



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

Competitive Projects—Call for Proposals – Component 1a

On behalf of

Department of National Defence



IDEaS IDEeS

INNOVATION FOR DEFENCE EXCELLENCE AND SECURITY **INNOVATION POUR LA DÉFENSE, L'EXCELLENCE ET LA SÉCURITÉ**

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PART 1—GENERAL INFORMATION

1.1 Summary

Public Works and Government Services Canada (PWGSC) is issuing this Call for Proposals (CFP) on behalf of the Department of National Defence (DND) with the responsibility of providing the knowledge and technological advantage needed to address Canada's defence and security interests.

The CFP is an invitation to Bidders to submit innovative science and technology (S&T) proposals leading to potential contract award and performance in support of Canada's defence and security interests.

More specifically, this CFP identifies S&T Challenges (see Part 1, Attachment 1) for which innovative solutions are sought that relate to the Innovation for Defence Excellence and Security (IDEaS) Program of DND.

1.2 Background

The Innovation for Defence Excellence and Security (IDEaS) Program is new and was introduced by Canada's defence policy "[Strong, Secure, Engaged](#)". The Program fosters a competitive environment and challenges bidders with diverse skills and expertise from a variety of domains to develop innovative S&T solutions to Canada's defence and security challenges. IDEaS aims to encourage and progress innovative solutions along a 9 level solution readiness level (SRL) S&T maturity Continuum as defined in Part 1, Attachment 2.

Under the Continuum, solutions may be developed and/or tested by Canada through a four component process summarized below and in Part 1, Attachment 3. There is an SRL entry level for each component.

Solutions from 1a that are successful and of interest to Canada may be completed contiguously and solely through Components 1b, 3 and 4 for the same or similar S&T Challenge. Suppliers may be invited to participate in Components 1b, 3 and 4 without being subject to a competitive process. Successful solutions from 1b may be funded outside of IDEaS up to SRL 9 through Component 2 only, summarized below and in Part 1, Attachment 3.

- **Component 1: Competitive Projects** (IDEaS Program funding, Procurement)
 - o **Component 1a** – Establish S&T Merit, Innovativeness & Impact
The objective of this Component is to establish the S&T merit, innovativeness and impact of a solution to address a specific S&T Challenge. Entry into this Component is for solutions within SRL 1-6 (inclusive). Bidders present their solution in a proposal that is submitted in response to a Call for Proposal (CFP). Bidders are also requested to outline their intention to participate in Component 1b; however, bidders are not required to participate in this or other Components. Proposals are evaluated and only solutions that meet the evaluation, selection criteria and all other requirements of the CFP may be recommended for Contract award. Funds are limited to a maximum of

\$200,000 (Applicable Taxes included) per contract for a maximum performance period of six months. The project will be assessed by Canada at one or more points of its progress for the purpose of Canada exercising Go/No Go decisions for the then balance of the project to proceed.

- **Key Program Aspects**

To progress solutions to a higher SRL from Component 1a, Canada intends to generally apply the following procedures for Components 1b, 2, 3 & 4:

- Suppliers may receive an invitation from PWGSC/DND to further their solution's SRL continuum and would be requested to submit a proposal.
- A non-competitive procurement process applies to solutions 1b, 2 and 4. Component 3 is a non-procurement process.
- Selection of solutions will be determined through use of same or similar technical evaluation criteria and strategic considerations selection criteria of those listed in Part 4, Attachment 1, Table 3 of the 1a CFP. All criteria aim to ensure that the solution is in line with the evolution of the technology under a given S&T Challenge. Other considerations may also arise such as security and Intellectual Property (IP). Details of all requirements will be indicated in the specific Component invitation.
- If a supplier chooses to participate in Component 2, the solution is exiting IDEaS and will be funded by a different source to advance the solution to a higher SRL.
- Decision for Canada to proceed with Component opportunities is the sole discretion of Canada and is not guaranteed. Each Component is subject to the conditions outlined in the specific Component opportunity, if and when the opportunities arise.
- The IDEaS Program is in its infancy and subject to change.

o **Component 1b – Further Develop Component 1a Solution**

The objective of this Component is to continue the S&T efforts of Component 1a solutions for the purpose of progressing the solution along the S&T maturity continuum to a higher SRL. Entry into this Component is for successfully completed Component 1a solutions that are promising to Canada. Around the conclusion of Component 1a, PWGSC may invite the suppliers of the successful solutions to propose the advancement of their solution. Funds are limited to a maximum of \$1,000,000 (Applicable Taxes included) per contract for a maximum performance period of one year. The project will be assessed by Canada at one or more points of its progress for the purpose of Canada exercising Go/No Go decisions for the then balance of the project to proceed.

- **Component 2: S&T Solution Advancement (non-IDEaS Program funding, Procurement)**

The objective of this Component is to continue the S&T efforts from Component 1b solutions to a higher SRL within a same or similar S&T Challenge to Component 1. Canada's organizational unit offering the opportunity is outside of the IDEaS Program funding and considers the successful Component 1b solution to be of interest to Canada. Funds are limited up to \$20M (Applicable Taxes included) per contract for a performance period commensurate with the intended effort necessary to advance the solution to be ready for operational readiness (SRL 9). Each solution may be assessed by Canada at one or more points of its progress for the purpose of Canada exercising Go/No Go decisions for the then balance of the project to proceed.

- **Component 3: Sandbox** (No DND funding; Non-Procurement)
This is a non-procurement Component. Funds are not payable to the supplier. The objective of this Component is to enable the solution to be tested or demonstrated in a suitable environment and to receive feedback from DND on its applicability. Entry into this Component is for solutions within SRL 5-6 (inclusive).
- **Component 4: Innovation Assessment and Implementation (IAI)** (IDEaS Program funding; Procurement)
The objective of this Component is for DND operators to assess a solution's effectiveness in a realistic setting. Entry into this Component is for solutions within SRL 7-8 (inclusive) and for the same or similar S&T Challenge of Component 1. The intention is for Canada to purchase or rent, up to a limited quantity of the solution/prototype(s) developed through Components 1 and/or 3 for the purpose of incorporating the results of field testing and to demonstrate that the solution is suitable for production or supply in quantity to acceptable quality standards. This excludes quantity production or supply to establish commercial viability or to recover research and development costs.

Total funds allocated to IAI are unknown at this time, but estimated up to \$5M (Applicable Taxes included). Each solution may be assessed by Canada at one or more points of its progress for the purpose of Canada exercising Go/No Go decisions for the then balance of the project to proceed.
- There may be IDEaS Elements of Sandbox and Innovation Assessment and Implementation (IAI) running independently outside of this CFP for same or similar S&T Challenges. If any supplier wishes to participate in these they must compete through the associated formal solicitation(s).

1.3 Procurement – This CFP

This CFP invites proposals for Component 1a only and involves a three-stage procurement process. Steps of action are summarized below for each stage of the procurement to better illustrate the overall process. Bidders are to refer to Parts 3 to 7 of this document for instruction.

Bidders are also requested to outline their intention to advance their solutions to Component 1b.

Stage 1: Proposal Submission

- Step 1: Bidder is to review the S&T Challenges and determine if he or she can address any of them with an innovation.
- Step 2: Bidder is to review the terms of the CFP including the requirements for submitting a proposal and determine its capability to submit a proposal; register with the online submission tool; prepare a proposal using the electronic Proposal Submission Form and submit the proposal on or before the bid closing date for the CFP.

Stage 2: Proposal Evaluation and Selection

- Step 3: DND, and other government departments (OGDs) where necessary, will evaluate the proposals against the requirements and evaluation criteria stated in the CFP. Proposal(s) having successfully responded to the evaluation criteria and other requirements of the CFP will be ranked by the scores received (highest to lowest) for consideration within Step 4.

- Step 4: DND may select for funding up to six proposals for each S&T Challenge. Selection will be in descending order, from highest to lowest score given to the proposal. Following the funding of the proposals, up to four more proposals may be selected for funding should funds become available.

Stage 3: Contracting

- Step 5: Bidders of the selected proposals will be invited to engage in contract negotiations with PWGSC.
- The ranking and selection of proposals for funding does not constitute a guarantee on the part of Canada that a contract will be awarded.

1.4 Maximum Funding

For Components 1a and 1b, several million dollars have been allocated to fund contracts. Maximum funds for individual contracts are as set out in section 1.2. All proposals must be in Canadian dollars.

For Components 1 (a and b), 2 and 4 for the S&T Challenges of this CFP, total funding is estimated at \$98M (Applicable Taxes included). Component 3 is non-procurement and therefore excluded from the estimate.

1.5 Canadian Content

This procurement is conditionally limited to Canadian goods and Canadian services (see Part 3.2).

1.6 Security Requirements

There will be no security requirements associated with the resulting contract(s) for Component 1a.

1.7 Conflict of Interest

A successful Bidder (the Contractor), its subcontractor(s) or any of their agent(s) directly or indirectly involved in the performance of the work and/or in the production of the deliverables under any resulting contract will not be precluded from bidding on any potential future CFP related to the production or exploitation of any concept or prototype developed or delivered.

1.8 Agreements

1.8.1 Comprehensive Land Claims Agreements (CLCA)

Depending on the proposal received, the region of delivery for the goods and/or services may be in an area subject to Comprehensive Land Claims Agreements (CLCAs). If this occurs, the procurement will be subject to the applicable CLCA.

1.8.2 Trade Agreements

The Canadian Free Trade Agreement (CFTA) applies to this procurement. The CFP process is organized in a manner consistent with the principles of the CFTA in terms of equal access, fairness, and transparency.

This procurement is excluded from the North American Free Trade Agreement (NAFTA) as per Annex 1001.1b-2 Research and Development, all classes, and excluded from the application of the World Trade Organization—Agreement on Government Procurement (WTO-AGP) under Appendix 1, Annex 4, as well as excluded from the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) as per Annex 19-5.

1.9 Contracting Authority

The Contracting Authority for this CFP is:

Kate Caves
Public Works and Government Services Canada
Acquisitions Branch
Defence Sciences Division
Telephone: 613 240-2069
Email address: TPSGC.PAIDEeSProjetsComp- APIDEaSCompProjects.PWGSC@tpsgc-pwgsc.gc.ca

All questions regarding this CFP must be addressed to the Contracting Authority.

1.10 Applicable Laws

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

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their proposal, 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.

PART 2—BIDDER INSTRUCTIONS

2.1 Terminology

In this document, terms identified below and their meaning referenced in the 2003 (2017-04-27) *Standard Instructions* are identified in the table below.

Term (in this document)	Term (2003 Standard Instructions)
Call for Proposals (CFP)	Solicitation or bid solicitation
Proposal	Bid

2.2 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in this CFP by number, date and title are set out in the [Standard Acquisition Clauses and Conditions \(SACC\) Manual](#) issued by PWGSC

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

The 2003 (2017-04-27) *Standard Instructions—Goods or Services—Competitive Requirements* are incorporated by reference into and form part of this CFP; some sections have been amended and are listed below.

Section 04—Definition of a Bidder is amended as follows:

Delete:

It does not include the parent, subsidiaries or other affiliates of the Bidder, or its subcontractors.

Section 05—Submission of Bids is amended as follows:

Paragraph (2) (d):

Delete:

The facsimile number and related instructions for bids transmitted by facsimile are provided in section 08.

Paragraph (4):

Delete:

Proposals will remain open for acceptance for a period of not less than 60 days from the closing date of the proposal solicitation unless specified otherwise in the bid solicitation.

Insert:

Proposals will remain open for acceptance for nine months from the date of proposal submission. The Contracting Authority may modify this period by sending written notice to the Bidder following Canada's completion (partial or entire) of Stage 2 and at any other time.

Section 08—Transmission by facsimile and Section 09—Customs Clearance are amended as follows:

Delete:

The following sections are deleted in their entirety:

- Section 08 Transmission by Facsimile
 - Section 09 Customs Clearance
-

Section 14—Price Justification is amended as follows:

Delete:

In the event that the Bidder's proposal is the sole responsive proposal received, the Bidders must provide, on Canada's request, one or more of the following price justification:

Insert:

For all proposals eligible for Contract award, the Bidders must provide, on Canada's request, one or more of the following price justification.

2.3 Bidders' Conference

A bidders' conference will be held in Ottawa, tentatively scheduled for April 25th, 2018. The conference will also be available via webcasting for bidders not able to attend in person. More information on the confirmed date and the webcasting will be made available prior to the conference on <https://buyandsell.gc.ca>.

The scope of this CFP will be reviewed during the conference and questions will be answered. It is recommended that bidders who intend to submit a bid attend or send a representative.

Bidders are requested to communicate with the Contracting Authority before the conference to confirm attendance. Bidders should provide, in writing, to the Contracting Authority, the names of the person(s) who will be attending, their title/role in the Bidder's organization, and a list of issues they wish to table at least five working days before the scheduled conference.

Any clarifications or changes to the bid solicitation resulting from the bidders' conference will be included as an amendment to the bid solicitation. Bidders who do not attend will not be precluded from submitting a bid.

2.4 Enquiries about the CFP

All enquiries must be submitted in writing to the Contracting Authority not later than ten calendar days before the CFP's closing date. Enquiries received after that time may not be answered.

Bidders must reference as accurately as possible the numbered item of this CFP 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 Bidders 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.

PART 3—PROPOSAL PREPARATION INSTRUCTIONS

3.1 Who May Apply

This CFP is open to individuals, academia and industry. The Bidder will assume the responsibility of submitting the proposal and serving as the point of contact for the duration of the CFP. Bidders will be required to obtain a Procurement Business Number (see Part 5.2.9).

3.2 Canadian Content

This procurement requires a minimum of 50 percent of Canadian content—goods and services. Bidders must provide a valid Canadian Content certification with the proposal (see Part 5).

3.3 Electronic Proposal Submission Form

3.3.1 Bidders must submit their proposal using the electronic Proposal Submission Form at <https://ideas-cp.fluidreview.com/?l=en>. In order to complete and submit a proposal, Bidders must first register with the online submission system and obtain a username and password.

3.3.2 When a proposal is successfully submitted, an automated email is sent to the Bidder. This email serves as confirmation of receipt.

3.3.3 If a large number of Bidders access the web-based system at the same time, the electronic submission of proposals may be delayed. Bidders are solely responsible for ensuring their proposal is submitted properly in its entirety and on time.

3.3.4 Should there be technical difficulties accessing or using the web-based system, Bidders must use the contact information located on the website. Technical assistance is restricted to issues associated with mechanics of the online system. The personnel providing technical assistance is not associated with the CFP and are not in a position to comment on or provide interpretation on the CFP.

3.3.5 All non-technical assistance for proposal submission is to be directed to the Contracting Authority.

3.3.6 Classified proposals will not be accepted for this CFP.

3.4 Proposal Preparation

Mandatory and Point Rated Evaluation Criteria

3.4.1 The mandatory and point rated criteria are detailed in Part 4, Attachment 1. The criteria are also included in the electronic Proposal Submission Form. Bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe, in a thorough, concise and clear manner, their approach for carrying out the work while respecting the allotted word count for each criterion.

Statement of Work and Cost Proposal

3.4.2 Bidders must complete the Statement of Work (SOW) and Cost Proposal set out in the electronic Proposal Submission Form. Responses provided in the electronic Proposal Submission Form will form the Bidder's SOW and Cost proposal.

3.4.3 All prices identified in the SOW must be in Canadian dollars. The prices submitted with the proposal must be in accordance with the [PWGSC Contract Cost Principles 1031-2](#). For academic institutions, prices must be in accordance with 10.40 of the *Supply Manual* (see: <https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/10/40>). The Bidder must also provide a Price Certification as set out in Part 5.

3.4.4 Requests for exchange rate fluctuation risk mitigation are not permitted as per [C3011T \(2013-11-06\) Exchange Rate Fluctuation](#)

3.5 Eligible Costs

Funds can only be used for incremental resourcing costs associated with delivering a proposed solution—for example, material and supplies, equipment rentals, subcontractors, casual or permanent employees (incremental labour costs for indeterminate employees at the federal level of the government in Canada cannot be included). Therefore, the funds can only be used for expenditures that are not amortized.

Travel and living expenses must be identified and compliant with the [National Joint Council Travel Directive](#). Expenses are to be at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Directive and with the other provisions of the Directive referring to “travelers”, rather than those referring to “employees”.

Travel justifications must be provided in Part 4, Attachment 1.

3.6 Intellectual Property

The Bidder must certify that it owns all relevant background Intellectual Property (IP) requisite to proceed with the work as defined in the SOW. (See Part 5)

The default position of Canada is to allow contractors to retain the IP rights with a licence granted to Canada for IP rights, which would include the right to use and have used the IP for Canada's activities. More information on IP is available from the following sources and, in particular, the licencing provisions are in the General Conditions 2040 30:

- Definition of IP under SACC Manual issued by PWGSC, found at: <https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/3/95>

- General Conditions 2040 30 (2016-04-04) Licences to Intellectual Property Rights in Foreground and Background Information found at: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/3/2040/17#licenses-to-intellectual-property-rights-in-foreground-and-background-information>.
- Policy on Title to Intellectual Property Arising under Crown Procurement Contracts, found at: <http://www.ic.gc.ca/eic/site/068.nsf/eng/00005.html>

3.7 Component 1b Interest

Suppliers submitting proposals for Component 1a may be interested in participating in Component 1b as outlined in Part 1.2 of this CFP. If interested, Bidders should complete the section “Solution Progression to Component 1b” in the Statement of Work (Annex A) under article D of section 2 “Project Description.”

3.8 Component 1b, 2, 3, 4 Advancement within the SRL Continuum

Suppliers of successful solutions from Component 1a may be invited to participate in Component 1b. Suppliers of successful solutions from Component 1b may then be invited to participate in Component 2 and/or Component 3 and/or Component 4 at a later undetermined date.

3.9 Completing the Statement of Work - Cost Proposal and Cost Proposal Breakdown

Annex A and Attachment 3 to Part 4 will be the SOW & Cost and the Cost Proposal Breakdown, respectively, once completed. Sections and elements of these documents are to be completed by the Bidder via the electronic proposal submission form following the instructions therein. Certain elements are already populated by Canada and are not to be changed by the Bidder. Following contract award (if awarded), the terms “bid” and “bidder” may be changed to “Contract” and “Contractor” and if not changed will be interpreted to mean, instead, “Contract” and “Contractor” unless otherwise noted. However, this does not change the requirement for the Bidders to complete and submit the information with the bid.

3.10 Certifications

Required certifications and relevant additional information are identified in Part 5.

PART 4—EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- 4.1.1 Proposals will be assessed in accordance with the entire requirement of this CFP including the technical and strategic considerations criteria and financial evaluation criteria.
- 4.1.2 An evaluation team composed of representatives of Canada will evaluate the proposals. If required, Canada may use external Subject Matter Experts (SMEs) to evaluate any proposal. External SMEs will be required to confirm they are not in a conflict of interest, and sign a non-disclosure agreement.
- 4.1.3 For each S&T Challenge, the evaluation team will determine first if there are two or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and fewer than two responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.
- 4.1.4 In conducting its evaluation of the proposals, Canada may, but will have no obligation to verify any information provided by Bidders through independent research, use of any government resources or by contacting third parties.

4.2 Evaluation Criteria

4.2.1 Mandatory Technical, Strategic Considerations and Financial Criteria

Proposals must meet all mandatory criteria identified in Part 4, Attachment 1. Proposals that fail to meet all mandatory criteria will be declared non-responsive (non-compliant).

4.2.2 Point Rated Evaluation Criteria

Each proposal that meets all of the mandatory criteria will be evaluated and scored in accordance with the point rated evaluation criteria in Part 4, Attachment 1, Table 2. Proposals must obtain a minimum score of 40 to be declared responsive.

4.2.3 Strategic Considerations Criteria

Each proposal that meets the minimum required score of 40 points within 4.2.2 will be evaluated and scored in accordance with the strategic considerations criteria in Part 4, Attachment 1, Table 3.

4.2.4 Bidders are to complete all the identified elements in the SOW & Cost, Annex A and the Cost Proposal Breakdown, Attachment 3 to Part 4.

4.2.5 Classified bids will not be accepted and therefore will not be evaluated. The bid may need to be opened to determine if it is classified.

4.3 Ranking Proposals

Proposals that satisfy all of the mandatory, point rated and financial criteria in sections 4.2.1 to 4.2.4 as well as meet all other requirements of the CFP will be ranked in the order of highest to lowest score per S&T Challenge. A total of 85 points is possible and a minimum of 40 points is required. All ranked proposals will be considered by the Senior Management Funding Oversight team for proposal selection purposes. All proposals not meeting the minimum 40 points will be non-responsive and will not be further considered.

4.4 Proposal Selection

For each S&T Challenge, the Senior Management Funding Oversight team (comprised of the Assistant Deputy Minister of S&T/DRDC/DND and the Director General of IDEaS/S&T/DRDC/DND) will select up to six proposals for funding (via recommendation for contract award) starting with the highest ranked proposal and following a descending order (highest to lowest). Selection is subject to available funding. After funding of up to six highest ranked proposals if additional funding becomes available at a later date up to four additional highest ranked proposals may be funded starting with the 7th.

All other responsive proposals identified within section 4.3 will remain on the ranked proposal list and up to ten proposals may be considered for funding (via contract award) if future funding becomes available prior to the expiry of the validity period of the proposal. The Senior Management Funding Oversight team will be responsible for funding allocation and approval.

4.5 Debriefing

Bidders may request a debriefing on the results of the CFP process. Such a request is to be made to the Contracting Authority within 15 working days after the receipt of the results of the CFP. The debriefing may be in writing, by telephone, or in person.

4.6 Contracting Process

Recommendation for contract award will be determined based on the available budget and the success in completing the following steps.

4.6.1 Financial Capability and Certifications

The Contracting Authority may undertake the following:

- a) obtain financial information to verify the Bidder's capacity to undertake the work identified in the SOW;
- b) request certifications and other information before the contract award; and
- c) negotiations as set out in Part 4.6.2.

If a Bidder fails to demonstrate adequate financial resources to complete the work, or fails to provide the certifications and additional information, the proposal will be considered non-responsive and given no further consideration.

4.6.2 Contract Negotiation

The intention is to involve minimal contract negotiations. The Contracting Authority may initiate the negotiations for the following, as applicable:

- a) contract terms and conditions;
- b) pricing and cost breakdown;
- c) the provision by the Bidder of price support to substantiate the costs to Canada; and
- d) Bidders must provide information requested by PWGSC within two business days of receiving the request. Failure to achieve consensus on any aspect of the negotiations will result in the proposal to be set aside and not given any further consideration.

4.6.3 Contract Award

Upon successful completion of contract negotiations, PWGSC may internally recommend, for approval, contract(s) to be awarded.

4.7 Human and Animal Ethics

A proposal that includes human subjects, human tissues, laboratory animals, or animal tissues, must not proceed without prior approval of the project team's Human Subjects Research Ethics Committee or the institutional Animal Care Committee and must not be conducted in contravention of the respective Committee's conditions of approval.

PART 5—CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the certifications and relevant 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 proposal non-responsive, or will declare a contractor in default if any certification made is found to be untrue, whether made knowingly or unknowingly, during the proposal evaluation period or during the contract period.

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

5.1 Certifications Required with the Proposal

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

5.1.1 Canadian Content Certification

This procurement is conditionally limited to Canadian goods and Canadian services.

Subject to the evaluation procedures contained in the CFP, Bidders acknowledge that only bids with a certification that the goods and services offered are Canadian goods and Canadian services, as defined in clause A3050T as modified below, may be considered.

Failure to provide this certification completed with the bid will result in the goods and services offered being treated as non-Canadian goods and non-Canadian services.

The Bidder certifies that:

() a minimum of 50 percent of the total bid price consists of Canadian goods and Canadian services as defined in paragraph 5 of clause A3050T, as amended herein.

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6. (9), Example 2, of the *Supply Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/annex/3/6>).

5.1.2. SACC Manual clause A3050T (2014-11-27), Canadian Content Definition, is amended as follows:

DELETE: 80 percent

INSERT: 50 percent

5.1.3 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 website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications and Additional Information Precedent to Contract Award

The certifications and additional information listed below should be submitted with the proposal but may be submitted afterwards. If any of these required certifications or additional information are not completed and submitted as requested, the Contracting Authority will inform the Bidders 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 proposal non-responsive.

5.2.1 Integrity Provisions—Required Documentation

In accordance with the Ineligibility and Suspension Policy (<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.

Integrity Provisions—Declaration of Convicted Offences

Pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide a completed Declaration Form (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a joint venture, is not named on the Federal Contractors Program (FCP) for employment equity FCP Limited Eligibility to Bid list available at the bottom of the page of the Employment and Social Development Canada (ESDC)—Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity.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 if the entity is a joint venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

5.2.3 Federal Contractors Program for Employment Equity – Certification

A Bidder's signature constitutes a confirmation to the effect that:

"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 the website: <https://www.canada.ca/en/employment-social-development/programs/employment-equity.html>

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 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

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 Program.

OR

- A5.2. The Bidder certifies having submitted the [Agreement to Implement Employment Equity \(LAB1168\)](#) to ESDC— Labour Program. As this is a condition to contract awards, 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 [FCP for Employment Equity](#). (Refer to the joint venture section of the Standard Instructions.)

5.2.4 Former Public Servant Certification

Contracts awarded to former public servants (FPSs) 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 the contract award. If the answer to the questions and, as applicable, the information required has 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.

5.2.5 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; and
- 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 FPS 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.

5.2.6 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) names 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) rates 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.

5.2.7 Controlled Goods

Will the resulting contract involve controlled goods?

YES () NO ()

For further information on the Controlled Goods Program, visit the website: <http://ssi-iss.tpsgc-pwgsc.gc.ca/dmc-cgd/index-eng.html>.

5.2.8 Status and Availability of Resources

The Bidder certifies that, should he or she be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that he or she has the permission from that individual to propose his/her services in relation to the work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

5.2.9 Procurement Business Number

Suppliers are required to have a Procurement Business Number (PBN) prior to the contract award in order to receive a PWGSC contract. Suppliers may register for a PBN online at Supplier Registration Information (<https://srisupplier.contractsCanada.gc.ca>). For non-Internet registration, suppliers may contact the InfoLine at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Agents.

PBN: _____

5.2.10 Rate or Price Certification

The Bidder is requested to provide one of the following certifications, as applicable, with its Cost Proposal:

_____ The Bidder certifies that the price proposed is based on costs computed in accordance with Contract Cost Principles 1031-2, and includes an estimated amount of profit of _____.

OR

_____ The Bidder certifies that the price proposed

- a) is not in excess of the lowest price charged anyone else, including the Bidder's most favoured customer, for the like quality and quantity of the goods, services or both;
- b) does not include an element of profit on the sale in excess of that normally obtained by the Bidder on the sale of goods, services or both of like quality and quantity, and
- c) does not include any provision for discounts to selling agents.

OR

_____ The Bidder certifies that the price proposed is based on costs computed in accordance with 10.40 (a) to (i) of the *Supply Manual* PWGSC, on the pricing of research, and development contracts with universities and colleges.

5.2.11 Intellectual Property

(Reference: Part 3, section 3.6 "Intellectual Property").

The Bidder certifies that it owns all relevant background Intellectual Property (IP) requisite to proceed with the work as defined in the SOW.

5.2.12 Applicable Laws

(Reference: Part 1, article 1.10 "Applicable Laws")

The Bidder is to indicate the choice of the Canadian province/territory below if choosing other than Ontario.

“The laws in force in the Canadian province/territory of _____ will apply instead of Ontario.”

5.2.13 Certification Acknowledgment

The Bidder certifies that the information submitted herein, and the information submitted in its bid, is accurate and complete.

The Bidder has read, understands and acknowledges the instructions and the clauses and conditions contained in all parts of the solicitation document.

By signing below the signatory certifies the above and that he or she is an authorized signing officer of the Bidder.

Print Name:

Signature:

Date:

5.2.14 Terms of Payment

Canada requests that Bidders complete option 1 or 2 below:

1. Electronic Payment Instruments will be accepted for payment of invoices.

The following Electronic Payment Instrument(s) are accepted:

- 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)
-

2. Electronic Payment Instruments will not be accepted for payment of invoices.

The Bidder is not obligated to accept payment by Electronic Payment Instruments.

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

PART 6—SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

Contractors may be required to possess valid security clearances, depending on the nature of the project, in order to have access to information and/or sites necessary for its execution. DND will determine the level of security required and will be responsible for establishing a Security Requirements Check List (SRCL) and associated clauses.

Bidders are reminded to obtain the required security clearance promptly. Any delay in the award of a contract to allow the successful Bidder time to obtain the required clearance will be at the discretion of the Contracting Authority.

For additional information on security requirements, bidders should refer to the Industrial Security Program—visit the website: <http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>.

6.2 Controlled Goods Program—Bid

SACC Manual clause A9130T (2014-11-27), Controlled Goods Program

PART 7—RESULTING CONTRACT CLAUSES

The instructions, clauses and conditions identified below will form part of any resulting Contract. The instructions, clauses and conditions do not represent a complete list. PWGSC may update, add or delete, as applicable, the standard terms and conditions contained herein.

7.1 Statement of Work

The Contractor must perform the work in accordance with the SOW at Annex A.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *SACC Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by PWGSC.

7.2.1 General Conditions

2040 (2016-04-04), General Conditions—Research & Development, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

4001 (2015-04-01), Hardware Purchase, Lease and Maintenance;
4002 (2010-08-16), Software Development or Modification Services;
4003 (2010-08-16), Licensed Software;
4004 (2013-04-25), Maintenance and Support Services for Licensed Software; and
4008 (2008-12-12), Personal Information

7.3 Security Requirement

The following security requirement (SRCL and related clauses) applies to and forms part of the Contract.

To be determined (TBD) or no security requirement applies.

7.4 Term of Contract

The work is to be completed by *TBD*.

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

TBD for each individual contract

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 Technical Authority

The Technical Authority for the Contract is:

TBD for each individual contract

The Technical Authority is the representative of the department or agency for whom the work is being carried out under the Contract and is responsible for all matters concerning the technical content of the work under the Contract. Technical matters may be discussed with the Technical Authority; however, the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

7.5.3 Procurement Authority

The Procurement Authority for the Contract is:

TBD for each individual contract

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

7.5.4 Contractor's Representative

TBD for each individual contract

7.6 Proactive Disclosure of Contracts with Former Public Servants

SACC Manual clause A3025C (2013-03-21)

7.7 Payment

7.7.1 Basis of Payment—Firm Price

SACC Manual clause C0207C (2013-04-25)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price *as specified in Annex A for a cost of \$_(to be completed by Canada at contract award)*. Customs duties are included and Applicable Taxes are extra.

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

7.7.2 Method of Payment

7.7.2.1 Milestone Payments

Canada will make milestone payments in accordance with the Work Plan, Deliverables and Payment table detailed in the SOW (Annex A) and the payment provisions of the Contract if:

- a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111 (<http://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) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- c) all work associated with the milestone has been completed and accepted by Canada.

7.7.3 SACC Manual Clauses

A9117C (2007-11-30), T1204— Direct Request by Customer Department

7.8 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 _____;
- c) the general conditions 2040 (2016-04-04);
- d) Annex A, Statement of Work and Cost;
- e) Annex B, Milestone 1 and Milestone 2 Report Template(s);
- f) Annex __, Security Requirements Check List; *if applicable*
- g) Annex __, Insurance - Specific Requirements; *if applicable*; and
- h) The Contractor's proposal, dated *_TBD_*, as amended (if applicable)

7.9 Discretionary Audit

One of the following SACC Manual clauses will apply.

- C0101C (2010-01-11), Discretionary Audit—Non-commercial Goods and/or Services;
- C0102C (2010-01-11), Discretionary Audit—Canadian Universities and Colleges; or
- C0705C (2010-01-11), Discretionary Audit.

7.10 Invoicing Instructions

The Contractor must submit a claim for progress payment using form PWGSC-TPSGC 1111 (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>), 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) the description and value of the milestone claimed as detailed in the Contract.

First claim must be supported by a copy of the Interim Progress Report.

Second claim must be supported by:

- a) a copy of the Final Report; and,
- b) if applicable as set out in Annex A, the Solution Progression to Component 1b overview.

The Contractor must prepare and certify an original claim on Form PWGSC-TPSGC 1111, and forward it to the Contracting Authority for certification, in an electronic format, to the electronic mail address identified under section entitled “Authorities” of the Contract. Portable Document Format (.pdf) format is acceptable. The Contracting Authority will then forward the certified claim, in an electronic format, to the Technical Authority for appropriate certification after inspection and acceptance of the work, and onward submission to the Payment Office for the remaining certification and payment will take place.

The Contractor must not submit claims until all work identified in this claim is completed.

7.11 Certifications

7.11.1 Compliance

Compliance with the certifications (attestations) and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract.

7.11.2 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.

7.11.3 SACC Manual Clauses

A3060C (2008-05-12), Canadian Content Certification

7.12 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in *(to be inserted at the contract award)*.

7.13 Insurance

SACC Manual clause G1005C (2016-01-28), Insurance - No Specific Requirement

OR

Insurance - Specific Requirements

(Note to Bidders: the selected proposal(s) may necessitate specific insurance requirements in lieu of or in addition to G1005C. This will be addressed with the selected Bidder prior to Contract award and may be a condition of contract award. If not applicable, this clause will be deleted.)

The Contractor must comply with the insurance requirements specified in Annex (to be completed by PSPC if applicable). The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an insurer with an A.M. Best Rating no less than "A-." The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

7.14 Controlled Goods Program

7.14.1 *SACC Manual* clause A9131C (2014-11-27), Controlled Goods Program—Contract

7.14.2 *SACC Manual* clause B4060C (2011-05-16), Controlled Goods

7.15 Canadian Armed Forces Site Regulations

For the work to be performed at a Canadian Armed Forces site, the Contractor must comply with all standing orders or other regulations, instructions, and directives in force on the site where the work is performed.

7.16 Go/No Go—Work Authorization

Following the Contractor's completion of Milestone 1 and the Technical Authority's receipt of the Interim Progress Report, and despite any other condition of the Contract, Canada will review and evaluate the Work and decide, at its discretion, whether to continue with the Work.

If Canada decides to continue with Work, the Contracting Authority will advise the Contractor in writing to commence work on Milestone 2. The Contractor must immediately comply with the notice.

If Canada decides not to proceed with the work, the Contracting Authority will advise the Contractor in writing of the decision and the Contract will be considered completed at no further costs to Canada. In no event will the Contractor be paid for any cost incurred for unauthorized work.

7.17 Applicable Foreign Nationals (Canadian Contractor *OR* Foreign Contractor)

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

OR

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

7.18 Successful Solution

Following completion of the solution through performance of Milestones 1 and 2, the solution will be assessed for the purpose of establishing the success or non-success of the solution in

order to be considered for participation in Component 1b. The following assessment will be used.

A successful solution is defined by:

1. The receipt and acceptance of Milestone 2 deliverable, Final Report, by the Technical Authority;
2. The qualifiers found within Annex B – Milestone 1 and Milestone 2 Report Template(s): scientific or technical merit, novelty/innovative, impact, feasibility and approach and cost performance which will be used to assess the success of the solution, to Canada’s discretion.

If successful, PWGSC may invite the Contractor to submit a proposal for the purpose of advancing the SRL of the solution through Component 1b. The proposal will be evaluated against criteria that are same or similar to those in Part 4, Attachment 1, Tables 2 and 3, including costing requirements of the Call for Proposal (CFP) no. W7714-186568.

7.19 Joint Venture

Note: This section will be deleted if the Bidder awarded the Contract is not a joint venture. If the Contractor is a joint venture, this clause will be completed with information provided in the bid.

7.19.1 The Contractor confirms that the name of the joint venture is _____ and that it is comprised of the following members: *[list all the joint venture members named in the Contractor’s original bid]*.

7.19.2 With respect to the relationship between the members of the joint venture Contractor, each member agrees, represents and warrants (as applicable) that:

- i. _____ has been appointed as the “representative member” of the joint venture Contractor and has fully authority to act as agent for each member regarding all matters relating to the Contract;
- ii. by giving notice to the representative member, Canada will be considered to have given notice to all the members of the joint venture Contractor; and
- iii. all payments made by Canada to the representative member will act as a release by all the members.

7.19.3 All the members agree that Canada may terminate the Contract in its discretion if there is a dispute among the members that, in Canada’s opinion, affect the performance of the work in any way.

7.19.4 All the members are jointly and severally, or solitarily, liable for the performance of the entire Contract.

7.19.5 The Contractor acknowledges that any change in the membership of the joint venture (i.e., a change in the number of members or the substitution of another legal entity for an existing member) constitutes an assignment and is subject to the assignment provisions of the General Conditions.

7.19.6 The Contractor acknowledges that all security and controlled goods requirements in the Contract, if any, apply to each member of the joint venture Contractor.

Part 1, Attachment 1—S&T Challenges

1) Understanding and addressing Post-Traumatic Stress Disorder (PTSD)

Challenge Statement

The Department of National Defence (DND) requires novel tools and methods to assess, address and treat PTSD resulting from defence and security operations. This includes the integrated dimensions of diagnosis, prevention, training, education, resilience, and moral injury treatment.

Background and Context

The Government of Canada (GoC) is committed to supporting ill and injured Canadian Armed Forces (CAF) members. In that context, mental health and PTSD remain primary concerns for the Chief of Defence Staff and the Surgeon General. Although advances have been made in understanding PTSD on a number of research fronts, the CAF requires comprehensive and multidisciplinary approaches to enable significant advances in the near and long term.

Outcomes and Considerations

Examples of significant outcomes of this comprehensive approach include but are not limited to:

- the development of new tools and methods for the diagnosis of PTSD,
- advances in brain scanning/imaging,
- new programs to educate and inform CAF members and their family from the early recruits to senior officers,
- building training and resiliency programs to prevent operational stress injuries before they occur, and,
- novel and efficient methods and programs to treat CAF members and public safety personnel who develop stress injuries or suffer from other brain injuries or trauma.

2) Recruit, retain, and reach 25% female representation by 2026

Challenge Statement

The Department of National Defence (DND) needs to develop recommendations on how the Canadian Armed Forces (CAF) can increase the recruitment and retention of women, including in non-traditional occupations in which women are under-represented.

Background and Context

The CAF have made a commitment to recruit and retain women in order to achieve 25% female representation by 2026. However, the level of interest among Canadian women in military employment makes this a significant challenge. Extensive CAF research on the recruitment and employment of women has identified a number of real and perceived barriers for women to serve in the military. These barriers include, but are not limited to, concerns about work-life balance,

separation from friends and family, potential marginalization in a male-dominated work environment, and the perception that it is not possible to pursue a preferred career field in the military.

Currently, 50% of women in the CAF Regular Force are found in eight occupations (i.e. Human Resources Administrator, Supply Technician, Logistics, Financial Services Administrator, Medical Technician, Cook, Nursing, and Mobile Support Equipment Operator). However, these eight occupations make up only 18% of the CAF population. Increasing growth in the representation of women in the CAF will require attracting more women to a wider range of occupations. How can the CAF achieve this? In the Canadian society, occupations are gender-related with clear patterns of male and female representation, as noted in the 2017 Statistics Canada report, “Women and Paid Work.” Thus, this challenge is not unique to the CAF, but it is certainly exacerbated by the nature of military service.

Outcomes and Considerations

The desired outcome is an innovative approach for recruiting and retaining women into non-traditional CAF occupations, as well as recommend approaches best suited to the unique context of the CAF. These recommendations must build upon research across a broad range of organizational types (i.e. private, public, non-profit, other). Novel methodologies and tools for the interest, recruitment, and retention of women are also sought, as are recommendations on how the CAF can address and change real and perceived barriers to female recruitment and retention.

3) Cognitive Performance Enhancement

Challenge Statement

Canadian Armed Forces (CAF) personnel need to process huge volume of information presented by complex information environments, often under stressful conditions. Therefore, the Department of National Defence (DND) requires the means to support CAF personnel in their use of at least one of the following: augmented reality environments, advanced interactive visualization, or enhanced vision (including extensions of the visible spectrum).

Background and Context

Every individual has a limited capacity to understand their environment. CAF personnel are expected on a routine basis to deal with information environments which are extraordinarily complex, or which exceed human sensory capabilities.

DND seeks ways to enhance cognitive capabilities to help CAF personnel in the completion of complex tasks requiring extended cognitive abilities. The approach need not be tied to specific means. Rather it must focus on the goal of improvement of human cognitive capabilities, and the measurement of those improvements in terms of task performance, dynamic workload, and memory in a real-world setting. The approach may employ technological adjuncts, including the smart use of compact computational devices, ubiquitous pervasive computing (ubicomp), or portable schemes for augmented reality, applications to the problems of enhanced wayfinding for the individual, and

enhanced vision (including extension of the perceivable spectrum). The human factors of large database visualization are especially important.

Outcomes and Considerations

The desired outcome is a demonstration of the support of cognitive capabilities in human comprehension of unique information environments. Such support will be based on approaches such as appreciation of realistic augmented reality environments, interactive visualization of massive databases, perception of the results of broad-spectrum image fusion, or enhanced wayfinding ability with sharpened situational awareness. Engineering development of such environments is not the purpose of this effort. Still, the information environment for the demonstration should be as realistic and operationally relevant as possible. Outcomes will be as follows:

- 1) The cognitive abilities to be enhanced (i.e., short-term visual memory, span of logical reasoning) will be specified and their relevance to environmental tasks will be described in detail.
- 2) The improvement of these specific cognitive tasks will be demonstrated in realistic (near-real-world) scenarios.
- 3) The correlation between cognitive measures and task performance will be assessed.
- 4) The persistence and retention of these changes will be assessed after treatment, in terms of weeks and months. The use of effects which produce a saving in capacity over time is preferred to manipulations which require prolonged or continuous treatment.

The improvement of these specific cognitive tasks must be demonstrated in realistic (near-real-world) tasks that capture some of the conditions which prevail in military operations. These conditions include high workload, short deadlines, austere physical environments, and the need to ensure information security. The realism of the environment, whether a physical environment or an information environment, is of prime importance.

This proposal is agnostic to the technology to be applied. The research must follow Tri-Council standards of ethics.

4) Predicting and Optimizing Personnel Performance

Challenge Statement

The Department of National Defence (DND) is looking for novel concepts and technologies to facilitate prediction of individuals' ability in the areas of athletics, physical strength, mental strength and resilience, as well as cognitive skills. DND is also looking for means of achieving the predicted peak performance in individuals.

Background and Context

As the physical, mental, and cognitive demands on the Canadian Armed Forces (CAF) and security services personnel increase, there is a need to ensure that they are best equipped both mentally and physically to handle any situations that may arise. This includes maintaining readiness, and improving

agility of CAF and security personnel, facilitating their ability to respond and adapt quickly to ever-changing situations under less-than-ideal conditions.

Outcomes and Considerations

The desired outcomes are threefold:

- 1) demonstrate the capability to assess and understand the current state of an individual's athletic, physical, mental (psychological), and cognitive skills or abilities against established benchmarks;
- 2) develop a capability to predict the peak potential of those traits for an individual;
- 3) develop concepts or technologies that would be used to optimize the individual's skills and abilities to reach their peak potential without the use of external augmentation/aids (e.g., exoskeletons).

These capabilities, concepts, and technologies must be safe and ethical, without any adverse effects on the individual. Concepts and technologies may include, but are not limited to:

- 1) Mental and cognitive training,
- 2) Psychometric testing,
- 3) Therapeutic techniques,
- 4) Nutrition,
- 5) Physical fitness assessments and
- 6) Physical training.

Relevant gender-based analysis (GBA+) factors must also be addressed.

5) Human Performance in Extreme Climatic Environments

Challenge Statement

The Department of National Defence (DND) seeks the means to enable human operators to perform tasks in extreme conditions including cold or hot and humid/dry environments, for extended periods interspersed by intense activity and inactivity. Manual dexterity issues in cold environments and mitigating thermal strain in hot/humid environments should be addressed. DND seeks innovative solutions in both physical and psychological conditioning aspects.

Background and Context

The Canadian Armed Forces (CAF) are developing concepts and strategies for future ground combat operations in the 2025–2040 time frame that will require highly capable and dispersed units to achieve a common objective. Advancements in domains such as textiles, portable power sources, mobile computing, and data fusion technologies may converge to allow enhanced protection for soldiers operating in long-duration isolated and autonomous units in very austere environments. The ability for military units to operate without resupply opportunities will require high calorie rations for physically demanding operations to ensure adequate muscular fuel and restoration after intense physical activity.

Outcomes & Considerations

The expected outcomes may include, but not be limited to, solutions that:

- aid soldiers in maintaining physical performance and/or fortify energy reserves in hot and cold, and/or for autonomous long-duration missions;
- enhance adaptive physiological responses to physical training and/or to mitigate negative physiological responses to harsh environment exposure;
- allow continuous and unobtrusive physiological monitoring;
- include pre-deployment acclimation strategies and techniques for austere environments; and/or
- respect all ethical standards.

Solutions must also consider relevant gender-based analysis (GBA+) factors.

6) Detection and Classification of Objects of Interest

Challenge Statement

The Department of National Defence (DND) is looking for novel concepts, approaches, techniques and technologies to enable and augment the ability of the Canadian Armed Forces (CAF) and security personnel to:

- detect, recognize, and identify persons or objects of interest in a physical environment, and/or
- track identified persons and objects of interest using seamless information sharing across a decision network.

Of particular interest are methods supporting the soldier or emergency responder to:

- minimize or manage cognitive load;
- support real-time identification and tracking of objects for timely decision-making;
- leverage and fuse multiple sensor and data sources;
- enable operations in complex environments including urban settings with the presence of cooperative and non-cooperative targets (i.e. disguised, camouflaged, or concealed); and
- differentiate between combatants and non-combatants.

Background and Context

CAF and security personnel must operate in complex and dynamic environments, and in the presence of physical threats while maintaining decision advantage. This challenge and capability solution must be geared toward the preservation of soldier safety in operations, the achievement of threat identification and possible avoidance, the minimization of collateral damages, and the achievement of improved speed, accuracy, confidence, assurance, and precision of impact as part of the operation's decision-action cycle. It is also intended to improve individual and common situational awareness and understanding for mission success in both domestic and expeditionary operations.

Outcomes and Considerations

Desired outcomes of this effort will improve situational awareness and understanding, and support decision making by:

- 1) identification and tracking of objects/person of interest in real time;
- 2) successful cross-cueing of information from multiple sensors;
- 3) the ability to coordinate and hand-off to partners who are conducting follow-on actions;
- 4) efficient use of resources, and low error rates (i.e. false positives, false negatives); and
- 5) seamless interoperability between operators and links to higher command levels.

This challenge applies to day and night situations, as well as in the presence of adverse weather conditions and noise.

Proposals should address privacy and ethical concerns.

For this challenge, DND is not interested in the broader challenges of social media analytics or full-motion video (FMV) analysis and associated automation algorithms. These matters are covered by separate challenges. However, exploitation of the output of such related methods and sources is relevant.

DND is interested not only in novel capabilities and concepts, but also in practical solutions which could be fielded and implemented quickly in the next few years.

7) Persistent Maritime Surveillance

Challenge Statement

The Department of National Defence (DND) requires the capability to monitor offshore waters with emphasis on the detection of underwater threats by way of rapidly deployed, persistent, autonomous, yet affordable solutions.

Background and Context

The Canadian Armed Forces (CAF) require enhanced capabilities to perform surveillance of the maritime approaches to Canada. Recent advances in autonomy, robotics, energy and intelligent signal processing suggest that new concepts could be developed to provide better and less expensive surveillance solutions than those that are currently available.

The emphasis of this call for proposals is for surveillance of underwater threats which are defined as submarines and unmanned underwater vehicles (UUV). However, the ability to detect both underwater threats and above water objects may provide additional information to improve interpretation of underwater sensor signals and reduce false alarm rates.

The areas of employment include maritime regions from shore to the continental shelf break or the Exclusive Economic Zone of Canada, is furthest. The technology should be able to provide

surveillance in waters up to 200 metres in depth as well as in a relatively shallow harbour environment. whichever

The technology has to be highly autonomous. However, it must also be able to interact with a human operator/analyst in real time.

Outcomes and Considerations

The desired outcome is a rapidly deployable, persistent, autonomous, yet affordable technology to provide surveillance of offshore waters with emphasis on detecting underwater threats. The technology should be deployable as multiple units to extend coverage. Highly autonomous on-board signal analysis should be demonstrated to provide good probability of detection with low false alarm rate. Sensors are expected to be predominately passive for covertness and for energy efficiency although an active sensor capability is acceptable. High speed and high-capacity communications with the platform are required to transmit detection incident reports, sensor data for remote human analysis, status reports and to receive re-tasking commands.

“Persistence” is defined as multiple months on the station. The technology should be deployable from military ships without the need for engineering changes to the vessel. Deployment from shore would also be useful.

Proposals should address privacy and ethical concerns.

8) Lightweight Ballistic Protection

Challenge Statement

From the perspective of Canadian Armed Forces (CAF) personnel, current ballistic protection systems are heavy, bulky, limit mobility, contribute to overheating and discomfort and alter natural movement biomechanics which may increase the risk of injury. In addition, current ballistic protection does not offer much modularity or scalability that might enable adoption of less burdensome solution and improve integrated survivability. The Department of National Defence is looking for means to significantly improve any of these characteristics in order to increase survivability, personnel performance, and unit effectiveness.

Background and Context

The CAF will continue to deploy to areas of operation where ballistic and blast are the main threats to the survivability. CAF personnel must wear protection to counter these threats while performing very physically demanding tasks, often under very harsh environmental conditions. The most challenging situation, in which lightweight ballistic protection is required, involves infantry, combat engineers, medics, and combat support who may not have vehicle transportation nearby for support. Soldiers routinely carry loads comprising weapons, ammunition and other combat supplies, protection (including ballistic), communications and sensing equipment, portable power, water, and other sustainment items. Even for short duration missions, soldiers carry in excess of 40 kilograms, depending on their role and mission.

The concept of integrated survivability is defined by the consideration of all factors influencing CAF personnel survivability, including the efficiency of protective equipment as well as its effects on personnel performance and its interaction with the environment. For example, while a protective system may reduce the probabilities of sustaining an injury following a ballistic impact, the same system may increase the probabilities of being detected, engaged and hit, which ultimately leads to an overall decrease in survivability.

Outcomes and Considerations

The desired outcome of this research effort is the enhancement of efficient soldier ballistic protection, thereby allowing the right balance of protection, mobility, weight, and ergonomics while maintaining high soldier survivability.

Some considerations are, as follows:

- Lighter weight, reduced bulk, more flexible, and/or more breathable materials and system designs to achieve the same levels and coverage of protection or to improve the outcome and quality of life of those who survive ballistic injuries.
- Ballistic protection materials and system designs that mitigate health and soldier performance impacts of wearing ballistic protection over extended periods in challenging operational environments, while ensuring an adequate level of protection.

9) Chemical, Biological and Radiological (CBR) Hazard Detection and Planning

Challenge Statement

The Department of National Defence (DND) is looking for innovative solutions and technologies for the persistent surveillance of CBR threats that allows rapid detection, early warning, and effective monitoring of CBR releases.

Background and Context

The CBR detection challenge may include surface or airborne contamination in theatres of operation or complex urban environments, and may involve fixed-site detectors and/or detectors on mobile platforms. A capability made of people, sensors and data (both existing and acquired) that enables timely and accurate decision-making is desirable to address this problem. This could be achieved through the combination of people, technology (i.e. sensors) and data realized by way of the: optimal positioning of sensors in what may be complex and hostile environments; managing, in real time, alternative potential courses of action from the moment an alarm is triggered to the moment a CBR threat is confirmed or denied; and real time integrating of sensing outputs to generate a consolidated threat representation.

Outcomes and Considerations

The desired outcome of this research effort is to identify, assess and enable technologies and solutions for the detection and mitigation of CBR threats. Advanced, rapid detection capabilities that are deployable, reliable and improve the management of information for decision-making are desired. In addition, user friendliness, ability to address real-time airborne release, and proximal detection of contaminated surfaces at sensitivity levels, below those which would cause adverse physiological effects should be considered. To enable rapid and efficient use of data being collected from complex environments the use of a learning capability for the analysis and threat assessment needs to be considered.

10) Proactive Deterrence

Challenge Statement

The Department of National Defence (DND) is looking to identify novel and innovative strategies, mechanisms and enabling technologies to anticipate and deter potential international crises and war in the 21st century.

Background and Context

The resurgence of major power competition, emerging threats from non-state actors, and challenges in the space and cyber domains have returned deterrence to the centre of defence thinking. Canada benefits from the deterrent effect provided by its core alliances (NORAD and NATO) and, through Strong, Secure, Engaged, has communicated how it takes seriously its responsibility to contribute to collective efforts to deter aggression by potential adversaries in all domains. At its core, deterrence is about discouraging a potential adversary from doing something harmful before they do it. Deterrence requires influencing an adversary's risk calculus on both sides of the cost-benefit equation, and closely linking military means and activities with political and diplomatic efforts. Deterrence is context-based, and therefore it is necessary to continue to evolve Canada's deterrence strategies to keep pace with the changing global environment. In the context of re-examining how to deter a wide spectrum of challenges to the international order, including those related to "hybrid warfare," DND has recognized that there may exist as-yet unidentified possibilities for advancing deterrence concepts and practice.

Existing deterrence concepts and theory were largely developed during the Cold War, with a focus on the prevention of nuclear war. Since the end of that era, the world has seen much sociological and technological change, resulting in challenges to some of the underpinning principles of deterrence. What used to be a relatively simplistic peer-to-peer calculation in a limited number of areas is now a many-on-many situations where all players have a variety of tools at their disposal.

Due to this increase in complexity, there lies renewed opportunity to look at various aspects of deterrence. This could include areas such as cognitive distortion/deception in the decision-making process, the understanding of adversaries (both state and non-state actors) and their associated motivations, risk tolerances, and susceptibility to coercion. Understanding of individual and group psychology and behaviours as well as sociological and ideological concepts all play a strong role in the effectiveness of deterrence strategies. Thanks to globalization and advances in technology, these

fields are also being exploited by corporations and individuals in an attempt to control and influence behaviours of customers and competitors alike.

The complexity of developing understanding in these areas is compounded by the expanded use of non-traditional warfighting domains such as cyber and space, where concepts such as protection and attribution may be more challenging.

Outcomes and Considerations

The desired outcome of this research effort is a set of tools, techniques, and concepts for the purpose of proactive deterrence from a comprehensive perspective. As such, this type of research could include, but is not limited to, a broad range of deliverables, such as the development of a forecasting capability, game theory concepts for assessing emerging instability or conflict, and novel strategies for defence diplomacy.

Researchers should look to exploit both traditional and non-traditional areas of deterrence. Specifically, it is recognized that the concepts of deterrence are also developed and applied outside of the defence context. Deterrence and the influencing of behaviour through anticipated consequences can be seen in the activities of corporations, political bodies, and individuals as well as nations and terrorist groups. Sociology, individual and group psychology, cognitive theory, and data analytics are playing a large role in the shaping of individual and corporation behaviours.

It is the combination of traditional and contemporary thinking that is being sought to advance deterrence practice as it applies to the physical, cognitive and cyber domains.

11) Collaboration of Robotic Systems

Challenge Statement

The Department of National Defence (DND) is looking for solutions to allow for a single human operator to control and coordinate multiple robotic systems (e.g. uninhabited vehicles, across ground, air, and sea or combinations of each) and perform tasks in an environment with many obstacles where vehicle localization is difficult.

Background and Context

Robotic system usage can reduce the human exposure to dirty, dangerous, or dull tasks as well as assist in accomplishing tasks that are beyond the capacity of a single person. Robots can evolve from singular function tools to function as team members capable of contributing to the solution of larger scale issues. This may involve the self-organization of a large number of robots into a group to augment the collective capability and capacity in executing objectives, assigned with high levels commands and/or actioned due to evolving degrees of autonomous behaviour. Humans must remain in the loop for supervision and the provision of high-level commands.

Outcomes and Considerations

The land, sea, and air environments each present unique challenges for a robot's mobility, perception, and navigation that must be overcome. Methods for real-time communication and processing may need to be developed to enable synchronization between systems.

The desired outcomes are:

- the definition of the limiting factors of human versus automated (e.g. artificial intelligence) control as both a function of task and environment complexity (e.g. noise, clutter, GPS and communication denial);
- the development of designs that help a single operator to control multiple robots simultaneously, possibly over as many as 100 platforms of both current and emerging designs; and
- the development of the capability for robotic platforms to function individually as well as in partnerships in order to perform coordinated and collaborative functions, such as surveillance, that are not possible using singular systems.

Proposals should address privacy and ethical concerns.

12) Resilient Non-Global Positioning System (GPS) Based Positioning, Navigation and Timing

Challenge Statement

The Department of National Defence (DND) is looking for non-GPS solutions for positioning, navigation and timing (PNT). Specifically, DND seeks to provide military personnel with continuous and seamless 3D positioning and ad hoc environment mapping under degraded or denied GPS conditions. Military personnel should be able to transition from open environments to urban canyons, and operate from street level to inside buildings and underground without disruptions in their localization and navigation capabilities.

Concepts and systems that exploit recent rapid advances in relevant PNT technologies such as new or advanced sensors, algorithms, integration concepts, and tactical procedures that allow for extremely accurate PNT, are of interest.

This call to develop new, non-satellite-based PNT capability for specific requirements and constraints is critical to the development of conventional and autonomous systems requiring robust PNT.

Background and Context

GPS has become ubiquitous on the modern battleground. However, operations often force military personnel into urban, indoor, subterranean or other difficult environments that are affecting the effectiveness of GPS equipment. To fulfill the requirement of providing precise locations in such GPS-denied environments, new systems and techniques are required. The cost, size, weight, and power reductions made possible by the rapid developments in modern technologies and algorithms in an integrated navigation system allow for significant opportunities for innovation.

Outcomes and Considerations

The desired outcome of this effort is to achieve a capability to allow operation without GPS (or any satellite navigation) for at least one hour with navigation error less than 30 metres and timing error less than one microsecond using equipment that can be easily carried by military personnel. The ultimate goal is to obtain “GPS-like” performance (10 metre accuracy) without GPS, indefinitely.

Constraints on proposed solutions include the size, weight, power, performance and cost objective thresholds. These constraints are driven by limitations on personnel weight bearing and power consumption. The system must operate globally, in all-weather, and under all-terrain conditions (i.e. from featureless to underground). There must be no reliance on pre-surveyed/pre-mapped locations or features except during system initialization at a trusted location. There must be a seamless context handover (e.g. airborne to underground) without operator intervention. Any communication with external systems or sensors must be secure.

13) Identification and Characterization of Space Objects

Challenge Statement

In today’s highly competitive space operations environment, there is a need to improve space situational awareness to ensure a safe and efficient environment for space operations.

The Department of National Defence (DND) is looking to develop a configurable Common Operating Picture (COP) of space assets that provides the required space situational awareness for informed, expedited decision-making in support of space system operations.

Background and Context

Canada’s new Defence Policy, *Strong, Secure, Engaged*, characterizes space as increasingly congested, contested, and competitive. Space is congested due to the ever-increasing amount of space objects orbiting Earth; more than 20,000 objects larger than 10 centimetres are currently orbiting the Earth while it is estimated that more than 300,000 items between one and 10 centimetres are in orbit. Space is contested because of threats and hazards, such as actions by hostile entities or adverse space weather conditions that could affect space assets. The congested and contested aspects are of particular concern, since they could lead to the temporary or permanent disruption of space capabilities.

In addition, novel methods for increasing the understanding of objects in Low Earth Orbit (LEO) and Geostationary Equatorial Orbit (GEO) are being sought. The current approach for space object characterization is limited to non-resolved images and orbit determination. The world of congested/contested space will require methods of determining the shape, status, configuration, orientation and capabilities of space objects.

Space watch crews currently monitor well over a dozen separate information feeds. These feeds include space situational awareness, space weather, positioning navigation and timing (PNT), and system status information as provided by sources such as the Canadian Sapphire satellite or the U.S. Space Surveillance Network. This requires constant vigilance and running of checklists, as very few of

these feeds flag the crew in a prioritized fashion if something requires their attention. They have to interpret/analyze, validate, and re-transmit the information which requires checklists and transcribing/retransmitting of information. Additionally, operational analysis staff must conduct higher-level space event risk analysis requiring a cross-correlation of much of the information that the watch crews monitor and retransmit. Their analysis supports operational decisions related to the protection and/or the operation of Canadian and allied space assets/capabilities. Therefore, there is a need to integrate all the required information feeds to produce a space COP for rigorous and effective evidence-based decision-making.

Outcomes and Considerations

The desired outcome of this research effort is to collect, collate, integrate, analyze and display all the available data feeds that are essential to establish and maintain a complete and continuous situational awareness for effective management of space assets and the provision of space effects.

From a user perspective, the space COP system should:

1. provide 3D and 2D visualization capabilities of space assets, as well as background/raw data;
2. be configurable, based on the user needs;
3. provide succinct, prioritized, time-ordered prompts of significant events (including assessed threats);
4. leverage existing commercial or military-off-the-shelf solutions wherever possible; and
5. if possible, integrate Canadian space sensors (such as the Sapphire satellite while being open for future sensors) and allow for the command and control of these systems.

14) What is in that Full Motion Video?

Challenge Statement

The Department of National Defence (DND) is looking for solutions that will assist analysts in monitoring and interpreting the high volume of Full Motion Video (FMV) feeds. FMV analysis supports the detection, identification and tracking of events, people and objects of interest.

Background and Context

The Canadian Armed Forces (CAF) has acquired new airborne intelligence, surveillance and reconnaissance (ISR) platforms while preparing for the next generation multi-mission aircraft (CP-140 Aurora maritime patrol aircraft replacement). These platforms will enhance the capacity of CAF to provide critical, near real time, surveillance and operational support to military organizations.

These airborne platforms will be equipped with state-of-the-art sensor suites to enable the collection of still images and FMV feeds. While the ability to operate these platforms has advanced to a high level of sophistication, the process of monitoring and interpreting video feeds continues to make a significant demand on the operational community. The CAF needs access to new tools to assist the analysts in monitoring multiple video feeds, identifying activities of interest, and alerting the operators.

With access to such tools, it will be possible for an operator to simultaneously monitor multiple feeds, thereby achieving enhanced efficiency and reduced workload. The task of monitoring video feeds is well suited to emerging technologies in order to identify items of interest within the field of view against a moving background and in the presence of other activities. Beyond recognizing items of interest, a further challenge is to determine if the system is observing an activity which could be of interest to the operator. This includes basic counting of objects of interest, analyzing patterns and, eventually, identifying indicators of anomalous activity.

Outcomes and Considerations

The desired outcome is the development of tools for automatic monitoring and interpretation of multiple live/near-real-time image/video feeds or FMV feeds, collected with various camera technologies (e.g. high resolution, electro-optics, infrared and Synthetic Aperture Radar). One should note that these sensors often image areas for which limited a-priori information is available.

The proposed solution should address one or more of the following:

1. Generate metadata to assist in the rapid retrieval of images or video clips;
2. Automatically recognize and track specific objects within the field of view (for example, buildings, vehicles, people, etc.);
3. Track mobile objects as they travel through the field of view;
4. Automatically compare patterns from the same area at different times, potentially using data from different sensor platforms and develop a model of normal patterns of life in a region;
5. Detect anomalous behaviour of objects (for example, vehicles travelling against normal traffic flow) with a reliable degree of confidence, thus alerting the operators to items of interest.

15) Making Sense of the Chatter

Challenge Statement

The Department of National Defence and security intelligence communities are challenged with making sense of ever-increasing volume, variety, and velocity of social media data to produce actionable intelligence in support of decision-making. We are looking for novel approaches, processes, technologies, and methods to assist intelligence analysts in the analysis of social media to extract relevant information for improved situational awareness and prediction of potential threats.

To improve the intelligence capability, we are particularly interested in developments (with varying levels of automation) related to:

- content analysis and extraction;
- data fusion;
- social science approaches for inferring intent;
- processing of multiple languages and cultural use of languages (e.g. particular semantics);

- validation and assessment of credibility (source reliability and inference);
- display of results (e.g. visual analytics, reporting);
- data searching, filtering and alignment, and
- alerting and notification (e.g. cross-cueing)

Background and Context

With the increasing complexity and fluctuating veracity of data in the open source domain, it is not possible to filter, identify and make sense of all information which could be relevant to defence and security. Data is often in multiple formats, multiple languages, unstructured and highly dynamic originating from hundreds of different social media platforms. Analysts are increasingly faced with cognitive overload and fatigue, while trying to make sense of this complex data. Growth in the number of analysts to manually process and interpret the data is not sustainable in the long term. In their aggregation with other similar topics, which are potentially based on different periods or audiences, interpretation and contextual errors easily occur.

Increasing computing power has improved the ability to identify trends and relevant patterns in huge data sets, which would usually remain hidden, in part due to the recent advances in artificial intelligence with novel methods of text and data mining, including statistical and machine learning techniques.

Outcomes and Considerations

The expected outcome is the development of more effective and efficient processes for content analysis capable of understanding and predicting human behaviour based on online activities and communications. Specific outcomes of this effort include:

- Achieving strategic and tactical advantage;
- Process efficiency for analysts;
- Informing protection of assets, and
- Predictive analytical power.

Concepts and technologies proposed may include, but are not limited to the application of:

- Natural language processing;
- Artificial intelligence, text analytics and pattern recognition;
- Detecting deception;
- Behavioural modelling based on social sciences;
- Sentiment analysis;
- Smart data tagging, and
- Data aggregation and visualization

For this particular call for proposals, we are not interested in data warehousing, information technology associated with hardware for computation, compression techniques for bandwidth management, analysis and extraction of full-motion video (FMV), other intelligence gathering mechanisms, or policy considerations which will be assessed at later stages of development.

We are interested in novel capabilities and concepts, but also practical solutions for operators which could be tested, fielded, and implemented quickly in the next few years.

16) Cyber Attribution for the Defence of Canada

Challenge Statement

The Department of National Defence (DND) is looking for innovative approaches to access, interpret, and compare all available evidence (e.g. technical, all-source intelligence) on how current cyberspace activities get attributed. This will assist in assessing the current cyberspace environment to improve methods on how to obtain secure cyberspace attribution in a timely manner.

Background and Context

Attribution is one of the most challenging problems in cyberspace. The Internet was not designed with the goal of attribution in mind. The decentralized, dynamic, and open architecture of the Internet enables a perpetrator to easily hide his or her tracks and operate with varying degrees of anonymity. Perpetrators may also operate on spatial scales ranging from local targets in close physical proximity to global targets connected by telecommunication technology over great distances. Consequently, perpetrators can be anywhere in the world and conduct their activities through compromised innocent third parties and obfuscate their origins.

Privacy rights are constantly being challenged, and government initiatives and legislation, such as those in the United Kingdom and Australia, increasingly request that application providers have mechanisms to attribute content and communications to users for lawful access. At the same time, application level encryption further complicates attribution as computing and micro segmentation are being used more frequently.

The ability to identify the source of a malicious cyber activity is the basis for taking action against a perpetrator. If one cannot convincingly show whether a perpetrator is a nation state or a criminal organization or a terrorist organization, one cannot establish the conflict's legal status or the internationally authorized response options. Legal and policy frameworks for responding to malicious cyber activities cannot work unless there is adequate attribution.

Outcomes and Considerations

The desired outcome of this research effort is to demonstrate methodological approaches and confidence metrics as well as identify challenges and issues (for e.g. technical, regulatory, etc.) with cyber activity attribution that would advance shared understanding of cyberspace and promote national cybersecurity. How these approaches can vary and be adapted for different levels of engagement (e.g. conflicts, aid to civil powers, response to national and continental threats) should be part of the solution.

Part 1, Attachment 2—Solution Readiness Levels for Innovation Progression

The Solution Readiness Levels (SRL) definitions are identified below:

SRL 1: Identification—basic principles and/or properties are observed.

SRL 2: Definition—practical applications and/or concepts are formulated.

SRL 3: Observation and Analysis—analytical and/or laboratory research and/or experiments are undertaken.

SRL 4: Proof of Concept—basic integration of applications and/or concepts to demonstrate viability.

SRL 5: Validation—refined integration of applications and/or concepts to confirm validity.

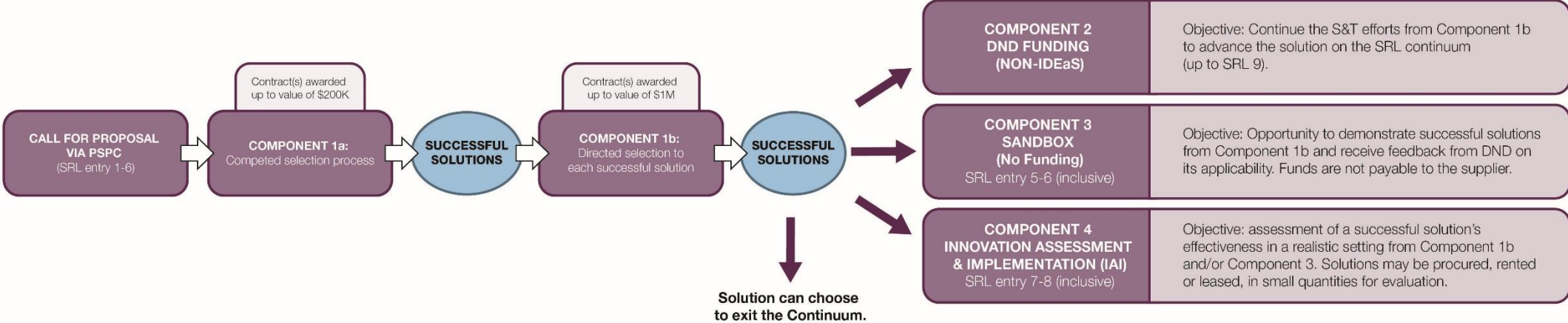
SRL 6: Simulated Demonstration—near-end state solution is demonstrated and tested in a simulated environment.

SRL 7: Real-World Demonstration—near-end state solution is demonstrated and tested in an appropriate real-world environment.

SRL 8: Qualified Solution—end state solution is completed and refined through testing.

SRL 9: Proven Solution—final solution is implemented and proven successful.

Part 1, Attachment 3— Component 1-4 Flow Chart



Part 4, Attachment 1—Evaluation Criteria

Table 1: Mandatory Criteria (MC)

Proposals must meet all mandatory criteria identified. Proposals that fail to meet the mandatory criteria will be declared non-responsive.

Mandatory Criteria (Bidder’s proposal must address)		
MC-1: One S&T Challenge of Annex B	Supporting Information	Evaluation Schema (Pass/Fail)
The proposal must identify one S&T Challenge identified in Part 1, Attachment 1.	The Bidder must identify the S&T Challenge in section 1.A of Annex A (SOW) and in the online tool, via the drop-down menu.	PASS: Proposal identifies one S&T Challenge that is listed in Part 1, Attachment 1.
MC-2: Alignment with S&T Challenge	Supporting Information	Evaluation Schema (Pass/Fail)
The objective of the proposed solution must address and align with the identified S&T Challenge.	In a maximum of 300 words, the Bidder must complete section 2.A of Annex A (SOW). The information must articulate how the project’s objective meets the criterion.	PASS: The proposal clearly articulates, within 300 words, that the criterion is met.
MC-3: Solution Readiness Level (SRL) – Project Start	Supporting Information	Evaluation Schema (Pass/Fail)
The SRL* of the proposed solution, before work is undertaken to advance the solution, is no greater than 6. *As defined in Part 4-Attachment 2.	The Bidder must identify the SRL in section 2.B of Annex A (SOW) and in the online tool, via the drop-down menu.	PASS: Proposal identifies SRL that is no greater than 6

MC-4 - Budget	Supporting Information	Evaluation Schema (Pass/Fail)
<ul style="list-style-type: none"> - The Cost Proposal does not exceed the individual contract maximum listed in Part 1, section 1.2 for Component 1a of this CFP; and - The Cost Proposal for Milestone 1 is no greater than 50% of the total Cost Proposal for Milestones 1 and 2, combined. 	<p>Bidder must provide the information required at Part 4-Attachment 3 (Cost Proposal Breakdown)</p>	<p>PASS: The proposal meets the criterion and contains the information required in Part 4-Attachment 1.</p>

Table 2: Point-Rated Criteria (PRC) – 70 Points

Canada requests that the Bidder complete Annex A (SOW). The Bidder’s information added to Annex A (SOW) will be used to assess the proposal against each point-rated criterion. A total of 70 points are available, and a minimum score of 40 is required to be considered responsive.

Point-Rated Evaluation Criteria (Bidder’s proposal to address)		
PRC-1: Scientific and/or Technical Merit	Supporting Information	Evaluation Schema
<ol style="list-style-type: none"> 1. The proposed solution is supported by sound and logical scientific evidence and/or technical evidence. 2. The scientific concepts and/or technical concepts are based on state-of-the art thinking and practice in the relevant methodological area. 3. The proposal addresses one of the following scenarios*: <ol style="list-style-type: none"> a. One or more factors of GBA+ are relevant to the solution, and are considered in the proposal. b. GBA+ is considered, however, there are no relevant factors. 	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criteria and the Evaluation Schema.</p>	<ol style="list-style-type: none"> i. Insufficient and/or no information to permit analysis of any of the three sub-criteria. <i>0 points</i> ii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets one of the three sub-criteria. <i>5 points</i> iii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets two of the three sub-criteria. <i>10 points</i> iv. Sufficient and clear information is provided and permits concrete analysis that the proposal meets all three sub-criteria. <i>15 points</i>
<p>*GBA+ as defined by the Treasury Board Secretariat of Canada: https://www.tbs-sct.gc.ca/hgw-cgf/oversight-surveillance/tbs-pct/gba-oacs-eng.asp It is encouraged to also refer to the Status of Women Canada website: http://www.swc-cfc.gc.ca/gba-ac/index-en.html. Examples of acceptable responses include: the impact of the GBA+ variables on the result of the project or an explanation of how the GBA+ factors are incorporated in the project.</p>		

PRC-2: Novel and Innovative	Supporting Information	Evaluation Schema
<p>The proposed project solution is novel** and innovative*** over existing solutions (for example, how is this project a game changer?).</p> <ol style="list-style-type: none"> 1. There will be new knowledge, science and/or technology improvements integrated into the work. These include novel concepts, approaches or methodologies, tools, or technologies. 2. There will be enhanced capabilities and/or improved efficiencies created over the current state-of-the-art and existing solutions. 3. The proposed work has projected potential to lead in creating new knowledge and/or technology enhancement over existing solutions. 	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criteria and the Evaluation Schema.</p>	<ol style="list-style-type: none"> i. Insufficient and/or no information to permit analysis of any of the three sub-criteria. <i>0 points</i> ii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets one of the three sub-criteria. <i>5 points</i> iii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets two of the three sub-criteria. <i>10 points</i> iv. Sufficient and clear information is provided and permits concrete analysis that the proposal meets all three sub-criteria. <i>15 points</i>
<p>** Novel: An original idea.</p> <p>*** Innovative: at least one of the following:</p> <ul style="list-style-type: none"> • A new technology or new process that is not currently available in the marketplace; • New knowledge advancing knowledge in social science; • Significant modifications to the application of existing technologies/process that are applied in a setting or condition for which current applications are not possible or feasible; • An improvement to an existing technology/process that represents a significant improvement in functionality, cost or performance of goods and services that are considered state-of-the-art or the current industry best practice. 		

PRC-3: Impact	Supporting Information	Evaluation Schema
<p>The proposed project solution should impact the field of the identified S&T Challenge.</p> <ol style="list-style-type: none"> 1. The proposed solution addresses a gap or critical barrier in the S&T Challenge. 2. The proposed solution improves scientific knowledge and/or technical capability. 3. The proposed solution describes a positive change to the concepts, methods or technologies that drive the field of the S&T Challenge. 	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criteria and the Evaluation Schema.</p>	<ol style="list-style-type: none"> i. Insufficient and/or no information to permit analysis of any of the three sub-criteria. <i>0 points</i> ii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets one of the three sub-criteria. <i>5 points</i> iii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets two of the three sub-criteria. <i>10 points</i> iv. Sufficient and clear information is provided and permits concrete analysis that the proposal meets all three sub-criteria. <i>15 points</i>
PRC-4: Feasibility* and Approach	Supporting Information	Evaluation Schema
<p>The approach and feasibility of the project to address the identified S&T Challenge.</p> <ol style="list-style-type: none"> 1. The proposed solution is feasible. 2. The approach is adequately developed, well-reasoned and appropriate. 3. Proposed deliverables clearly define a solution. <p>*Feasibility: The solution is applicable and could be accomplished in practice in Canada. This determination is at the sole discretion of the evaluation team.</p>	<p>The Bidder should complete section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criteria and the Evaluation Schema.</p>	<ol style="list-style-type: none"> i. Insufficient and/or no information to permit analysis of any of the three sub-criteria. <i>0 points</i> ii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets one of the three sub-criteria. <i>5 points</i> iii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets two of the three sub-criteria. <i>10 points</i> iv. Sufficient and clear information is provided and permits concrete analysis that the proposal meets all three sub-criteria. <i>15 points</i>

PRC-5: Cost Proposal	Supporting Information	Evaluation Schema
<p>The cost estimate is commensurate with the solution work, and specifically:</p> <ol style="list-style-type: none"> 1. Is realistic for the technical approach offered. 2. Aligns with, and is reasonably relative to: <ul style="list-style-type: none"> • each labour category proposed per milestone; • the number of labour hours proposed per milestone; • the types and kinds of materials, equipment, costs and other associated items. • each task for which travel and living is proposed, the travel and living costs are explained and reasonable. 	<p>The Bidder should complete Part 4- Attachment 1 (Cost Proposal Breakdown) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criteria and the Evaluation Schema.</p>	<ol style="list-style-type: none"> i. Insufficient and/or no information to permit analysis of any of the two sub-criteria. <i>0 points</i> ii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets one of the two sub-criteria. <i>5 points</i> iii. Sufficient and clear information is provided and permits concrete analysis that the proposal meets both of the sub-criteria. <i>10 points</i>

Table 3: Strategic Considerations Criteria (SCC) – 15 Points

Canada requests that the Bidder complete Annex A (SOW)-section 2D-Investment Viability, Operational Relevance and Capabilities/Benefits. Proposals that obtain 40 points or more based on the point-rated evaluation criteria within Table 2 above will be further assessed against each strategic consideration criterion. A total of 15 additional points are available, and these points will be added to the score from Table 2, to a maximum score of 85 points. The degree the proposal achieves the Evaluation Schema is the sole discretion of the evaluation team.

Strategic Considerations Criteria (Bidder’s proposal to address)		
SCC-1: Investment Viability	Supporting Information	Evaluation Schema
<p>The proposed solution represents a worthwhile investment by DND including but not limited to</p> <ul style="list-style-type: none"> - being distinct from existing/other planned work (classified or unclassified) of Canada and its Allies (known to the technical evaluation team at the time of evaluation); and/or 	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criterion and the Evaluation Schema.</p>	<ol style="list-style-type: none"> I. Insufficient and/or no information to permit analysis OR the criterion is not met. <i>0 points</i> II. The proposal clearly articulates that the criterion is met. <i>5 points</i>

<ul style="list-style-type: none"> - being at a Solution Readiness Level (SRL) distinct from available/existing solution(s) (known to the technical evaluation team at the time of evaluation). 		
SCC-2: Operational Relevance	Supporting Information	Evaluation Schema
<p>The proposed solution meets current and emerging operational requirements of the Canadian Armed Forces including but not limited to being aligned with military systems, doctrine, and practice.</p>	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criterion and the Evaluation Schema.</p>	<ul style="list-style-type: none"> I. Insufficient and/or no information to permit analysis OR the criterion is not met. <i>0 points</i> II. The proposal clearly articulates that the criterion is met. <i>5 points</i>
SCC-3: Capabilities / Benefits	Supporting Information	Evaluation Schema
<p>The proposed solution is expected to contribute towards the development of new defence and security capabilities within Canada’s industrial sector and/or the solution is expected to generate social, environmental, or other benefits for local communities (including, but not limited to generating a positive impact on indigenous communities, contributing to gender balance, diversity, etc).</p>	<p>The Bidder should complete Section 2.C of Annex A (SOW) with a degree of information sufficient to enable Canada’s assessment of the proposal against the criterion and the Evaluation Schema.</p>	<ul style="list-style-type: none"> I. Insufficient and/or no information to permit analysis OR the criterion is not met. <i>0 points</i> II. The proposal clearly articulates that the criterion is met. <i>5 points</i>

Annex A - Statement of Work (SOW) & Cost

This Statement of Work describes a project aimed at establishing the knowledge and technological advantage needed to address Canada’s defence and security interests for the S&T Challenge listed below.

1. S&T Challenge

A.	S&T Challenge being addressed by this project:	
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2. Project Description

A.	Project Objective: <i>(In maximum of 300 words, the Bidder must address the criteria and supporting information for MC-2 of Part 4, Attachment 1.)</i>
B.	Solution Readiness Level (SRL) of the solution before starting the project (under the Contract):
C.	Project’s S/T Merit, Novelty & Innovation, Impact, Feasibility and Approach, and the Strategic Considerations: <i>(In a maximum of 1600 words, the Bidder should address the criteria and supporting information PRC-1, PRC-2, and PRC-3, PRC-4 of Part 4, Attachment 1 and also SCC-1 to SCC-3 of Part 4, Attachment 1.)</i>
S/T Merit:	

Novel & Innovation:
Impact:
Feasibility and Approach:
Investment Viability:
Operational Relevance:
Capabilities / Benefits:

D.	Solution Progression to Component 1b: <i>(In a maximum of 200 words, the Bidder is requested to briefly describe the S&T work to be performed under Component 1b, and, what the solution/idea may be at the end of Component 1b, including the end-state SRL and its capabilities and benefits for Canada. If the Bidder is not proposing to progress to Component 1b, insert "N/A.")</i>

3. Work Plan and Deliverables

This section will be used to assess the criteria and supporting information of PRC-4 of Part 4, Attachment 1.

Each column of Table 1 below contains specific tasks and deliverables (Work). Work must be distributed into two Milestones. Work for Milestone 1 must render the project to a point of progress sufficient to enable the Technical Authority to assess the potential of the Project Description through completion of Milestone 2. The Interim Progress Report must provide the information listed in Annex B- Milestone 1 and Milestone 2 Report Template(s).

Bidders should specify in Table 1 below, or in a similar format, the work activities to be performed being sure to decompose the work activities to a level that exposes all risk factors, and that allows accurate estimation of the requirements and the schedule duration for each task activity (maximum 100 words per table entry).

Table 1—Work Plan & Deliverables

Milestone 1						
Work Activities					Risks and Mitigation	
Tasks	Task Start Date (dd mm yyyy)	Task End Date (dd mm yyyy)	Description of Deliverable (Articulation of the deliverable or product to be provided to the Technical Authority)	Deliverable Due Date (dd mm yyyy)	Risk(s) (Description, probability and impact [both based on a High/Medium/Low assessment])	Risk Mitigation Strategy (ies)
<i>Task 1 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 2 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 3 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Bidder to add/delete rows as required</i>						
Interim Progress Report to be completed and delivered in accordance with the SOW. <i>(Bidder not to modify content of this task and deliverable, due date, and other information for this Report.)</i>	Input not required	Input not required	Interim Progress Report	No later than 2 business days after completion of the Work Activities of this Milestone 1.	Input not required	Input not required
<i>Firm Milestone Price: \$</i>						

Table 1—Work Plan & Deliverables (continued)

Milestone 2						
Work Activities					Risks and Mitigation	
Tasks	Task Start Date (dd mm yyyy)	Task End Date (dd mm yyyy)	Description of Deliverable (Articulation of the deliverable or product to be provided to the Technical Authority)	Deliverable Due Date (dd mm yyyy)	Risk(s) (Description, probability and impact [both based on a High/Medium/Low assessment])	Risk Mitigation Strategy (ies)
<i>Task 1 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 2 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 3 Description Here</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Bidder to add/delete rows as required</i>						
Component 1a Final Report to be completed and delivered in accordance with the SOW. <i>(Bidder not to modify content of this task and deliverable, due date and other information.)</i>	Input not required	Input not required	Final Report	<i>No later than 2 business days after completion of the Work Activities of this Milestone 2.</i>	Input not required	Input not required
<i>Firm Milestone Price: \$</i>						

3.1 Meetings

The Bidder is to indicate the meetings the Bidder is proposing. If none, indicate “none” under “Meeting”. Bidder to add applicable information at “Input” only.

The Contractor will participate in the following meetings in person or via telecom, as requested by the TA.

Meeting	Date	In Person or via Telecom (Bidder to indicate)	Proposed Location (if in-person)
Kick-Off Meeting	<i>Input</i>	<i>Input</i>	<i>Input</i>
Interim Progress Review Meeting with delivery of the Interim Progress Report	<i>Input</i>	<i>Input</i>	<i>Input</i>
Close-Out Meeting with delivery of the Final Report	<i>Input</i>	<i>Input</i>	<i>Input</i>

3.2 Location of Work

Bidder is to add applicable location(s), where instructed, and not to change text.

Apart from the Meeting locations indicated above, the Contractor will perform the work, including Travel and Living, in the following location(s):
Input here.

3.3 Language of Work

Bidder to input where instructed at “Input,” and, not to change text.

The Contract will require work to be performed in either or both of the Official Languages of Canada. The language will be established following the decision to fund a proposal.

The Bidder is to indicate its capability for either or both Official Languages. Inputs: English, French, or English and French.

3.4 Reporting

The Contractor is to complete and deliver the documents below by the date listed in Table 1. The information to be provided for each report is listed below. One copy is to be delivered to the Technical Authority (TA) and one copy to the IDEaS Program Office (contact information to be provided at award of Contract). The TA will review the report and assess the progress for the purposes of the Go/No Go Decision set out in article 7.16 of the Contract.

- A. Interim Progress Report – mandatory to provide. Provide the information requested in Annex B.
- B. Final Report – mandatory to provide. Provide the information requested in Annex B.

3.5 Government Furnished Property (Materiel or Equipment or Information)

Bidder not to change text.

Canada will not provide Government Property.

4. Special Considerations-Communication notification

Canada and the Contractor shall consult with each other, 15 working days in advance, about all proposed new releases or public announcements relating to the Contract. This is to provide all parties sufficient notice of key project communications, and, where appropriate, the time to determine a course of action (including a mutually agreed date and location), line up representatives and prepare joint material. Notwithstanding the advance notice requirement, consent shall not be unreasonably withheld by either Party if a news release or public announcement must be issued in less than 15 working days as the result of unforeseeable circumstances, including matters of public safety or where an emergency response is required. The Government of Canada retains the right to make primary contract announcements.

5. Glossary

Bidder to add at “input here” and is not to change text.

If acronyms and/or uncommon terms are utilized, Bidder is to add and define here. Note: If none, Canada will leave this article blank or delete it.

The following terms are used in this SOW and have the definitions assigned to them below:

Input here.

6. Reference Documents

Bidder to add at “input here” as applicable, and is not to change text.

If the Work details include references to documents critical for understanding the basis of the Work, the Bidder is to fully describe these documents here. The minimal information required is a name/title of the document, authorizing person/organization, its relevance to the work, its date. Note: if none, Canada will leave this article blank or delete it.

The following documents form part of the Contract:

Input here.

Part 4 - Attachment 3 - Cost Proposal Breakdown

In the tables below, specify the various costs proposed for Milestones 1 and 2 (Applicable taxes extra). This section will be used to assess the criteria and supporting information for MC-5 and PRC-5 of Part 4, Attachment 1. Bidder to add information to complete the tables, as applicable.

Milestone 1			
Milestone 1 Labour			
Category (Example: software developer)	Labour (h) (number of hours)	Rate (\$/h)	Total (\$)
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
Total Labour Cost			\$ —

Other Costs	Description	Cost
Other Direct Cost		\$ —
Subcontractor		\$ —
		\$ —
Other Total Costs		\$ —

Milestone 1 Materials	Qty	Unit Cost	Total
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
Total Material Cost			\$ —

Milestone 1 Travel & Living

Trip #	Purpose	Destination	# Travellers	# Days	Total
1					\$ —
2					\$ —
3					\$ —
4					\$ —
Total Travel & Living					\$ —

TOTAL FIRM MILESTONE 1 PRICE (including labour, other costs, materials, travel & living) (Applicable Taxes extra)		\$ —
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Milestone 2			
Milestone 2 Labour			
Category (Example: software developer)	Labour (h) (number of hours)	Rate (\$/h)	Total (\$)
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
Total Labour Cost			\$ —

Other Costs	Description	Cost
Other Direct Cost		\$ —
Subcontractor		\$ —
		\$ —
Other Total Costs		\$ —

Milestone 2 Materials	Qty	Unit Cost	Total
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
			\$ —
Total Material Cost			\$ —

Milestone 2 Travel & Living

Trip #	Purpose	Destination	# Travellers	# Days	Total
1					\$ —
2					\$ —
3					\$ —
4					\$ —
Total Travel & Living					\$ —

TOTAL FIRM MILESTONE 2 PRICE (including labour, other costs, materials, travel & living) (Applicable Taxes extra)		\$ —
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Annex B— Milestone 1 and Milestone 2 Report Template

Project Number:	<i>To be provided by the IDEaS Program Office</i>	Project Title:	<i>From SOW</i>
PSPC Contract Number:	<i>To be added by the PSPC Contracting Authority.</i>	Report Date:	<i>Input</i>

Work Plan & Deliverable Performance								
Proposed Work Activities (based on SOW)					*Actual Work Activities			Progress Comments
Tasks	Start Date (dd mm yyyy)	End Date (dd mm yyyy)	Description of Deliverable	Deliverable Due Date (dd mm yyyy)	Start Date (dd mm yyyy)	End Date (dd mm yyyy)	Deliverable Due Date (dd mm yyyy)	
<i>Task 1 Description from SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 2 Description from SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Task 3 Description from SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>New/Additional Task Description (if applicable).</i>					<i>Input</i>	<i>Input</i>	<i>Input</i>	<i>Input</i>
<i>Contractor to add/delete rows as required.</i>								
<i>Progress/Final Report completed and delivered</i>	<i>Input not required</i>	<i>Input not required</i>	<i>Progress Report</i>	<i>As per SOW*</i>	<i>Input not required</i>	<i>Input not required</i>	<i>Input</i>	<i>Input reason if date is different from that specified in the SOW*.</i>
<p>*Actual Work Activities-Instruction: The Contractor cannot change the fixed work and due dates without the prior written approval of the Contracting Authority evidenced through a Contract amendment. Firm-priced milestone contracts do not pay variances in actual costs, only the firm price is payable by Canada.</p>								

Considering the information provided in the “Work Plan & Deliverable Performance” Table above, is the project on track, on schedule and within scope? If no, why not and what is/are the solution(s) and when is/are the solution(s) to be implemented?

Input your answer here.

Cost Performance* (*Instruction above regarding variances also applies hereunder)

Cost Proposal Breakdown (based on SOW)		Actual Cost Breakdown	Progress Comments
Labour			
Category	Total \$	Total \$	Progress Comments
<i>Category Description from SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
<i>New/Additional Category Description (if applicable).</i>		<i>Input</i>	<i>Input</i>
<i>Contractor to add/delete rows as required.</i>			
Materials			
Description	Total \$	Total \$	Progress Comments
<i>Description from SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
<i>New/Additional Description (if applicable).</i>		<i>Input</i>	<i>Input</i>
<i>Contractor to add/delete rows as required.</i>			
Travel and Living			
Description	Total \$	Total \$	Progress Comments
<i>Trip Destination from SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
<i>New/Additional Trip (if applicable).</i>		<i>Input</i>	<i>Input</i>
<i>Contractor to add/delete rows as required.</i>			

Other Costs			
Description	Total \$	Total \$	Progress Comments
<i>Description from SOW</i>	<i>From SOW</i>	<i>Input</i>	<i>Input</i>
<i>New/Additional Description (if applicable).</i>		<i>Input</i>	<i>Input</i>
<i>Contractor to add/delete rows as required.</i>			
<i>Firm Milestone Price:</i>	<i>From SOW</i>	<i>Input*(Does not change amount payable by Canada)</i>	<i>Input</i>

Considering the information provided in the “Cost Performance” Table above, is the project within scope and within the Firm Price budget? If yes, what (if any) budget re-allocations were made? If no, why not and what is/are the scope change(s)?

Input your answer here.

Explain whether the progression of this project to a higher SRL is, or is not, of interest and/or benefit to Canada.*

Input your answer here.

*In providing your answer, please consider: MC-2: Alignment with S&T Challenge; PRC-1: Scientific and/or Technical Merit; PRC-2: Novel and Innovative; PRC-3: Impact; PRC-4: Feasibility and Approach; PRC-5: Cost Proposal from the CFP no. W7714-186568

What were the main findings/conclusions of the work undertaken? (Summary of S&T results)

Input your answer here.

Answering this question is optional in the Interim Progress Report (Milestone 1), but mandatory in the Final Report (Milestone 2).

Please provide references to S&T publications, reports, technical memoranda, journal papers, conference proceedings, scientific letters, or other media where full details of S&T results can be found.

Provide a transition overview explaining how the Contractor would progress the project to a higher Solution Readiness Level during Component 1b contract.*

Input your answer here.

Answering this question is optional in the Interim Progress Report (Milestone 1), but Mandatory in the Component 1 A Final Report (Milestone 2).

*In providing your answer, please consider: MC-2: Alignment with S&T Challenge; PRC-1: Scientific and/or Technical Merit; PRC-2: Novel and Innovative; PRC-3: Impact; PRC-4: Feasibility and Approach; PRC-5: Cost Proposal. As referenced in CFP W7714-186568.

