



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving
PWGSC
33 City Centre Drive
Suite 480C
Mississauga
Ontario
L5B 2N5
Bid Fax: (905) 615-2095**

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

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

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

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

Comments - Commentaires

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Ontario Region
33 City Centre Drive
Suite 480
Mississauga
Ontario
L5B 2N5

Title - Sujet Co-ordinate Measuring Machine	
Solicitation No. - N° de l'invitation W7719-175351/A	Date 2016-11-04
Client Reference No. - N° de référence du client W7719-175351	
GETS Reference No. - N° de référence de SEAG PW-\$TOR-031-7210	
File No. - N° de dossier TOR-6-39100 (031)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-12-19	Time Zone Fuseau horaire Eastern Standard Time EST
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: Schmidt, Jeff	Buyer Id - Id de l'acheteur tor031
Telephone No. - N° de téléphone (905) 615-2058 ()	FAX No. - N° de FAX (905) 615-2060
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE 1133 Sheppard Ave. W. Toronto Ontario M3K2C9 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

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PART 1 - GENERAL INFORMATION

1.1 Requirement

The requirement is detailed under Article 2 of the resulting contract clauses.

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 Trade Agreements

The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

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 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

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

Delete: 60 days
Insert: 90 days

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 10 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as

such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 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 (3 hard copies)
Section II: Financial Bid (1 hard copies)
Section III: Certifications (1 hard copies)

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

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

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 in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "1" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "1" Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

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

3.1.2 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.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

Each bid will be reviewed for compliance with the mandatory requirements of the bid solicitation. Bids that do not meet each and every Mandatory Technical Criteria will be considered non-compliant and will receive no further consideration.

1. General Mandatory Requirements

- 1.1 Bidders must provide make and model of the proposed Coordinate Measuring Machine (CMM) and must clearly address each specification with a specifications sheet or literature to demonstrate compliance with the Mandatory Technical Criteria.

Make: _____

Model: _____

Criteria No.	Reference to Annex A	Specifications	Mandatory Technical Specifications	Location in Bid (Section or Page #)
1.2	4.1.1	Measurement accuracy	A minimum of .1mm.	
1.3	4.1.2	Repeatability of measures	Single Point Repeatability at a minimum of 0.06mm.	
1.4	4.1.3	Working volume	Minimum 2.5 m but not more than 3.0 m.	
1.5	4.1.4	Weight	CMM arm must weigh less than 12kg.	
1.6	4.1.5	Counterbalanced weight	Must have internal counterbalance feature to stabilize arm and minimize effort required by a single operator.	
1.7	4.1.6	Power supply	Must be powered by 120V AC.	
1.8	4.1.7	Battery power	Must be fully battery operated by rechargeable and interchangeable battery.	
1.9	4.1.8	On-board computer	Must have an on-board computer with touch screen interface to enable measurements without external computer.	
1.10	4.1.9	Connectivity to external computer	Wired and wireless (e.g. Bluetooth, Wi-Fi) availability.	
1.11	4.1.10	Thermal compensation	The CMM must have temperature corrected encoders.	

1.12	4.1.11	Digitizing Accessories	Must be compatibility with optional contact probes and laser scan heads.	
1.13	4.1.12	Degrees of freedom	Must have a minimum of 7 axes.	
1.14	4.1.13	Measurement Units	Must provide measurements in SI or imperial units.	
1.15	4.1.14	Scan data output	Digitized 3 dimensions (i.e., X, Y, Z) coordinates in ASCII compliant format for export to common third party software (e.g. Matlab, SPSS, MS Excel).	
1.16	4.1.15	Software API	Ability to communicate with user-developed software via a software API.	
1.17	4.1.16	Mounting	Base must accept alternate mounting options (e.g. clamp, magnetic, vacuum).	

4.1.2 Financial Evaluation

- i. Bidders must submit pricing in accordance with Annex B, Basis of Payment, with their bid at bid closing;
- ii. The Total Evaluated Price will be the sum of the Total Extended Prices and Lot Prices for the Firm and Optional Requirements at Annex B, Basis of Payment.

For Item 1.1, this will be the Firm Lot Price;

For Item 2.1, this will be the Firm Lot Price;

For Item 2.2, this will be calculated by multiplying the Quantity by the Firm Unit Price;

For Item 2.3, this will be calculated by multiplying the Quantity by the Firm Unit Price

- iii. *SACC Manual* Clause A0220T (2014-06-26), Evaluation of Price – Bid

4.2 Basis of Selection

- 4.2.1 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 specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.2 Certifications Precedent to Contract Award and Additional Information

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

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

PART 6 - 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 the Contract.

6.2 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex A.

6.2.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A, Requirement of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

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

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>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010A (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

4001 (2015-04-01) Hardware Purchase, Lease and Maintenance, apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract to _____ inclusive (*four years after contract award, to be completed upon contract award.*)

6.4.2 Delivery Date – Firm Requirements

All the deliverables must be received on or before March 31, 2017.

6.4.3 Delivery Date – Optional Requirements

All the deliverables must be received on or before August 24, 2017.

6.4.4 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex A of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Jeff Schmidt
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Address: 33 City Centre Dr, Suite 480C
Mississauga, ON L5B 2N5

Telephone: 905-615-2058
Facsimile: 905-615-2060
E-mail address: jeff.schmidt@pwgsc.gc.ca

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

6.5.2 Project Authority

The Project Authority for the Contract is:

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

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

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

6.5.3 Contractor's Representative (*Bidder to complete*)

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

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

6.6 Payment

6.6.1 Basis of Payment- Firm Price, Firm Unit Price(s) or Firm Lot Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm prices and firm lot prices, as specified in Annex B, Basis of Payment 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.

6.6.2 Limitation of Price

SACC Manual clause C6000C (2011-05-16) Limitation of Price

6.6.3 Single Payment

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

6.6.4 Advanced Payment

For item 2.3, Hardware Maintenance Support Warranty at Annex B, Basis of Payment

Canada will pay the Contractor in advance for the Work if:

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

6.6.5 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)

6.7 Invoicing Instructions

6.7.1 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.

Each invoice must be supported by:

- a copy of the invoice(s),
- contract number

6.7.2 Invoices must be distributed as follows:

- a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
- b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.8 Certifications and Additional Information

6.8.1 Compliance

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

6.9 Applicable Laws

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

6.10 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;
- (c) the general conditions 2010A (2016-04-04), General Conditions - Goods (Medium Complexity);
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) the Contractor's bid dated _____.

6.11 Defence Contract

SACC Manual clause A9006C (2012-07-16) Defence Contract

6.12 Insurance - No Specific Requirement

SACC Manual clause G1005C (2008-05-12), Insurance – No Specific Requirement

ANNEX A

REQUIREMENT

Coordinate Measuring Machine

1. REQUIREMENT

Defence Research and Development Canada (DRDC), Toronto, ON, requires the supply, delivery, training, hardware and software support of one (1) Coordinate Measuring Machine (CMM) and accessories identified at Section 4, Requirements. The requirement also includes the option to purchase one (1) Portable CMM, Magnetic Base and Extended Warranty.

2. BACKGROUND

The Comprehensive Ergonomics-based Tools and Techniques (CETTs) capability within SoSE (02ab) and Air Human Effectiveness (03aa) supports clothing, equipment, and workspace design, specification, evaluation and acquisition. The CETTs framework makes a clear link between the Tools & Techniques required to answer ergonomics-based questions that DND/CAF are asking.

1. Four generic Use Cases have been developed that should capture the large majority of situations and questions DND/CAF might ask:
 - a. Use Case 1: Operators in an unconstrained environment doing relatively static/quasi-static tasks and movements. For example, what work clothes are suitable for office worker at workstation doing computer tasks?
 - b. Use Case 2: Operators in an unconstrained environment doing relatively dynamic tasks and movements. For example, what is the Dismounted Soldier burden in the field running, jumping, climbing, etc.?
 - c. Use Case 3: Operators in a constrained environment doing relatively static/quasi-static tasks and movements. How well are Drivers or Pilots accommodated in their confined workspace while performing driving/flying tasks?
 - d. Use Case 4: Operators in a constrained environment doing relatively dynamic tasks and movements. What are the survivability issues if Drivers or Pilots need to ingress/egress through small hatches or during seat ejection in an emergency?
2. Common to all Use Cases is the requirement to develop representative models of the operator, along with their tools, equipment and workspaces for importation and analysis in three dimension (3D) and Digital Human Modeling software. To date, a human digitization capability has been acquired to collect detailed body size and shape data of the operator using a large, stationary 3D scanning tool.
3. The objective of this SOR is to augment the human digitization capability with a Workspace Digitization Capability that is both portable and allows for contact and non-contact digitization of the workstation geometry and surfaces. As mentioned above, this is one of four capabilities required to model a workspace and simulate an avatar performing tasks in its virtual environment. The Workspace Digitization Capability includes 1) a Digitizer, 2) rendering software, 3) post-processing software, 4) computer hardware that meet the software specifications, and 5) digitizer and data processing training. It has been determined that the preferred digitizer will be a Coordinate Measuring Machine (CMM) augmented by an optional, integrated 3D scanning capability

3. ACRONYMS

3D	3 Dimensions
CAF	Canadian Armed Forces
CETTs	Comprehensive Ergonomics Tools and Techniques
CMM	Coordinate Measuring Machine
DND	Department of National Defence
DRDC	Defence Research and Development Canada
PC	Personal Computer
SOR	Statement of Requirement
TA	Technical Authority

4. TECHNICAL REQUIREMENTS

4.1 Coordinate Measuring Machine (CMM)

Required quantity: 1

The Contractor must provide the requirement with the following specifications:

No.	Specifications	Mandatory Technical Specifications
4.1.1	Measurement accuracy	A minimum of .1mm.
4.1.2	Repeatability of measures	Single Point Repeatability at a minimum of 0.06mm.
4.1.3	Working volume	Minimum 2.5 m but not more than 3.0 m.
4.1.4	Weight	CMM arm must weigh less than 12kg.
4.1.5	Counterbalanced weight	Must have internal counterbalance feature to stabilize arm and minimize effort required by a single operator.
4.1.6	Power supply	Must be powered by 120V AC.
4.1.7	Battery power	Must be fully battery operated by rechargeable and interchangeable battery.
4.1.8	On-board computer	Must have an on-board computer with touch screen interface to enable measurements without external computer.
4.1.9	Connectivity to external computer	Wired and wireless (e.g. Bluetooth, Wi-Fi) availability.
4.1.10	Thermal compensation	The CMM must have temperature corrected encoders.
4.1.11	Digitizing Accessories	Must be compatibility with optional contact probes and laser scan heads.
4.1.12	Degrees of freedom	Must have a minimum of 7 axes.
4.1.13	Measurement Units	Must provide measurements in SI or imperial units.
4.1.14	Scan data output	Digitized 3 dimensions (i.e., X, Y, Z) coordinates in ASCII compliant format for export to common third party software (e.g. Matlab, SPSS, MS Excel).
4.1.15	Software API	Ability to communicate with user-developed software via a software API.
4.1.16	Mounting	Base must accept alternate mounting options (e.g. clamp, magnetic, vacuum).

4.2 Accessories

The Contractor must provide the following accessories for requirement 4.1:

No.	Description	Required quantity
4.2.1	External, rechargeable battery	2
4.2.2	Heavy-duty carrying case	1
4.2.3	Power cables	1
4.2.4	Cables to connect CMM to computer (e.g. USB)	1
4.2.5	CMM measurement software	1

4.3 Laser Scan Head

No.	Specifications	Mandatory Technical Specifications
4.3.1	Mounting	Modular attachment to a mounting fixture on the CMM arm.
4.3.2	Scan output	The CMM must output industry standard CAD format to allow importing into 3rd party 3D CAD software (e.g. <i>OBJ, PLY, STL, IGES, STEP</i>).
4.3.3	Visual feedback	Real-time visual feedback of scanning via software graphics.

4.4 Mounting tripod

No.	Specifications	Mandatory Technical Specifications
4.4.1	Support	Minimum three leg support with retractable wheels for ease of movement.
4.4.2	Mounting	Quick mount to CMM base plate.

4.5 Training

The Contractor must provide training for 2 DRDC participants for item 4.1. The language of the training must be English. Training must include the following topics:

1. Set up and calibration of the CMM;
2. Operation of the CMM, probes and any onboard functions;
3. Basic measurements;
4. Transferring data to a computer;
5. Software installation, features and processing of digitized data;
6. Any safety or care of use issues;

The training must not last longer than 3 days and be located off-site at an authorized facility in the Greater Toronto Region. The exact date of the training will be determined by the Technical Authority and must occur within 90 days after installation of requirement 4.1. If the Contractor does not have an authorized facility in the Greater Toronto Region, arrangements will be made with approval for the Technical Authority to selection an alternative training facility or location.

The Contractor must supply training material for all participants. The training materials must be written in English and must be supplied in soft copy. All electronic copies must be in Adobe PDF format delivered on USB drive, CD or DVD.

4.6 Hardware Maintenance Support

The Contractor must provide for requirement 4.1 and optional requirement 4.7 a one year hardware maintenance support. The hardware maintenance support must include:

- a) Factory repairs at a certified service centre within Canada;
- b) Parts and labour for covered items;
- b) Annual calibration of hardware;
- c) Toll-free telephone technical support;

d) Online technical support;

4.7 Portable Coordinate Measuring Machine (CMM)

Optional Required quantity: 1

The Contractor must provide the requirement with the following specifications:

No.	Specifications	Mandatory Technical Specifications
4.7.1	Measurement accuracy	At a minimum of .1mm
4.7.2	Repeatability of measures	Single Point Repeatability at a minimum of 0.05mm.
4.7.3	Working volume	Minimum 1.5 m but not more than 2.0 m.
4.7.4	Weight	CMM arm must weigh less than 12kg.
4.7.5	Counterbalanced weight	Must have internal counterbalance feature to stabilize arm and minimize effort required by a single operator.
4.7.6	Power supply	Must be powered by 120V AC.
4.7.7	Battery power	Must be fully battery operated by rechargeable and interchangeable battery.
4.7.8	On-board computer	Must have an on-board computer with touch screen interface to enable measurements without external computer.
4.7.9	Connectivity to external computer	Wired and wireless (e.g. Bluetooth, Wi-Fi) availability.
4.7.10	Thermal compensation	The CMM must have temperature corrected encoders.
4.7.11	Digitizing Accessories	Must be compatibility with optional contact probes and laser scan heads.
4.7.12	Degrees of freedom	Must have a minimum of 7 axes.
4.7.13	Measurement Units	Must provide measurements in SI or imperial units.
4.7.14	Scan data output	Digitized 3 dimensions (i.e., X, Y, Z) coordinates in ASCII compliant format for export to common third party software (e.g. Matlab, SPSS, MS Excel).
4.7.15	Software API	Ability to communicate with user-developed software via a software API.
4.7.16	Mounting	Base must accept alternate mounting options (e.g. clamp, magnetic, vacuum).

4.8 Magnetic Base

Optional Required quantity: 2

No.	Specifications	Mandatory Technical Specification
4.8.1	Mounting	Compatible with CMM base plate.

4.9 Extended Warranty

Optional Required quantity: 2

No.	Specifications	Mandatory Requirement
4.9.1	Extended Warranty	Option to extend CMM base warranty and addition period of up to three years after the base warranty has expired.

5. Operation and Technical Manual Requirements

- 5.1 The Contractor must deliver one Operation and Technical Manual with the delivery of each item as described in 4.1 in soft copy. The manuals must be delivered in English as existing commercial off-the-shelf manuals. All electronic copies must be in Adobe PDF format delivered on a USB drive, CD or DVD.
- 5.2 The Contractor must deliver one Operation and Technical Manual with the delivery of each item as described in requirement 4.7 in soft copy. The manuals must be delivered in English as existing commercial off-the-shelf manuals. All electronic copies must be in Adobe PDF format delivered on a USB drive, CD or DVD.

6. DATE OF DELIVERY

Deliverables 4.1 to 4.6 must be delivered: On or before 2017-03-01

Deliverables 4.7 to 4.8 must be delivered: On or before 2017-08-24

7. DELIVERY LOCATION

Defence Research and Development Canada – Toronto Research Centre
1133 Sheppard Ave West
Toronto, ON
M3K 2C9
Canada

ANNEX B

BASIS OF PAYMENT

Firm, all-inclusive pricing in Canadian funds. Canadian customs duties, excise taxes, F.O.B. destination and any delivery charges. Applicable Taxes are extra, if applicable.

Note: *The wording in italics is for evaluation purposes only and upon contract issuance, will be removed from Annex B, Basis of Payment.*

1. Firm Requirement

1.1 Coordinate Measuring Machine (CMM)

Item	Description	Firm Lot Price
1.1.1	For the supply, delivery, training and hardware maintenance support of one (1) Coordinate Measuring Machine (CMM), in accordance with 4.1 of Annex A. The Firm Requirement must include the deliverables and quantities as identified in the following sections of Annex A, Requirement: Accessories in accordance with 4.2 of Annex A; Laser Scan Head in accordance with 4.3 of Annex A; Mounting Tripod in accordance with 4.4 of Annex A; Training in accordance with 4.5 of Annex A; Hardware Maintenance Support in accordance with 4.6 of Annex A.	\$ _____

2. Optional Requirements

2.1 Portable Coordinate Measuring Machine (CMM)

Item	Description	Firm Lot Price
2.1.1	For the supply and delivery of one (1) Portable Coordinate Measuring Machine (CMM), in accordance with 4.7 of Annex A.	\$ _____

2.2 Magnetic Base

Item	Description	Quantity	Firm Unit Price	Extended Price
2.2.1	For the supply and delivery of a Magnetic Base, in accordance with 4.8 of Annex A.	2	\$ _____	\$ _____

2.3 Hardware Maintenance Support Warranty

Item	Description	Quantity	Firm Unit Price	Extended Price
2.3.1	For the supply of a three (3) year Hardware Maintenance Support warranty, in accordance with 4.9 of Annex A for the Firm CMM and optional Portable CMM.	2	\$ _____	\$ _____

TOTAL EVALUATED PRICE (1.1 + 2.1 + 2.2 + 2.3) \$ _____

ANNEX 1 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)

ANNEX C**ADDITIONAL CERTIFICATIONS****1. Board of Directors**

In accordance with Section 01, Integrity Provisions – Bid of the 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, Bidders are required to provide a complete list of names of all individuals who are currently directors of the Bidder before contract award. Bidders are requested to provide this information in their bid.

Director Name - _____

Director Name - _____

Director Name - _____

Director Name - _____

Director Name - _____

Director Name - _____

Director Name - _____

Director Name - _____

2. Procurement Business Number (PBN)

In accordance with Section 02, Procurement Business Number of the Standard Instructions, Suppliers are required to have a Procurement Business Number (PBN) before contract award.

Procurement Business Number - _____

Suppliers may register for a PBN online at [Supplier Registration Information](#). For non-Internet registration, suppliers may contact the InfoLine at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Agent.