



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada  
Room 100,  
167 Lombard Ave.  
Winnipeg  
Manitoba  
R3B 0T6  
Bid Fax: (204) 983-0338

## 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 - Western  
Region  
Room 100  
167 Lombard Ave.  
Winnipeg  
Manitoba  
R3B 0T6

<b>Title - Sujet</b> GNSS Receiver Kits	
<b>Solicitation No. - N° de l'invitation</b> F2470-180033/A	<b>Date</b> 2018-08-29
<b>Client Reference No. - N° de référence du client</b> F2470-180033	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$WPG-119-10613	
<b>File No. - N° de dossier</b> WPG-8-41089 (119)	<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> <b>on - le 2018-10-09</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Central Daylight Saving Time CDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Zdan, Tyler	<b>Buyer Id - Id de l'acheteur</b> wpg119
<b>Telephone No. - N° de téléphone</b> (204) 509-5743 ( )	<b>FAX No. - N° de FAX</b> (204) 983-7796
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF FISHERIES AND OCEANS 501 UNIVERSITY CRESCENT WINNIPEG Manitoba R3T2N6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<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>

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## PART 1 - GENERAL INFORMATION

### 1.1 Requirement

The Department of Fisheries and Oceans Canada's (DFO) Small Craft Harbours Branch (SCH) has a requirement for the supply and delivery of two (2) survey-grade GNSS (Global Navigation Satellite System) base/rover kits, as well as field accessories. Training in the use of the GNSS kits is also required.

### 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 North American Free Trade Agreement (NAFTA) and the Canadian Free Trade Agreement (CFTA).

### 1.4 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](#) (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

### 2.2 Submission of Bids

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

Bid Receiving Public Works and Government Services Canada  
100 -167 Lombard Ave.  
Winnipeg, MB, R3B 0T6

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Email address (for initiating an ePost conversation): [ROReceptionSoumissions.WRBidReceiving@tpsgc-pwgsc.gc.ca](mailto:ROReceptionSoumissions.WRBidReceiving@tpsgc-pwgsc.gc.ca) **\*\* Bids/Offer will be not be accepted if emailed directly to this email address. This email is to initiate an ePost Connect conversation, as detailed in the Standard Instructions. \*\***  
Bid Fax: (204) 983-0338

## 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) 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 Manitoba.

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 Bid  
Section II: Financial Bid  
Section III: Certifications  
Section IV: Additional Information

- 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 Bid (1 hard copy)  
Section II: Financial Bid (1 hard copy)  
Section III: Certifications (1 hard copy), if applicable

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 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](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, 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.

### **3.1.1 Electronic Payment of Invoices – Bid**

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

If Annex C 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.

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## 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

See Annex A: Requirement.

#### 4.1.2 Financial Evaluation

SACC Manual Clause [A0220T](#) (2016-01-28), Evaluation of Price

### 4.2 Basis of Selection

#### 4.2.1 Basis of Selection – Mandatory Technical Criteria

SACC Manual Clause [A0031T](#) (2010-08-16), Basis of Selection - Mandatory Technical Criteria

## 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 Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

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## 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 section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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.

The Bidder must provide the Contracting Authority with a completed annex titled Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

## 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 two (2) survey-grade GNSS (Global Navigation Satellite System) base/rover kits in accordance with the Requirement at Annex A.

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

### 6.4 Term of Contract

#### 6.4.1 Delivery Date

All the deliverables must be received on or before November 15, 2018.

#### 6.4.2 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: Tyler Zdan  
Title: Procurement Officer  
Public Works and Government Services Canada  
Procurement Services  
Directorate: Western Region  
Address: 100-167 Lombard Avenue, Winnipeg, MB, R3B 0T6  
Telephone: (204) 509-5743  
E-mail address: Tyler.Zdan@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 Project Authority

The Project Authority for the Contract is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_



Telephone: \_\_\_\_\_  
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

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

## 6.6 Payment

### 6.6.1 Basis of Payment

*\*\* This section will be completed upon contract award. \*\**

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 \$ \_\_\_\_\_.  
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 Single Payment

H1000C (2008-05-12), Single Payment

### 6.6.3 Electronic Payment of Invoices – Contract

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

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

## 6.7 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: The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

## **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 Manitoba.

## **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; and 4003 (2010-08-16), Licensed Software;
- (c) the general conditions 2010A (2018-06-21), General Conditions - Goods (Medium Complexity);
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) the Contractor's bid dated \_\_\_\_\_.

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## ANNEX A

### REQUIREMENT

#### Background

Department : The Department of Fisheries and Oceans Canada's (DFO) Small Craft Harbours Branch (SCH) has a requirement for the supply and delivery of two (2) survey-grade GNSS (Global Navigation Satellite System) base/rover kits, as well as field accessories. Training in the use of the GNSS kits is also required.

Reason for Tender: SCH operations in the Central and Arctic Region requires the GNSS receivers to augment the existing aging equipment and enable the utilization of more modern technologies that will increase production and minimize cost.

#### Requirement

Specific Requirement: The contractor must provide two (2) GNSS receiver kits, as follows:

- Two (2) survey grade GNSS (Global Navigation Satellite System) receivers, including hard case and all required ancillary equipment for use in the field including, but not limited to, rechargeable batteries (one main and one spare), tribrach for base, chargers, power cables, measuring tape, and cables for data download;
- One (1) data controller with QWERTY keypad and access software, including carrying case and all required ancillary equipment for use in the field including, but not limited to, batteries, power supply, hand strap, USB cable, stylus, rover pole bracket;
- One (1) 2m Carbon Fibre Rover Pole
- One (1) Tripod

The Contractor must also provide two on-site training sessions on the equipment provided and its compatibility with SCH's existing equipment and workflow. Each training session would be for up to 8, English-speaking engineers or engineering technology professionals. One training session is required in Winnipeg, MB and the other in Burlington, ON.

The Contractor must also provide three years of service and maintenance for the GNSS receivers and data controller.

#### Delivery Location

Street Address: Fisheries and Oceans Canada Freshwater Institute  
City: Winnipeg  
Province: Manitoba  
Country: Canada

## Mandatory Delivery Date

Delivery Date: The goods must be delivered by October 31, 2018. Training must be completed by November 15, 2018.

### Compliance Matrix - Minimum Mandatory Criteria

A complete list of the minimum mandatory performance specifications are detailed below in the "Compliance Matrix". Bidders are to clearly demonstrate compliance with each mandatory specification.

1. Bidders must show compliance by addressing each performance specification in the Compliance Matrix, whether the product offered meets ("Yes") or doesn't meet ("No").
2. Bidders must indicate whether the product or service offered meets each performance specification by stating, "Yes," or, "No."
3. If applicable, supporting technical documentation, including but not limited to, specification sheets, technical brochures, photographs or illustrations, should be provided with the bid at solicitation close. If supporting documentation is supplied, the Bidder should include a note in the Compliance Matrix that directs the evaluator(s) to the precise location of the supporting information for the relevant criterion (e.g. "specification sheet, item 2.1." Supporting documentation should be provided directly. Bidders should refrain from referencing information not included with the bid (e.g. "See company website," or, "See p. 12 of our online brochure").
4. If Canada requests additional supporting documentation for any of the mandatory specifications, the Contracting Authority will notify the Bidder, and the Bidder will have a deadline of two (2) business days to provide the requested information. Failure to fulfil such a request could result in the bid being deemed non-compliant.
5. Bidders with questions or concerns in regards to the performance specifications can raise these with the Contracting Authority prior to the deadline outlined in the solicitation document. Such submissions should be provided in writing by emailing the Contracting Authority directly. When required, bidder questions or concerns can result in revisions or corrections to the performance specifications.
6. If the bid fails to meet any mandatory performance specification herein, the evaluator(s) will deem the bid non-compliant.

Bidder Information			
Bidder Name:			
Address:			
Representative:			
Phone/Email:			
PBN/Vendor Code:			
Line Item #	Technical Specification/ Mandatory Criterion/ Item List	Requirement Met? Indicate "Yes" or "No"	Supporting documentation provided? Provide cross-referencing information if applicable.
GNSS Receivers			

1	<p>The GNSS receivers must connect, integrate, and work seamlessly with the SCH's existing survey equipment and workflow.</p> <p>This includes the ability for the GNSS receivers to connect wirelessly to a Seafloor Systems Hydrolite-TM single beam echosounder and to collect data in the data controller.</p> <p>The GNSS receivers must function to full potential while connected to the Seafloor Systems Hydrolite-TM and require no additional steps, fixes, workarounds, patches, software, etc. to force this integration to work.</p>		
2	<p>The GNSS receivers must be survey grade and capable of achieving or exceeding the following accuracies:</p> <p>RTK: (Single baseline &lt; 30km)</p> <ul style="list-style-type: none"> <li>• Horizontal = 8 mm +1 ppm (Parts per million) RMS (Root Mean Squared)</li> <li>• Vertical = 15mm + 1 ppm RMS</li> </ul> <p>RTK: (Network RTK)</p> <ul style="list-style-type: none"> <li>• Horizontal = 8 mm + 0.5 ppm RMS</li> <li>• Vertical = 15mm + 0.5 ppm RMS</li> </ul> <p>Static GNSS surveying (high precision):</p> <ul style="list-style-type: none"> <li>• Horizontal = 3 mm + 0.1 ppm RMS</li> <li>• Vertical = 3.5mm + 0.4 ppm RMS Static and Fast</li> </ul> <p>Static and Fast Static GNSS surveying :</p> <ul style="list-style-type: none"> <li>• Horizontal = 3 mm + 0.5 ppm RMS</li> <li>• Vertical = 5mm + 0.5 ppm RMS</li> </ul>		

	<p>Code Differential GNSS surveying :</p> <ul style="list-style-type: none"> <li>• Horizontal = 0.25m + 1.0 ppm RMS</li> <li>• Vertical = 0.5mm + 1.0 ppm RMS</li> </ul> <p>RTK start-up time for specified precisions = 2 to 8 seconds</p>		
3	<p>The GNSS receivers must be capable of tracking the following satellite signals simultaneously:</p> <ul style="list-style-type: none"> <li>• GPS: L1C/A, L1C, ,2C, L2E, L5</li> <li>• GLONASS: L1C/A, L1P, L2C/A, L2P, L3</li> <li>• SBAS: L1C/A, L5 (For SBAS satellites that support L5)</li> <li>• GALILEO: GIOVE-A and GIOVE-B, E1, E5a, E5B</li> <li>• COMPASS: B1, B2, B3</li> <li>• OmniSTAR HP, XP, G2, VBS positioning</li> <li>• QZSS, WAAS, MSAS, EGNOS, GAGAN</li> </ul>		
4	<p>GNSS receivers must update at Positioning Rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz</p>		
5	<p>The GNSS receivers must have an internal radio that transmits and receives thus allowing the unit to operate in the "base" and "rover" modes. GNSS receivers shall meet or exceed these specifications for communications and data storage :</p> <ul style="list-style-type: none"> <li>• Serial: 3-wire serial (7-pin Lemo)</li> <li>• USB: supports data download and high speed communications</li> <li>• Radio Modem: fully Integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 410 MHz to 470 MHz: <ul style="list-style-type: none"> <li>o Transmit power: 2 W</li> <li>o Range: 3–5 km typical</li> </ul> </li> </ul>		

6	The GNSS receivers must be able to send and receive the following data correction protocols: <ul style="list-style-type: none"> <li>• CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1 input and output</li> <li>• Transmit NMEA 0183 at a minimum</li> <li>• 24 NMEA outputs, GSOF, RT17 and RT27 outputs</li> </ul>		
7	GNSS receivers must meet or exceed the following: <ul style="list-style-type: none"> <li>• Cellular: integrated, 3.5 G modem, HSDPA 7.2 Mbps (download), GPRS multi-slot class 12, EDGE multi-slot class 12, UMTS/HSDPA (WCDMA/FDD) 850/1900/2100MHz, Quad-band EGSM 850/900/1800/1900 MHz, GSM CSD, 3GPP LTE</li> </ul>		
8	GNSS receivers must have WiFi: 802.11 b,g, access point and client mode, WEP64/WEP128 encryption		
9	The GNSS receivers must be fully Bluetooth integrated and have a fully sealed 2.4 GHz communications port		
10	The GNSS receivers must be capable of data storage: 4 GB internal memory; over three years of raw observables (approx. 1.4 MB /day), based on recording every 15 seconds from an average of 14 satellites		
11	The GNSS receivers must be able to track a minimum of 120 channels		
12	The GNSS receivers must be capable of withstanding the following environmental conditions: - 40°C to +65°C while operational or in storage		

13	GNSS receivers must meet or exceed the following ingress protection: <ul style="list-style-type: none"> <li>• IP67 dustproof</li> <li>• Protected from temporary immersion to depth of 1 metre</li> <li>• Able to operate in all weather conditions including but not limited to snow, sleet, rain, hail</li> </ul>		
14	GNSS receivers must meet or exceed the following shock and vibration environmental standards: <ul style="list-style-type: none"> <li>• Shock:               <ul style="list-style-type: none"> <li>o Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete.</li> <li>o Operating: to 40 G, 10 msec, sawtooth</li> </ul> </li> <li>• Vibration:               <ul style="list-style-type: none"> <li>o MIL-STD-810F, FIG.514.5C-1</li> </ul> </li> </ul>		
15	GNSS receiver individual weight must not exceed 2.49 lbs with battery, radio and antenna.		
16	GNSS receivers must have a minimum of 440 channels for SV tracking		
17	GNSS receivers must be compatible with RTX Satellite Positioning technology		
18	GNSS receivers must be able to maintain RTK accuracies in the event of a radio or cellular signal being lost for up to 5 minutes GNSS receivers must also be able to automatically switch back to normal RTK corrections if radio or cellular signal is regained within the 5 minute timeframe		



19	The GNSS receivers must have electronic tilt compensation and must work seamlessly (uninterrupted Bluetooth connection) with a controller that has a the ability to display an electronic level bubble - electronic bubble must have the ability for controller to store tilt for RTK measurements		
20	GNSS receivers must use a removable, rechargeable battery with a built-in power indicator		
21	GNSS receivers must have an integrated quick release for ease of attachment to the tripod and/or rover pole		
Data Controller and Software			
22	<p>The data controller must connect, integrate, and work seamlessly with the SCH' s existing survey equipment and workflow.</p> <p>This includes the ability for the data controller to connect wirelessly to a Seafloor Systems Hydrolite-TM single beam echosounder and collect depth data in the data controller via Bluetooth. The requirement is for one piece of software on the data controller to collect both topographic survey data and bathymetric depth data without additional add-on software.</p> <p>The data controller must function to full potential while connected to the Seafloor Systems Hydrolite-TM and require no additional steps, fixes, workarounds, patches, software, etc to force this integration to work.</p>		

23	The data controller must meet or exceed the following environmental specifications: <ul style="list-style-type: none"> <li>• Operating Temperature: -30 °C to 60 °C</li> <li>• Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F)</li> <li>• Sand &amp; dust: IP6x: 8 hours of operation with blowing talcum powder (IEC-529)</li> <li>• Water: IPx7: Immersed in 1 m of water for 30 minutes (IEC-529)</li> <li>• Drop: 26 drops at room temperature from 1.22 m onto plywood over concrete</li> </ul>		
24	The data controller must have a Windows mobile operating system capable of running software that is compatible with the GNSS receivers		
25	Data controller must have a QWERTY keyboard		
26	Data controllers must have a minimum of 8 GB Flash memory		
27	Data controller must have a battery life of 34 hours under normal operating conditions		
Field Accessories			
28	Tripod must meet or exceed the following specifications: <ul style="list-style-type: none"> <li>• Composite extensible legs</li> <li>• Head cover</li> <li>• Shoulder carrying strap</li> <li>• Dual clamp locking system</li> </ul>		
29	Carbon Fibre Rover Pole: <ul style="list-style-type: none"> <li>• Made of carbon fibre</li> <li>• Composed of two sections</li> <li>• Fixed 2.0m height</li> <li>• Easily-visible precise level vial</li> </ul>		
Training			

30	The Contractor must provide two (2) on-site training sessions, one in Winnipeg, MB and one in Burlington, ON, as follows: <ul style="list-style-type: none"><li>• Train up to 8, English-speaking engineers or engineering technology professionals</li><li>• Provide training on the equipment provided and its compatibility with SCH's existing equipment and workflow</li></ul>		
Product Support			
31	The contractor must provide product support for routine technical questions, via phone or email, within 24 hours of a request.		
32	The contractor must provide all product manuals (PDF electronic preferred) on delivery.		
33	The contractor must provide a three-year service and maintenance program for the GNSS receivers and data controller, to commence on delivery.		

## ANNEX B

### BASIS OF PAYMENT

In consideration of the Contractor satisfactorily fulfilling all of its obligations under the Contract, the Contractor will be paid a firm unit price, as specified below. Customs duties are included and any applicable taxes are extra, and are to be shown as a separate item on any resulting invoice.

Item #	Description	Unit	Unit Price	Quantity	Extended Price
1	<b>GNSS receiver kit</b> , including two (2) receivers, one (1) data controller and software, carbon fibre pole, tripod and additional accessories (hard case and all required ancillary equipment for use in the field, including, but not limited to, rechargeable batteries (one main and one spare), tribrach for base, chargers, power cables, measuring tape, and cables for data download).	ea	\$	2	\$
2	<b>Delivery</b> of Items 1-3 to the Department of Fisheries and Oceans (DFO) Freshwater Institute, 501 University Crescent, Winnipeg, MB.	ea	\$	1	\$
3	<b>3-year service and maintenance program.</b>	ea	\$	1	\$
4	<b>On-site training</b> at the DFO Freshwater Institute, 501 University Crescent, Winnipeg, MB.*	ea	\$	1	\$
5	<b>On-site training</b> at the DFO Canadian Centre for Inland Waters, 867 Lakeshore Road, Burlington, ON.*	ea	\$	1	\$
<b>Total:</b>					\$

\* Note: This rate must be inclusive of all costs required to provide the requested service.

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**ANNEX C**

**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)