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Québec
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G1J 0C7

LETTER OF INTEREST
LETTRE D'INTÉRÊT

Comments - Commentaires

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

Issuing Office - Bureau de distribution
TPSGC/PWGSC
601-1550, Avenue d'Estimauville
Québec
Québec
G1J 0C7

| | |
|---|---|
| Title - Sujet Lettre intérêt | |
| Solicitation No. - N° de l'invitation W7701-135615/A | Date 2013-05-27 |
| Client Reference No. - N° de référence du client W7701-13-5615 | GETS Ref. No. - N° de réf. de SEAG PW-\$QCL-035-15428 |
| File No. - N° de dossier QCL-3-36040 (035) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-06-28 | |
| Time Zone Fuseau horaire Heure Avancée de l'Est HAE | |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Lessard, Pascal | Buyer Id - Id de l'acheteur qcl035 |
| Telephone No. - N° de téléphone (418) 649-2819 () | FAX No. - N° de FAX (418) 648-2209 |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: R & D POUR LA DÉFENSE CANADA VALCARTIE BATIMENT 53 2459 BLVD PIE XI NORD QUEBEC Québec G3J1X5 Canada | |

Instructions: See Herein

Instructions: Voir aux présentes

| | |
|--|--|
| Delivery Required - Livraison exigée See Herein | Delivery Offered - Livraison proposée |
| Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur | |
| Telephone No. - N°de téléphone Facsimile No. - N° de télécopieur | |
| Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie) | |
| Signature | Date |

Solicitation No. - N° de l'invitation

W7701-135615/A

Amd. No. - N° de la modif.

File No. - N° du dossier

QCL-3-36040

Buyer ID - Id de l'acheteur

qcl035

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

W7701-13-5615

CCC No./N° CCC - FMS No/ N° VME

REQUEST FOR INFORMATION

Included herein

1. Introduction
2. Sample of prospective terms and conditions
3. Additional Information
4. Requirements for information response requirements

Appendix A: Statement of Work

Appendix B: Mandatory and rated criteria

1. INTRODUCTION

This Request for Information (RFI) is not a request for Proposal (RFP) and no contract will be awarded following receipt of information.

It is in inquiry for general information regarding Defence Research and Development Canada - Valcartier (DRDC V) for Future Small Arm Research (FSAR) Integrated Weapon System Concept Demonstration. DRDC V cannot supply a guarantee in the effect that a request for proposal will be published for this process following this request for information.

REQUEST FOR INFORMATION OBJECTIVES:

The objectives of this request for information is to raise the concerns of the industry and the feasibility of the project. Also, the industry will have the possibility to raise issues related to information contained in this request for information and possible solutions.

Defense Research and Development Canada (DRDC) intends to issue, through a competitive bidding process, a task authorization contract to answer his requirements for the IWSC project specified in Annex A which is related to FSAR program. The FSAR program will support the Canadian Army's by developing a validated science based Statement of Operational Requirements (SOR) and metrics for a family of weapon systems that will provide a significant increase in operational effectiveness to the Canadian Forces (CF). The Integrated Weapon System Concept Demonstration is an essential part of the specification process and as such this contract is firstly about the development of an SOR and only secondarily about development and demonstration of technologies.

DRDC want to receive information on contractual, technical and financial aspects in this request for information. The information will help for the improvement of the of the project structure, cost estimation, estimating schedules and defining requirements as needed, in the event of a future implementation of a competitive RFP.

Information provided will be kept in strict confidence and not shared outside the Canadian Government.

You will find in Appendix A and B the statement of work and evaluation criteria on which we want to obtain information.

ADDITIONAL INFORMATION

1. Security Classification

Work carried out will be UNCLASSIFIED.

2. Access to Follow-on Capital Acquisition Projects

Two types of company arrangements are envisaged, Prime contractor with sub-contractors or a Consortium. In both cases the company responsible for specifying the SOR output for this contract will be excluded from supplying related equipment for Capital Acquisition Projects based on the SOR. All other companies will maintain their right to participate.

3. Duration of Contract

Contract duration estimate : 7 years

4. Estimated Expenditure and Basis of Payment

FY 13/14 to 14/15 (Two Fiscal Years): \$2.0M Funded

FY 15/16 to 17/18 (Three Fiscal Years): \$7.0M Unfunded Option

FY 18/19 to 19/20 (Two Fiscal Years): \$5.8M Unfunded Option

5. Throughout the duration of the Task Authorization Contract, the frequency of occurrence of all activities is expected to be as follows:

| Activity | Description | Frequency |
|----------|---|-----------|
| 1 | Human Factors Engineering | 20% |
| 2 | Systems engineering analysis, design and validation | 10% |
| 3 | Small arms weapon platform analysis, design, fabrication and technical evaluation | 35% |
| 4 | WM-SATS analysis, design, fabrication and technical evaluation | 35% |
| | | 100% |

2. SAMPLE OF PROSPECTIVE TERMS AND CONDITIONS

It is planned that the following clauses from the SACC would be an integral part of a future request for proposals, which we ask you for your comments, concerns, issues and solutions that may result from these factors.

2003 (2012-03-02) Conflict of Interest - Unfair Advantage:

1. In order to protect the integrity of the procurement process, bidders are advised that Canada may reject a bid in the following circumstances:
 - a. if the Bidder, any of its subcontractors, any of their respective employees or former employees was involved in any manner in the preparation of the bid solicitation or in any situation of conflict of interest or appearance of conflict of interest;
 - b. if the Bidder, any of its subcontractors, any of their respective employees or former employees had access to information related to the bid solicitation that was not available to other bidders and that would, in Canada's opinion, give or appear to give the Bidder an unfair advantage.
2. The experience acquired by a bidder who is providing or has provided the goods and services described in the bid solicitation (or similar goods or services) will not, in itself, be considered by Canada as conferring an unfair advantage or creating a conflict of interest. This bidder remains however subject to the criteria established above.
3. Where Canada intends to reject a bid under this section, the Contracting Authority will inform the Bidder and provide the Bidder an opportunity to make representations before making a final decision. Bidders who are in doubt about a particular situation should contact the Contracting Authority before bid closing. By submitting a bid, the Bidder represents that it does not consider itself to be in conflict of interest nor to have an unfair advantage. The Bidder acknowledges that it is within Canada's sole discretion to determine whether a conflict of interest, unfair advantage or an appearance of conflict of interest or unfair advantage exists.

Intellectual property:

2040 27 (2008-05-12) Intellectual Property Infringement and Royalties:

1. The Contractor represents and warrants that, to the best of its knowledge, neither it nor Canada will infringe any third party's intellectual property rights in performing or using the Work, and that Canada will have no obligation to pay royalties of any kind to anyone in connection with the Work.
2. If anyone makes a claim against Canada or the Contractor concerning intellectual property infringement or royalties related to the Work, that Party agrees to notify the other Party in writing immediately. If anyone brings a claim against Canada, according to Department of Justice Act, R.S., 1985, c. J-2, the Attorney General of Canada must have the regulation and conduct of all litigation for or against Canada, but the Attorney General may request that the Contractor defend Canada against the claim. In either case, the Contractor agrees to participate fully in the defence and any settlement negotiations and to pay all costs, damages and legal costs incurred or payable as a result of the claim, including the amount of any settlement. Both Parties agree not to settle any claim unless the other Party first approves the settlement in writing.

3. The Contractor has no obligation regarding claims that were only made because:
- a. Canada modified the Work or part of the Work without the Contractor's consent or used the Work or part of the Work without following a requirement of the Contract; or
 - b. Canada used the Work or part of the Work with a product that the Contractor did not supply under the Contract (unless that use is described in the Contract or the manufacturer's specifications); or
 - c. the Contractor used equipment, drawings, specifications or other information supplied to the Contractor by Canada (or by someone authorized by Canada); or
 - d. the Contractor used a specific item of equipment or software that it obtained because of specific instructions from the Contracting Authority; however, this exception only applies if the Contractor has included the following language in its own contract with the supplier of that equipment or software: "[Supplier name] acknowledges that the purchased items will be used by the Government of Canada. If a third party claims that equipment or software supplied under this contract infringes any intellectual property right, [supplier name], if requested to do so by either [Contractor name] or Canada, will defend both [Contractor name] and Canada against that claim at its own expense and will pay all costs, damages and legal fees payable as a result of that infringement." Obtaining this protection from the supplier is the Contractor's responsibility and, if the Contractor does not do so, it will be responsible to Canada for the claim.
4. If anyone claims that, as a result of the Work, the Contractor or Canada is infringing its intellectual property rights, the Contractor must immediately do one of the following:
- a. take whatever steps are necessary to allow Canada to continue to use the allegedly infringing part of the Work; or
 - b. modify or replace the Work to avoid intellectual property infringement, while ensuring that the Work continues to meet all the requirements of the Contract; or
 - c. take back the Work and refund any part of the Contract Price that Canada has already paid.

If the Contractor determines that none of these alternatives can reasonably be achieved, or if the Contractor fails to take any of these steps within a reasonable amount of time, Canada may choose either to require the Contractor to do (c), or to take whatever steps are necessary to acquire the rights to use the allegedly infringing part(s) of the Work itself, in which case the Contractor must reimburse Canada for all the costs it incurs to do so.

2040 28 (2008-05-12) Records and Disclosure of Foreground Information:

1. During and after the performance of the Contract, the Contractor must keep detailed records of the Foreground Information, including details of its creation, ownership and about any sale or transfer of any right in the Foreground Information. The Contractor must report and fully disclose to Canada all Foreground Information as required by the Contract. If the Contract does not specifically state when and how the Contractor must do so, the Contractor must provide this information when requested by the Contracting Authority or a representative of the department or agency for which the Contract is performed, whether before or after the completion of the Contract.

2. Before and after final payment to the Contractor, the Contractor must provide Canada with access to all records and supporting data that Canada considers pertinent to the identification of Foreground Information.

3. For any Intellectual Property that was developed or created in relation to the Work, Canada will be entitled to assume that it was developed or created by Canada, if the Contractor's records do not list that Intellectual Property or do not indicate that it was created by the Contractor, or by someone on behalf of the Contractor, other than Canada.

2040 29 (2008-05-12) Ownership of Intellectual Property Rights in Foreground Information:

1. All Intellectual Property Rights in the Foreground Information belong to the Contractor as soon as they come into existence.

2. Despite the Contractor's ownership of all the Intellectual Property Rights in the Foreground Information, Canada has unrestricted ownership rights in any prototype, model, custom or customized system or equipment that is a deliverable under the Contract, including manuals and other operating and maintenance documents. This includes the right to make them available for public use, whether for a fee or otherwise, sell them or otherwise transfer ownership in them.

3. Any personal information, as defined in the Privacy Act, R.S., 1985, c. P-21, collected by the Contractor in the execution of the Work under the Contract becomes the property of Canada immediately upon collection and must be used only for the performance of the Work. The Contractor has no right in any such personal information.

4. If the Work under the Contract involves the preparation of a database or other compilation using information or data supplied by Canada and any personal information referred to above, the Intellectual Property Rights in the database or compilation containing such information will belong to Canada. The Contractor's Intellectual Property Rights in the Foreground Information are restricted to those capable of being exploited without the use of the information or data supplied by Canada and the personal information.

5. The Contractor must maintain the confidentiality of the information or data supplied by Canada and the personal information as required in the General Conditions. The Contractor must return all the information belonging to Canada on request or on completion or termination of the Contract. This includes returning all hard copies and electronic copies as well as any paper or electronic record that contains any part of the information or information derived from it.

2040 30 (2008-05-12) Licenses to Intellectual Property Rights in Foreground and Background Information:

1. As Canada has contributed to the cost of developing the Foreground Information, the Contractor grants to Canada a license to exercise all Intellectual Property Rights in the Foreground Information for Canada's activities. Subject to any exception described in the Contract, this license allows Canada to do anything that it would be able to do if it were the owner of the Foreground Information, other than exploit it commercially and transfer or assign ownership of it. The Contractor also grants to Canada a license to use the Background Information to the extent that it is reasonably necessary for Canada to exercise fully all its rights in the deliverables and in the Foreground Information.

2. These licenses are non-exclusive, perpetual, irrevocable, worldwide, fully-paid and royalty-free. Neither license can be restricted in any way by the Contractor providing any form of notice to the

contrary, including the wording on any shrink-wrap or click-wrap license or any other kind of packaging, attached to any deliverable.

3. For greater certainty, Canada's licenses include, but are not limited to:

a. the right to disclose the Foreground and Background Information to third parties bidding on or negotiating contracts with Canada and to sublicense or otherwise authorize the use of that information by any contractor engaged by Canada solely for the purpose of carrying out such contracts. Canada will require these third parties and contractors not to use or disclose that information except as may be necessary to bid on, negotiate or carry out those contracts;

b. the right to disclose the Foreground and Background Information to other governments for information purposes;

c. the right to reproduce, modify, improve, develop or translate the Foreground and Background Information or have it done by a person hired by Canada. Canada, or a person designated by Canada, will own the Intellectual Property Rights associated with the reproduction, modification, improvement, development or translation.

d. without restricting the scope of any license or other right in the Background Information that Canada may otherwise hold, the right, in relation to any custom-designed or custom-manufactured part of the Work, to exercise such of the Intellectual Property Rights in the Background Information as may be required for the following purposes:

i. for the use, operation, maintenance, repair or overhaul of the custom-designed or custom-manufactured parts of the Work;

ii. in the manufacturing of spare parts for maintenance, repair or overhaul of any custom-designed or custom-manufactured part of the Work by Canada if those parts are not available on reasonable commercial terms to enable timely maintenance, repair or overhaul;

e. for Software that is custom designed for Canada, the right to use any source code the Contractor must deliver to Canada under the Contract.

4. The Contractor agrees to make the Background Information, including in the case of Software, the source code promptly available to Canada for any purpose mentioned above. The license does not apply to any Software that is subject to detailed license conditions that are set out elsewhere in the Contract. Furthermore, in the case of commercial off-the-shelf software, the Contractor's obligation to make the source code promptly available to Canada applies only to source code that is within the control of or can be obtained by the Contractor or any subcontractor.

2040 31 (2008-05-12) Contractor's Right to Grant Licenses:

The Contractor represents and warrants that it has the right to grant to Canada the licenses and any other rights to use the Foreground and Background Information. If the Intellectual Property Rights in any Foreground or Background Information are or will be owned by a subcontractor or any other third party, the Contractor must have or obtain promptly a license from that subcontractor or third party that permits compliance with section 30 or arrange, without delay, for the subcontractor or third party to grant promptly any required license directly to Canada.

3. ADDITIONAL INFORMATION:

Responding to the Request for Information (RFI) is not a prerequisite to receiving a request for proposal (RFP). Potential bidders are, however, encouraged to indicate their level of interest to facilitate a better understanding of requirements and capabilities from both DRDC V and industry perspective.

This RFI shall not be construed to be a RFP and no contract or other form of commitment will be entered into with any vendor based on responses to this RFI. This RFI shall in no way be considered as an authorization by DRDC V for vendors to undertake any work, which would result in costs to the DRDC V. DRDC V shall not be liable for, nor shall it reimburse any vendors for, any costs, fees or expenses, which any vendor incurs in the preparation or submission of its response to this RFI.

Nothing in this RFI shall be construed as a commitment to issue a RFP. DRDC V shall not be bound by anything stated herein. DRDC V reserves the right to change, at any time, any or all parts of the requirement as deemed necessary. Vendors are advised that any information submitted to DRDC V in response to this RFI may be used in the development of a subsequent RFP. Vendors shall not be bound by any aspect of their response to this RFI.

All responses to this RFI received on or before the stipulated closing date and time will become the property of Canada and will not be returned. All responses will be treated as confidential, subject to the provisions of the Access to Information Act (R.S. 1985, c. A-1) and the Privacy Act (R.S., 1985, c. P-21).

Not responding to this RFI shall in no way penalize the vendor should an actual RFP take place.

DRDC V is seeking feedback to this RFI from all interested parties who can provide the above listed meeting all the conditions requested.

4. Request for information response requirements

Responses and supporting documentation must be submitted in writing to Pascal Lessard, Procurement Specialist, by email at pascal.lessard@pwgsc-tpsgc.gc.ca, no later than the closing date of the request for information.

In addition to comments, concerns, issues and considered as part of the evidence in the present request for information, we ask respondents to include in documents submitted as part of this inquiry, the answers to the following questions:

- 1) One of the objectives of the project, which would be one of the deliverable, is to prepare a statement of requirements to allow the acquisitions of goods with competitive tendering. In this context, it is important to proceed with the drafting of the statement in a transparent and open mode for everyone. Regarding this item, do you think that some elements suggest that there may be an unfair advantage for contractors or subcontractors that may be involved in tasks related to the requirement stated in Appendix A?
- 2) As part of Task 3 specified in the statement of work in Appendix A, it is expected that the designated tasks will be given to Colt Canada as a subcontractor as the expertise and the data of the first generation of equipment that they hold should be included in this project. In this regard, do you see an issue that should be considered?
- 3) As part of the required expertise, is there some elements that prevent the contractor from performing the services stated in Appendix A?
- 4) What technical challenges do you face in a project like this one?
- 5) Can you suggest other important technical aspects that should be considered in the development of a request for proposals which would result in a authorization tasks contract?
- 6) Does your company has expertise in "human factors"?
- 7) Considering the statements mentioned above with respect to intellectual property, is there aspects to consider to meet the reality of the industry?
- 8) How do you see the framing of such a project in terms of project management and financial management? Do you think this type of project can bring management issues with subcontractors? If so, which one and what do you suggest to overcome them?

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Buyer ID - Id de l'acheteur

qcl035

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

W7701-13-5615

CCC No./N° CCC - FMS No/ N° VME

CLOSING DATE :

Suppliers interested in providing an answer or comments should send it (preference by e-mail) to Pascal Lessard before the date and time of closing listed on the first page of the inquiry. All your questions, or answers, should be directed to:

Pascal Lessard
Procurement Specialist
1550 avenue D'Estimauville, 6th floor, Québec (QC) G1J 0C7
PWGSC
Phone: 418-649-2819
Fax: 418-648-2209
Email: pascal.lessard@pwgsc-tpsgc.gc.ca

The documents can be provided in the two official languages (English and French).

APPENDIX A

STATEMENT OF WORK

1. GENERAL

1.1 Title

Task Authorization Contract for FSAR Integrated Weapon System Concept Demonstration

1.2 Objective

The objective of this statement of work is to provide the framework for the delivery of the demonstration of the Integrated Weapon System Concept (IWSC) of the Future Small Arms Research (FSAR) Program. The IWSC is comprised of two primary subsystems, a small arms weapon platform and a Weapon Mounted – Situational Awareness and Targeting Suite (WM-SATS). The context of this work is the Soldier System vision of the Canadian Forces. The IWSC is intended to inform the lethality component of this vision.

Demonstration in this contract spans the range from analysis, to design, prototyping, testing, fabrication and field trials. A spiral demonstration approach will be taken in demonstrating the IWSC. Multiple fields of knowledge are required to attain this objective and include but are not limited to: human factors of soldier systems and small arms weapons systems, human factors analysis and engineering, field trial design and execution, systems engineering, electronics, portable power and energy management, small arms weapon system, ammunition, Hazards of Electromagnetic Effects to Ordnance (HEEO), optics, electro-optics, sensors, fire control, image and object detection, recognition and identification, navigation and communication.

The FSAR program will support the Canadian Army by developing a validated science based Statement of Operational Requirements (SOR) and metrics for a family of weapon systems that will provide a significant increase in operational effectiveness to the Canadian Forces (CF). The Integrated Weapon System Concept Demonstration is an essential part of the specification process and as such this contract is firstly about the development of an SOR and only secondarily about development and demonstration of technologies.

1.3 Background

FSAR will provide the CF with the necessary scientific and technical expertise to efficiently replace its current small arms. Once capabilities that will result in significant increases in operational effectiveness have been identified it will determine the time frame in which implementation is technically feasible in addition to how the capabilities can be implemented. The FSAR program seeks to identify what makes a difference, how to measure the difference and when it can be introduced to the C Army and the CF.

FSAR will be aligned with, and complement, the C Army's Future Soldier System (FSS), and will consider all on-going projects integrating the weapon into soldier sub-systems through a system-of-systems approach. This system vision of the dismounted soldier follows directly from the force employment concept of Canadian Army of Tomorrow (AoT), Adaptive Dispersed Operations (ADO).

Some of the expected soldier benefits of the FSAR program will be to:

- a) Provide substantial weight reduction from a small arms system perspective;
- b) Enhance the soldier's ability to locate and distinguish between non-combatant, friend and foe through sensors integrated into the weapons;
- c) Provide a spectrum of non-lethal and lethal effects to allow commanders the flexibility to respond appropriately to a greater variety of situations;
- d) Enhance the soldier's ability to mass effects through automated target hand-off and integrated sensors;
- e) Greatly increase accuracy at significantly longer ranges; and
- f) Reduce the amount of training required to achieve a high level of shooting proficiency.

FSAR is comprised of five (5) Projects, 1.0 Weapon System, 2.0 Human Factors, 3.0 Launchers and Components, 4.0 Effects and Ammunition, and 5.0 Weapon Mounted Situational Awareness and Targeting Suite. The effort for each Project is divided into Work Breakdown Elements (WBE). The Integrated Weapon System Concept Demonstrator covered by this SOW will be accomplished under WBE 1.5. The detailed program structure which provides the context of WBE 1.5 is given below.

1.0 Weapon System

- 1.1 Program formulation, management and SOR development
- 1.2 System capability modeling
- 1.3 Integrated power and data distribution
- 1.5 Integrated weapon system concept demonstration

2.0 Human Factors

- 2.1 The effect of the human on accuracy
- 2.2 Optimizing WM-SATS for the human
- 2.3 Training, trainability and training needs assessment
- 2.4 Physical ergonomics in weapon design
- 2.5 Collecting and implementing lessons learned from current operations
- 2.6 On-board integrated training system
- 2.7 Weapon recoil and muzzle movement

3.0 Launchers and Components

- 3.1 Weapon system dynamic processes
- 3.2 Thermal management of weapons
- 3.5 Acoustic and flash signature management
- 3.6 Launcher structure and materials
- 3.7 On-board service life and logistics monitoring

4.0 Effects and Ammunition

- 4.1 Weapon / ammunition system effectiveness
- 4.2 Kinetic energy ammunition
- 4.3 Programmable ammunition
- 4.4 Lightweight cased and caseless ammunition
- 4.5 Electronically initiated ammunition and electronically operated weapons
- 4.6 Non-lethal small arms technologies

5.0 Weapon Mounted SA and Targeting Suite

- 5.1 Situational awareness and targeting sensors
- 5.2 Advanced optronics optics, sensors and displays
- 5.3 Automatic target cueing
- 5.4 Assisted target engagement
- 5.5 Target sharing and hand-off

1.4 Acronyms

| | |
|---------|--|
| ADO | Adaptive Dispersive Operations |
| AoT | Army of Tomorrow |
| ARP | Applied Research Program |
| C Army | Canadian Army |
| CF | Canadian Forces |
| DMC | Digital Magnetic Compass |
| DSP | Digital Signal Processing |
| FCS | Fire Control System |
| FPA | Focal Plane Array |
| FPGA | Field-programmable gate array |
| FSAR | Future Small Arms Research |
| FSS | Future Soldier System |
| FY | Fiscal Year |
| GFE | Government Furnished Equipment |
| GPS | Global Positioning System |
| HEEO | Hazards of Electromagnetic Effects to Ordnance |
| IMU | Inertial Measurement Unit |
| IWSC | Integrated Weapon System Concept |
| LWIR | Long Wave Infra Red |
| NGSA | Next Generation Small Arms |
| SA | Situational Awareness |
| SIPES | Soldier Integrated Precision Effects System |
| SOR | Statement of Operational Requirements |
| SOW | Statement of Work |
| SWIR | Short Wave Infra Red |
| TDP | Technology Demonstration Project |
| TRL | Technology Readiness Level |
| VTC | Video Teleconference |
| WBE | Work Breakdown Element |
| WM-SATS | Weapon Mounted – Situational Awareness and Targeting Suite |

2. SCOPE OF WORK

The structure of FSAR has been formulated around an initial vision for the IWSC that will be validated and evolved throughout the program, first on the level of individual technologies and fields of knowledge under Projects 2.0 through 5.0 and WBE 1.2 and 1.3 and then through integrating the technologies and fields of knowledge to demonstrate the IWSC under WBE 1.5. As such, there will be significant interaction between the IWSC demonstration component of FSAR and all other WBE.

The initial IWSC vision is composed of 1) Weight, volume and balance optimized, electronic, integrally suppressed, weapon platform and system; 2) Fully integrated, weight optimized, semi-automatic, recoil compensated programmable ammunition launcher and shot gun with electronic initiation; 3) Integrated non lethal capabilities for escalation of force; 4) Integrated power and data distribution; 5) Fused multi-sensor sight and augmented reality display with image and video capture; 6) Sight enabled automatic target cueing; 7) Acoustic and flash detection; 8) Attitude, heading and geo-positioning reference system; 9) Network linkage with seamless target sharing and video and data transmission; 10) Assisted target engagement FCS; 11) Integrated illumination and pointing; 12) On board service life and logistics monitoring; 13) On board integrated training system. It is expected that as FSAR progresses and our understanding of the technologies, the soldier's interaction with the technologies and the operational environment grows that this vision will evolve and be refined.

A spiral demonstration approach will be taken in evolving and demonstrating the IWSC vision. To date, two Generations of the small arms weapon platform and three Generations of the WM-SATS are planned. However, the exact number of Generations could evolve throughout the life of this contract. The present plan is that the 1st Generation of both the small arms weapon platform and WM-SATS will be delivered to FSAR from other DRDC projects and as such, the work under this contract for the 1st Generations will be that of detailed evaluation. This detailed evaluation will be used to inform the development of the future Generations. However, it is possible that some of the development work for either the weapon platform or WM-SATS will need to be completed under this contract.

Upon completion and detailed evaluation of the 1st Generation weapon platform and WM-SATS, subsequent Generations will be developed and evaluated. Development of these Generations will depend heavily on input from the work in Projects 2.0 to 5.0 as well as WBE 1.2 and 1.3. In fact, the present plan is these projects and WBEs will feed technical data as well as software and hardware to WBE 1.5.

This SOW provides general categories of activities. Each task authorization (DND 626) will provide a detailed description of work, deliverables and timelines. A total of four categories of activities are described in the following paragraphs. Each task authorization can refer to more than one category described below and the same task can be executed several times over the contract duration. The identification of a weapon platform and WM-SATS task does not infer anything as to the actual distribution of capability throughout the weapon system. As such, sensor capability could just as easily be situated on the weapon platform as on the WM-SATS module. Consequently, WM-SATS refers more to capability than to the actual real estate occupied by the capability.

TASKS

Task 1: Human Factors Engineering

General

The services related to this task concern the application of human factors engineering expertise to the development of demonstrators of the FSAR IWSC (2nd Generation weapon platform and 2nd and 3rd Generation WM-SATS), the evaluation of all Generations (including 1st) potential for increased operational effectiveness both at the sectional and platoon level, identification of a way ahead from the human factors perspective for follow-on generations and the crafting of science (evidence) based SOR.

Services to be provided include

- 1 Develop and evolve a Human Factors program plan that covers all aspects of the IWSC demonstration.
- 2 Perform high level and detailed Human Factors based analyses of the IWSC identifying potential areas of challenge.
- 3 Develop and evolve metrics for the evaluation of system usability and operational effectiveness.
- 4 Design, plan and execute focus groups and laboratory trials to evaluate the usability and operational effectiveness of the IWSC and its weapon platform and WM-SATS subsystems.
- 5 Design, plan and execute field trials to evaluate the usability and operational effectiveness of the IWSC and its weapon platform and WM-SATS subsystems.
- 6 Analyse data from focus groups, laboratory trials and field trials and formulate and ensure the implementation of recommendations in the IWSC and its weapon platform and WM-SATS subsystems. Recommendations will be based on optimizing the operational effectiveness of the IWSC.
- 7 Evaluate knowledge developed under Project 2.0 Human Factors, and formulate and ensure the implementation of recommendations in the IWSC and its weapon platform and WM-SATS subsystems. Recommendations will be based on satisfying FSAR system goals.
- 8 Provide direction to Project 2.0 Human Factors based on understanding developed through focus groups, laboratory trials and field trials. Direction will be based on satisfying FSAR system goals.
- 9 Generate and validate a SOR based on system usability and operational effectiveness.
- 10 Develop timelines indicating when various capabilities should be implemented or upgraded (technology insertion) based on projected TRL of supporting technology.
- 11 Develop cost benefit analyses of the IWSC and its weapon platform and WM-SATS subsystems.
- 12 Evaluate how the IWSC fits with the present and future version of the FSS and formulate recommendations to ensure seamless system integration.
- 13 Document all analyses and results in written reports and presentations.

Task 2: Systems engineering analysis, design and validation**General**

The services related to this task concern the application of systems engineering expertise to the development of demonstrators of the FSAR IWSC (2nd Generation weapon platform and 2nd and 3rd Generation WM-SATS), the technical evaluation of the operation of all Generations (including 1st), identification of a way ahead from the systems engineering perspective for follow-on generations and the crafting of science (evidence) based technical system related specifications.

Services to be provided include

- 1 Develop and evolve a Systems Engineering program plan that covers all aspects of the IWSC demonstration.
- 2 Perform high level and detailed Systems Engineering based analyses and design of the IWSC identifying potential areas of challenge.
- 3 Develop and evolve technical metrics for the evaluation of system performance and the delivery of promised capabilities.
- 4 Generate and manage system technical drawings.
- 5 Specify and ensure conformity of all system, subsystem and component interfaces, mechanical/structural, thermal, electrical, electronics, and digital.
- 6 Direct, oversee and ensure integration of the weapon platform and WM-SATS subsystems.
- 7 Direct and oversee the technical evaluation of the system, subsystem and components and provide recommendations and solutions to Projects 3.0 to 5.0 based on results.
- 8 Evaluate knowledge developed under Projects 3.0 to 5.0 and formulate and ensure the implementation of recommendations in the IWSC and its weapon platform and WM-SATS subsystems. Recommendations will be based on satisfying FSAR system goals.
- 9 Perform trade studies to evaluate optimal location of the integrated weapon system of different capabilities.
- 10 Generate technical specifications in support of the Human Factors based SOR that will ensure delivery of capability.
- 11 Document all analyses and results in written reports and presentations.

Task 3: Small arms weapon platform analysis, design, fabrication and technical evaluation

Please note that we plan to reserve the task 3 to Colt Canada as a sub-contractor

General

The services related to this task concern the application of knowledge in small arms weapon platform technologies, analysis, design, fabrication and test and evaluation to the development of a 2nd Generation weapon platform. The small arms weapons platform includes but is not limited to the following components: weapon receiver, barrel, trigger group, heat guard, pistol grip, fore grip, rails, power and data rail, ammunition (projectile, case, propellant, primer) weapon management system, power management system, power sources, Soldier System power connectivity, on board service life and logistics monitoring modules, illumination and pointing modules, buffer, butt stock, recoil management mechanism, suppressor, and secondary lethality modules. It is possible that within the FSAR IWSC demonstration certain sensors presently included under WM-SATS could be integrated into the weapon platform. However, technical and design expertise in this case is still included under the Task 4.

Services to be provided include

- 1 Review literature/technology founded on open literature sources and industrial in-house data base and experience to provide technology direction to Projects 3.0 Launchers and components and 4.0 Effects and Ammunition. Ensure that work in Projects 3.0 and 4.0 does not duplicate work already performed and takes into consideration the industrial expertise in small arms weapon platforms.
- 2 Carry out preliminary design of weapon components and the platform as well as interfaces with the rest of the weapon system.
- 3 Build test rigs to evaluate technology.
- 4 Experimentally test and evaluate validate preliminary design concepts and component technologies.
- 5 Design and build rapid prototypes of weapon components, the platform and the complete weapon system.
- 6 Generate mechanical, electronic and electrical technical drawings
- 7 Perform kinematic modelling, modal analysis and finite element stress and strain modeling of the dynamic behaviour of weapon components, the weapon platform and the complete weapon system.
- 8 Carry out detailed design of weapon components and the platform as well as interfaces with the rest of the weapon system. Maintain control of mechanical drawings.
- 9 Build final weapon platform.
- 10 Evaluate weapon design using NATO standard based tests.
- 11 Man qualify the weapon in preparation for human factors type field trials.
- 12 Document all analyses and results in written reports and presentations

Task 4: WM-SATS analysis, design, fabrication and technical evaluation**General**

The services related to this task concern the application of knowledge in WM-SATS technologies, analysis, design, fabrication and test and evaluation to the development of a 2nd and 3rd Generation WM-SATS. The WM-SATS includes but is not limited to the following components: optics and electro-optics for the visible band, electro-optics for SWIR and LWIR spectral bands, beam splitter, laser ranging, targeting and steering, video display, weapon sight based on one spectral band or image fusion (digital or analogue) of visible, SWIR and LWIR spectral bands, DSP and FPGA and other data processing electronics, enhanced reality head mounted display, acoustic sensor and shot location software, DMC, IMU, accelerometers, temperature sensors, ambient pressure sensors, wind sensors, weapon cant sensors, FCS hardware and software, ballistics kernel, automatic target cueing and assisted target engagement software, and Power management system.

Services to be provided include

- 1 Review literature/technology founded on open literature sources and industrial in-house data base and experience to provide technology direction to Project 5.0 Weapon Mounted SA and Targeting Suite. Ensure that work in Project 5.0 does not duplicate work already performed and takes into consideration the industrial expertise in small arms weapon platforms.
- 2 Carry out preliminary design of WM-SATS components as well as interfaces with the rest of the weapon system.
- 3 Design and build breadboard type WM-SATS prototypes.
- 4 Build test rigs to evaluate technology.
- 5 Experimentally test and evaluate validate preliminary design concepts and component technologies.
- 6 Carry out detailed design of WM-SATS components and the integrated sub-system as well as interfaces with the rest of the integrated weapon system.
- 7 Generate mechanical, electronic and electrical technical drawings.
- 8 Build final WM-SATS sub-system.
- 9 Technically evaluate the WM-SATS in preparation for human factors field trials.
- 10 Document all analyses and results in written reports and presentations.

3. REPORTS AND OTHER DELIVERABLES

General

Depending on the nature of the task, the deliverable(s) could consist of a combination of any of the following:

- a. Technical reports
- b. Numerical models
- c. Results from experimental evaluation
- d. Results from user field trials
- e. Technical drawings
- f. Rapid prototypes
- g. Application software (including source code)
- h. Component and/or system hardware
- i. Demonstrators

Deliverables will be specified in each Task (DND 626).

Technical report

For each task authorization, the contractor must deliver a report describing in detail:

- a. The objectives of task
- b. The background of the task
- c. A description of the work performed
- d. Depending on the work requested, a report will also include at least one of the following:
 - i. Raw and analyzed experimental results
 - ii. Photos or videos documenting work
 - iii. Technical drawings
 - iv. Parasolid type descriptions of components
 - v. Documented source code
 - vi. User guide
 - vii. Input file for any simulations
 - viii. User trial test protocols

Individual tasks will specify where hard and/or electronic copies are required.
- e. Conclusions and recommendations
- f. List of Acronyms

The DRDC publication format provided by the technical authority must be used for the writing of the report. The abstract and executive summaries will be provided in English and French. The contractor must deliver between 5 and 10 hard copies of the report (as decided by the scientific authority and indicated in each task authorization) printed on 8 ½ in x 11 in paper and 2 electronic copies of the report on a CD in each of the following formats: MS Word and DRDC approved Adobe Acrobat PDF. Reports must be delivered in English.

4. PUBLICATIONS

The contractor and technical authority may be permitted to co-publish specific work related to a task to the public domain (conference, symposium, journal), however, all such publications for public release must be approved by the technical authority in advance of publication

5. **MEETINGS**

VTC meetings will be held on a monthly basis with on-site (at the contractors) meetings will be held on an as needed basis. Individual tasks will specify the frequency and approximate timing of on-site meetings. Frequency and timing of meetings could vary throughout a task based on the decision of the Scientific Authority.

6. **GOVERNMENT FURNISHED EQUIPMENT (GFE)**

General

Each task will contain a detailed definition of government provided equipment. Specific GFE will be related to output from Projects 2.0 to 5.0.

List of material

The type of material that could be provided to the contractor includes but is not limited to components or sub-components for: weapon receiver, barrel, trigger group, heat guard, pistol grip, fore grip, rails, power sources, on board service life and logistics monitoring, illumination and pointing, buffer, butt stock, recoil management, suppressor, secondary lethality module, optics and imaging modules for visible, SWIR and LWIR spectral bands, beam splitter, laser ranging, targeting and steering, video display, weapon sight based on one spectral band or image fusion (digital or analogue) of visible, SWIR and LWIR spectral bands, DSP and FPGA and other data processing electronics, enhanced reality head mounted display, acoustic sensor and shot location software, DMC, IMU, accelerometers, temperature sensors, ambient pressure sensors, wind sensors, weapon cant sensors, FCS hardware and software, ballistics kernel, automatic target cuing and assisted target engagement software, and Power management system.

7. **WORK LOCATION**

Work will be performed at the contractors or sub-contractors.

Annex B

MANDATORY AND POINT RATED CRITERIA

In the event of a request for proposals, the following criteria would be used

Proposals will be evaluated first on the basis of the mandatory criteria. Bidders must meet ALL of the mandatory criteria in order to be considered further. Failure on the part of the bidder to meet one (1) or more of the mandatory criteria will result in the proposal being deemed non-compliant and ineligible for further consideration or evaluation. Depending upon the successful meeting of these criteria by the bidder, proposals will be evaluated on the basis of the point rated criteria and the financial proposal.

Given the diversity of expertise required to fulfill this contract and to assist the bidders, criteria have been sub-divided based on the four broad areas of expertise required to deliver the contract, Human Factors, Systems engineering, Small arms weapon platform and Weapon Mounted Situational Awareness and Targeting Suite (WM-SATS). Given the primary objective of this work, development of a validated science based Statement of Operational Requirements (SOR) and metrics, the evaluation criteria requires that the project be led by a firm with expertise in Human Factors and which does not produce product related to the demonstration.

MANDATORY CRITERIA

| REF NO. | MANDATORY CRITERIA |
|------------|---|
| 1 | Bidder Credentials and Experience |
| | |
| | Human Factors |
| 1.1 | Bidders must demonstrate that at least one of their senior Human Factors (HF)/Human Systems Integration (HSI) consultants is Project Management Professional (PMP) certified and has managed a minimum of fifteen (15) HF consulting studies. |
| | |
| | Systems Engineering |
| 1.2 | Bidders must have at least one (1) Professional Systems Engineer with a minimum of ten (10) years of experience in land forces weapons systems engineering. |
| | |
| | Small Arms Weapon Platform |
| 1.3 | Bidders must have at least one (1) Professional Engineer or Senior Technologist with a minimum of ten (10) years of experience covering small arms weapon platform analysis, design, fabrication and technical evaluation. |
| | |
| | WM-SATS |
| 1.4 | Bidders must have at least two (2) Professional Engineers or Technical Experts or combination, each with a minimum of five (5) years of experience in the integration of the WM-SATS class of technologies into concept demonstrators or products. The WM-SATS class of technologies can be divided into five sub-classes and include, Sub-Class 1: optics and electro-optics for the visible band, electro-optics for SWIR and LWIR spectral bands, weapon sight based on one spectral band or image fusion (digital or analogue) of visible, SWIR and LWIR spectral bands, beam splitter, video display, enhanced reality head mounted display; Sub-Class 2: laser ranging, targeting and steering; Sub-Class 3: DMC, IMU, accelerometers, temperature sensors, ambient pressure sensors, wind sensors, weapon cant sensors, acoustic sensor; Sub-Class 4: DSP, FPGA, FCS hardware and software, ballistics kernel, automatic target cueing and assisted target |

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| | engagement software, shot location software; Sub-Class 5: Power management system. The combined experience of the two (2) Professional Engineers or Technical Experts or combination must include at least one component of each Sub-Class. |
| | |

POINT RATED CRITERIA

If the bidder has successfully met all of the foregoing mandatory criteria, proposals will be then evaluated on the basis of the point rated criteria. Point rated criteria will be assessed by a minimum of two HF specialists, two weapons specialists, and two WM-SATS specialists within Department of National Defence (DND). For each area of expertise, if there is any discrepancy between the points awarded by each scorer, an average of the points awarded by each of the scorers will be used. To be considered responsive, a bid must (a) meet all the mandatory criteria of this solicitation and (b) obtain a score higher than the minimum score for each category. A summary of the Minimum and Maximum scores per category is provided in the table below. The winning bid will be the bidder that obtains the highest total score while obtaining no scores lower than the minimum in any category.

| REF NO. | DESCRIPTION | MIN SCORE | MAX SCORE |
|---------|---|------------|------------|
| 2 | Technical Proposal | 70 | 110 |
| 3 | Management Proposal | 36 | 60 |
| 4 | Proposed Team | 185 | 355 |
| 4.1 | Human Factors | 60 | 115 |
| 4.2 | Systems Engineering | 18 | 30 |
| 4.3 | Small Arms Weapon Platform | 62 | 120 |
| 4.4 | Weapons Mounted Situational Awareness and Targeting Suite | 45 | 90 |
| 5 | Company | 57 | 164 |
| 5.1 | Human Factors | 22 | 54 |
| 5.2 | Systems Engineering | NA | 30 |
| 5.3 | Small Arms Weapon Platform | 20 | 40 |
| 5.4 | Weapons Mounted Situational Awareness and Targeting Suite | 15 | 40 |
| | TOTAL | 348 | 689 |

A detailed description of the point rated criteria and scoring method is provided in the table below.

| REF NO. | DESCRIPTION | MIN SCORE | MAX SCORE | EVALUATION CRITERIA |
|------------|---|-----------|------------|---|
| 2 | Technical Proposal | 70 | 110 | |
| 2.1 | Understanding of objectives and required technical work for each Task. | NA | 20 | <p>The bidder should clearly demonstrate that he understands the objectives and specificities of the project. He should also present in detail the technical support that he proposes for the conduct of the work and for achieving the objectives.</p> <p>20 pts: Proof of an excellent understanding of the task objectives and realistic technical solutions. All principal elements are defined and solutions given.</p> <p>15 pts: Proof of a very good understanding of the task objectives and realistic technical solutions. Almost all principal elements are defined and solutions given.</p> <p>10 pts: Proof of a good understanding of the task objectives and realistic technical solutions. Most of the principal elements are defined and solutions given.</p> <p>5 pts: Proof of a limited understanding of the task objectives and realistic technical solutions. Some of the principal elements are defined and solutions given.</p> <p>0 pts: No understanding of the task objectives and realistic technical solutions. Very few of the principal elements are defined and solutions given.</p> |
| 2.2 | Proposed strategy and methodology for each Task. | NA | 15 | <p>The bidder should clearly present the technical approach and the methodology that he proposes. The technical approach and the methodology that are proposed both need to be realistic, relevant and directly tied to the required technical work. They should also be complete and realistic. Innovation will also be evaluated.</p> <p>15 pts: The technical strategy and methodology (along with possible risks) presented is excellent (very concise and complete). All principal elements are defined and solutions given.</p> <p>12 pts: The technical strategy and methodology (along with possible risks) presented is very good (concise and</p> |

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| | | | | <p>complete). Almost all principal elements are defined and solutions given.</p> <p>9 pts: The technical strategy and methodology (along with possible risks) presented is good (concise and complete). Most of the principal elements are defined and solutions given.</p> <p>6 pts: The technical strategy and methodology (along with possible risks) presented is limited (very concise and complete). Some of the principal elements are defined and solutions given.</p> <p>3 pts: The technical strategy and methodology (along with possible risks) is not rigorously presented. Very few of the principal elements are defined and solutions given.</p> |
| 2.3 | Demonstrates an understanding of Canadian dismounted infantry needs, tactics, techniques, procedures (TTP's) and doctrine. | NA | 15 | <p>The bidder should demonstrate competence to undertake the work outlined in the SOW by demonstrating a solid understanding of Canadian dismounted infantry needs, TTP's and doctrine and the impact of soldier modernization on these. This may be demonstrated by clear description of HF projects undertaken that relied upon this level of understanding, or through direct, relevant and recent (last 5 years) experience working with or in the Canadian Infantry</p> <p>15 pts: Demonstrates an excellent understanding of Canadian dismounted infantry needs, TTP's and doctrine. Details the impact of soldier modernization on these. The bidder details numerous projects and/or experience working with Canadian dismounted infantry that required, and contributed to, this complete understanding and knowledge OR The bidder's team includes former members of the Canadian dismounted infantry with sufficient rank/extensive recent experience to provide them in-depth knowledge in this area.</p> <p>12 pts: Demonstrates very good understanding of Canadian dismounted infantry needs, TTP's and doctrine. Provides reasonable insight on the impact of soldier modernization on these. The bidder describes many projects and/or experience working with Canadian dismounted infantry that required, and contributed to, a very good level of understanding and knowledge.</p> |

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| | | | | <p>OR The bidder's team includes former military members with a very good level of relevant knowledge and experience in this area.</p> <p>9 pts: Demonstrates a good understanding of Canadian dismounted infantry needs, TTP's and doctrine. Provides some insight on the impact of soldier modernization on these. The bidder describes several projects and/or experience working with Canadian dismounted infantry that required, and contributed to, a good level of understanding and knowledge. OR The bidder's team includes former military members with a good level of relevant knowledge and experience in this area.</p> <p>6 pts: Demonstrates limited understanding of Canadian dismounted infantry needs, TTP's and doctrine. Provides limited insight on the impact of soldier modernization on these. The bidder describes some projects and/or experience working with Canadian dismounted infantry that required, and contributed to, a limited level of understanding and knowledge. OR The bidder's team includes former military members with limited relevant experience and/or knowledge in this area.</p> <p>3 pts: Demonstrates little understanding of Canadian dismounted infantry needs, TTP's and doctrine. Provides little insight on the impact of soldier modernization on these. The bidder has conducted few to no projects and has little to no experience working with Canadian dismounted infantry. OR The bidder's team includes former military members with little relevant experience and/or knowledge in this area.</p> |
| 2.4 | Demonstrates an understanding of current Canadian soldier system, future soldier systems, allied soldier systems and relevant emerging and future technologies to support Canadian soldier systems. | NA | 15 | <p>The Bidder should define the soldier as a system, and provide descriptive details and/or relevant project experience that demonstrates knowledge of current soldier systems (current, future, allied), as well as potential soldier technologies, interfaces and their impact on the soldier system.</p> <p>15 pts: Provides a comprehensive definition of the soldier as a system. Demonstrates a complete understanding of the current Canadian soldier system, an excellent awareness of allied soldier systems, and detailed understanding of many potential</p> |

future soldier systems, sub-systems, components and interfaces. Cites many projects wherein the bidder has contributed to the development and testing of a wide range of soldier systems, sub-systems and technologies, OR provides comprehensive details on soldier systems to demonstrate complete knowledge across the full spectrum of systems, sub-systems and technologies.

12 pts: Provides a Very Good definition of the soldier as a system. Demonstrates a very good understanding of the current Canadian soldier system, a very good level of awareness of allied soldier systems, and a very good understanding of the range of potential future soldier systems, sub-systems, components and interfaces. Has conducted many relevant projects across a range of soldier sub-systems to demonstrate this understanding OR provides sufficient details in the proposal to demonstrate a very good level of knowledge across the range of soldier systems and technologies

9 pts: Provides a good definition of the soldier as a system. Demonstrates a good understanding of the current Canadian soldier system, a good level of awareness of allied soldier systems, and a good understanding of the range of potential future soldier systems, sub-systems, components and interfaces. Has conducted several relevant projects across a range of soldier sub-systems to demonstrate this understanding OR provides sufficient details in the proposal to demonstrate a good level of knowledge across the range of soldier systems and technologies.

6 pts: Provides a limited definition of the soldier as a system. Demonstrates a limited understanding of the current Canadian soldier system, a limited level of awareness of allied soldier systems, and a limited understanding of the range of potential future soldier systems, sub-systems, components and interfaces. Has conducted some relevant projects across a range of soldier sub-systems to demonstrate this understanding OR provides sufficient details in the proposal to demonstrate a limited level of knowledge across the range of soldier systems and technologies.

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| | | | | <p>3 pts: Provides a weak definition of soldier systems. Demonstrates limited understanding of the current Canadian soldier system, little awareness of allied soldier systems, and limited understanding of the range of future potential soldier systems, components and interfaces. Has conducted few relevant projects or has conducted projects relevant to only a limited aspect of soldier systems. The proposal does not provide sufficient detail to demonstrate any more than a limited understanding of the foregoing.</p> |
| 2.5 | <p>Recognizes the direct and peripheral problems associated with providing Human Factors Engineering support to soldier systems</p> | NA | 15 | <p>The Bidder should identify and describe problems, and provide proposed solutions in areas including, but not limited to: experimental design, operational fidelity and scientific rigour, in the context of providing HF input to soldier systems.</p> <p>15 pts: Identifies and describes in detail the complete range of direct and peripheral problems, across all areas of experimental design, operational fidelity and scientific rigour, in the specific context of HF support to soldier modernization. Provides realistic and implementable solutions to all problems identified.</p> <p>12 pts: Identifies and describes many of the range of direct and peripheral problems, across all areas of experimental design, operational fidelity and scientific rigour, in the specific context of HF support to soldier systems. Provides very good solutions to all problems identified.</p> <p>9 pts: Identifies and describes several of the range of direct and peripheral problems, across all areas of experimental design, operational fidelity and scientific rigour, in the specific context of HF support to soldier systems. Provides good solutions to all problems identified.</p> <p>6 pts: Identifies and describes some of the range of direct and peripheral problems, across all areas of experimental design, operational fidelity and scientific rigour, in the specific context of HF support to soldier systems. Provides limited solutions to all problems identified.</p> <p>3 pts: Identifies and describes few of the range of direct and peripheral problems, across most areas of experimental design,</p> |

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| | | | | operational fidelity and scientific rigour, in the context of HF support to soldier systems. Provides few solutions, or solutions that are not very feasible, to the problems identified. |
| 2.6 | Demonstrates an understanding of the Soldier System Technology Road Map (SSTRM) program. | NA | 15 | <p>The Bidder should describe the relationship of the present work to the Implementation Phase of the SSTRM. The description should be based on the Capstone report and how the present work addresses the following: capability themes, identified deficiencies, identified drivers and constraints, challenges and requirements, and R&D Focus areas.</p> <p>15 pts: Understanding between the present work and the SSTRM Capstone report is extensive.</p> <p>12 pts: Understands many of the links between the present work and the SSTRM Capstone report.</p> <p>9 pts: Understands several of the links between the present work and the SSTRM Capstone report.</p> <p>6 pts: Understands some of the links between the present work and the SSTRM Capstone report.</p> <p>3 pts: Understanding of the relationship between the present work and the SSTRM Capstone report is limited.</p> |
| 2.7 | Demonstrates an understanding of the approach, issues and processes involved in developing a Statement of Operational Requirement (SOR) for soldier system capability | NA | 15 | <p>The Bidder should propose an approach, identify issues involved and identify processes and tools.</p> <p>15 pts: Demonstrates a comprehensive understanding of the approach, issues, processes and tools.</p> <p>12 pts: Demonstrates a very good understanding.</p> <p>9 pts: Demonstrates a good understanding.</p> <p>6 pts: Demonstrates limited understanding.</p> <p>3 pts: Demonstrates a little understanding.</p> |
| 3 | Management Proposal | 36 | 60 | |
| 3.1 | Project control (coordination, interfacing, supervision) | NA | 10 | <p>a. The bidder proposes the use of project control techniques/tools (i.e. Microsoft project or other) and supports with examples):</p> <p>10 pts: Acceptable (meets the requirement)</p> <p>5 pt: Low (lack of information) one example</p> <p>0 pts: Unacceptable (missing information)</p> |

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| 3.2 | Control system for resources | NA | 10 | <p>a. The bidder proposes the application of an effective resource management system and supports with examples:</p> <p>10 pts: Acceptable (meets the requirement) 5 pt: Low (lack of information) 0 pts: Unacceptable (missing information)</p> |
| 3.3 | Management experience of project manager | NA | 30 | <p>The Bidder must provide the name of the Project Manager who will be assigned to the project, demonstrating his/her education, qualifications and experience. His/her curriculum vitae must also be included.</p> <p>a. The project manager has experience in technical project management (technical, budget, personnel) – can include experience gained over many contracts: 15 pts: 15 years or more fulltime experience in technical project management (technical, budget, personnel) 10 pts: 10 years or more fulltime experience in technical project management (technical, budget, personnel) 5 pts: 5 years or more fulltime experience in technical project management (technical, budget, personnel) 0 pts: Less than 5 years fulltime experience in technical project management (technical, budget, personnel)</p> <p>b. The project manager has supervised R&D projects of \$500k or more: 15 pts: Supervised fifteen or more R&D projects 10 pts: Supervised ten or more R&D projects 5 pts: Supervised five or more R&D projects 0 pts: Supervised less than five R&D projects</p> |
| 3.4 | Assignment of personnel | NA | 10 | <p>a. The bidder must clearly present how it foresees to attribute the resources to each of the tasks as well as the precise role of each of the resources in each activity.</p> <p>Clear presentation of resource and role for each task: 10 pts: Proof of an excellent allocation of resources for all tasks (excellent</p> |

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| | | | | <p>understanding of requirements and fit with each task).</p> <p>8 pts: Proof of a very good allocation of resources for all tasks (very good understanding of requirements and fit with each task).</p> <p>6 pts: Proof of a good allocation of resources for all tasks (good understanding of requirements and fit with each task).</p> <p>4 pts: Proof of a limited allocation of resources for all tasks (limited understanding of requirements and fit with each task).</p> <p>0 pts: No allocation of resources for the tasks is given (no understanding of requirements and fit with each task).</p> |
| 4 | PROPOSED TEAM | 185 | 355 | |
| | <p>For each of the sub-criterion, the bidder must indicate the name of the resource(s) proposed and the résumé(s) must be included with the proposal.</p> <p>When more than one person is proposed for a resource category, each person shall be evaluated separately and the total score for the resource category will be the average score. It is understood that company personnel structures could dictate that sub-resource categories will be defined by a given company (ie. Under the resource category "Other Consultants" for Human Factors a company could have Intermediate, Junior and Coop sub-categories). As long as the primary resource category structure is maintained this is acceptable.</p> <p><i><u>Note for the experience criteria :</u></i></p> <p><i>For all the criteria pertaining to the experience of the proposed resources, points will be given to experience sufficiently demonstrated. The Bidder must therefore provide sufficient information to allow for a complete evaluation of each stated experience. If the information provided is insufficient to confirm the relevance of the experience with the requirement of a criterion, zero points will be given to the Bidder for that specific experience criterion.</i></p> <p><i>Minimum information required:</i></p> <ul style="list-style-type: none"> - Title of the project or experience; - Description of the project or experience; - Name of client, including name and telephone number of a point of contact able to confirm the information; - Exact dates of the project or the experience (month and year of start/end); - Exact dates of the involvement of the resource (month and year of start/end); - Tasks conducted by the resource during the project or the experience. <p><i><u>Note that concurrent activities pertaining to a single experience will be considered only once</u></i></p> | | | |
| 4.1 | Human Factors | 60 | 115 | |
| 4.1.1 | Project Leader | 18 | 30 | |
| 4.1.1.1 | Years of Experience | NA | 10 | Number of years experience in the provision of professional HF consulting services: |

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| | | | | 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |
| 4.1.1.2 | Relevance of Experience | NA | 10 | 10 pts: The project leader has demonstrated experience leading a large range of soldier system HF projects of varying size and scope. 8 pts: The project leader has demonstrated experience leading a range of soldier system HF projects of varying size and scope. 6 pts: The project leader has demonstrated experience leading army-relevant HF projects of varying size and scope 4 pts: The project leader has demonstrated experience leading military HF projects of varying size and scope. 2 pts: The project leader either has no military HF- experience or has limited experience leading HF projects of any size or scope. |
| 4.1.1.3 | Qualifications | NA | 10 | 10 pts: The project leader has a minimum of a Masters Degree with specialty in Human Factors and is a certified Human Factors professional. Project leader also possesses PMP certification. 8 pts: Above, less PMP certification. Leader has formal project management training. 6 pts: The project leader has a minimum of a Masters Degree with specialty in Human Factors, and is a full member of an HF professional organization. Lacks PMP certification, but has project management training 4 pts: The project leader has a Masters Degree in a non-HF human science, and is a full member of an HF professional organization. Lacks PMP certification or formal project management training. 2 pts: The project leader has no HF qualifications or has no post-graduate degree. Lacks formal project management training. |
| 4.1.2 | Human Factors Consultants | 22 | 45 | |
| 4.1.2.1 | Number of Senior Consultants | NA | 15 | Number of full-time Senior consultants in the company 15 pts: three or more Senior consultants 10 pts: two Senior consultants |

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| | | | | 5 pts: one Senior consultant |
| 4.1.2.2 | Years of Experience | NA | 10 | <p>Number of years experience in the provision of professional HF consulting services.</p> <p>10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience</p> |
| 4.1.2.3 | Relevance of Experience | NA | 10 | <p>10 pts: The senior consultant(s) has demonstrated experience leading a large range of soldier system HF projects of varying size and scope.</p> <p>8 pts: The senior consultant(s) has demonstrated experience leading a range of soldier system HF projects of varying size and scope.</p> <p>6 pts: The senior consultant(s) has demonstrated experience leading army-relevant HF projects of varying size and scope</p> <p>4 pts: The senior consultant(s) has demonstrated experience leading military HF projects of varying size and scope.</p> <p>2 pts: The senior consultant(s) either has no military HF- experience or has limited experience leading HF projects of any size or scope.</p> |
| 4.1.2.4 | Qualifications | NA | 10 | <p>10 pts: The senior consultant(s) has a minimum of a Masters Degree with specialty in Human Factors and is a certified Human Factors professional. Senior consultant(s) also possesses PMP certification.</p> <p>8 pts: Above, less PMP certification. Senior consultant(s) has formal project management training.</p> <p>6 pts: The senior consultant(s) has a minimum of a Masters Degree with specialty in Human Factors, and is a full member of an HF professional organization. Lacks PMP certification, but has project management training.</p> <p>4 pts: The senior consultant(s) has a Masters Degree in a non-HF human science, and is a full member of an HF professional organization. Lacks PMP certification or formal project management training.</p> <p>2 pts: The senior consultant(s) has no HF qualifications or has no post-graduate degree. Lacks formal project management training.</p> |

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| 4.1.3 | Other Consultants | 20 | 40 | |
| 4.1.3.1 | Number of Consultants | NA | 10 | <p>Number of full-time consultants other than senior consultants in the company</p> <p>10 pts: five consultants 8 pts: four consultants 6 pts: three consultants 4 pts: two consultants 2 pts: one consultant</p> |
| 4.1.3.2 | Years of Experience | NA | 10 | <p>Number of years experience in the provision of professional HF consulting services</p> <p>10 pts: 6+ years of experience 6 pts: 4 to 6 years of experience 2 pt: 2 to 4 years of experience</p> |
| 4.1.3.3 | Relevance of Experience | NA | 10 | <p>10 pts: The consultant(s) has demonstrated experience leading or conducting a large range of soldier system HF projects of varying size and scope. 8 pts: The consultant(s) has demonstrated experience leading or conducting a range of soldier system HF projects of varying size and scope. 6 pts: The consultant(s) has demonstrated experience conducting army-relevant HF projects of varying size and scope 4 pts: The consultant(s) has demonstrated experience conducting or supporting military HF projects of varying size and scope. 2 pts: The consultant(s) either has no military HF- experience or has limited experience conducting or supporting HF projects of any size or scope.</p> |
| 4.1.3.4 | Qualifications | NA | | <p>10 pts: The consultant(s) has a minimum of a Masters Degree with specialty in Human Factors. Is a member of an HF-related professional organization. 8 pts: The consultant(s) has a minimum of a Masters Degree with specialty in Human Sciences or relevant Engineering. 6 pts: The consultant(s) has a minimum of a Bachelors Degree in Human Sciences or Engineering. 4 pts: The consultant(s) has a minimum of a Bachelors degree. 2 pt: The consultant(s) does not possess a degree but has post-secondary education.</p> |
| 4.2 | Systems Engineering | 18 | 30 | |
| 4.2.1 | Systems Engineer | 18 | 30 | |
| 4.2.1.1 | Years of Experience | NA | 10 | Number of years experience in land forces |

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| | | | | weapons systems engineering: 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |
| 4.2.1.2 | Relevance of Experience | NA | 10 | 10 pts: The Systems Engineer(s) has demonstrated experience as a lead engineer in small arms weapons systems engineering projects. 8 pts: The Systems Engineer(s) has demonstrated experience as a lead engineer in land forces weapons systems engineering projects. 6 pts: The Systems Engineer(s) has demonstrated experience as a member of a team in small arms weapons systems engineering projects. 4 pts: The Systems Engineer(s) has demonstrated experience as a member of a team in land forces weapons systems engineering projects. |
| 4.2.1.3 | Qualifications | NA | 10 | 10 pts: The Systems Engineer(s) has a minimum of a Masters Degree in Engineering with specialty a specialty in Systems Engineering. 8 pts: The Systems Engineer(s) has a minimum of a Bachelors Degree in Engineering with specialty a specialty in Systems Engineering. 6 pts: The Systems Engineer(s) has a minimum of a Masters Degree in Engineering with specialty a specialty in Mechanical, Electrical, Electronics or Software Engineering or Engineering Physics. 4 pts: The Systems Engineer(s) has a minimum of a Bachelors Degree in Engineering with specialty a specialty in Mechanical, Electrical, Electronics or Software Engineering or Engineering Physics. |
| 4.3 | Small Arms Weapon Platform | 62 | 120 | |
| 4.3.1 | Lead Engineer | 14 | 30 | |
| 4.3.1.1 | Years of Experience | NA | 10 | Number of years experience in land forces weapons engineering. 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |

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| 4.3.1.2 | Relevance of Experience | NA | 10 | <p>10 pts: The Lead Engineer(s) has demonstrated experience as a lead engineer in small arms weapon platform analysis, design, fabrication and technical evaluation.</p> <p>8 pts: The Lead Engineer(s) has demonstrated experience as a lead engineer in land forces weapons engineering projects.</p> <p>6 pts: The Lead Engineer(s) has demonstrated experience as a member of a team in small arms weapon platform analysis, design, fabrication and technical evaluation.</p> <p>4 pts: The Lead Engineer(s) has demonstrated experience as a member of a team in land forces weapons engineering projects.</p> |
| 4.3.1.3 | Qualifications | NA | 10 | <p>10 pts: The Lead Engineer(s) has a minimum of a relevant Doctors Degree (eg. Mechanical, Materials, Combustion, Electrical and Electronics Engineering, Engineering Physics Systems Engineering).</p> <p>6 pts: The Lead Engineer(s) has a minimum of a relevant Masters Degree (eg. Mechanical, Materials, Combustion, Electrical and Electronics Engineering, Engineering Physics Systems Engineering).</p> <p>2 pts: The Lead Engineer(s) has a minimum of a Bachelors Degree (eg. Mechanical, Materials, Combustion, Electrical and Electronics Engineering, Engineering Physics Systems Engineering).</p> |
| 4.3.2 | Other Engineer(s) or Technical Expert(s) | 14 | 30 | |
| 4.3.2.1 | Years of Experience | NA | 10 | <p>Number of years experience in land forces weapons technical work</p> <p>10 pts: 6+ years of experience</p> <p>6 pts: 4 to 6 years of experience</p> <p>2 pts: 2 to 4 years of experience</p> |
| 4.3.2.2 | Relevance of Experience | NA | 10 | <p>10 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a lead in small arms weapon platform analysis, design, fabrication and technical evaluation.</p> <p>8 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a lead in land forces weapons engineering projects.</p> <p>6 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a member of a team in small arms weapon</p> |

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| | | | | platform analysis, design, fabrication and technical evaluation. 4 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a member of a team in land forces weapons engineering projects. |
| 4.3.2.3 | Qualifications | NA | 10 | 10 pts: The Engineer(s) or technical expert(s) has a minimum of a relevant Doctors Degree (eg. Engineering such as Mechanical, Materials, Combustion, Electrical, Electronics and Systems, and Engineering Physics, or Science such as Physics, Chemistry, and Computer Science). 6 pts: The Engineer(s) or technical expert(s) has a minimum of a relevant Masters Degree (eg. Engineering such as Mechanical, Materials, Combustion, Electrical, Electronics and Systems, and Engineering Physics, or Science such as Physics, Chemistry, and Computer Science). 2 pts: The Engineer(s) or technical expert(s) has a minimum of a Bachelors Degree (eg. Engineering such as Mechanical, Materials, Combustion, Electrical, Electronics and Systems, and Engineering Physics, or Science such as Physics, Chemistry, and Computer Science). |
| 4.3.3 | Lead Engineering Technologist | 17 | 30 | |
| 4.3.3.1 | Years of Experience | NA | 10 | Number of years experience in land forces weapons engineering. 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |
| 4.3.3.2 | Relevance of Experience | NA | 10 | Number of years experience in one of small arms weapon platform analysis, design, fabrication and technical evaluation. 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |
| 4.3.3.3 | Qualifications | NA | 10 | 10 pts: The Lead Engineering Technologist has a relevant diploma from a community college or technical institute (eg. Mechanical engineering technology, electrical engineering technology) as well as weapons technologist certification from the Canadian Forces. |

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| | | | | 5 pts: The Lead Engineering Technologist has weapons technologist certification from the Canadian Forces or has a relevant diploma from a community college or technical institute (eg. Mechanical engineering technology, electrical engineering technology). |
| 4.3.4 | Other Engineering Technologist(s) | 17 | 30 | |
| 4.3.4.1 | Years of Experience | NA | 10 | Number of years experience in land forces weapons engineering 10 pts: 6+ years of experience 6 pts: 4 to 6 years of experience 2 pts: 2 to 4 years of experience |
| 4.3.4.2 | Relevance of Experience | NA | 10 | Number of years experience in one of small arms weapon platform analysis, design, fabrication and technical evaluation. 10 pts: 6+ years of experience 6 pts: 4 to 6 years of experience 2 pts: 2 to 4 years of experience |
| 4.3.4.3 | Qualifications | NA | 10 | 10 pts: The Engineering Technologist has a relevant diploma from a community college or technical institute (eg. Mechanical engineering technology, electrical engineering technology) as well as weapons technologist certification from the Canadian Forces. 5 pts: The Engineering Technologist has weapons technologist certification from the Canadian Forces or has a relevant diploma from a community college or technical institute (eg. Mechanical engineering technology, electrical engineering technology). |
| 4.4 | WM-SATS | 45 | 90 | |
| 4.4.1 | Lead Engineer | 14 | 30 | |
| 4.4.1.1 | Years of Experience | NA | 10 | Number of years experience in the integration of the WM-SATS class of technologies in concept demonstrators or products for land forces weapons systems. 10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience |
| 4.4.1.2 | Relevance of Experience | NA | 10 | 10 pts: The Lead Engineer(s) has demonstrated experience as a lead engineer in the integration of the WM-SATS class of |

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| | | | | technologies into concept demonstrators or products for small arms weapons projects. 8 pts: The Lead Engineer(s) has demonstrated experience as a lead engineer in the integration of the WM-SATS class of technologies into concept demonstrators or products for land forces weapons projects. 6 pts: The Lead Engineer(s) has demonstrated experience as a member of a team in the integration of the WM-SATS class of technologies into concept demonstrators or products for small arms weapons projects. 4 pts: The Lead Engineer(s) has demonstrated experience as a member of a team in the integration of the WM-SATS class of technologies into concept demonstrators or products for land forces weapons projects. |
| 4.4.1.3 | Qualifications | NA | 10 | 10 pts: The Senior Engineer(s) has a minimum of a relevant Doctors Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics). 6 pts: The Senior Engineer(s) has a minimum of a relevant Masters Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics). 2 pts: The Senior Engineer(s) has a minimum of a Bachelors Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics). |
| 4.4.2 | Other Engineer(s) or Technical Expert(s) | 14 | 30 | |
| 4.4.2.1 | Years of Experience | NA | 10 | Number of years experience in the integration of the WM-SATS class of technologies in concept demonstrators or products for land forces weapons systems. 10 pts: 6+ years of experience 6 pts: 4 to 6 years of experience 2 pts: 2 to 4 years of experience |
| 4.4.2.2 | Relevance of Experience | NA | 10 | 10 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a lead in the integration of the WM-SATS class of technologies into concept demonstrators or products for small arms weapons projects. 8 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a lead in the integration of the WM-SATS |

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| | | | | <p>class of technologies into concept demonstrators or products for land forces weapons projects.</p> <p>6 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a member of a team in the integration of the WM-SATS class of technologies into concept demonstrators or products for small arms weapons projects.</p> <p>4 pts: The Engineer(s) or Technical Expert(s) has demonstrated experience as a member of a team in the integration of the WM-SATS class of technologies into concept demonstrators or products for land forces weapons projects.</p> |
| 4.4.2.3 | Qualifications | NA | 10 | <p>10 pts: The Engineer(s) or Technical Expert(s) has a minimum of a relevant Doctors Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics or Science such as Physics, Chemistry, Optics, Electronics).</p> <p>6 pts: The Engineer(s) or Technical Expert(s) has a minimum of a relevant Masters Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics or Science such as Physics, Chemistry, Optics, Electronics).</p> <p>2 pts: The Engineer(s) or Technical Expert(s) has a minimum of a Bachelors Degree (eg. Electrical, Electronics, and Optical Engineering, Engineering Physics or Science such as Physics, Chemistry, Optics, Electronics).</p> |
| 4.4.3 | Engineering Technologists | 17 | 30 | |
| 4.4.3.1 | Years of Experience | NA | 10 | <p>Number of years of experience in the integration of the WM-SATS class of technologies into concept demonstrators or products for land forces weapons systems.</p> <p>10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience</p> |
| 4.4.3.2 | Relevance of Experience | NA | 10 | <p>Number of years experience in the integration of one of the WM-SATS class of technologies into concept demonstrators of products for small arms weapon systems.</p> <p>10 pts: 15+ years of experience 6 pts: 10 to 15 years of experience 2 pts: 5 to 10 years of experience</p> |

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| 4.4.3.3 | Qualifications | NA | 10 | <p>10 pts: The Engineering Technologist(s) has a relevant diploma from a community college or technical institute (eg. Electrical, electronics, optical, MEMS engineering technology) as well as electro-optical technologist certification from the Canadian Forces.</p> <p>5 pts: The Engineering Technologist(s) has a electro-optical technologist certification from the Canadian Forces or has a relevant diploma from a community college or technical institute (eg. Electrical, electronics, optical, MEMS engineering technology).</p> |
| 5 | COMPANY | 57 | 164 | |
| | <p>The sub criteria will be evaluated according to the following method:</p> <p>Minimum information required:</p> <ul style="list-style-type: none"> - title of the contract; - description of the contract; - name of client, including name and telephone number of a point of contact able to confirm the information; - exact dates of the contract (month and year of start/end); | | | |
| 5.1 | Human Factors | 22 | 54 | |
| 5.1.1 | Relevant specific experience over the last 10 years | NA | 24 | <p>A minimum of two projects/studies in the delivery of each of the HF consulting services. The points are cumulative.</p> <p>2 pt: Engineering anthropometry</p> <p>2 pt: Biomechanics</p> <p>2 pt: Subjective assessment</p> <p>2 pt: Physical workload assessment</p> <p>2 pt: Mental workload assessment</p> <p>2 pt: Utility and usability evaluation</p> <p>2 pt: Experimental design</p> <p>2 pt: Statistical analysis</p> <p>2 pt: Field-based use evaluations of products</p> <p>2 pt: Individual performance measurement</p> <p>2 pt: Team performance measurement</p> <p>2 pt: Human engineering in systems design</p> |
| 5.1.1 | Relevant experience of the company over the last 10 years related to Soldier Systems. | NA | 15 | <p>Total value (excluding GST) of contracts conducted specifically on Human Factors evaluation of Soldier System technology: 15 pts</p> <p>0 pt: less than \$1,000,000</p> <p>5 pts: \$1,000,000 to less than \$2,000,000</p> |

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| | | | | 10 pts: \$2,000,000 to less than \$3,000,000 15 pts: more than \$3,000,000 |
| 5.1.2 | Relevant experience of the company over the last 10 years related to small arms weapon system technologies. | NA | 15 | Total value (excluding GST) of contracts conducted specifically on Human Factors evaluation of small arms weapon system technologies: 15 pts 0 pt: less than \$500,000 5 pts: \$500,000 to less than \$1,000,000 10 pts: \$1,000,000 to less than \$2,000,000 15 pts: more than \$2,000,000 |
| 5.2 | Systems Engineering | NA | 30 | |
| 5.2.1 | Relevant experience of the company over the last 10 years related to small arms integrated weapon systems. | NA | 15 | Total value (excluding GST) of contracts conducted specifically on systems analysis, design and validation of small arms integrated weapon systems: 0 pt: less than \$250,000 5 pts: \$250,000 to less than \$500,000 10 pts: \$500,000 to less than \$750,000 15 pts: more than \$750,000 |
| 5.2.2 | Relevant experience of the company over the last 10 years related to land forces integrated weapon systems. | NA | 15 | Total value (excluding GST) of contracts conducted specifically on land forces integrated weapon systems: 0 pt: less than \$250,000 5 pts: \$250,000 to less than \$500,000 10 pts: \$500,000 to less than \$750,000 15 pts: more than \$750,000 |
| 5.3 | Small Arms Weapon Platform | 20 | 40 | |
| 5.3.1 | Relevant specific experience of the company over the last 10 years | NA | 25 | A minimum of two projects/studies related to each of the following technologies. The points are cumulative. 5 pt: Electronic ballistic systems 5 pt: Recoil management 5 pt: Sound and Flash Suppressors 5 pt: Power and Data rail 5 pt: On-board service life and logistics monitoring |
| 5.3.2 | Relevant general experience of the company over the last 10 years | NA | 15 | Total value (excluding GST) of contracts conducted specifically on analysis, design, fabrication and technical evaluation of small arms integrated weapon systems: 0 pt: less than \$1,000,000 5 pts: \$1,000,000 to less than \$2,000,000 10 pts: \$2,000,000 to less than \$3,000,000 |

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| | | | | 15 pts: more than \$3,000,000 |
| 5.4 | WM-SATS | 15 | 40 | |
| 5.4.1 | Relevant specific experience of the company over the last 10 years | NA | 25 | <p>A minimum of two projects/studies related to the following WM-SATS sub-classes of technologies. The points are cumulative.</p> <p>5 pt: Optics and electro-optics for visible band, electro-optics for SWIR and LWIR spectral bands, weapon sight based on one spectral band or image fusion (digital or analogue) of visible, SWIR and LWIR spectral bands, beam splitter, video display, enhanced reality head mounted display</p> <p>5 pt: Laser ranging, targeting and steering</p> <p>5 pt: DMC, IMU, accelerometers, temperature sensors, ambient pressure sensors, wind sensors, weapon cant sensors, acoustic sensor;</p> <p>5 pt: DSP, FPGA, FCS hardware and software, ballistics kernel, automatic target cueing and assisted target engagement software, shot location software</p> <p>5 pt: Power management system.</p> |
| 5.4.2 | Relevant experience of the company over the last 5 years | NA | 15 | <p>Total value (excluding GST) of contracts conducted specifically on analysis, design, fabrication and technical evaluation of weapon mounted situational awareness and targeting suite technologies: 15 pts</p> <p>0 pt: less than \$250,000</p> <p>5 pts: \$250,000 to less than \$500,000</p> <p>10 pts: \$500,000 to less than \$750,000</p> <p>15 pts: more than \$750,000</p> |