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**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address**

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**Issuing Office - Bureau de distribution**

Travaux publics et Services gouvernementaux Canada  
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800, rue de La Gauchetière Ouest  
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Montréal  
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<b>Title - Sujet</b> Hydraulic Test Bench System	
<b>Solicitation No. - N° de l'invitation</b> W1985-212030/A	<b>Amendment No. - N° modif.</b> 003
<b>Client Reference No. - N° de référence du client</b> W1985-212030	<b>Date</b> 2020-11-12
<b>GETS Reference No. - N° de référence de SEAG</b> PW-SMTA-170-15883	
<b>File No. - N° de dossier</b> MTA-0-43044 (170)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Eastern Standard Time EST <b>on - le 2020-12-21</b> Heure Normale du l'Est HNE	
<b>F.O.B. - F.A.B.</b> Specified Herein - Précisé dans les présentes <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input checked="" type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Cimpan, Cristina	<b>Buyer Id - Id de l'acheteur</b> mta170
<b>Telephone No. - N° de téléphone</b> (514) 604-3855 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

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<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

### AMENDMENT 003

**This amendment aims to answer the questions asked following the virtual site visit and to postpone the closing date to Monday, December 21, 2020, at 02:00 PM EST, and also to modify the article 4.1.2.1 from Part 4 of the Request for Proposal (RFP).**

**Q3 :** The cooling system is it Water-cooled or Air-Cooled?

**A3 :** At the choice of the designer, provided that it meets the need of point 2.7 of Annex A. When analyzing the concept, we will take into account the efficiency of the system, the reliability, the required maintenance and the cost. It is important that the test bench generates as little energy as possible inside the building. If water cooling is used, it should be in closed loop.

**Q4 :** Is it OK if the new hydraulic bench will be bigger due to the two test Chambers (we have one for pumps and one for rotating components)? There is any problem, any constraint in maximum dimensions due to the infrastructure?

**A4 :** Must respect the dimensions illustrated in Annex A-4 and in Annex A, point 1.3.4. If this is not possible, when submitting, please indicate the necessary modifications to the infrastructure in order to allow us to analyze the additional costs incurred and to consider your proposal at its fair value. Modifications and additions to the building must be discussed and accepted in writing with the representative of 202DA, Annex A, point 1.3.1.

**Q5 :** The existing test bench will be removed from this place and the new test bench will come in this area itself?

**A5 :** The existing test bench will be removed. However, the design, manufacturing, installation, commissioning and training will have to be done by the company providing the test bench. See Annex A, point 3.0 and point 1.3.

**Q6 :** How are the hydraulic accumulators (bladder, piston, diaphragm) being tested currently if at all? The space inside the bench enclosure is rather limited. Will they be tested on the "valve" side of the bench?

**A6 :** Yes, currently the accumulators are tested on the "Component section" side described in Annex A, point 2.1.5.1.1. We anticipate that the dimensions will be sufficient for our future needs.

**Q7 :** Document titled "w1985-212030\_annexe\_a-3\_equipment\_to\_be\_tested\_equipements\_a\_tester" lists 30 components (mostly 28 pumps and motors, and 2 valves), but SOW (Annex A) states, "The equipment to be tested on the hydraulic test bench includes hydraulic accumulators, motors, pumps (including submersible pumps), linear actuators, cylinders, pistons, hydrostatic transmissions, and valves". Is the UUT list incomplete?

**A7 :** Yes, we have provided a list with some equipment that the test bench must be able to test obligatorily and have all the necessary fixings tools. The bench must be able to test these parts without any modification of the machine or manufacturing of parts on our side. In addition, we expect the bench to have the functionality necessary to check the equipment described in Annex A, point 1.2, according to industry standards.

**Q8 :** What are your expectations regarding the data acquisition system (at controller level)?

**A8 :** The system must be simple, user-friendly and quick to implement: Make the acquisition and display all the measurements necessary for the tests; obtain clear graphics to read, templates already assembled for all the hydraulic components tested, be able to compare these graphics with the data provided by the manufacturer in the technical documentation of the products, the goal being to estimate the degree of wear of the hydraulic components . See Annex A, point 2.4.7 and 2.4.8.

**Q9 :** It was stated to be as flexible as possible to support more business with the armed forces. Which armed forces do you do business with or wish to support with testing? Army, Navy, Air Force...?

**A9 :** We support all hydraulic mobile equipment that the Army owns (No Navy, no Air Force).

**Q10 :** What level of automation is required for testing? Can we see the mounting of the submersible pump?

**A10 :** We want to have at least one PLC that performs the test described, Annex A, in point 2.1.10. When it comes to submersible pumps, we want a more versatile concept than what we currently have, as this is dedicated to a single pump model.

**Q11 :** A question about universality of the system : We test motor pumps on one table and valves & accumulators on another, what about actuators (there is not much information about), cylinders how much force is needed, what kind of test, dimensions or pressure of the actuators.

**A11 :** We believe that the pressure of 410 bar at 90 liters / minute and the flow rate of 250 liters / minute at 230 bar expressed in Annex D, point 2.1.4.1 and 2.1.4.2 will be enough to perform most tests. However, this is a minimum. If you feel that more pressure or flow is required for the test bench to operate, we will read your arguments and take them into account when analyzing your submissions.

**Q12 :** Actuator testers force use maximum pressure. What level of automation is required for testing?

**A12 :** Same as Q10

**Q13 :** Clause 2.7.4 : The resulting heat must be released outside the main building. How do you plan to duct the hot air out? So air-conditioned cool air will be provided by the building, but hot air must be ducted out of the building by contractor?

**A13** : The bench cooling concept must be independent of the building's ventilation / heating / air conditioning system and release heat outside the building. The design and installation are fully supported by the contractor.

NOTE: Two walls that surround the power unit face outward. Any need or modification to the integrity of the building or addition must be mentioned in your quote so that it is judged at its fair value.

**Q14** : Clause: 2.1.8.1.7 Vibration measurement: What vibration are you planning to measure?

**A14** : The vibrations measured are those generated by the pumps and hydraulic motors during the operation of these during the tests. The system measures the difference in vibration between the bench output shaft and the component.

#### **Q15 : CODES, STANDARDS AND PERMITS**

**Statement:** We noted many references in the solicitation to CSA certification, approvals and CSA requirements for electrical components, etc. See list of sections below and in particular sections 3.6.3 and 3.9.6.2. On similar projects we have offered or our customer requested explicitly within the solicitation a CSA and/or UL certification confirmed by an independent evaluation body.

**3.6.3** The Contractor must include the ULC (Underwriters Laboratories Canada) or CSA (Canadian Standards Association) registration logos and those of other organizations.

**3.9.6.2** Must provide CSA certification for the installation as a whole.

**2.2.2.2| 2.11.2.1.3| 2.11.2.2.3| 2.11.2.3| 2.11.2.4.3.1.1| 3.4.6.1| 3.6.3 | 3.6.6.2| ANNEX A-1**

Do you require and request CSA certification and labelling by an independent evaluator? Or ULC?

**A15** : Both are accepted, but upon delivery, the FINAL installation must be CSA certified.

#### **Q16 : CODES, STANDARDS AND PERMITS Same statement as Q15.**

If it is not required, would you consider an independent evaluation an acceptable way to prove compliance to all your CSA / ULC requirements?

**A16** : Yes, if the independent evaluation certifies the final system in accordance with CSA / ULC standards.

#### **Q17 : ADAPTERS / FIXTURES FOR EQUIPMENT TO BE TESTED**

**Statement:** We did not see a section requesting adapters / fixtures and adapter accessories to mount the requested *Equipment to be tested*, to the universal test stand.

Is 202e team planning on making their own adapters and accessories to mount the *Equipment to be tested* (UUTs) on the universal test bench or should we include the design and manufacturing of the adapters in our bid proposal?

If the answer is yes (the bidder should include this in their proposal) then we have 2 follow-up questions:

- a) Will the 202e team provide the necessary technical details, drawings, possibly testing procedures of the *Equipment to be tested*, to evaluate effort, commonality of equipment and insure excellent design and fit of the adapters?
- b) May we kindly ask if the technical information necessary will be provided now, or only after award of the contract?

**A17 :** Please refer to point 2.1.7 of Annex A. A universal test jig must be supplied with the system.

**Q18 : GENERAL EXISTING FACILITY INFRASTRUCTURE**

In the 202e facility building what info can you provide about the existing or provided facility power supply? ie. what max. nominal current / power the facility provides?

**A18 :** Please refer to point 2.1.13.1 of Annex A. The section of the busbar which supplies the mains is supplied by 400 A fuses.

**Q19 : INSTALLATION** Reference **3.7.7** - The test bench must be able to pass through an 80-inch-wide door; the power unit and tank must be able to pass through a 65-inch-wide door. ANNEX A-4, Drawing of Site

What are the additional door dimensions since this is the limiting factor for bringing the test bench inside the building? i.e Height of doors.

**A19 :** The height of the workshop door is 11 feet and that of the power unit chamber is 79 inches.

**Q20 : HANDLING OF EQUIPMENT TO BE TESTED**

What is the 202e team's preferred way of handling equipment to be tested? By hand, by crane? Can we propose a solution for the handling of the equipment under test?

**A20 :** For very small parts, parts handling can be done by hand. Most of the time, the overhead crane is used. Yes, a solution can be proposed.

**Q21 : HANDLING OF EQUIPMENT TO BE TESTED**

Is it important to have access into the test chamber / chambers by crane from above?

**A21 :** Yes

**Q22 : CONFIRMATION OF LINEAR HYDRAULIC ACTUATOR TEST PROCEDURE**

Our question is in reference to the two sections in the solicitation

*2.1.3 ... A dedicated bench for linear actuators is not required. Hydraulic equipment for universal testing of linear actuators and servo valves must be supplied directly from the hydraulic test bench.*

*Annex A2, d) Linear hydraulic actuator test procedure*

Can you please confirm only leakage tests will be done and the test bench must only supply required flow and pressure. Is this correctly understood?

**A22** : Yes, we want to assess the presence of external and internal leaks, measure the pressure and flow, while having enough clearance on the table to allow actuation of the cylinder stroke (table door can be opened during testing)

**Q23 : CONFIRMATION OF LINEAR HYDRAULIC ACTUATOR TEST PROCEDURE – Same statement as Q22**

Can you confirm that none of your future linear actuators testing procedures will include exerting compressive and tensional forces (a load unit required), measuring distance travelled, speed, etc.?

**A23** : The test bench does not necessarily need to allow these analyzes. However, this improvement can be presented as an additional option.

**Q24 : OVERALL TEST SYSTEM LAYOUT**

Our question is in reference to the two sections in the solicitation

2.1.5 Bench layout and sections:  
2.1.5.1 The front of the test bench must have three parts:  
2.1.5.3 Representation and proposal for bench sections: (Picture)  
Annex A-4 (Drawing)

In regards to the picture in 2.1.5.3 - Is Contracting Authority open to other, similar layout proposals which are already designed, keep the required functionality, and possibly bring more capability and flexibility?

**A24** : We are open to suggestions, but we may require this three-part distribution if we do not like the suggestions.

**Q25 : OVERALL TEST SYSTEM LAYOUT – Same statement as Q24**

In consideration for existing solutions. Are the dimensions shown in Annex A-4, 22' x 18' and 9'6" x 6'6" hard requirements or approximate numbers? If approximate, would it be possible to have the dimension of the pump room and testing room?

**A25** : These are the maximum dimensions. If you require more space, it is important to specify the reasons and impacts. The necessary changes in infrastructure that will result from this will have to be supported and paid for by the contractor.

**Q26 : VIBRATION MEASUREMENT**

Our question is in reference to the following section in the solicitation

2.1.8 Meters and gauges.....  
2.1.8.1.7 Vibration.

What are we measuring for vibration? Equipment under test, test stand itself or the power unit?

**A26** : Same as Q14

**Q27 : VIBRATION MEASUREMENT – Same statement as Q26**

What specific vibration measurement requirements, frequency and accuracy does 202e specify?

**A27** : Frequency only.

**Q28 : SUBMERSIBLE PUMP TESTING**

Our question is in reference to the following section in the solicitation

2.1.9.1.2.5 ... The dimensions of the bell are 16 inches in diameter by 16 inches long.

It was stated during the virtual tour that the current solution is not what they are looking for as it was capable of only testing one submersible pump.

Can the team provide more clarification details on what solution and requirements as well as what submersible pump test standards should apply?

**A28** : The current bench has a coupling and mounting allowing a single specific pump to be tested. The new bench must accept all pumps that can fit into the bell regardless of their shaft and mounting.

**Q29 : SUBMERSIBLE PUMP TESTING –Same statement as Q28**

What was the limiting factor/s to only being able to test one? Was it the size of the bell?

**A29** : The coupling between the bench and the pump, as well as the mounting of the pump.

**Q30 : LEVEL OF AUTOMATED TESTING**

Our question is in reference to the two sections in the solicitation

2.4.1.1 Conduct automated test programs (data to be entered by users).

2.4.7.2 Automated tests must not require any operator intervention.

This is contradictory. Can you elaborate?

**A30** : The interface must allow the components to be tested according to pre-established templates AND give the possibility of making changes in terms of display to these templates.

**Q31 : LEVEL OF AUTOMATED TESTING – Same statement as Q30**

What level of automation is required for testing?

**A31** : Same as Q10

**Q32 : LEVEL OF AUTOMATED TESTING – Same statement as Q30**

What is meant by automated tests? Fully automated tests are often supported with for individual UUTs with acceptance test procedures. Are acceptance test procedures per Equipment to test available? By providing them we evaluate the development and programming efforts more accurately by following the ATP step by step. Or should we just estimate this effort with the general procedure listed in Annex A3? Can you clarify this further?

**A32** : Same as Q10

**Q33 : HYDRAULIC FLUID COOLING SYSTEM AND AVAILABLE INFRASTRUCTURE**

Our question is in reference to the following section in the solicitation

**2.7.1** The Contractor must supply a cooling system for hydraulic systems to maintain the temperature of the hydraulic fluid within a consistent range.

What type of cooling system does the 202e team prefer? Can you provide more clarity if we can choose either air or cold water cooling solutions?

**A33** : Same as Q3

**Q34 : HYDRAULIC FLUID COOLING SYSTEM AND AVAILABLE INFRASTRUCTURE – Same statement as Q33**

If only air is acceptable, what is the ambient temperature in Power Unit room (range or maximal temperature)? Needed for air cooling calculation and sizing of fans.

**A34** : Between 18 and 22 degrees Celsius. The cooling system must not release heat into the building.

**Q35 : HYDRAULIC FLUID HEATING SYSTEM**

Our question is in reference to the following section in the solicitation

2.8.1.1 The hydraulic fluid heating system must maintain the operating temperature of the fluid during the test procedures between at least 35°C and at most 75°C.

**Question:** Is the heater required since the pump itself will heat the fluid quickly (in approx. 8min if the oil needs to be heated up by 30 deg K)? Only cooling system must be implemented to keep the fluid temperature within the desired range.

**A35** : If you propose a system allowing to comply to point 2.8.1, your solution will be retained.

**Q36 : HYDRAULIC FLUID TYPES**

2.9.1 The Contractor must supply a separate panel to monitor and indicate the operation of the cooling/heating system components for each of the hydraulic fluids. As part of its minimum functions, it must have:

What other fluids other than MIL-H-6083?

**A36** : Only MIL-H-6083

**Q37 : MEETINGS TO ASSESS PROGRESS AND APPROVE PROJECT MILESTONES**

Our question is in reference to the following section in the solicitation

1.11.4 The first meeting must take place at the 202WD premises. The Contractor must pay all travel and living expenses for him or herself and any representatives who attend the meeting.

Can you please clarify this further, who “any representative” might be and who decides if they should attend? Do you mean individuals that the bid winner requires at the meeting or do you mean possible representatives of the contracting authority, maintenance team or other individuals from the customer side? Can you provide some additional clarity please?



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W1985-212030/A  
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MTA170  
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**A37** : All representatives deemed necessary by the winning supplier. Travel by 202DA personnel is paid for by 202DA.

**Q38 : CONTROL PANEL LOCATION**

Our question is in reference to the following section in the solicitation

**2.1.5** Bench layout and sections:

**2.1.5.1.2** The control panel must be located in the centre with all the settings and dials.

Would it be acceptable to offer an alternative location of the control panel if we feel confident it provides additional value to the operator and or is already part of an existing design?

**A38** : Same as Q24.

***The article 4.1.2.1 from Part 4 of the RFP is amended as follows:***

**Delete** article 4.1.2.1 in its entirety and replace with the following:

**Insert:**

**4.1.2.1 Evaluation of Price - Canadian / Foreign Bidders**

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) Montreal Incoterms 2010 for shipments from a commercial contractor. Bids will be assessed on an DDP basis.

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**All other terms and conditions remain unchanged.**