
DGLEPM Medium Complexity Bid Solicitation and Resulting Contract Template (MC)(Chg 5)

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION	3
1.1 STATEMENT OF WORK.....	3
1.2 DEBRIEFINGS.....	3
1.3 CANADIAN CONTENT.....	3
PART 2 - BIDDER INSTRUCTIONS	3
2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS.....	3
2.2 ELECTRONIC SUBMISSION OF BIDS.....	3
2.3 FORMER PUBLIC SERVANT.....	3
2.4 ENQUIRIES - BID SOLICITATION.....	5
2.5 APPLICABLE LAWS.....	5
PART 3 - BID PREPARATION INSTRUCTIONS	5
3.1 BID PREPARATION INSTRUCTIONS.....	5
PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION	6
4.1 EVALUATION PROCEDURES.....	6
4.2 BASIS OF SELECTION.....	7
PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION	7
5.1 CERTIFICATIONS REQUIRED WITH THE BID.....	7
5.2 CERTIFICATIONS PRECEDENT TO CONTRACT AWARD AND ADDITIONAL INFORMATION.....	7
PART 6 - RESULTING CONTRACT CLAUSES	8
6.1 SECURITY REQUIREMENTS.....	8
6.2 STATEMENT OF WORK.....	8
6.3 STANDARD CLAUSES AND CONDITIONS.....	8
6.4 TERM OF CONTRACT.....	9
6.5 AUTHORITIES.....	9
6.6 PROACTIVE DISCLOSURE OF CONTRACTS WITH FORMER PUBLIC SERVANTS.....	9
6.7 PAYMENT.....	10
6.8 INVOICING INSTRUCTIONS.....	10
6.9 CERTIFICATIONS.....	10
6.10 APPLICABLE LAWS.....	10
6.11 PRIORITY OF DOCUMENTS.....	10
6.12 DEFENCE CONTRACT.....	11
6.13 INSURANCE.....	11
ANNEX "A"	12
STATEMENT OF WORK.....	ERROR! BOOKMARK NOT DEFINED.
ANNEX "B"	20
EVALUATION CRITERIA.....	20
ANNEX "C"	204
SECURITY REQUIREMENT CHECK LIST.....	204

ANNEX "D" 22

ELECTRONIC PAYMENT INSTRUMENTS.....22

PART 1 - GENERAL INFORMATION

1.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Canadian Content

"The requirement is subject to a preference for Canadian goods and/or services."

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

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

The 2003 (2017-04-27) Standard Instructions – Goods and Services – Competitive Requirements, are incorporated by reference into and form part of the bid solicitation, with the following modifications:

- a) Section 02, Procurement Business Number is deleted in its entirety.
- b) Section 20(2), Further Information is deleted in its entirety.

2.2 Electronic Submission of Bids

- a) Bids must be submitted only to the Department of National Defence by the date, time and place indicated on page 1 of the bid solicitation. Bids must be received electronically as noted in subparagraph b).
- b) **Electronic Submissions: Individual e-mails exceeding five (5) megabytes, or that includes other factors such as embedded macros and/or links, may be rejected by the DND e-mail system and/or firewall(s) without notice to the Bidder or Contracting Authority.** Larger bids may be submitted through more than one e-mail. The Contracting Authority will confirm receipt of documents. It is the Bidder's responsibility to ensure that the Contracting Authority has received the entire submission. Bidders should not assume that all documents have been received unless the Contracting Authority confirms receipt of each document. In order to minimize the potential for technical issues, Bidders are requested to allow sufficient time before the closing time and date to confirm receipt. Technical and financial documents received after the closing time and date will not be accepted.

Due to the nature of the bid solicitation, bids transmitted by facsimile will not be accepted.

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to

comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

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

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

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

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

Former Public Servant in Receipt of a Pension

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

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

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

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

Work Force Adjustment Directive

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

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;

-
- e. rate of pay on which lump sum payment is based;
 - f. period of lump sum payment including start date, end date and number of weeks;
 - g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

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

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.5 Applicable Laws

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

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid (1 soft copy);
- Section II: Financial Bid (1 soft copy);
- Section III: Certifications (1 soft copy);
- Section IV: Additional Information (1 soft copy);

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

Bidders may use Attachment 1 to Part 3 to indicate their prices. If Bidders choose to use Attachment 1 to Part 3 to indicate their prices, Bidders must include Attachment 1 to Part 3 in their financial bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid as follows:

Bidders must submit firm prices, Delivered Duty Paid (DDP) at NPB building, 45 boul. Sacré-Coeur, Gatineau (Qc) J8X 1C6, Incoterms 2010, Applicable Taxes excluded. The total amount of Applicable Taxes must be shown separately.

Bids must be submitted in Canadian dollars.

3.1.1 Electronic Payment of Invoices – Bid

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

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

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

3.1.2 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

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

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.
- (c) The evaluation team will determine first if there are two or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than two responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

See Annex B – Evaluation Criteria

4.1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, Delivered Duty Paid (DDP) at the NPB building, 45 boul. Sacré-Coeur, Gatineau (Qc) J8X 1C6, Incoterms 2010, Canadian customs duties and excise taxes included, Applicable Taxes excluded.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the *lowest evaluated price* will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Canadian Content Certification

This procurement is conditionally limited to Canadian services.

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids with a certification that the service offered is a Canadian service, as defined in clause [A3050T](#), may be considered.

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

The Bidder certifies that:

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

5.1.1.1 *SACC Manual* clause [A3050T](#) (2014-11-27) Canadian Content Definition

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's website](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969#afed) (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969#afed).

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

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Education and Experience

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

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

6.1.1 There is no security requirement applicable to this Contract.

6.2 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A.

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

[2010C](#) (2016-04-04), General Conditions - Services (Medium Complexity) apply to and form part of the Contract, with the following modifications:

a. Definition of Minister is modified as follows:

"Canada", "Crown", "Her Majesty" or "the Government" means Her Majesty the Queen in right of Canada as represented by the Minister of National Defence and any other person duly authorized to act on behalf of that minister or, if applicable, an appropriate minister to whom the Minister of National Defence has

delegated his or her powers, duties or functions and any other person duly authorized to act on behalf of that minister.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is to be performed before July 31st 2018.

6.4.2 Shipping Instructions

Services will be delivered at the location specified in the Statement of Work, Annex A.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Elizabeth Delisle

Contracting Authority DLP Dedicated Contracting Cell
Direction de l'obtention terrestre 7-2-2-2 | Directorate of Land Procurement 7-2-2-2
Défense nationale | National Defence Ottawa, Canada K1A 0K2
Elizabeth.delisle@forces.gc.ca
Téléphone | Telephone 819-939-7392
Gouvernement du Canada | Government of Canada

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

6.5.2 Project Authority

The Project Authority for the Contract is:

François Paquin

Senior IM/IT Project Manager
Department of National Defence (DND)
DLEPS 11,
NPB, 45 blvd Sacre Coeur
Telephone: 613-939-9338
E-mail: francois.paquin2@forces.gc.ca

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

6.6 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

6.7 Payment

6.7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in contract for a cost of \$ _____. Customs duties are included and Applicable Taxes are extra.

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

6.7.2 Single Payment

SACC Manual clause H1000C (2008-05-12) Single Payment

6.7.3 Electronic Payment of Invoices – Contract

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

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

6.8 Invoicing Instructions

The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed. Invoices must be distributed as follows:

- a. One (1) soft copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.9 Certifications

6.9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

6.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b)
- (c) the general conditions
[2010C](#) (2016-04-04), General Conditions - Services (Medium Complexity);
- (d) Annex A, Statement of Work;
- (e) Annex C, Security Requirements Check List;
- (f) the Contractor's bid dated _____.

6.12 Defence Contract

SACC *Manual* clause [A9006C](#) (2012-07-16) Defence Contract

6.13 Insurance

SACC *Manual* clause [G1005C](#) (2012-07-16) Insurance

ANNEX "A"

Statement of Work (SOW)

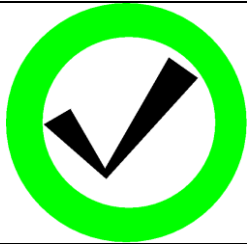
Vehicle Penetration Testing and Reverse Engineering Course

Requisition Number:

Date: 23/02/2018

Prepared by:

Director Land Equipment Program Staff 11
(Land Cyber Mission Assurance Program)
National Defence Headquarters
National Printing Bureau
Gatineau, Quebec
J8X 1C6



NOTICE

This documentation has been reviewed by the Technical Authority and does not contain controlled goods.

AVIS

Cette documentation a été révisée par l'Autorité technique et ne contient pas de marchandises contrôlées.

TABLE OF CONTENTS

1. BACKGROUND	14
2. OBJECTIVE	14
3. SCOPE OF WORK	14
4. TASKS/REQUIREMENTS	14
5. DELIVERABLES	16

6. CONSTRAINTS	16
7. LANGUAGE OF WORK	17
8. LOCATION OF WORK	17
9. TERMINOLOGY	17
10. SUPPORT PROVIDED BY CANADA	17
<i>ANNEX A</i>	<i>18</i>
<i>ANNEX B</i>	<i>19</i>

1. BACKGROUND

The automobile industry has introduced electronics and software in vehicles in order to improve overall operating efficiency of engines, transmission, braking systems and auxiliary systems. The electronic control units (ECUs) and their related software may be vulnerable to security attacks much like other communication devices such as cell phones or laptops. Military vehicles which contain such ECUs are susceptible to the same type of vulnerabilities.

2. OBJECTIVE

This Statement of Work has been established to familiarize and train Department of National Defence (DND) and Canadian Armed Forces (CAF) employees on Vehicle Penetration Testing and Reverse Engineering in relation to security attacks on automotive ECUs

3. SCOPE OF WORK

DND requires a course be conducted on Vehicle Penetration Testing and Reverse Engineering. The course must include theoretical as well as practical (hands-on) training. Canada anticipates up to 20 personnel will attend the course and estimates that the course should be of a duration of two days.

4. TASKS/REQUIREMENTS

4.1 The Contractor must provide a course, theoretical as well as practical (hands-on), for up to 20 personnel. DND estimates the course to be two days in length. The hands-on portion of the course must allow students the opportunity to put in practice the theoretical knowledge of the course and test their abilities. The Contractor is to provide details in their bid to demonstrate the efficacy of the course;

4.2 The Contractor must provide a detailed course lesson plan, at least ten (10) working days prior to the start of the course for approval by Canada. The lesson plan and documentation must as a minimum address all modules identified at 4.5 of this document.

4.3 The course must be delivered before 31 March 2018. The preferred date is the week of 26 March 2018;

4.4 The Contractor and individual instructors delivering the course must demonstrate an expert knowledge in penetration testing and reverse engineering specializing in automotive embedded controller software.

4.5 The Contractor must provide course that includes, but is not limited to, the following modules:

4.5.1 Vehicle data capture

The Contractor must provide instruction on Vehicle Data Capture and Management (DCM). This is the creation and expansion of access to high-quality, real-time, multimodal transportation data, captured from connected vehicles, mobile devices, and infrastructure. Data Capture and Management technologies collect real-time data from a variety of sources and modes and integrate the data across modes and sources or make it available for users to incorporate according to their needs.

The objectives of the DCM module is for the course candidates to understand:

- Enabling systematic data capture from connected vehicles (automobiles, transit, and trucks), mobile devices, and infrastructure;
- Data environments that enable integration of high-quality data from multiple sources for transportation management and performance measurement;
- The ability of Data Management software systems to eliminate technical and institutional barriers to the capture, management, and sharing of data; and
- The required infrastructure for transformative applications implementation, along with associated costs and benefits.

4.5.2 Diagnostic fuzzing

The objective of the Diagnostic fuzzing training module is to impart an understanding on the topic of “fuzzing” as it applies to vehicles. In this context, Fuzz testing (fuzzing) is a quality assurance technique used to discover coding errors and security loopholes in software, operating systems or networks. It involves inputting massive amounts of random data, called fuzz, to the test subject in an attempt to make the vehicle inoperable (crash). If a vulnerability is found, a software tool called a fuzzer can be used to identify potential causes.

The training objectives are:

- To demonstrate how fuzzing is performed;
- To demonstrate fuzzing using the use of a classroom simulator;
- Explain the role of the CAN BUS in the operation of a vehicle;
- To demonstrate how vulnerabilities are detected; and
- Provide the list of software and hardware tools needed to perform fuzzing.

4.5.3 Vehicle message replay techniques

The objective of this training module is to ensure that candidates have a general understanding of a vehicle replay attack (also known as playback attack). This is a form of network attack in which a valid data transmission is maliciously or fraudulently repeated or delayed. This is carried out either by the originator or by an adversary who intercepts the data and re-transmits it, possibly as part of a masquerade attack by IP packet substitution.

This module should address as a minimum:

- Prevention and countermeasures;
- Countermeasures in specific scenarios; and
- Real world examples of replay attack susceptibility

4.5.4 Advance vehicle control techniques

This module is intended to give the course candidates a general understanding of Advance Vehicle Control techniques and technologies that will eventually migrate to military vehicles.

This module should cover:

- The concept of the Intelligent Vehicle/Highway System (IVHS);
- Recent advances in a variety of technologies in the automatic control of the operation of road vehicles;
- Identifying three stages in the likely evolution of these advanced vehicle control systems (AVCS), showing how AVCS is related to the other IVHS functions;

-
- The technological elements of AVCS, and the corresponding research and development work now in progress; and
 - The potential to integrate AVCS technologies into military vehicles and the potentials vulnerabilities and risks.

4.5.5 Hardware physical control access

In this module the course candidates should develop a basic understanding of the field of physical security, information security and access control.

The act of accessing may mean consuming, entering, or using. Permission to access a resource is called authorization. This module should at a minimum include:

- Physical security;
- Access control system operation;
- Access credential;
- Access control system components;
- Access control topology;
- Types of readers;
- Access control system topologies; and
- General Security risks and mitigation measures.

4.5.6 Hardware analysis

At the conclusion of this module, candidates must have a good general understanding of diagnostic programs used to examine the state of, or locate problems with hardware, or operating system environments that are running on/in vehicles CAN BUS or one of the vehicles Electronic Control Units.

4.5.7 Society of Automotive Engineers standard SAE J1939 (J1939 protocol)

The objective of this module is for the course candidates to obtain a good general understanding of SAE J1939 protocol. In particular:

- The role of the J1939 Protocol when used for communication and diagnostics among vehicle components;
- Its role in the heavy-duty truck industry in the United States and in Europe; and
- Its role in military vehicles.

5. DELIVERABLES

5.1 The Contractor must also provide, for approval by Canada:

- Detailed course lesson plan, at least 10 working days before the start of the course;
- All printed and audio-visual material;
- List of emulators used as classroom aids;
- Theoretical and practical course material; and
- Student test and student test results.

6. CONSTRAINTS

6.1 The course must be delivered during normal business hours (08:00 to 17:00, Monday to Friday, excluding public holidays).

6.2 The Contractor must be authorized to perform work in Canada.

6.3 The Contractor is solely responsible for all printed material, manuals and handouts including photocopying.

7. LANGUAGE OF WORK

The course must be delivered in English and any printed material must also be delivered in English.

8. LOCATION OF WORK

The course must be delivered in the National Capital Region (Ottawa, Canada), exact location to be defined by Canada after contract award. As required for the completion of the Work, Canada will provide, at their sole discretion, access to the DND/CAF facilities and the Project Authority as required for the successful completion of the Work.

9. TERMINOLOGY

Controller Area Networks (CAN): installed in all modern military vehicles to remove the need of having thousands of individual wires connecting various devices in the military platform to the vehicle's battery. All electronic functions are connected to the TIPM, (Totally Integrated Power Module), such as solenoids/relays to lock the doors or mini-motors to operate the power windows etc. From each node (IE Switch pod that controls the windows or the electric door locks) it broadcasts a coded message across the CAN. When the TIPM detects a valid message, it will react to perform some function such as locking the doors, activating the brakes and etc.

Fuzz testing (fuzzing): quality assurance technique used to discover computer coding errors and security deficiencies in software, operating systems or networks. It involves inputting massive amounts of random data, called "fuzz", to the test subject in an attempt to make it inoperable (crash) using a software tool called a fuzzer. This can be used to identify potential vulnerabilities on the CAN.

10. SUPPORT PROVIDED BY CANADA

10.1 As required for the completion of the Work, Canada will provide the following:

10.2 Review of course lesson plans and other submitted deliverables, as required, and the provision of comments and suggested revisions, in a timely manner.

10.3 Other assistance and support as appropriate such as class room, vehicle test stalls, electric power etc. Canada will provide a full operational civilian pattern or military vehicle to meet the Contractor's requirement for practical, hand-on testing.

10.4 As required for the completion of the Work, Canada will provide the following, at their sole discretion, access to relevant documentation and reference materials to which the Contractor would not otherwise have access, including any necessary documentation related to the configuration of the test vehicle(s).

ANNEX A TECHNICAL EVALUATION CRITERIA

Contractor Qualifications

The Contractor must clearly demonstrate in their submission that:

M1. The Bidder has a minimum of five years of experience, within the last eight years as of bid closing, in delivering Vehicle Penetration Testing and Reverse Engineering courses to allied Government agencies or industry.

M2. Identify two resources demonstrating expert understanding (*as defined below*) as Subject Matter Experts in the field of Vehicle Penetration Testing and Reverse Engineering training through a combination of formal training or experience. The Contractor's Curricula Vitae must be submitted as part of the Contractor's proposal which demonstrates:

- Expert understanding based on a minimum of five years practical, recent* and relevant** experience of vehicle serial data protocols such as Controller Area Network (CAN), Local Interconnect Sub-bus (LIN), and Automotive Ethernet (BroadR);
- Expert understanding based on a minimum of five years practical, recent* and relevant** experience of vehicle high level protocols such as J1979, ISO 14230, and ISO 14229; and
- Have taught a minimum of two (2) Course serials of a technical nature, within the past four (4) years.

**Recent experience is defined as having been completed within the last 10 years.*

***Relevant experience is defined as being related to vehicle penetration testing and reverse engineering*

M3. The Bidder must demonstrate their ability to deliver the course by providing a draft version of the lesson plan and presentation to be assessed and approved by Canada. The draft lesson plan and presentation must contain all elements of section 4.5 of the SOW and demonstrate a complete understanding of the course material.

ANNEX B
FINANCIAL EVALUATION CRITERIA

To be found compliant the Bidder must complete the following table. The table will be used to evaluate the Bidder's financial evaluation.

Activity	Quantity (A)	Cost (B)	Proposal Amount
Instructor Cost*	No. of Hours	Cost Per Hour	A*B
Course Material Cost	No. of copies	Cost per student	A*B
Total Cost:			Sum of Instructor and Course Material Costs

* The cost of travel and living expenses for contractors is not considered in the bid pricing and will not form part of the evaluation. Travel and living costs will be reimbursed on a cost recovery basis, without the ability for profit, as per the National Joint Council Travel Directive. The Contractor will be paid its authorized travel and living expenses, reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal, private vehicle and incidental allowances specified in Appendices B, C and D of the National Joint Council Travel Directive (<https://www.njc-cnm.gc.ca/directive/d10/en>) and with the other provisions of the directive referring to "travelers", rather than those referring to "employees".

ANNEX "B"

EVALUATION CRITERIA

ATTACHMENT 1 TO PART 3 OF THE - BID SOLICITATION

PRICING SCHEDULE

Activity	Quantity (A)	Cost (B)	Proposal Amount
Instructor Cost*	No. of Hours	Cost Per Hour	A*B
Course Material	No. of copies	Cost per student	A*B

* The cost of travel and living expenses for contractors is not considered in the bid pricing.

Bidders may use Attachment 1 to Part 3 to indicate their prices. If Bidders choose to use Attachment 1 to Part 3 to indicate their prices, Bidders must include Attachment 1 to Part 3 in their financial bid.

ANNEX "C"

SECURITY REQUIREMENT CHECK LIST

ANNEX “D” to PART 3 OF THE - BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

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