Reliability and Maintainability
3.2.3.6.1	Reliability
3.2.3.6.1.1	Fault Isolation
3.2.3.6.1.2	Fault Tolerance
3.2.3.6.1.3	Fault Detection and Fault Indication
3.2.3.6.1.4	Mean-Time-Between-Critical-Failure
(MTBCF)	
3.2.3.6.2	Maintainability
3.2.3.6.2.1	Mean-Time-To-Repair (MTTR)
3.2.3.6.2.2	Maximum-Repair-Time
3.2.3.6.2.3	Corrective Maintenance Action
3.2.3.7.	Availability
3.2.3.8.	Safety
3.2.3.8.1	Hazard-free Design

3.2.3.8.2	Common-cause Failures
3.2.3.8.3	Protection from Electrical Shock
3.2.3.8.3.1	Accidental Contact
3.2.3.8.3.2	Ground Potential
3.2.3.8.4	Protection from Mechanical Hazards
3.2.3.8.4.1	Design Considerations
3.2.3.8.4.2	Lifting Limits
3.2.3.8.4.3	Temperature
3.2.3.8.5	Accidental Activation Protection
3.2.3.8.6	Protection from Radiation
3.2.3.8.7	Acoustic Noise
3.2.3.8.8	Protection from Electrostatic Devices (ESD)
3.2.3.8.9	Marking, Signs, Tags and Symbols
3.2.3.8.9.1	Markings
3.2.3.8.9.2	Signs and Labels
3.2.3.9.	Electrical
3.2.3.10.	Environmental Conditions
3.2.3.10.1	Operation
3.2.3.10.2	Transportation
3.2.3.10.3	Storage
3.2.3.11.	Transportability
3.2.3.12.	Parts and Materials
3.2.3.13.	Preparation for Delivery
3.2.3.13.1	Packing
3.2.3.13.2	Marking for Shipment
3.2.3.14.	Training Program
3.2.3.14.1	Course Objective
3.2.3.14.2	Course Duration
3.2.3.14.3	Course Contents
3.2.3.14.4	Trainee Qualification Prerequisites
3.2.3.14.5	Course Documentation
3.2.3.14.6	Class Size
3.2.3.14.7	Pre-training Conference
3.2.3.14.8	Detailed Syllabus Breakdown
4.	System Design
4.1.	System Architecture
4.1.1.	Simulation Models (SIM) CSCI
4.1.2.	Visualization and Displays (VAD) CSCI
4.1.3.	System and Simulation Support CSCI
4.1.4.	MOTS H/W CSCI
4.1.4.1.	H/W Architecture
4.1.4.2.	Workstation Configuration
4.1.5.	Selection of COTS
4.1.5.1.	SGI Onyx (DELETED)
4.1.5.2.	SGI Indy (DELETED)
4.1.5.3.	SGI IRIX 6.5 (DELETED)

4.1.5.4.	Kinesix Sammi
4.1.5.5.	PV-WAVE (DELETED)
4.1.5.6.	G2 (DELETED)
4.1.5.7.	Designer's Workbench TM (DELETED)
4.1.5.8.	Linux RedHat
4.1.5.9.	Windows
4.1.5.10.	DirectX
4.1.5.11.	3Dconnection 3DxSoftware
4.1.5.12.	Visual Studio
4.1.5.13.	Autodesk 3DSMax
4.1.5.14.	Presagis Creator
4.1.5.15.	Adobe Photoshop
4.1.5.16.	Polytrans
4.1.5.17.	ZBrush
4.1.5.18.	VMware Workstation
4.1.5.19.	Mathworks Matlab
4.1.5.20.	CMLabs Vortex
4.1.6.	Selection of Open Sources
4.1.6.1.	Ogre
4.1.6.2.	CEGUI
4.1.6.3.	SolidView
4.1.6.4.	SWIFT
4.1.6.5.	Qt
4.2.	Interface Architecture
4.2.1.	External Interfaces
4.2.1.1.	MOTS-to_SOSC External Interface
4.2.1.2.	MOTS-to-CMTF External Interface
4.2.1.3.	MOTS-to-VOTE External Interface (DELETED)
4.2.1.4.	MOTS-to-CVS External Interface (DELETED)
4.2.1.5.	MOTS-to-C1CS External Interface (DELETED)
4.2.1.6.	MOTS-to-STVF External Interface (DELETED)
4.2.2.	Internal Interfaces
4.2.2.1.	CSCI/CSCI Internal Interfaces
4.2.2.1.1	SSS CSCI – VAD CSCI Interface
4.2.2.1.1.1	Simulation Element Configuration Control
4.2.2.1.1.2	Execution Control
4.2.2.1.1.3	Common Database Access
4.2.2.1.1.4	Playback I/O (DELETED)
4.2.2.1.1.5	HCI Data
4.2.2.1.1.6	XEvents (DELETED)
4.2.2.1.2	SSS CSCI – SIM CSCI Interface
4.2.2.1.2.1	Simulation Element Configuration Control
4.2.2.1.2.2	Model Execution
4.2.2.1.2.3	Common Database Access
4.2.2.1.2.4	Malfunctions
4.2.2.1.2.5	Simulation Data

4.2.2.1.3	SIM CSCI – VAD CSCI Interface
4.2.2.1.3.1	Simulation Data
4.2.2.1.3.2	Body Data
4.2.2.1.3.3	Renderer Control
4.2.2.1.3.4	Collision Detection
4.2.2.1.3.5	I/O Device Data
4.2.2.2.	CSCI-to-HWCI Internal Interface
4.2.2.2.1	VAD CSCI – H/W
4.2.3.	Resource Allocation
4.2.4.	Configuration Allocation
5.	Government-Furnished Equipment List
6.	Notes
6.1.	List of Acronyms
6.2.	Glossary
Appendix A.	Traceability and Requirements Verification
Appendix B.	MSS Specifications

FIGURE C-3 – "MOTS SSD TOC"

D MOTS SDD TABLE OF CONTENTS FOR DELIVERABLE ID 5

The TOC of the SDD to be delivered should include, but is not limited to, the items shown below in Figure D-4 – "MOTS SDD TOC".

Table of Contents

1.	Introduction
1.1	Document Purpose
1.2	Conventions
1.3	References
2.	Overview
2.1	Hardware Architecture Overview
2.1.1	Workstations
2.1.2	Workstation Block Diagram
2.1.2.1	On-site Workstations
2.1.2.2	Mini-MOTS Mobile Workstations
2.2	Software Architecture Overview
2.2.1	CSCI Overview
2.2.2	Run-time Processes
2.2.2.1	Synchronous Processes
2.2.2.2	Asynchronous Processes
3.	System Design
3.1	Hardware CI
3.2	SSS CSCI
3.3	VAD CSCI
3.4	SIM CSCI
4.	Software Configuration Management
4.1	SIMex Configuration Trees
4.2	SIMex Build Environment
4.3	VR Build Environment
4.4	Vortex Build Environment
4.5	IPSSIP Environment
5.	Notes
5.1.	List of Acronyms
5.2.	Glossary

FIGURE D-4 – "MOTS SDD TOC"

E MOTS END-TO-END TEST PROCEDURE FORMAT FOR DELIVERABLE ID 6

The format that must be followed for a MOTS end-to-end Procedure is shown below in Figure E-5 – "End-to-End Test Procedure Format".

XYZ Qualification Test Procedure	
Introduction This test procedure is used to	
Test Purpose The following functions are tested in this test procedure: 1. ...	
Test Sequence 1. ...	
Test Notes 1. ...	
Test Preparation 1. ...	
Step No.: 1	Load Simulation ()
Action:	1. <u>Location of inputs</u> Step inputs. 2. ...
Expected Results:	1. <u>Location of outputs</u> Expected result. 2. ...
Comments:	Additional information or helpful notes

...

Step No.: 2	Unload the Simulation	()
Action:	1. <u>Location of inputs</u> Step inputs. 2. ...	
Expected Results:	1. <u>Location of outputs</u> Expected result. 2. ...	
Comments:	Additional information or helpful notes	
XYZ Qualification Test Procedure		
Test Performed By:		
Test Witnessed By:		
Date:		
Comments:		

FIGURE E-5 – "END-TO-END TEST PROCEDURE FORMAT"

where:

- Step No.: X: Unique step number.
- Location of inputs: Identifies the exact location where the inputs need to be performed for this step, this will usually be a window or page name, or a physical location such as a hardware panel, a console, a computer, etc.
- *Step inputs*: Identifies the exact sequence of actions or inputs to perform in the identified location.
- Location of outputs: Identifies the exact location where the expected results or outputs need verified for this step, this will usually be a window or page name, or a physical location such as a hardware panel, a console, a computer, etc.
- *Expected result*: it identifies an exact expected result.
- (✓ or X): A ✓ indicates the witnessed results matches the expected result, while an X indicates the witnessed results do not matches the expected result.
- *Additional information or helpful notes*: Sometimes additional information may be helpful in giving a pertinent reference or stating the exhaustive list of which one or a few items are currently being listed.

F POV FORMAT FOR DELIVERABLE ID 7

The format that must be followed for a POV is shown below in Figure F-6 – "Individual SAR POV Format".

POV for MOTS SAR-xxxx (Vx)

Title field from the iSAR

REVISION HISTORY		
Rev.	First & Last Name	Date
V1	G. Parent	07 May 2020

Document setup instruction (*delete this textbox after completion*):

- In the **Document Properties** → **Summary tab**, change:
 - Title:** replace xxxx with the SAR number.
 - Subject:** enter the Title field from iSAR
 - Category:** enter MOTS test configuration to be used (ex: MTS870_BL15)
 - Comments:** replace x (in Vx) with the current version number (the last one from the **REVISION HISTORY** table above)
- In the **REVISION HISTORY** table above fill the last row (starting from first row for V1) with current Rev., your Name and Date.
- Go directly to **Test Procedure** section. **Test Preparation** section will be done at the beginning of Test Procedure execution.
- Use the preset styles for Sections, Steps, Verifies, etc. to create **Test Procedure**). All verifies from corresponding LOV should be bold and should start with the corresponding LOV verify number, i.e.: (LOV √ n)
- Save the file **under title:**
POV for MOTS SAR-xxxx (Vx) - Title field from the iSAR
 as Word Document (*.docx) type.

POV for MOTS SAR-xxxx

Vx

1 TEST PREPARATION**1.1 IDENTIFICATION**Note the name of the Test Lead: LP. Archambault

Note the name of the Test Conductor: _____

Note the name of the Test Witness: _____

Record the date and time: _____
(e.g.: 6 June 2020 13:45)**1.2 POV STATUS**

Before starting test procedure, verify that this POV shows a watermark with the right MOTS version. (____)

1.3 TEST SCENARIO

This procedure is run as part of the following test scenario (circle or select one):

<input type="checkbox"/> Development Run	<input type="checkbox"/> Dry Run	<input checked="" type="checkbox"/> FQT
<input type="checkbox"/> Other	Specify: _____	

POV for MOTS SAR-xxxx

Vx

1.4 HARDWARE AUDIT

This procedure is run on the following machine (circle or select one):

MEC Console	Mini-MOTS
<input type="checkbox"/> IWS	<input type="checkbox"/> Mini-MOTS
<input type="checkbox"/> OWS	<input type="checkbox"/> Foxhound 01
<input type="checkbox"/> PTT	<input type="checkbox"/> Mini-MOTS
<input type="checkbox"/> PTT2	<input type="checkbox"/> Foxhound 02
<input type="checkbox"/> RWS1	<input type="checkbox"/> Mini-MOTS
<input type="checkbox"/> RWS2	<input type="checkbox"/> Foxhound 03
<input type="checkbox"/> CMSE – M-L3WS _____	
<input type="checkbox"/> Enterprise _____	

This procedure is run using the following GFX machine(s):

GFX
<input type="checkbox"/> GFX _____ (e.g.: 03)
<input type="checkbox"/> GFX _____
<input type="checkbox"/> GFX _____
<input type="checkbox"/> GFX _____
<input type="checkbox"/> DEV-GFX _____
<input type="checkbox"/> _____
<input type="checkbox"/> None

POV for MOTS SAR-xxxx

Vx

This procedure is run using the following vMOTS (Host) and vSAIF machines :

vMOTS (Host)

- | | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> Dragonfly01 | <input type="checkbox"/> Dragonfly02 | <input type="checkbox"/> Dragonfly03 | <input type="checkbox"/> Dragonfly04 |
| <input type="checkbox"/> Dragonfly05 | <input type="checkbox"/> Dragonfly06 | <input type="checkbox"/> Dragonfly07 | <input type="checkbox"/> Dragonfly08 |
| <input type="checkbox"/> Dragonfly09 | <input type="checkbox"/> Dragonfly10 | <input type="checkbox"/> Dragonfly11 | <input type="checkbox"/> None |
| <input type="checkbox"/> _____ | | | |

vSAIF

- | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> vSAIF01 | <input type="checkbox"/> vSAIF02 | <input type="checkbox"/> vSAIF03 | <input type="checkbox"/> vSAIF04 |
| <input type="checkbox"/> vSAIF05 | <input type="checkbox"/> vSAIF06 | <input type="checkbox"/> vSAIF07 | <input type="checkbox"/> vSAIF08 |
| <input type="checkbox"/> vSAIF09 | <input type="checkbox"/> vSAIF10 | <input type="checkbox"/> vSAIF11 | <input type="checkbox"/> None |
| <input type="checkbox"/> _____ | | | |

This procedure is run using the following vMON machine:

vMON

- | |
|--|
| <input type="checkbox"/> Corsair _____
(e.g.: 03) |
| <input type="checkbox"/> Foxhound _____ - mon |
| <input type="checkbox"/> _____ |
| <input type="checkbox"/> None |

POV for MOTS SAR-xxxx

Vx

This procedure is run using the following vPCS or PCS machine:

PCS/vPCS

☐ vPCS

(e.g.: 03)

☐ PCS

(e.g. M-PCS14)

☐

☐ None

1.5 SOFTWARE AUDIT

The procedure is run using the following MOTS configuration:

Job Selection		
Group	Configuration	Job
<div><input type="checkbox"/> TEST</div>	<div><input type="checkbox"/> MTS##0_BL##</div>	<div><input type="checkbox"/> FLIGHT_HTV</div>
<div><input type="checkbox"/> </div>	<div><input type="checkbox"/> </div>	<div><input type="checkbox"/> FLIGHT_DRAGON</div>
		<div><input type="checkbox"/> FLIGHT_CYGNUS</div>
		<div><input type="checkbox"/> SPDM_ON_SSRMS</div>
		<div><input type="checkbox"/> SPDM_ON_SSRMS_TRG</div>
		<div><input type="checkbox"/> FLIGHT_CYGNUS_TRG</div>
		<div><input type="checkbox"/> </div>
		<div><input type="checkbox"/> None</div>

POV for MOTS SAR-xxxx

 V_x

This procedure is run using the following PCS software:

PCS version: _____
(e.g.: PCS R20)

☐ None

This procedure is run using the following GUI configuration files:

GUI Config files

GUI Config Files:

SSRMS: _____
(e.g.: gui_cfg_HTV7_f5v2)

MBS: _____
(e.g.: mbsgui_cfg_HTV7_f5v2)

SPDM: _____
(e.g.: spdmgui_cfg_HTV7_f5v2)

Overlay: _____
(e.g.: overlaygui_cfg_HTV7_f5v2)

Discrete File: _____
(e.g.: discrete_msg_mss05_f03)

☐ None

This procedure is run using the following Baseline:

Baseline	
Baseline version:	<input type="text"/>
	(e.g.: MSS10_Config6/NG12-002_10.0.01D)
<input type="checkbox"/> None	

POV for MOTS SAR-xxxx

Vx

This procedure is run using the following MSS Flight Software (FSW) and vSAIF software:

Flight Software

MSS FSW version: _____
(e.g.: MSS 10.1)

vSAIF software version: _____
(e.g.: VSAIF 10.10)

- ☐ Emulated Model
☐ None

POV for MOTS SAR-xxxx

Vx

2 TEST PROCEDURE ✓**Section 1 Title 1** (section is optional, only if applicable) ✓Step 1 Location of inputs Step inputs.

√1.1 Verify that item x is expected result x. ()

√1.2 **(LOV ✓ 1) Verify that item 1 is displayed as shown in Figure 1.** ()

Note! 1.1 Additional information or helpful notes (if applicable).

Step 2 Location of inputs Step inputs.√2.1 **(LOV ✓ 3) Verify that item 3 is expected result 3.** ()Step 3 Location of inputs Step inputs.

√3.1 Verify that item y is expected result y. ()

√3.2 Verify that item z is expected result z. ()

√3.3 **(LOV ✓ 2) Verify that item 2 is expected result 2.** ()

Note! 3.1 Additional information or helpful notes (if applicable).

Section 2 Title 2Step 4 Location of inputs Step inputs.√4.1 **(LOV ✓ N) Verify that item N is expected result N.** ()

Note! 4.1 Additional information or helpful notes.

POV for MOTS SAR-xxxx

Vx



FIGURE 1 - FIGURE TITLE

Test Procedure Status

()

Test Witness Signature:

X

Name
Test witness

POV for MOTS SAR-xxxx

Vx

FIGURE F-6 – "INDIVIDUAL SAR POV FORMAT"

G MOTS SOFTWARE BUILD ITEMS FOR DELIVERABLE ID 8

The CM released items of a MOTS software build must include, but is not limited to, the following configuration items demonstrated to work together as a complete set:

1. The CEALIB Simex configuration named “TEST:CAELIB_WORK”,
2. The MOTS Simex configuration named for that particular MOTS software build. For example, for the MOTS 8.7 software build the MOTS Simex configuration was named “TEST:MOTS_CSA_8_7_0”,
3. The PERMANENT Simex configuration compatible with that particular MOTS software build. For example, for the MOTS 8.7 software build the PERMANENT Simex configuration was named “TEST:PERM870_BL01”,
4. The UTILITIES Simex configuration compatible with that particular MOTS software build. For example, for the MOTS 8.7 software build the UTILITIES Simex configuration was named “TEST:UTIL860_BL02”,
5. The MSS Flight software configuration(s) compatible with that particular MOTS software build. For example, for the MOTS 8.7 software build the MSS 9.2 integrated flight software and the MSS 9.3 and MSS 10 flight software vSAIF configurations were named “TEST:S92M860_BL14”, 9-01_ER16P1_MSS9_3P47 and 9-01_ER13_MSS9-2.
6. The PCS Software configuration(s) compatible with that particular MOTS software build. For example, for the MOTS 8.7 software build the single PCS software configuration was named “PCS R20.007T61p.RUC2”.

H MOTS FQT TEST RESULT ITEMS FOR DELIVERABLE ID 9

The FQT Test Results of a particular MOTS Software build should include all of the by-products generated during the FQT activities that are not part of the MOTS Software build described in Appendix G. This includes items such as, but not limited to, the following:

1. Test screen captures,
2. Test models,
3. Test scripts,
4. Test output files,

I MOTS VDD TABLE OF CONTENTS FOR DELIVERABLE ID 10

The TOC of the VDD to be delivered should include, but is not limited to, the items shown below in Figure I-7 – "MOTS VDD TOC".

Table of Contents

1.	Introduction
1.1	Configuration Dependencies
1.2	Engineering Change Notices (ECN)
2	Predefined Scenarios
3	Simulation Jobs
4	MSS GUI Versions
5	Visual Renderer (VR) Mode Selection
6	Flight Software Selection
7	Recon Files
7.1	GUI Configuration Files
7.2	Description of Recon File <i>Flight Number</i> , ENG Cycle, MPT Version <i>Number</i>
7.2.1	Coordinate System Files
7.2.2	OCS Payload Files
7.2.3	SACS Payload Files
7.2.4	Autosequence Files
7.2.5	MCUS Payload Files
7.2.6	Miscellaneous Files
	... (Repeat section 7.2 for each Recon File)
8	Graphics Objects
9	Global Initialization Files
10	Simulation Job: <i>Job Name</i>
10.1	Default Initialization of Simulation Job: <i>Job Name</i>
10.2	User Selectable Files for Simulation Job <i>Job Name</i>
10.2.1	Base Relocation Initialization Files
10.2.2	Connect Initialization Files
10.2.3	Grapple Initialization Files
10.2.4	Mission Initialization Files
10.2.5	Select Initialization Files

- 10.2.6 Target Overlay Config Initialization Files
- 10.2.7 MT Reconfiguration Initialization Files
- 10.2.8 OTCM Reconfiguration Initialization Files
- 10.2.9 HTV Berthing Box Reconfiguration Initialization Files
- 10.2.10 Unclassified Initialization Files
- 10.2.11 Start Point Initialization Files
- 10.2.12 Operations Data Files (ODF)
- 10.2.13 SnapShot files
- ... (Repeat section 10 for each Job)

FIGURE I-7 – "MOTS VDD TOC"

As an indication, there are currently 89 Recon Files and 18 Jobs in MOTS.

J SAR AND ECN FORMAT EXAMPLE FOR DELIVERABLE ID 11

The format that must be followed for a SAR raised in EGI's ISAR software tool is shown below in Figure J-8 – "Individual SAR Format".

ExDOC	MLLC	MOTS	PTOC	SOSC	Training	STVF	VOTE/BORIS
EGI_Tools	ESF	RIF	PCCS	ESM	AT		
LIST SAR	LIST ECN	LIST OPS	LIST AI	LIST WP	USERS List	STATS	PRODUCT STRUCTURE
CREATE SAR	CREATE ECN	CREATE OPS	CREATE AI	CREATE WP		EXPORT	

Save

CREATE NEW SAR			
System	MOTS	Version	MOTS_CSA_2_9_0
Number			
Type	System Anomaly Report		
Title	Simulator no longer responds to user inputs		
Originator	UU3 :U.Admin	Phone	unavailable
Date	2013-10-08 15:42:55		
Description	IWS (MOTS) crashed unexpectedly during training activities. Workaround was to reboot the system and reload the simulator		
Steps to reproduce the problem	Load Flight 12A as per MOTS lesson plan (Fly to Practice) Execute the lesson plan until the end of step 83.		
Attachment : <input checked="" type="checkbox"/>			
File Name	File Size	Delete	
Livelihood Attachment : <input checked="" type="checkbox"/>			
Title	URL	Delete	
Corresponding Configuration Item(s): <input checked="" type="checkbox"/>			
Function	System	Hardware	Software
			Delete

FIGURE J-8 – "INDIVIDUAL SAR FORMAT"

where:

- **System:** ISAR automatically sets the System to MOTS as long as MOTS is the only selected system in the ISAR top menu bar.
- **Type:** The originator chooses the SAR type from the pre-defined menu.
- **Title:** The originator enters the SAR Title.
- **Description:** The originator enters the SAR description.
- **Steps to reproduce the problem:** The originator enters a step-by-step description of actions that permits the described anomaly to be reproduced:
- **Originator:** ISAR automatically sets the SAR originator to the user name.
- **Attachments:** The originator attaches any attachments necessary.

The format that must be followed for an ECN raised in EGI's ISAR software tool is shown below in Figure J-9 – "Individual ECN Format".

ExDOC	MMLC	MOTS	PTOC	SOSC	Training	STVF	VOTE/BORIS
EGI_Tools	ESF	RIF	PCCS	ESM	AT	RIW	SUBMIT
List SARs	List ECNs	List Ops	List AIs	List WPs	Index List	Stats	Product Structure
Create SAR	Create ECN	Create Ops	Create AI	Create WP		Export	

[Create ECN](#)

CREATE NEW ECN			
System	MOTS	Version	MOTS_CSA_3_0_0
Title	Fix of SAR #1622, LEE Setup indicator does not update correctly		
Originator	UU3 :U.Admin	Phone	unavailable
Date	2013-11-07 10:20:47		
Change Impact	- The LEE setup indicator will now be updated correctly by POA and SSRMS operations. - Loaded/unloaded payload control parameter messages will be sent by the OCS.		
Detailed Description of Change	These files include the following: ocs_effector_functions.c, pcs_discrete_server.c, que_discrete.c, for, ocs_process_monitor_for_trigger.c, pcs_gui_functions, msshci_control.c, and lee_switches_status.c.		
Hours spent on this task	40	Product Structure Update Required	<input type="checkbox"/>

Attachment : [+](#)

File Name	File Size	Delete
Procedure Of Verification for MOTS SAR 1622.docx		X

Livelink Attachment : [+](#)

Title	URL	Delete

Corresponding Configuration Item(s): [+](#)

Function	System	Hardware	Software	Delete
PC-VCM-001	IWS	Simulation Server Achil	*	X
PC-VCM-001	OWS	Simulation Server Hector	*	X
PC-VCM-001	PTT	Simulation Server Priam	*	X

Corresponding SAR(s): [+](#)

Number	Version	St	Originator	Assignee	Title	Delete
1622	MOTS_CSA_2_9_0	A	U.Admin	UU1,UU2	LEE "Setup" indicator does not update correctly	X

FIGURE J-9 – "INDIVIDUAL ECN FORMAT"

where:

- **System:** ISAR automatically sets the System to MOTS as long as MOTS is the only selected system in the ISAR top menu bar.
- **Title:** The SAR Assignee enters the ECN title.
- **Originator:** ISAR automatically sets the originator to the user name.
- **Change Impact:** The SAR Assignee describes the change impact on the System.
- **Detailed Description of Change:** The SAR Assignee enters a detailed description of the changes, namely the simulation files that were modified.
- **Hours spent on this task:** The SAR Assignee enters the number of hours spent implementing the changes described in the Detailed description of change field.
- **Attachments:** The SAR Assignee attaches the Procedure Of Verification.
- **Configuration Items Involved:** The SAR Assignee selects the configuration item related to the SAR.
- **Corresponding SARs:** The SAR Assignee links the SAR to the ECN.

K MOTS TTT COURSE TOPICS FOR DELIVERABLE ID 12

The TOC of the MOTS TTT course material/information to be delivered should include, but is not limited to, the items shown below in Figure K-10 – "MOTS TTT Course Topics".

1. MOTS Introduction
 - 1.1. What is MOTS
 - 1.1.1. Purpose
 - 1.1.2. Description of MOTS functionalities (high level)
 - 1.2. Workstations
 - 1.2.1. RWS
 - 1.2.2. Instructor/Operator Stations
 - 1.3. Reserving MOTS
2. Starting a MOTS Session
 - 2.1. Logging in to MOTS
 - 2.2. Starting the GUI
 - 2.3. Using the GUI
 - 2.3.1. Main Menu and Status Bar Description (high level)
 - 2.3.1.1. MOTS Menu Bar
 - 2.3.1.2. Shortcut Buttons – Common Command Access
 - 2.3.2. Manipulating MOTS Windows
 - 2.3.2.1. Using the mouse
 - 2.3.2.2. Moving, resizing windows
 - 2.3.2.3. Editing information
 - 2.3.3. Button, list boxes and fields
 - 2.3.4. On-line help
3. Selecting the scenario and load options
 - 3.1. Session control window
 - 3.2. Load options
 - 3.2.1. Job selection - Flight scenario
 - 3.2.2. Visual Configuration
 - 3.2.3. Load Control – Load Button, Freeze button
 - 3.3. Confirmation that visual configuration is loaded
4. Setting the initial conditions

- 4.1. Initial configuration and job data – INI file selection
- 4.2. PSC configuration
 - 4.2.1. PSC Interface Configuration
 - 4.2.2. PSC Startup
- 4.3. Setting Simulation Control page options
 - 4.3.1. Control Mode
 - 4.3.1.1. Dynamics vs. Kinematics
 - 4.3.2. Function Enabler
 - 4.3.2.1. Orbital Environment
 - 4.3.2.2. Light Override
 - 4.3.2.3. SRMS Active
 - 4.3.2.4. Collision Detection
 - 4.3.2.5. Collision Warnings
 - 4.3.2.6. Self-collision Detection
 - 4.3.2.7. RWS Activation
 - 4.3.2.8. Accelerated Power-up
 - 4.3.2.9. Display latency
 - 4.3.3. Flight Software
 - 4.3.3.1. Version
 - 4.3.3.2. FSW with JCS
 - 4.3.3.3. Emulated model vs. flight software
 - 4.3.3.4. Limitations of flight software
 - 4.3.4. Setup
 - 4.3.5. Setting Hand Controller Arbitration
- 4.4. Powering up the MSS (SSRMS, MBS, SPDMD)
 - 4.4.1. Automatic Power up
 - 4.4.2. Manual Power up
 - 4.4.3. When to power down
- 5. Setting Cameras and Arbitrary Viewpoint
 - 5.1. Camera Control
 - 5.2. Arbitrary Viewpoint Control
- 6. Data Tools
 - 6.1.1. Snapshots and Hop-to

- 6.1.2. Kinematic Sequencer
- 6.1.3. Distance Monitoring
- 6.1.4. Puddle Plots
- 6.1.5. Free-Flyer Analysis
- 7. On-Orbit Pages
 - 7.1. MSS Pages
 - 7.2. D&C Panel
 - 7.3. Orbiter Pages
 - 7.4. Space Station Pages
 - 7.5. Payload and Free-Flyer Control
- 8. Ground Display and Command
 - 8.1. Workstation GUI pages
 - 8.2. MON.RTL Laptop
- 9. Equipment Malfunctions
 - 9.1. Malfunction Browser
 - 9.2. Malfunction Parameters
- 10. Basic Troubleshooting and Recovery
 - 10.1. Change users without unloading
 - 10.2. Partially frozen GUI or incorrect data
 - 10.3. Completely frozen GUI
 - 10.4. Camera routing problems
 - 10.5. Frozen or crashed video
 - 10.6. Arm not moving with hand controllers
 - 10.7. Error report log
 - 10.8. Reporting issues - raising SARs
- 11. Ending a MOTS session
 - 11.1. Unloading
 - 11.2. Logging Off

FIGURE K-10 – "MOTS TTT COURSE TOPICS"

L RELEASE PROGRESS REPORT FORMAT FOR DELIVERABLES ID 14

The formats that must be followed for the Table L-1 – "Actual Hours Spent" and the Figure L-11 – "Planned vs Actual Costs" in a Release Progress Report are shown below.

TABLE L-1 – "ACTUAL HOURS SPENT"

SAR Related								
SARs Investigated & Implemented	Investigation (IR and the LOV) ⁷	Development & Implementation	Integration & Test By Developer	SAR Documentation (POV, reports, E-mails, etc)	Individual SAR TOTAL ⁸	Risk Hours		Integration & Test By IS
						IR Quote	Used Risk Hours ⁹	
All SARs	XX hrs	XX hrs	XX hrs	XX hrs	XX hrs	XX hrs	XX hrs	XX hrs
TOTAL Investigations	XX hrs	TOTAL All SARs			XX hrs	TOTAL Risk	XX hrs	
Non SAR Related								
Technical Support for MOTS Training and Mission Operations users								
Computer Administration (OS admin, etc)								
Formal Qualification Testing (TRR, FQT, FQR, etc)								
Customer Meetings (SRB, etc)								
Internal Design Meetings								
Project Management (Planning, Supervision, Progress Report, Invoices, etc)								
Miscellaneous (e.g. special investigations or tasks requested by the TA)								
TOTAL Site Support						XX hrs ¹⁰		
Documentation (SSD, SDD, End-to-End Test Procedures, VDD, TTT Course Material/Information, etc)								
TTT Sessions								
TOTAL for Release								XX hrs ¹¹

NOTES:

⁷ Must include only SARs whose investigation was done during the period covered by this Invoice.⁸ SAR Total must be equal to SUM(Development & Implementation, Integration & Test by Developer, SAR Documentation).⁹ Used Risk Hours must be equal to SAR Total – IR Quote.¹⁰ TOTAL for Site Support must be equal to SUM(Integration & Test by IS, all Non SAR related items except Documentation).¹¹ TOTAL for Release must be equal to SUM (TOTAL Investigations, TOTAL All SARs, TOTAL Site Support, Non SAR related Documentation and TTT sessions).

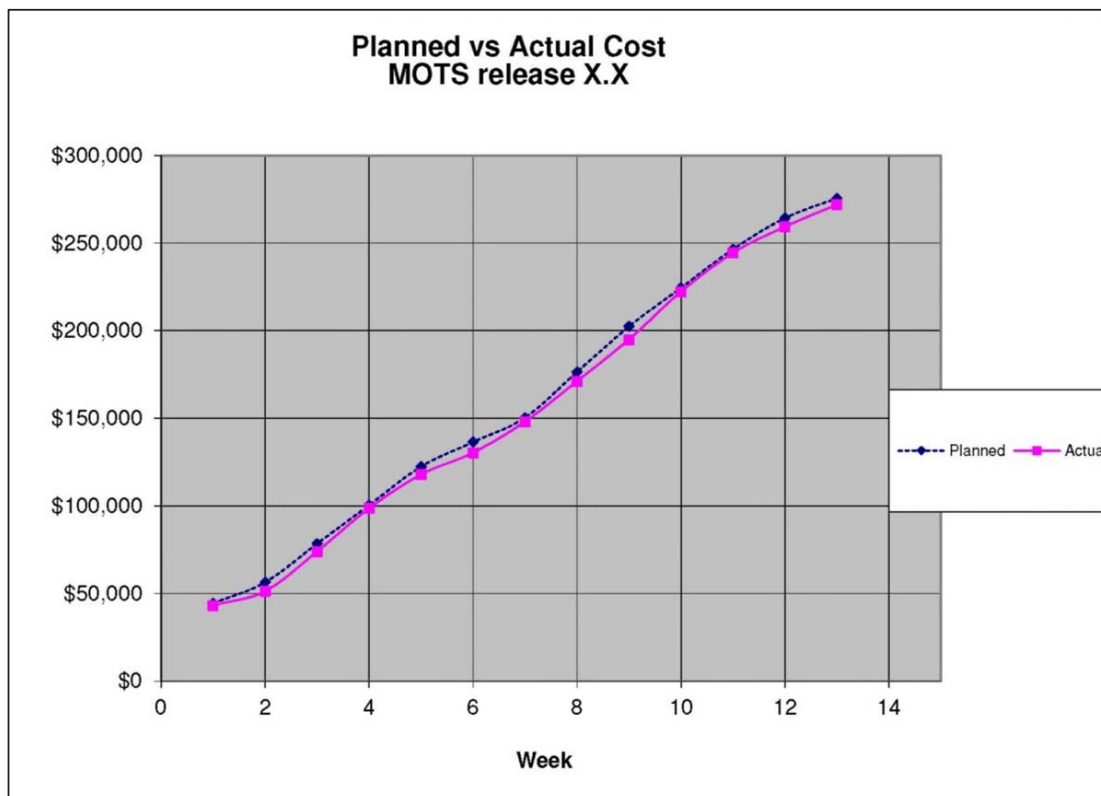


FIGURE L-11 – "PLANNED VS ACTUAL COSTS"

The Release Progress Report should be a simple e-mail with up to date versions of the Table L-1 and the Figure L-11 in it, as well as a statement in the body of the e-mail as to how the implementation of the release is progressing. Any expected schedule slip or cost overruns must be stated.

M QUARTERLY REPORT FORMAT FOR DELIVERABLES ID 15

The Quarterly Report must be a separate document whose TOC should include, but is not limited to, the items shown below in Figure M-12 – "Quarterly Report TOC".

Table of Contents

1. Project Issues
2. Release X.X
 - 2.1. Task Authorization TA-##

Include a final Table L-1 – "Actual Hours Spent"

... (Repeat section 2.1 for each Task Authorization)
 - 2.2. Details of Special Support Activities
 - 2.3. Planned Vs Actual Cost

Include a final Figure L-11 – "Planned vs Actual Costs"
3. Contract Financial Trend

Include a Figure M-13 – "Planned vs Actual Cost (Per Release)"

and a Figure M-14 – "Planned vs Actual Cost (Cumulative)"
4. Schedule

Include a Gantt chart with milestones for all the contract releases.
5. Action Items

FIGURE M-12 – "QUARTERLY REPORT TOC"

The formats that must be followed for the Table L-1 – "Actual Hours Spent" and the Figure L-11 – "Planned vs Actual Costs" in a Quarterly Report are the same as those shown above for the Release Progress Report. The formats that must be followed for the Figure M-13 – "Planned vs Actual Cost (Per Release)" and the Figure M-14 – "Planned vs Actual Cost (Cumulative)" are shown below.

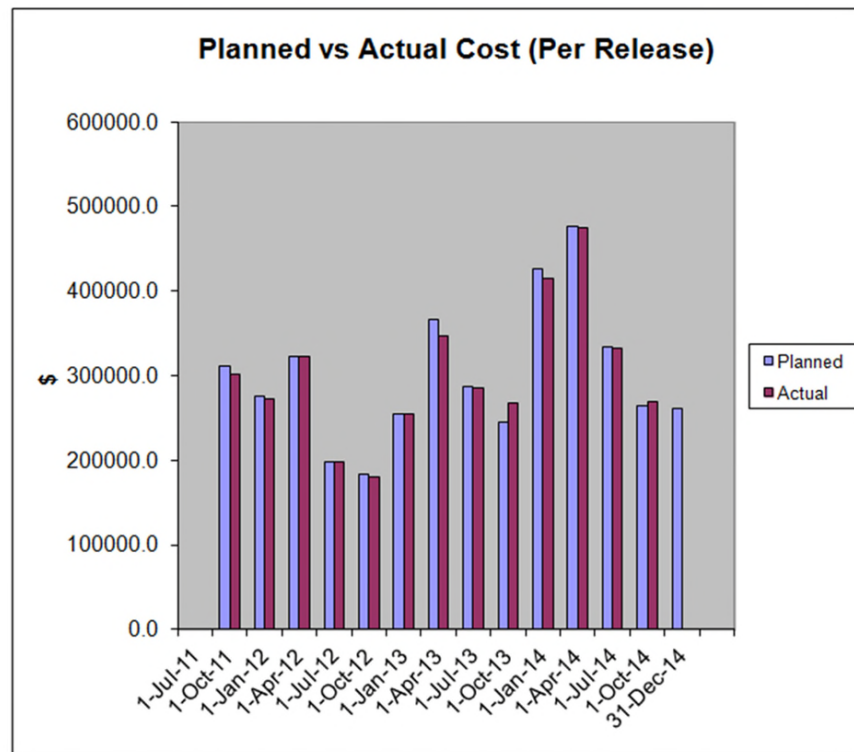


FIGURE M-13 – "PLANNED VS ACTUAL COST (PER RELEASE)"

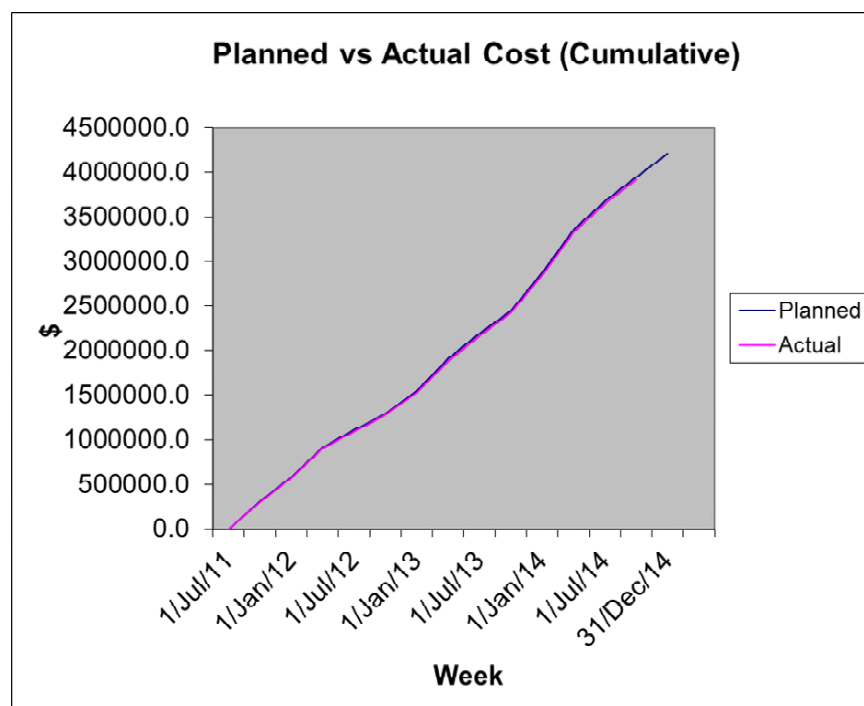


FIGURE M-14 – "PLANNED VS ACTUAL COST (CUMULATIVE)"

**ANNEX B
BASIS OF PAYMENT**

A - INITIAL PERIOD (Contract award until March 31, 2023)

1. LABOR: at the following firm rates **Est.: \$ _____**

CATEGORY (or Name)	Contract award to March 31, 2022		April 1, 2022 to March 31, 2023	
	Firm Hourly Rate	Estimated Effort (Hours)	Firm Hourly Rate	Estimated Effort (Hours)
Lead Project Engineer		648		432
Other Categories (To be determined by bidder)		20,160		13,440

2. EQUIPMENT: at laid down cost without markup **Est.: \$ _____**
(Specify type of equipment.)

3. RENTALS: at actual cost without markup **Est.: \$ _____**
(Specify what rentals.)

4. MATERIALS AND SUPPLIES: at laid down cost without markup **Est.: \$ _____**
(Specify what categories of materials and supplies.)

5. TRAVEL AND LIVING EXPENSES: **Est.: \$ _____**

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal and private vehicle expenses provided in Appendices B, C and D of the Treasury Board Travel Directive (<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have prior authorization of the Project authority. All payments are subject to government audit.

6. SUBCONTRACTS: at actual cost without markup **Est.: \$ _____**
(Identify subcontractors, if applicable.)

7. OTHER DIRECT CHARGES: at actual cost without markup **Est.: \$ _____**
(Specify what categories of direct charges.)

8. OVERHEAD: at a firm rate of ___% of item ___ above **Est.: \$ _____**

9. PROFIT: at a firm rate of ___% of item ___ above **Est.: \$ _____**

A - Limitation of Expenditure under Task Authorisation: \$ _____
(Applicable Taxes extra)

B - BASIS OF PAYMENT – OPTIONAL PERIOD (April 1 2023 award until March 31, 2024)

1. LABOR: at the following firm rates

Est.: \$ _____

CATEGORY (or Name)	FIRM HOURLY RATES	ESTIMATED EFFORT (HOURS)
Lead Project Engineer		432
Other Categories (To be determined by bidder)		13,440

2. EQUIPMENT: at laid down cost without markup
(Specify type of equipment.)

Est.: \$ _____

3. RENTALS: at actual cost without markup
(Specify what rentals.)

Est.: \$ _____

4. MATERIALS AND SUPPLIES: at laid down cost without markup
(Specify what categories of materials and supplies.)

Est.: \$ _____

5. TRAVEL AND LIVING EXPENSES:

Est.: \$ _____

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal and private vehicle expenses provided in Appendices B, C and D of the Treasury Board Travel Directive (<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>), and with the other provisions of the directive referring to “travellers”, rather than those referring to “employees”.

All travel must have prior authorization of the Project authority. All payments are subject to government audit.

6. SUBCONTRACTS: at actual cost without markup
(Identify subcontractors, if applicable.)

Est.: \$ _____

7. OTHER DIRECT CHARGES: at actual cost without markup
(Specify what categories of direct charges.)

Est.: \$ _____

8. OVERHEAD: at a firm rate of ___% of item ___ above

Est.: \$ _____

9. PROFIT: at a firm rate of ___% of item ___ above

Est.: \$ _____

B - Limitation of Expenditure under Task Authorisation: \$ _____
(Applicable Taxes extra)

C - BASIS OF PAYMENT – OPTIONAL PERIOD (Optional Period 2 – April 1 2024 to March 31 2024)

1. **LABOR:** at the following firm rates **Est.: \$ _____**

CATEGORY (or Name)	ESTIMATED EFFORT (HOURS)	FIRM HOURLY RATES
Lead Project Engineer		288
Other Categories (To be determined by bidder)		8,960

2. **EQUIPMENT:** at laid down cost without markup **Est.: \$ _____**
(Specify type of equipment.)

3. **RENTALS:** at actual cost without markup **Est.: \$ _____**
(Specify what rentals.)

4. **MATERIALS AND SUPPLIES:** at laid down cost without markup **Est.: \$ _____**
(Specify what categories of materials and supplies.)

5. **TRAVEL AND LIVING EXPENSES:** **Est.: \$ _____**

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal and private vehicle expenses provided in Appendices B, C and D of the Treasury Board Travel Directive (<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have prior authorization of the Project authority. All payments are subject to government audit.

6. **SUBCONTRACTS:** at actual cost without markup **Est.: \$ _____**
(Identify subcontractors, if applicable.)

7. **OTHER DIRECT CHARGES:** at actual cost without markup **Est.: \$ _____**
(Specify what categories of direct charges.)

8. **OVERHEAD:** at a firm rate of ___ % of item ___ above **Est.: \$ _____**

9. **PROFIT:** at a firm rate of ___ % of item ___ above **Est.: \$ _____**

C - Limitation of Expenditure under Task Authorisation: \$ _____
(Applicable Taxes extra)

TOTAL EVALUATED PRICE A + B + C = _____

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

ANNEX C

SECURITY REQUIREMENTS CHECK LIST



SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine		Canadian Space Agency		2. Branch or Directorate / Direction générale ou Direction Operations & Infrastructure	
3. a) Subcontract Number / Numéro du contrat de sous-traitance		3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant L-3 Com MAPPS Inc.			
4. Brief Description of Work / Brève description du travail The purpose of Mobile Servicing System (MSS) Operations and Training Simulator (MOTs) Phase 7 is to provide sustaining engineering to ensure that the functional capabilities implemented during the previous four development phases are maintained, and enhanced when required, so that the performance of the MOTS continues to meet the requirements.					
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?				<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?				<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis					
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)				<input type="checkbox"/> No Non	<input checked="" type="checkbox"/> Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.				<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?				<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès					
Canada <input checked="" type="checkbox"/>		NATO / OTAN <input type="checkbox"/>		Foreign / Étranger <input type="checkbox"/>	
7. b) Release restrictions / Restrictions relatives à la diffusion					
No release restrictions Aucune restriction relative à la diffusion <input checked="" type="checkbox"/>		All NATO countries Tous les pays de l'OTAN <input type="checkbox"/>		No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>	
Not releasable À ne pas diffuser <input type="checkbox"/>					
Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : <input type="checkbox"/>		Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : <input type="checkbox"/>		Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : <input type="checkbox"/>	
7. c) Level of information / Niveau d'information					
PROTECTED A PROTÉGÉ A <input checked="" type="checkbox"/>		NATO UNCLASSIFIED NATO NON CLASSIFIÉ <input type="checkbox"/>		PROTECTED A PROTÉGÉ A <input type="checkbox"/>	
PROTECTED B PROTÉGÉ B <input checked="" type="checkbox"/>		NATO RESTRICTED NATO DIFFUSION RESTREINTE <input type="checkbox"/>		PROTECTED B PROTÉGÉ B <input type="checkbox"/>	
PROTECTED C PROTÉGÉ C <input type="checkbox"/>		NATO CONFIDENTIAL NATO CONFIDENTIEL <input type="checkbox"/>		PROTECTED C PROTÉGÉ C <input type="checkbox"/>	
CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>		NATO SECRET NATO SECRET <input type="checkbox"/>		CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>	
SECRET SECRET <input type="checkbox"/>		COSMIC TOP SECRET COSMIC TRÈS SECRET <input type="checkbox"/>		SECRET SECRET <input type="checkbox"/>	
TOP SECRET TRÈS SECRET <input type="checkbox"/>				TOP SECRET TRÈS SECRET <input type="checkbox"/>	
TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>				TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>	



PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? ☒ No / Non ☐ Yes / Oui

If Yes, indicate the level of sensitivity:

Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? ☒ No / Non ☐ Yes / Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :

Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

- | | | | |
|---|---|---|--|
| <input checked="" type="checkbox"/> RELIABILITY STATUS
COTE DE FIABILITÉ | <input type="checkbox"/> CONFIDENTIAL
CONFIDENTIEL | <input type="checkbox"/> SECRET
SECRET | <input type="checkbox"/> TOP SECRET
TRÈS SECRET |
| <input type="checkbox"/> TOP SECRET- SIGINT
TRÈS SECRET - SIGINT | <input type="checkbox"/> NATO CONFIDENTIAL
NATO CONFIDENTIEL | <input type="checkbox"/> NATO SECRET
NATO SECRET | <input type="checkbox"/> COSMIC TOP SECRET
COSMIC TRÈS SECRET |
| <input type="checkbox"/> SITE ACCESS
ACCÈS AUX EMPLACEMENTS | | | |

Special comments:

Commentaires spéciaux :

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.

REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? ☐ No / Non ☒ Yes / Oui
- If Yes, will unscreened personnel be escorted?
Dans l'affirmative, le personnel en question sera-t-il escorté? ☐ No / Non ☒ Yes / Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS? ☐ No / Non ☒ Yes / Oui
11. b) Will the supplier be required to safeguard COMSEC information or assets?
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC? ☒ No / Non ☐ Yes / Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ? ☐ No / Non ☒ Yes / Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS? ☐ No / Non ☒ Yes / Oui
11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale? ☒ No / Non ☐ Yes / Oui



PART C - (continued) / PARTIE C - (suite)

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 niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form **online** (via the Internet), the summary chart is automatically populated by your responses to previous questions.

Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL CONFIDENTIEL	SECRET	TOP SECRET TRÈS SECRET	NATO RESTRICTED NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET COSMIC TRÈS SECRET	PROTECTED PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET TRÈS SECRET
											A	B	C			
Information / Assets Renseignements / Biens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT Media / Support TI	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT Link / Lien électronique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?

La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☒ No
Non

☐ Yes
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?

La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☒ No
Non

☐ Yes
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



Government of Canada
Gouvernement du Canada

Contract Number / Numéro du contrat
20190231

Security Classification / Classification de sécurité

PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées)
REAL PALARDY

Title - Titre
MANAGER, Exploration Ground
Infrastructure (EGI)

Signature

Telephone No. - N° de téléphone
450-926 4740

Facsimile No. - N° de télécopieur
450-926 5132

E-mail address - Adresse courriel
real.palardy@canada.ca

Date
March 6th, 2020

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)
DANY DUFOUR

Title - Titre
AGENT PRINCIPAL(I)
SERVICES DE SECURITY

Signature

Telephone No. - N° de téléphone
450-926 4769

Facsimile No. - N° de télécopieur
450-926-4885

E-mail address - Adresse courriel
dany.dufour@canada.ca

Date
March 10th, 2020

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached?

Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?

☒ No ☐ Yes
Non Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)
Kaveh Mirfatahi

Title - Titre
Supply Specialist

Signature

Telephone No. - N° de téléphone
514-260-4106

Facsimile No. - N° de télécopieur

E-mail address - Adresse courriel
kaveh.mirfatahi@tpsgc-pwgsc.gc.ca

Date
March 10, 2020

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées)

Title - Titre

Signature

Telephone No. - N° de téléphone

Facsimile No. - N° de télécopieur

E-mail address - Adresse courriel

Date

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

ANNEX D

NON-DISCLOSURE AGREEMENT

I, _____, recognize that in the course of my work as an employee or subcontractor of _____, I may be given access to information by or on behalf of Canada in connection with the Work, pursuant to Contract Serial No. 9F054-190231 between Her Majesty the Queen in right of Canada, represented by the Minister of Public Works and Government Services and _____, including any information that is confidential or proprietary to third parties, and information conceived, developed or produced by the Contractor as part of the Work. For the purposes of this agreement, information includes but not limited to: any documents, instructions, guidelines, data, material, advice or any other information whether received orally, in printed form, recorded electronically, or otherwise and whether or not labeled as proprietary or sensitive, that is disclosed to a person or that a person becomes aware of during the performance of the Contract.

I agree that I will not reproduce, copy, use, divulge, release or disclose, in whole or in part, in whatever way or form any information described above to any person other than a person employed by Canada on a need to know basis. I undertake to safeguard the same and take all necessary and appropriate measures, including those set out in any written or oral instructions issued by Canada, to prevent the disclosure of or access to such information in contravention of this agreement.

I also acknowledge that any information provided to the Contractor by or on behalf of Canada must be used solely for the purpose of the Contract and must remain the property of Canada or a third party, as the case may be.

I agree that the obligation of this agreement will survive the completion of the Contract Serial No. 9F054-190231.

Signature

Date

ATTACHMENT 1 to PART 3 OF THE BID SOLICITATION

BID SUBMISSION FORM

BID SUBMISSION FORM

Bidder's full legal name		
Authorized Representative of Bidder for evaluation purposes (e.g., clarifications)	Name	
	Title	
	Address	
	Telephone #	
	Fax #	
	Email	
Bidder's Procurement Business Number (PBN) [see the Standard Instructions 2003] [Note to Bidders: Please ensure that the PBN you provide matches the legal name under which you have submitted your bid. If it does not, the Bidder will be determined based on the legal name provided, not based on the PBN, and the Bidder will be required to submit the PBN that matches the legal name of the Bidder.]		
Jurisdiction of Contract: Province or territory 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 2 of the bid solicitation entitled Former Public Servant 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 2 entitled "Former Public Servant"	

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

	<p>Is the Bidder a FPS who received a lump sum payment under the terms of the Work Force Adjustment Directive?</p> <p>Yes _____ No _____</p> <p>If yes, provide the information required by the Article in Part 2 entitled "Former Public Servant"</p>	
<p>Security Clearance Level of Bidder</p> <p>[include both the level and the date it was granted]</p> <p>[Note to Bidders: Please ensure that the security clearance matches the legal name of the Bidder. If it does not, the security clearance is not valid for the Bidder.]</p>		
<p>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:</p> <ol style="list-style-type: none">1. The Bidder considers itself and its proposed resources 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; 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.		
<p>Signature of Authorized Representative of Bidder</p>		

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

ATTACHMENT 2 to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

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)

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ATTACHMENT 1 TO PART 4 OF THE BID SOLICITATION

ATTACHMENT 1 TO PART 4 TECHNICAL EVALUATION CRITERIA

1. MANDATORY CRITERIA

1.1 At the time of bid closing, the bidder must meet the mandatory criteria presented below, in the tables *Evaluation Grid for the Mandatory Criteria of the Company*, *Evaluation Grid for the Mandatory Criteria of the Lead Project Engineer* and *Evaluation Grid for the Mandatory Criteria of the Team*, and provide the documents and any other information necessary to demonstrate that it complies with these requirements.

1.2 The bidder must submit its bid following the numbering and the order of the mandatory evaluation criteria as presented in this bid solicitation.

1.3 It is not sufficient to simply state that the mandatory criteria are met. The bidder must demonstrate clearly and in detail how it meets the mandatory criteria.

1.4 Any offer which does not comply with one of the mandatory criteria will be declared non-responsive. Each mandatory criteria must be treated separately.

1.5 For each mandatory criteria, the bidder must reference the specific page and paragraph number location(s) in the page(s) of their tender where the requested information is presented.

1.6 The curriculum vitae (CV) of the proposed resources must be provided with the proposal.

1.7 The Bidder must supply their experience and that of their resources in the Month Year format. The number of months and years of experience required is calculated according to the project dates (Format: Month Year) on which the tenderer has worked. For example, a bidder who worked on a project from July 2019 to October 2019 could count four months of experience for this project, and thus add the number of months for each project he worked on.

1.8 In situations in which a proposed company, team or resource worked at the same time on more than one project, the duration of any overlapping project time period will be counted only once toward any requirements that relate to the company's, team's or resource's length of experience.

Evaluation grid.

This section provides the evaluation grid used to assess the evidence provided by the Bidder to determine if all the Mandatory Criteria are met.

Evaluation Grid for the Mandatory Criteria of the Company

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Project Experience Evidence Description	Project Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 1	The Bidder's Company must have at least 10 years of experience over the last 15 years in the design, development, integration, maintenance and support of real-time simulator(s) of similar scope and similar contract value as the MOTS. Overlapping experience if any must not exceed 3 years.	Project 1:	Is the project performed within the last 15 years?			Number of years of experience in design, development, integration, maintenance and support within the last 15 years:				
			Is the overlapping experience if any ≤ 3 years?							
			Is the project average annual contract value (including taxes) ≥ \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?							
			Is the project experience in design, development, integration, maintenance and support?							
		Project 2:	Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?			Number of years of experience in design, development, integration, maintenance and support within the last 15 years:				
			Is the project performed within the last 15 years?							
			Is the overlapping experience if any ≤ 3 years?							
			Is the project average annual contract value (including taxes) ≥ \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?							
		Project 3:	Is the project experience in design, development, integration, maintenance and support?			Number of years of experience in design, development, integration, maintenance and support within the last 15 years:				
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
			Is the project performed within the last 15 years?							
			Is the overlapping experience if any ≤ 3 years?							
			Is the project average annual contract value (including taxes) ≥ \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?			Number of years of experience in design, development, integration, maintenance and support within the last 15 years:				
			Is the project experience in design, development, integration, maintenance and support?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Project Experience Evidence Description	Project Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 2	The Bidder's Company must have at least 7 years of experience over the last 10 years with real-time simulator(s) of multi-degree of freedom robot(s) for the purpose of engineering design, training or operations support.	Project 1:	Is the project performed within the last 10 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 10 years:			Is the total number of years with real-time simulation of multi-degree of freedom robot(s) ≥ 7 years?	
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 10 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 10 years:				
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 10 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 10 years:				
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Evaluation Grid for the Mandatory Criteria of the Lead Project Engineer

Crit. #	Criteria Description	Education Admissibility Condition	Is the Education Admissibility Condition met? (Yes/No)	Are all the Education Admissibility Conditions met? (Yes/No)
Mandatory Criteria 3	The Bidder's proposed Lead Project Engineer must have a university bachelor's degree from a recognized Canadian university or equivalent in an engineering specialty relevant to the work to be performed such as, but not limited to: aerospace engineering, computer engineering, electrical engineering, mechanical engineering, systems engineering or software engineering.	Does the Lead Project Engineer have a university bachelor's degree in engineering? ^{Note 1}		
		Note 1: Having a Masters in engineering, a PhD in engineering, a Bachelor's in science, Master's in science or PhD in science does not qualify the proposed Lead Project Engineer for this Mandatory Criteria. The proposed Lead Project Engineer must have specifically a Bachelor's in engineering.		
		Is the degree from a recognized Canadian university or equivalent? Note 2		
		Note 2: In cases where studies were completed in an institution outside Canada, only an equivalency certificate from an accredited institution recognizing the credentials as Canadian equivalences will be accepted. These institutions include the credential assessment services of the federal or provincial governments and the International Credential Assessment Service of Canada, as well as others recognized as credential assessment services for comparing degrees and diplomas to Canadian standards and identified on the Canadian Information Centre for International Credentials Web site: https://www.cicc.ca/1374/06/ain_an_academic_credential_assessment_for_general_purposes/canada		
		Is the degree in an engineering specialty relevant to the work to be performed such as, but not limited to: aerospace engineering, computer engineering, electrical engineering, mechanical engineering, systems engineering or software engineering?		

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Lead Engineer Experience Evidence Description	Lead Engineer Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 4	The Bidder's proposed Lead Project Engineer must have at least 10 years of experience over the last 15 years in the design, development, integration, maintenance and support of real-time simulator(s) of similar scope and similar contract value as the MOTS. Overlapping experience if any must not exceed 3 years.	Project 1:	Is the project performed within the last 15 years?			Number of years of experience in the design, development, integration, maintenance and support within the last 15 years:			Is the total number of years of experience in the design, development, integration, maintenance and support \geq 10 years?	
			Is the overlapping experience if any \leq 3 years?							
			Is the project average annual contract value (including taxes) \geq \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?							
			Is the project experience in design, development, integration, maintenance and support?							
			Is the speed of the real-time simulation loop \geq 10 Hz or \leq 100 milliseconds?							
		Project 2:	Is the project performed within the last 15 years?			Number of years of experience in the design, development, integration, maintenance and support within the last 15 years:				
			Is the overlapping experience if any \leq 3 years?							
			Is the project average annual contract value (including taxes) \geq \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?							
			Is the project experience in design, development, integration, maintenance and support?							
			Is the speed of the real-time simulation loop \geq 10 Hz or \leq 100 milliseconds?							
		Project 3:	Is the project performed within the last 15 years?			Number of years of experience in the design, development, integration, maintenance and support within the last 15 years:				
			Is the overlapping experience if any \leq 3 years?							
			Is the project average annual contract value (including taxes) \geq \$750k/year?							
			Is the project a human in the loop simulator with a real-time multi body predictive simulation of the functional & the physical dynamic behavior of a mechanical system?							
			Is the project experience in design, development, integration, maintenance and support?							
			Is the speed of the real-time simulation loop \geq 10 Hz or \leq 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Lead Engineer Experience Evidence Description	Lead Engineer Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 5	The Bidder's proposed Lead Project Engineer must have at least 7 years of project management experience over the last 10 years. Overlapping experience if any must not exceed 2 years.	Project 1:	Is the project performed within the last 10 years?			Number of years of experience in project management within the last 10 years:			Is the total number of years of experience in project management ≥ 7 years?	
			Is the overlapping experience if any ≤ 2 years?							
			Is the project experience in project management?							
		Project 2:	Is the project performed within the last 10 years?			Number of years of experience in project management within the last 10 years:				
			Is the overlapping experience if any ≤ 2 years?							
			Is the project experience in project management?							
		Project 3:	Is the project performed within the last 10 years?			Number of years of experience in project management within the last 10 years:				
			Is the overlapping experience if any ≤ 2 years?							
			Is the project experience in project management?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Lead Engineer Experience Evidence Description	Lead Engineer Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 6	The Bidder's proposed Lead Project Engineer must have at least 5 years of experience over the last 15 years with real-time simulator(s) of multi-degree of freedom robot(s) for the purpose of engineering design, training or operations support.	Project 1:	Is the project performed within the last 15 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 15 years:			Is the total number of years with real-time simulation of multi-degree of freedom robot(s) ≥ 5 years?	
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 15 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 15 years:				
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 15 years?			Number of years with real-time simulation of multi-degree of freedom robot(s) within the last 15 years:				
			Is the project an engineering design, training or operations support simulator?							
			Is the project with a multi-degree of freedom robot?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Evaluation Grid for the Mandatory Criteria of the Team

Crit. #	Criteria Description	Size Admissibility Condition	Is the Size Admissibility Condition met? (Yes/No)
Mandatory Criteria 7	The Bidder's proposed Team must have at least 5 individual team members, exclusive of the Lead Project Engineer.	Has the Bidder provided the names and the documentation showing the respective education of at least 5 individual team members (exclusive of the Lead Project Engineer)?	

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 8	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 8 years in the design and development of visual computer graphics software, specifically for real-time simulator(s) or game(s).	Project 1:	Is the project performed within the last 8 years?			Number of years with visual computer graphics software design and development within the last 8 years:			Is the total number of years with visual computer graphics software design and development ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience in visual computer graphics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 8 years?			Number of years with visual computer graphics software design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience in visual computer graphics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 8 years?			Number of years with visual computer graphics software design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience in visual computer graphics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Evidence Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 9	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 8 years as a Graphic Artist in the design and development of visual assets, specifically for real-time simulator(s) or game(s).	Project 1:	Is the project performed within the last 8 years?			Number of years as a Graphic Artist in visual asset design and development within the last 8 years:			Is the total number of years as a Graphic Artist in visual asset design and development ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience as a Graphic Artist in visual asset design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 8 years?			Number of years as a Graphic Artist in visual asset design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience as a Graphic Artist in visual asset design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 8 years?			Number of years as a Graphic Artist in visual asset design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience as a Graphic Artist in visual asset design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Description	Team Member Experienced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 10	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 8 years in software design and development of dynamic, kinematic and contact dynamic simulation, specifically for real-time simulator(s).	Project 1:	Is the project performed within the last 8 years?			Number of years in dynamics, kinematics and contact dynamics software design and development within the last 8 years:			Is the total number of years in dynamics, kinematics and contact dynamics software design and development ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience in dynamics, kinematics and contact dynamics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 8 years?			Number of years in dynamics, kinematics and contact dynamics software design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience in dynamics, kinematics and contact dynamics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 8 years?			Number of years in dynamics, kinematics and contact dynamics software design and development within the last 8 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience in dynamics, kinematics and contact dynamics software design and development?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Evidence Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 11	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 15 years in software design and development using the Fortran programming language, specifically for real-time simulator(s).	Project 1:	Is the project performed within the last 15 years?			Number of years designing and developing with the Fortran programming language within the last 15 years:			Is the total number of years with the Fortran programming language ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience with the Fortran programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 15 years?			Number of years designing and developing with the Fortran programming language within the last 15 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the Fortran programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 15 years?			Number of years designing and developing with the Fortran programming language within the last 15 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the Fortran programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Evidence Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 12	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 10 years in software design and development using the C++ programming language, specifically for real-time simulator(s).	Project 1:	Is the project performed within the last 10 years?			Number of years designing and developing with the C++programming language within the last 10 years:			Is the total number of years with the C++ programming language ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience with the C++ programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 10 years?			Number of years designing and developing with the C++programming language within the last 10 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the C++ programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 10 years?			Number of years designing and developing with the C++programming language within the last 10 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the C++ programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Evidence Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)
Mandatory Criteria 13	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 15 years in software design and development using the C programming language, specifically for real-time simulator(s).	Project 1:	Is the project performed within the last 15 years?			Number of years designing and developing with the C programming language within the last 15 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the C programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 2:	Is the project performed within the last 15 years?			Number of years designing and developing with the C programming language within the last 15 years:			Is the total number of years with the C programming language ≥ 5 years?	
			Are all the project(s) for the same Team member?							
			Is the project experience with the C programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							
		Project 3:	Is the project performed within the last 15 years?			Number of years designing and developing with the C programming language within the last 15 years:				
			Are all the project(s) for the same Team member?							
			Is the project experience with the C programming language?							
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?							

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Members Experience Evidence Description	Team Members Experienced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)	
Mandatory Criteria 14	The Bidder's proposed Team must have at least 4 team members, each with at least 5 years of experience over the last 10 years in software design and development within the Linux Operating System environment, specifically for real-time simulator(s).	Project 1:	Is the project performed within the last 10 years?			Number of years in software design and development experience within the Linux Operating System environment within the last 10 years.			Is the total number of years in software design and development experience within the Linux Operating System environment for each of the 4 Team members ≥ 5 years?		
			Is the project experience for the same 4 Team members?								
			Is the project experience with software design and development within the Linux Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								
		Project 2:	Is the project performed within the last 10 years?			Number of years in software design and development experience within the Linux Operating System environment within the last 10 years.					
			Is the project experience for the same 4 Team members?								
			Is the project experience with software design and development within the Linux Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								
		Project 3:	Is the project performed within the last 10 years?			Number of years in software design and development experience within the Linux Operating System environment within the last 10 years.					
			Is the project experience for the same 4 Team members?								
			Is the project experience with software design and development within the Linux Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								

Crit. #	Criteria Description	Project Name	Project Admissibility Condition	Is the Project Admissibility Condition met? (Yes/No)	Are all the Project Admissibility Conditions met? (Yes/No)	Team Member Experience Evidence Description	Team Member Experience Evidenced (Years)	Total Experience Evidenced (Only use experience of project(s) that meet all the project's admissibility conditions)	Experience Condition	Is the Experience Condition met? (Yes/No)	
Mandatory Criteria 15	The Bidder's proposed Team must have at least 1 team member with at least 5 years of experience over the last 8 years in software design and development within the Windows Operating System environment, specifically for real-time simulator(s) or game(s).	Project 1:	Is the project performed within the last 8 years?			Number of years with software design and development within the Windows Operating System environment within the last 8 years:			Is the total number of years with software design and development within the Windows Operating System environment ≥ 5 years?		
			Are all the project(s) for the same Team member?								
			Is the project experience with software design and development within the Windows Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								
		Project 2:	Is the project performed within the last 8 years?			Number of years with software design and development within the Windows Operating System environment within the last 8 years:					
			Are all the project(s) for the same Team member?								
			Is the project experience with software design and development within the Windows Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								
		Project 3:	Is the project performed within the last 8 years?			Number of years with software design and development within the Windows Operating System environment within the last 8 years:					
			Are all the project(s) for the same Team member?								
			Is the project experience with software design and development within the Windows Operating System environment?								
			Is the speed of the real-time simulation loop ≥ 10 Hz or ≤ 100 milliseconds?								

Crit. #	Criteria Description	Education Admissibility Condition	Is the Education Admissibility Condition met? (Yes/No)	Are all the Education Admissibility Conditions met? (Yes/No)
Mandatory Criteria 16	With the exception of the Graphic Artist, each of the Bidder's proposed Team members must have a university bachelor's degree from a recognized Canadian university or equivalent in an engineering or a computer science specialty relevant to the work to be performed such as, but not limited to: aerospace engineering, computer engineering, electrical engineering, mechanical engineering, systems engineering, software engineering or in systems computer science.	With the exception of the Graphic Artist, does each of the Team members have a university bachelor's degree in engineering or in computer science? Note 1		
		Note 1: Having a Masters in engineering, a PhD in engineering, a Bachelor's in science, Master's in science or PhD in science does not qualify a Team member for this Mandatory Criteria. The Team member must have specifically a Bachelor's in engineering or computer science.		
		With the exception of the Graphic Artist, is each of the Team member's degree from a recognized Canadian university or equivalent? Note 2		
		Note 2: In cases where studies were completed in an institution outside Canada, only an equivalency certificate from an accredited institution recognizing the credentials as Canadian equivalences will be accepted. These institutions include the credential assessment services of the federal or provincial governments and the International Credential Assessment Service of Canada, as well as others recognized as credential assessment services for comparing degrees and diplomas to Canadian standards and identified on the Canadian Information Centre for International Credentials Web site: https://www.cicic.ca/1374/obtain-an-academic-credential-assessment-for-general-purposes-canada		
		With the exception of the Graphic Artist, is each of the Team member's degree in an engineering or computer science specialty relevant to the work to be performed such as, but not limited to: aerospace engineering, computer engineering, electrical engineering, mechanical engineering, systems engineering, software engineering or in systems computer science?		

2. POINT RATED CRITERIA

2.1 Any proposal that meets all of the mandatory criteria specified above in the tables *Evaluation Grid for the Mandatory Criteria of the Company, Evaluation Grid for the Mandatory Criteria of the Lead Project Engineer and Evaluation Grid for the Mandatory Criteria of the Team*, will be evaluated and scored according to the evaluation criteria listed in the Point Rated Criteria table below.

2.2 The point rated criteria will be evaluated in accordance with the descriptions accompanying each criteria indicated in Point Rated Criteria table below.

To be declared responsive, submissions must:

- a. obtain the minimum score required for each criteria with a passing grade; and
- b. obtain the minimum score of 65 points overall for the point rated evaluation criteria.

2.3 The bidder must submit its bid following the numbering and the order of the point rated evaluation criteria as presented in the Point Rated Criteria table below.

2.4 The number of months and years of experience required is calculated according to the project dates (Format: Month Year) on which the tenderer has worked. For example, a bidder who worked on a project from July 2019 to October 2019 could count four months of experience for this project, and thus add the number of months for each project he worked on.

2.5 In situations in which a proposed company, team or resource worked at the same time on more than one project, the duration of any overlapping project time period will be counted only once toward any requirements that relate to the company's, team's or resource's length of experience.

2.6 For point rated criteria 14 and 15, it is not sufficient to simply state that the point rated criteria are met. The bidder must demonstrate clearly and in detail how it meets the point rated criteria. For each of these two point rated criteria, the bidder must reference the specific page and paragraph number location(s) in the page(s) of their tender where the requested information is presented.

2.7 For point rated criteria 16, it is not sufficient to simply state that the criteria is met. The bidder must demonstrate clearly and in detail how each of the items of the point-rated criteria 16 it claims to meet are actually met.

The section below provides the evaluation grid used to assess the evidence provided by the Bidder to determine how the point rated criteria are met.

[illegible]

[illegible]

Point Rated Criteria 13	Total Experience Evidenced for Mandatory Criteria 15.	5	20	<p><u>20 points:</u> The Total Experience Evidenced for Mandatory Criteria 15 is 8 years or more of experience;</p> <p><u>15 points:</u> The Total Experience Evidenced for Mandatory Criteria 15 is 7 years to less than 8 years of experience;</p> <p><u>10 points:</u> The Total Experience Evidenced for Mandatory Criteria 15 is 6 years to less than 7 years of experience;</p> <p><u>5 points:</u> The Total Experience Evidenced for Mandatory Criteria 15 is 5 years to less than 6 years of experience;</p> <p><u>0 points:</u> The Total Experience Evidenced for Mandatory Criteria 15 is less than 5 years of experience.</p>		
Point Rated Criteria 14	Experience of the Bidder's proposed Team in software design and development using the ADA programming language.	0	30	<p><u>30 points:</u> The Bidder's proposed Team has more than 10 years of experience in software design and development using the ADA programming language;</p> <p><u>25 points:</u> The Bidder's proposed Team has 9 years to less than 10 years of experience in software design and development using the ADA programming language;</p> <p><u>20 points:</u> The Bidder's proposed Team has 8 years to less than 9 years of experience in software design and development using the ADA programming language;</p> <p><u>15 points:</u> The Bidder's proposed Team has 7 years to less than 8 years of experience in software design and development using the ADA programming language;</p> <p><u>10 points:</u> The Bidder's proposed Team has 6 years to less than 7 years of experience in software design and development using the ADA programming language;</p> <p><u>5 points:</u> The Bidder's proposed Team has 5 years to less than 6 years of experience in software design and development using the ADA programming language;</p> <p><u>0 points:</u> The Bidder's proposed Team has less than 5 years of experience in software design and development using the ADA programming language.</p>		
Point Rated Criteria 15	Experience of the Bidder's proposed Team in software development within CAE's SIMEX environment.	0	30	<p><u>30 points:</u> The Bidder's proposed Team has more than 10 years of experience in software development within CAE's SIMEX environment;</p> <p><u>25 points:</u> The Bidder's proposed Team has 9 years to less than 10 years experience in software development within CAE's SIMEX environment;</p> <p><u>20 points:</u> The Bidder's proposed Team has 8 years to less than 9 years experience in software development within CAE's SIMEX environment;</p> <p><u>15 points:</u> The Bidder's proposed Team has 7 years to less than 8 years experience in software development within CAE's SIMEX environment;</p> <p><u>10 points:</u> The Bidder's proposed Team has 6 years to less than 7 years experience in software development within CAE's SIMEX environment;</p> <p><u>5 points:</u> The Bidder's proposed Team has 5 years to less than 6 years of experience in software development within CAE's SIMEX environment;</p> <p><u>0 points:</u> The Bidder's proposed Team has less than 5 years of experience in software development within CAE's SIMEX environment.</p>		

Point Rated Criteria 16	<p>The Bidder's own workplace is accessible for people with disabilities, including, but not limited to the following items:</p> <ul style="list-style-type: none"> i. main entrances that are equipped with a power door, ii. passenger elevators with visual and auditory signals and tactile identification, iii. public areas, such as cafeterias and walkways, that are accessible to people with physical disabilities, iv. federal work areas, such as offices and meeting rooms, that are accessible to people with visual and physical disabilities, v. interior doors and corridors that are wide enough for people in manual wheelchairs and with light levels that are high enough to accommodate people with visual impairments, vi. washrooms that are properly equipped for people in wheelchairs, vii. at least one public telephone that is accessible to people in wheelchairs and with hearing impairments, viii. at least one drinking fountain that is accessible to people in wheelchairs, ix. tactile signage for individuals with visual impairments to indicate washrooms, emergency exits, elevators, stairwells, etc, x. visitor parking with the required number of accessible parking spaces, xi. large assembly areas equipped with assistive listening systems. 	0	30	<p><u>30 points:</u> The Bidder's own workplace meets all of the 11 items listed in this Point Rated Criteria 16; <u>25 points:</u> The Bidder's own workplace meets 10 of the 11 items listed in this Point Rated Criteria 16; <u>20 points:</u> The Bidder's own workplace meets 8 of the 11 items listed in this Point Rated Criteria 16; <u>15 points:</u> The Bidder's own workplace meets 6 of the 11 items listed in this Point Rated Criteria 16; <u>10 points:</u> The Bidder's own workplace meets 4 of the 11 items listed in this Point Rated Criteria 16; <u>5 points:</u> The Bidder's own workplace meets 2 of the 11 items listed in this Point Rated Criteria 16; <u>0 points:</u> The Bidder's own workplace meets none of the 11 items listed in this Point Rated Criteria 16.</p>		
<u>TOTAL Min & Max Score</u>		65	420	<u>TOTAL Score by Evaluator</u>		

ATTACHMENT 1 TO PART 5 OF THE BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

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 full-time 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)

Solicitation No. - N° de l'invitation
9F054-190231/A
Client Ref. No. - N° de réf. du client
9F054-190231

Amd. No. - N° de la modif.
File No. - N° du dossier
MTB-0-43009

Buyer ID - Id de l'acheteur
mtb550
CCC No./N° CCC - FMS No./N° VME

ATTACHMENT 1 TO PART 7

TASK AUTHORIZATION FORM



Task Authorization Autorisation de tâche

Contract Number - Numéro du contrat

Contractor's Name and Address - Nom et l'adresse de l'entrepreneur	Task Authorization (TA) No. - N° de l'autorisation de tâche (AT)
	Title of the task, if applicable - Titre de la tâche, s'il y a lieu
	Total Estimated Cost of Task (Applicable taxes extra) Coût total estimatif de la tâche (Taxes applicables en sus) \$
Security Requirements: This task includes security requirements Exigences relatives à la sécurité : Cette tâche comprend des exigences relatives à la sécurité <input type="checkbox"/> No - Non <input type="checkbox"/> Yes - Oui If YES, refer to the Security Requirements Checklist (SRCL) included in the Contract Si OUI, voir la Liste de vérification des exigences relative à la sécurité (LVERS) dans le contrat ▶	

For Revision only - Aux fins de révision seulement

TA Revision Number, if applicable Numéro de révision de l'AT, s'il y a lieu	Total Estimated Cost of Task (Applicable taxes extra) before the revision Coût total estimatif de la tâche (Taxes applicables en sus) avant la révision \$	Increase or Decrease (Applicable taxes extra), as applicable Augmentation ou réduction (Taxes applicables en sus), s'il y a lieu \$
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Start of the Work for a TA : Work cannot commence until a TA has been authorized in accordance with the conditions of the contract.

Début des travaux pour l'AT : Les travaux ne peuvent pas commencer avant que l'AT soit autorisée conformément au contrat.

1. Required Work: - Travaux requis :

A.Task Description of the Work required - Description de tâche des travaux requis	See Attached - Ci-joint <input type="checkbox"/>
B. Basis of Payment - Base de paiement	See Attached - Ci-joint <input type="checkbox"/>
C. Cost of Task - Coût de la tâche	See Attached - Ci-joint <input type="checkbox"/>
D. Method of Payment - Méthode de paiement	See Attached - Ci-joint <input type="checkbox"/>

Contract Number - Numéro du contrat

2. Authorization(s) - Autorisation(s)

By signing this TA, the authorized client and (or) the PWGSC Contracting Authority certify(ies) that the content of this TA is in accordance with the conditions of the contract.

The client's authorization limit is identified in the contract. When the value of a TA and its revisions is in excess of this limit, the TA must be forwarded to the PWGSC Contracting Authority for authorization.

En apposant sa signature sur l'AT, le client autorisé et (ou) l'autorité contractante de TPSGC atteste(nt) que le contenu de cette AT respecte les conditions du contrat.

La limite d'autorisation du client est précisée dans le contrat. Lorsque la valeur de l'AT et ses révisions dépasse cette limite, l'AT doit être transmise à l'autorité contractante de TPSGC pour autorisation.

Name and title of authorized client - Nom et titre du client autorisé à signer

Signature

Date

PWGSC Contracting Authority - Autorité contractante de TPSGC

Signature

Date

3. Contractor's Signature - Signature de l'entrepreneur

Name and title of individual authorized - to sign for the Contractor
Nom et titre de la personne autorisée à signer au nom de l'entrepreneur

Signature

Date