



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Réception des soumissions - TPSGC / Bid Receiving
- PWGSC

1550, Avenue d'Estimauville
1550, D'Estimauville Avenue
Québec
Québec
G1J 0C7

FAX pour soumissions: (418) 648-2209

**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

Title - Sujet Complete Mechanical Test Systems	
Solicitation No. - N° de l'invitation 31206-208551/A	Date 2019-09-24
Client Reference No. - N° de référence du client 31206-208551	
GETS Reference No. - N° de référence de SEAG PW-\$QCN-036-17766	
File No. - N° de dossier QCN-9-42103 (036)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-11-04	Time Zone Fuseau horaire Heure Normale du l'Est HNE
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Carbonneau, Julie	Buyer Id - Id de l'acheteur qcn036
Telephone No. - N° de téléphone (418) 649-2837 ()	FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Faculty of Engineering Univ. Manitoba NRC-Additive Fabrication Chancellors Circle Winnipeg MB R3T5V6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

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

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

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TITLE: COMPLETE MECHANICAL TEST SYSTEMS

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PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirements.

1.2 Requirement

The requirement is detailed at Annex A.

1.3 Debriefings

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

1.4 Trade Agreements

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA).

1.5 epost Connect service

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

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

The [2003](#) (2019-03-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

B1000T (2014-06-26) Condition of material – Bid

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.

2.2.1 By using the [epost Connect service provided by Canada Post Corporation](https://www.canadapost.ca/web/en/products/details.page?article=epost_connect_send_a) (https://www.canadapost.ca/web/en/products/details.page?article=epost_connect_send_a)
The email address of PWGSC Quebec region Bid Receiving Unit is:
TPSGC.RQReceptionSoumissions-QRSupplyTendersReception.PWGSC@tpsgc-pwgsc.gc.ca

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

2.2.2 Tenders can also be transmitted by fax to **418-648-2209**

2.2.3 By mail or in person at:
Public Works and Government Services Canada (PWGSC)
1550, Avenue of Estimaerville
Quebec City, Quebec G1J 0C7

2.3 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

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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 the Province of Quebec.

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

- If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. Bidders must provide their bid in a single transmission. The epost Connect service has the capacity to receive multiple documents, up to 1GB per individual attachment.

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

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

- If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

Section I: Technical Offer (Two (2) hard copies)
Section II: Financial Offer (One (1) hard copy)
Section III: Certifications (One (1) hard copy)

If there is a discrepancy between the wording of the soft copy on electronic media and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

- If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will have priority over the wording of the other 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 hard copy 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 RFSO.

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](https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573) (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, Offerors 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.

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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 – Annex B. The total amount of Applicable Taxes must be shown separately.

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

Each bid will be reviewed to determine whether it meets the mandatory requirements of the bid solicitation. Any element of the bid solicitation identified with the words "must" or "mandatory" is a mandatory requirement.

Bids that do not comply with each and every mandatory requirement will be declared non-responsive and be disqualified.

4.1.1.1 Mandatory Technical Criteria

The bidder must include with its proposal:

1. The Table of technical compliance below duty filled-in:

The supplied equipment must meet or better all of the requirements defined below. The supplied equipment is to be new, not used or refurbished. Equipment not meeting all the following Mandatory Requirements will be considered non-responsive.

Bidder must provide with their proposal technical literature/brochures, operating manuals, written documentation (such as a description of equipment components and capabilities) etc., to demonstrate compliance with each area of the criteria stated below at time of bid closing. Proposal evaluation will be based upon the information supplied with the bid only. Failure to demonstrate compliance with any area of the criteria will render your proposal non-responsive and no further consideration will be given. References are to be specific to supporting documentation (ex. document title, page and paragraph number).

Please note that compliance must be demonstrated (by submission of supporting documentation such as technical literature/brochures, operating manuals, written statement describing how requirement is met etc.) and that if an offeror only states "comply" without any further detail, this is not considered as a demonstration compliance. A full description of the performance and capabilities of the equipment must be provided.

Although bidders must propose products meeting all mandatory specifications and components outlined in **Annex "A"**, at the bid closing date, bids will be evaluated on following preselected mandatory specifications and components:

(See Table on next page)

TABLE OF TECHNICAL COMPLIANCE		
Mandatory Technical Specifications :		Bidder's Specifications (should indicate the reference to the technical documentation of the proposed equipment or indicate the exact information)
		References
1. Servohydraulic system :		
1.1	100 kN servohydraulic frame, tall version, including a device for alignment of the unit when loaded	_____ _____
1.2	1700 mm minimum in height	_____ _____
1.3	The piston must be in the base. The piston displacement must be 150 mm (6 in) minimum (± 75 mm)	_____ _____
1.4	Environmental chamber (-125°C or less to + 535°C or more) and its support structure on wheels (for easy removal of the chamber when not in use).	_____ _____
1.5	The minimum dimensions must be 350 mm x 400 mm x 560 mm (length x width x height).	_____ _____
1.6	Hydraulic unit of minimum 30 gpm and 3000 psi (including necessary oil) equipped	_____ _____
1.6.1	A human interface provided by PLC (Programmable Logic Controller)	_____ _____
1.6.2	Controller (servocontroller) whose synchronized control and acquisition rate is at least 1000 Hz and possible up to at least 5000 Hz	_____ _____
1.6.3	Extensometer for use in fatigue of 50 mm in gage length (*+50%/-10% of displacement) according to the ASTM E83 standard	_____ _____

2. Dynamic test software (for the servohydraulic system)		
2.1	Configurable and adaptable to meet the needs of generic tests as well as certain applications according to international standards.	_____ _____
2.2	It must allow for the insertion (Open System), within the test procedures of a method, of a sub-routine written in an object-based programming language (e.g. Java, C#, Python, etc.). These sub-routines, when inserted, become part of the definition of the test and are carried out at the same rate as the method itself without external intervention.	_____ _____
3. Electromechanical system :		
3.1	Electromechanical machine with a minimum capacity of ± 250 kN, tall version, including a device for alignment of the unit when loaded. Test speeds between 0.005 mm/min (or less) and 500 mm/min (or more)	_____ _____
3.2	Minimum dimensions: 575 mm between the columns and 1800 mm in height	_____ _____
4. Quasi-static test software (for the electromechanical system)		
4.1	Configurable and adaptable to meet the needs of generic tests as well as certain applications according to international standards.	_____ _____
4.2	It must allow for the insertion (Open System), within the test procedures of a method, of a sub-routine written in an object-based programming language (e.g. Java, C#, Python, etc.). These sub-routines, when inserted, become part of the definition of the test and are carried out at the same rate as the method itself without external intervention.	_____ _____
5. Complete optical measuring system		
5.1	Complete optical measuring system (including accessories)	_____ _____

4.1.2 Evaluation of Price

1. Bidders must submit firm prices, customs duties and excise taxes included, and Applicable Taxes excluded.
2. Unless the bid solicitation specifically requires bids to be submitted in Canadian currency, bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.
3. Bidders must provide prices Delivered Duty Paid (DDP), Faculty of Engineering, Engineering & Information Technology Complex, University of Manitoba, NRC – Additive Fabrication, 75A Chancellors Circle, Winnipeg, Manitoba, Canada, R3T 5V6, Canada, Incoterms 2010 for shipments from commercial contractor.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and all the mandatory technical criteria to be declared responsive. The responsive bid with the lowest Total Bid Price (TBP) (Annex B) 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.

5.2.3 Additional Certifications Required with the Bid

5.2.3.1 Bidder certifies that All Equipment is “Off-the-Shelf”

Any equipment bid to meet this requirement must be “off-the-shelf” (unless otherwise stated in this bid solicitation), meaning that each item of equipment is commercially available and requires no further research or development and is part of an existing product line with a field-proven operational history (that is, it has not simply been tested in a laboratory or experimental environment). If any of the equipment bid is a fully compatible extension of a field-proven product line, it must have been publicly announced on or before the bid closing date. By submitting a bid, the Bidder is certifying that the entire equipment bid is off-the-shelf.

5.2.3.2 OEM Certification (Annex C)

- (a) Any Bidder that is not the Original Equipment Manufacturer (OEM) for every item of hardware proposed as part of its bid is required to submit the OEM's certification regarding the Bidder's authority to provide and maintain the OEM's hardware, which must be signed by the OEM (not the Bidder). **(Annex C)**

No Contract will be awarded to a Bidder who is not the OEM of the hardware it proposes to supply to Canada, unless the OEM certification has been provided to Canada. Bidders are requested to use the OEM Certification Form included with the bid solicitation. Although all the contents of the OEM Certification Form are required, using the form itself to provide this information is not mandatory. For Bidders/OEMs who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.

- (b) If the hardware proposed by the Bidder originates with multiple OEMs, a separate OEM certification is required from each OEM.
- (c) For the purposes of this bid solicitation, OEM means the manufacturer of the hardware, as evidenced by the name appearing on the hardware and on all accompanying documentation.

PART 6 - RESULTING CONTRACT CLAUSES

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

Notice: Numbering will be revised at the contract award.

6.1 Security Requirements

6.1.1 There is no security requirements

6.2 Requirement

The Contractor must provide and deliver the equipment, in accordance with the Requirement 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

2010A (2018-06-21), 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. <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4001/6>

4003 (2010-08-16) Licensed Software, apply to and form part of the Contract.

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4003/4>

6.4 Term of Contract

6.4.1 Period of the Contract

The contract period is from the date of contract award **until 12 months after the acceptance of the deliverables.**

6.4.2 Delivery Delay

All deliverables must be received no later than twenty (20) weeks after contract award.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Julie Carbonneau
Title: Supply Agent
Public Works and Government Services Canada Acquisitions Branch
Address: Acquisitions Branch
1550 D'Estimauville Ave.,
Quebec, QC, G1J 0C7
Telephone: 418-649-2837

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Facsimile: 418-648-2209
E-mail address: Julie.Carbonneau@tpsgc-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 Technical Authority

The Technical Authority for the Contract is: [\(Will be added at Contract Award\)](#)

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

Telephone: _____
E-mail address: _____

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

6.5.3 Client Administrative Authority

The Client Administrative Authority for the Contract is: [\(Will be added at Contract Award\)](#)

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

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

6.5.4 Contractor's Representative [\(to be completed by the offeror\)](#)

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

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

6.6 Payment

6.6.1 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 Annex B for a cost of \$ _____ [\(insert the amount at contract award\)](#). Customs duties are *included* and Applicable Taxes are extra.

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

6.6.2 Limitation of Price

SACC Manual Clause C6000C, (2017-08-17) Limitation of Price

6.6.3 Terms of payment

SACC Manual Clause H1000C, (2008-05-12) Single payment

6.7 Invoicing Instructions

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.
2. Invoices must be distributed as follows:
 - a. The original must be forwarded to the Client Administrative Authority 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 the Province of Quebec.

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 supplemental general conditions 4003 (2010-08-16) Licensed Software;
- d) The General Conditions 2010A (2018-06-21) Goods (Medium Complexity);
- e) Annex A, Requirement;
- f) Annex B, Basis of payment;
- g) Annex C, OEM Certification Form;
- h) The Contractor's bid dated _____ (*insert date of bid*)

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QCN-9-42103

Buyer ID - Id de l'acheteur
QCN036
CCC No./N° CCC - FMS No./N° VME

6.11 SACC Manual Clauses

G1005C	2016-01-28	Insurance https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/G/G1005C/3
B1501C	2007-11-30	Electrical Equipment https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/B/B1501C/2
B7500C	2006-06-16	Excess Goods https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/B/B7500C/1
D9002C	2007-11-30	Incomplete Assemblies https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/D/D9002C/3

6.12 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered DDP Delivered Duty Paid; National Research Council Canada, 435 Ellice Avenue, Winnipeg, MB, R3B 1Y6, Canada, Incoterms 2010 for shipments from commercial contractor.

ANNEX « A » – STATEMENT OF REQUIREMENTS

1. PURPOSE

The National Research Council of Canada (NRC), Winnipeg site, wishes to acquire two (2) complete mechanical test systems including one INCLUDING one (1) servohydraulic machine unit with all components necessary for its proper operation and one (1) electromecanical machine unit with all components necessary for its proper operation. These devices will be used for static and dynamic tests (fatigue, tension, compression, etc.). All previously named tests should be done either hot or cold, depending on the specific needs of the related projects. The NRC is aiming to meet the new needs in Canadian industries in addition to diversifying its activities in casting and hot forming of metal sheets by including additive manufacturing in its process equipment.

The installation of these machines shall be carried out at the University of Manitoba's Department of Engineering.

The scope of the work includes the supply, delivery and installation of all components pertaining to two (2) test systems for the NRC address provided in Section 6, in addition to training on the use of said equipment.

2. DELIVERABLES

2.1 Two (2) complete mechanical testing systems (including all components and accessories in accordance with the required technical specifications):

- 2.1.1 One (1) complete servohydraulic system.
- 2.1.2 One (1) complete electromecanical system.

2.2 Calibration of all equipment and accessories.

2.3 Delivery to the "University of Manitoba, Department of Engineering" site.

2.4 The installation and operation of all cables and hosing for system operation.

2.5 Documentation in English in either an electronic format or paper:

- 2.5.1 Drawings.
- 2.5.2 List of components.
- 2.5.3 Technical data sheets.
- 2.5.4 Maintenance recommendations.

2.6 Training for the use of the equipment and accessories for four (4) persons.

3. TECHNICAL SPECIFICATIONS OF DELIVERY

The criteria below must be met or exceeded

3.1 Technical specifications - Servohydraulic system

- 3.1.1 Servohydraulic machine of 100 kN capacity (tall version), including: a device allowing for the alignment of the machine when loaded. 500 mm minimum between the columns.
 - 3.1.1.2 1700 mm minimum in height.
 - 3.1.1.3 Minimum vertical clearance of 400 mm or less (between the force sensor and the piston surface when completely retracted).
 - 3.1.1.4 The piston must reside in the base. The displacement of the piston must be 150 mm (6 inches) minimum (± 75 mm).

-
- 3.1.2 Two (2) load cells for dynamic and quasi-static tests (tension and compression) attached to the top rail of the apparatus, including:
 - 3.1.2.1 One (1) load cell of the maximum capacity of the machine (± 100 kN) and
 - 3.1.2.2 One (1) ± 5 kN load cell.
 - 3.1.3 Environmental chamber (-125°C or less to $+535^{\circ}\text{C}$ or more) and its support structure on wheels (for easy removal from the chamber when not in use).
 - 3.1.3.1 Must include the option for liquid nitrogen cooling.
 - 3.1.3.2 The minimum dimensions must be 350 x 400 x 560 mm (i.e., width x depth x height).
 - 3.1.3.3 The chamber must be controlled by the same servocontroller as for the complete system.
 - 3.1.4 Hydraulic jaws of 100 kN capacity for dynamic and quasi-static tests (tension and compression) to test the following samples:
 - 3.1.4.1 Flat (between 0 and 19 mm) and
 - 3.1.4.2 Round ("V" between 6.5 and 19 mm)
 - 3.1.4.3 At temperatures between $+5^{\circ}\text{C}$ and $+65^{\circ}\text{C}$.
 - 3.1.5 Hydraulic unit with a minimum of 30 gpm and 3000 psi (including the necessary oil) equipped with:
 - 3.1.5.1 A human interface provided by PLC (Programmable Logic Controller) and
 - 3.1.5.2 All necessary hydraulic hoses (10 meters minimum length) for the complete system.
 - 3.1.5.3 Sound insulation so that noise does not exceed 65 dB(A).
 - 3.1.6 Electrical cables ten (10) meters minimum (necessary for all system connections).
 - 3.1.7 Controller (servocontroller) whose synchronized control and acquisition rate is at least 1000 Hz and possible up to at least 5000 Hz.
 - 3.1.8 Extensometer for use in fatigue of 50 mm gage length ($+50\%$ / -10% of displacement), in accordance with the ASTM E83 standard.
 - 3.1.9 Intel Core i5 computer minimum, 16 GB of RAM, 2X500GB SATA RAID including the software(s) required for dynamic testing.

3.2 Dynamic testing software (for servohydraulic machine 4.1)

The software must be the latest version of the dynamic (cyclic) application software produced by the supplier. It must be versatile, easy to configure and adaptable to meet the needs of generic tests as well as applications abiding by international standards.

- 3.2.1 Must allow for the complete programming of procedures and formulae.
- 3.2.2 Must allow for the insertion, within the test procedures of a given method, of a subroutine written in a programming language interpreted by means of object-oriented programming (e.g. Java, C#, Python, etc.). These subroutines, when inserted, become part of the test definition and are carried out at the same rate as the method itself without external intervention.
- 3.2.3 Must allow for the mathematical calculation of new values based on measurements made of the principal parameters (e.g. force, displacement, strain, etc.) and to make decisions according to their value or maneuver the control loop from these newly calculated parameters. These newly created parameters must in turn be able to be integrated into new calculations, if necessary. All of these calculations must be done in the controller at the rate of system control and acquisition.

- 3.2.4 Must allow for the display of test variables in real time as well as have an interface that allows some of these variables to be represented graphically when the test is running.

3.3 Technical specifications - Electromechanical system

- 3.3.1 Electromechanical machine with a minimum capacity of ± 250 kN (tall version), including a device allowing for the alignment of the machine when loaded. Testing speeds are to be between 0.005 mm/min (or less) and 500 mm/min (or more).
- 3.3.1.3 Minimum dimensions: 575 mm between the columns and 1800 mm in height.
- 3.3.2 Two (2) load cells quasi-static tests (tension and compression) that includes an assembly for the attachment of:
- 3.3.2.1 One (1) load cell of the maximum capacity of the machine (minimum: ± 250 kN) and
- 3.3.2.2 One (1) ± 30 kN load cell that includes an assembly for the attachment of this cell to the cell of maximum capacity.
- 3.3.3 Jaws corresponding to the maximum capacity of the machine (minimum: ± 250 kN) in order to test the following samples:
- 3.3.3.1 Flat (between 0 and 15 mm) and
- 3.3.3.2 Round ("V" between 3.5 and 19 mm).
- 3.3.4 Extensometer for quasi-static use of 50 mm in gage length (0 to +50% displacement), in accordance with the ASTM E83 standard.
- 3.3.5 Intel Core i5 computer minimum, 16 GB of RAM, 2X500GB SATA RAID including the software(s) required for quasi-static testing.

3.4 Quasi-static testing software (for electromechanical machine 3.3)

The software must be the latest version of the static application software produced by the supplier. It must be versatile, easy to configure and adaptable to meet the needs of generic tests as well as applications abiding by international standards.

- 3.4.1 Must allow for the insertion, within the test procedures of a given method, of a subroutine written in a programming language interpreted by means of object-oriented programming (e.g. Java, C#, Python, etc.). These subroutines, when inserted, become part of the test definition and are carried out at the same rate as the method itself without external intervention.
- 3.4.2 Must be able to calculate different results determined in the test procedure and display them immediately at the end of each test. It must also make it possible to redo the calculations of the various results after the test is finished. It must also include an integrated routine that produces the reports immediately after the test has concluded.
- 3.4.3 Must allow for the display of test variables in real time as well as have an interface that allows some of these variables to be represented graphically when the test is running.

3.5 Optical extensometer

Optical extensometer for use with the servohydraulic system and the electromechanical system (3.1 to 3.4) including:

- 3.5.1 Complete optical measuring system composed of:
 - 3.5.1.1 Fields of vision between 75 and 100 mm.
 - 3.5.1.2 A resolution of 0.002 mm.
- 3.5.2 Dynamic utilization up to a minimum of 20 Hz.

4 TECHNICAL SPECIFICATIONS OF DELIVERY

(Required, Non-evaluable)

4.1 Technical specifications - Servohydraulic system

- 4.1.1 Servohydraulic machine (frame) of 100 kN capacity (tall version).
 - 4.1.1.1 The capacity of the load frame must be ± 100 kN (tension and compression).
 - 4.1.1.2 The axial rigidity of the load frame must be equal to or greater than 450 kN/mm.
 - 4.1.1.3 Mobile crosshead that can be locked hydraulically (lift & lock).
 - 4.1.1.4 The piston must be in the lower part of the machine (i.e. integrated into the base).
 - 4.1.1.5 The machine must have electrically operated hydraulic service manifolds (HSM).
 - 4.1.1.5.1 Must be equipped with (2) 10 gpm servovalves (including manual shut-off valves).
 - 4.1.1.5.2 Must have two (2) 1-L certified "Canadian Registration Number" (CRN) accumulators.
 - 4.1.1.5.3 Must possess one (1) 3 micron filter.
- 4.1.2 Load cell of maximum capacity of the apparatus for dynamic et quasi-static tests (tension and compression) (± 100 kN).
 - 4.1.2.1 Accuracy of $\pm 0.5\%$ of the reading up to 2% of the load cell capacity.
- 4.1.3 A ± 5 kN load cell.
 - 4.1.3.1 Accuracy of $\pm 0.5\%$ of the reading up to 2% of the load cell capacity.
 - 4.1.3.2 Including assembly for attachment to the principal cell (5.1.2).
- 4.1.4 Device for the alignment of the apparatus when loaded.
- 4.1.5 Hydraulic grips.
 - 4.1.5.1 Complete hydraulic grips system including a controller integrated into the main panel, an assortment of grips (wedges) to test flat samples.
 - 4.1.5.2 A set of water-cooled extension rods for non-ambient temperature testing in the environmental chamber described in point 4.1.3.
 - 4.1.5.3 A 30 gpm hydraulic unit with a 1.9-L minimum "Canadian Registration Number" (CRN) certified accumulator.

Note: 30 gpm is required to allow for the eventual addition of supplemental hydraulic devices (e.g. common pump).

-
- 4.1.6 Controller (servocontroller).
 - 4.1.6.1 Must control the temperature of the environmental chamber.
 - 4.1.6.2 All sensors must be capable of automatic recognition (self ID) .
 - 4.1.6.3 Minimum of five (5) channels of conditioned AC/DC inputs (force sensor, LVDT, extensometer, etc.) - resolution: minimum 19 bits.
 - 4.1.6.4 Four (4) digital inputs/outputs (I/O).
 - 4.1.6.5 Minimum two (2) analog inputs (± 10 V).
 - 4.1.6.6 Minimum four (4) analog outputs (± 10 V).
 - 4.1.6.7 Must include the space required to add supplemental control stations (minimum of two (2) servohydraulic machines) to this controller.

 - 4.1.7 Dynamic testing software.
 - 4.1.7.1 The supplier shall provide a list of standardized tests for which specific applications have been developed for this software.
 - 4.1.7.2 The software must have at least the following functions:
 - 4.1.7.2.1 Creation, modification and backup of dynamic test (cyclic) models.
 - 4.1.7.2.2 Data acquisition (time-based, max-min, level overflow, cyclic/logarithmic)
 - 4.1.7.2.3 Waveforms including sinusoidal, square, triangular, ramp, hold and profile, as well as custom (ASCII file).
 - 4.1.7.2.4 Limit detection, sequencing triggers.
 - 4.1.7.2.5 Exporting data in ASCII format.
 - 4.1.7.2.6 Minimum of 4 real-time graphs of test variables.
 - 4.1.7.2.7 Function to freely create and/or modify advanced reports as needed (in addition to predefined report templates).

 - 4.1.8 "On-site" calibration of all sensors (force, displacement, extension) and alignment of the frame.

4.2 Technical specifications - Electromechanical system

- 4.2.1 Electromechanical machine.
 - 4.2.1.1 The axial rigidity of the load frame must be equal to or greater than 350 kN/mm.
 - 4.2.1.2 Synchronized acquisition and control rates up to 1000 Hz for all channels.

- 4.2.2 A 250 kN (minimum) load cell (depending on the maximum capacity of the machine).
 - 4.2.2.1 Accuracy of $\pm 0.5\%$ of the reading up to 2% of the load cell capacity.

- 4.2.3 A 30 kN load cell.
 - 4.2.3.1 Accuracy of $\pm 0.5\%$ of the reading up to 2% of the load cell capacity.

- 4.2.4 Fixture allowing the alignment of the device when loaded.

- 4.2.5 Software for static tests.
 - 4.2.5.1 The supplier shall provide a list of standardized tests for which specific applications have been developed for this software.

4.2.5.2 The software must have at least the following functions:

- 4.2.5.2.1 Creation, modification and backup of monotonic test models.
- 4.2.5.2.2 Data acquisition.
- 4.2.5.2.3 Limit detection, sequencing triggers.
- 4.2.5.2.4 Calculations of results and statistics.
- 4.2.5.2.5 Automated report creation including graphs and data.
- 4.2.5.2.6 Exporting data in ASCII format.
- 4.2.5.2.7 Real-time graphical display of test variables.
- 4.2.5.2.8 Controller tests in terms of force, displacement or strain.
- 4.2.5.2.9 Function to freely create and/or modify advanced reports as needed (in addition to predefined report templates).

- 4.2.6 "On-site" calibration of all sensors (force, displacement, speed, extension) and alignment of the frame.

4.3 Optical extensometer

Optical extensometer for use with the servohydraulic system (3.1) and the electromechanical system (3.3) including:

- 4.3.1 Lighting system and its support.
- 4.3.2 Software installed on each of the computers pertaining to points 3.1 and 3.3.
- 4.3.3 Cables required for all connections.
- 4.3.4 Mounting system (support) for each device.

5. DOCUMENTATION

- 5.1 User manual including safety precautions (electronic format)
- 5.2 Service and maintenance manuals which must include: component listings for troubleshooting.
- 5.3 Technical drawings.
- 5.4 All documentation must be available in English and/or French in an electronic format.

6. OTHER REQUIREMENTS

- 6.1 POWER SUPPLY: The equipment must be designed to operate on one of the two power supplies available in the building, or have a transformer of sufficient capacity to adapt to it without having the equipment's rated performance or durability being affected. The transformer and everything downstream from the primary connection is the responsibility of the equipment supplier.

The power supplies that are available are :

- 3 φ 4w, 208Y/120Vac 60 hz
- 3 φ 4w, 600Y/347Vac 60 hz

- 6.2 WATER: If a water supply is required, the supplier must indicate the pressure and flow, the pressure differential and the minimum and maximum inlet temperature.
- 6.3 AIR: If compressed air is required, the supplier must indicate the flow, pressure, cleanliness, dryness, etc.

-
- 6.4 The contractor shall provide telephone or Internet technical assistance during the working hours of the University of Manitoba (NRC-Winnipeg temporary site / Additive Manufacturing), Monday to Friday between 8:00 a.m. and 4:00 p.m.
- 6.5 The contractor shall provide a service of maintenance, repairs and spare parts.
- 6.6 A response to any request for technical support or repair must be obtained within 48 hours in order to determine the procedure to follow for troubleshooting or repairs.

7. DELIVERY, INSTALLATION AND OPERATION

- 7.1 The system must be delivered and installed at the following address:

Faculty of Engineering
Engineering & Information Technology Complex
University of Manitoba
NRC – Additive Fabrication
75A Chancellors Circle
Winnipeg, Manitoba
Canada
R3T 5V6

- 7.2 The supplier shall be responsible for ensuring the complete operation of the hydraulic and electromechanical systems, as well as all accessories.
- 7.3 Full operation of the systems must be completed within forty (40) days after delivery to the University of Manitoba (NRC-Winnipeg temporary site / Additive Manufacturing).

8. RESPONSABILITIES OF THE CLIENT

- 8.1 Unloading and setup:

The client, the NRC-Winnipeg (at the University of Manitoba), shall be responsible for the unloading and setting up (i.e. displacement to its final position) of the products delivered on their site, as well as disposing of the shipping material.

- 8.2 Services:

The NRC is responsible for providing water, air, electricity and all of the modifications necessary to the area, such as the installation of ducts along the walls of the laboratory, if applicable.
The contractor must specify and indicate all of the necessary services in addition to any special requirements in their proposal.

9. TRAINING

- Training must be provided, during a day period of 8:00 to 16:30, to at least three (3) users immediately following installation of the systems. This training must cover the following elements:
- 9.1 Operation of 2 complete systems including accessories and optical extensometer (2 days per system and 1 day for the optical extensometer, for a total of 5 days).
- 9.2 Programming, data transfer and communication.

ANNEX « B » – BASIS OF PAYMENT

- a) Please indicate the brand name and model offered and complete the last two columns of the following table:

Item	Description	Qty	Total Firm Price
1	<p>Complete Servohydraulic System In accordance with the specifications set out at Annex « A ».</p> <p>Brand offered: _____</p> <p>Model offered: _____</p>	1 each	_____ \$
2	<p>Dynamic Testing Software for servohydraulic machine In accordance with the specifications set out at Annex « A ».</p>	1 each	_____ \$
3	<p>Complete Electromechanical System In accordance with the specifications set out at Annex « A ».</p> <p>Brand offered: _____</p> <p>Model offered: _____</p>	1 each	_____ \$
4	<p>Quasi-static testing Software for Electromechanical Machine In accordance with the specifications set out at Annex « A ».</p>	1 each	_____ \$
5	<p>Documentation In accordance with the specifications set out at point 5 of Annex « A ».</p>	1 lot	_____ \$

Solicitation No. - N° de l'invitation
31206-208551/A
Client Ref. No. - N° de réf. du client
31206-208551

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6	Installation, calibration and operation In accordance with the specifications set out at point 7 of Annex « A ».	1 lot	_____ \$
7	Training In accordance with the specifications set out at point 9 of Annex « A ».	1 lot	_____ \$
8	Delivery DDP (Winnipeg, MB, Canada), including customs duties, handling.		_____ \$
TOTAL BID PRICE (TBP) =			_____ \$

*** If the cost items 5, 6, 7 and 8 are included in item 1, 2, 3, 4 fill in zero (0)***

Solicitation No. - N° de l'invitation
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Client Ref. No. - N° de réf. du client
31206-208551

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QCN036
CCC No./N° CCC - FMS No./N° VME

ANNEX « C » - CERTIFICATION AND BIDDER FORMS

Form – To be submitted with bid

REF.: 5.2.3.2 OEM Certification

OEM Certification Form

This confirms that the original equipment manufacturer (OEM) identified below has authorized the Bidder named below to provide and maintain its products under any contract resulting from the bid solicitation identified below.

Name of OEM _____

Signature of authorized signatory of OEM _____

Print Name of authorized signatory of OEM _____

Print Title of authorized signatory of OEM _____

Address for authorized signatory of OEM _____

Telephone no. for authorized signatory of OEM _____

Fax no. for authorized signatory of OEM _____

Date signed _____

Solicitation Number _____

Bidder's name _____