



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Travaux publics et Services gouvernementaux  
Canada

Place Bonaventure, portail Sud-Ouest

800, rue de La Gauchetière Ouest

7<sup>e</sup> étage, suite 7300

Montréal

Québec

H5A 1L6

FAX pour soumissions: (514) 496-3822

## 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**

Travaux publics et Services gouvernementaux Canada

Place Bonaventure, portail Sud-Ouest

800, rue de La Gauchetière Ouest

7<sup>e</sup> étage, suite 7300

Montréal

Québec

H5A 1L6

<b>Title - Sujet</b> Robot - (Unmanned Ground Vehicle)	
<b>Solicitation No. - N° de l'invitation</b> 01396-190916/A	<b>Date</b> 2019-01-16
<b>Client Reference No. - N° de référence du client</b> 01396-190916	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$MTA-625-15188	
<b>File No. - N° de dossier</b> MTA-8-41346 (625)	<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 2019-02-26</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Heure Normale du l'Est HNE
<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> Lavoie, Corine	<b>Buyer Id - Id de l'acheteur</b> mta625
<b>Telephone No. - N° de téléphone</b> (514) 207-4777 ( )	<b>FAX No. - N° de FAX</b> (514) 496-3822
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> MINISTERE DE L'AGRICULTURE ET DE L'AGROALIMENTAIRE 430 BOULEVARD GOUIN SAINT-JEAN-RIHELIE Québec J3B 3E6 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> .	<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 Security Requirements**

There is no security requirement applicable to the Contract.

### **1.2 Requirement**

The Work to be performed is detailed under Article 6.2 - Requirement of the resulting contract clauses.

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

## **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.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days  
Insert: 120 days

#### **2.1.1 SACC Manual Clauses**

[B1000T](#) (2014-06-26) Condition of Material - Bid

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## 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.

You must submit your offer, **by epost Connect, by mail, by facsimile or in person**, prior to the closing date and time:

**a) By mail or in person, at the following address:**

Public Services and Procurement Canada  
Acquisitions Directorate - Quebec Region  
800, rue de la Gauchetière Ouest, Portal South-west, Suite 7300  
Montréal, Quebec H5A 1L6

**b) By facsimile, at the following number: (514) 496-3822**

**c) Bids may also be submitted using the epost Connect service as detailed in the Standard Instructions.**

The following PWGSC Regional Bid Receiving Unit e-mail address is to be used for epost Connect services:

[TPSGC.RQReceptionSoumissions-QRSupplyTendersReception.PWGSC@tpsgc-pwgsc.gc.ca](mailto:TPSGC.RQReceptionSoumissions-QRSupplyTendersReception.PWGSC@tpsgc-pwgsc.gc.ca)

Bids will not be accepted if emailed directly to this e-mail address. This email address is to initiate an epost Connect conversation, as detailed in the 2003 Standard Instructions – section 08.

## 2.3 Enquiries - Bid Solicitation

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

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

## 2.4 Applicable Laws

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

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.

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## 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

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 (2 hard copies)  
Section II: Financial Bid (1 hard copy)  
Section III: Certifications (1 hard 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 their bid:

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

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

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

#### **Section I: Technical Bid**

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

#### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment.

### 3.1.1 Electronic Payment of Invoices – Bid

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

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

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

### 3.1.2 Exchange Rate Fluctuation

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

## Section III: Certifications

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

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### 4.1.1 Technical Evaluation

It is mandatory to provide the technical / descriptive documents of the product that you are offering (eg. drawing, data sheet, sketch, etc.) or a description to allow it's technical evaluation. Failure to comply will render your bid non responsive.

You must demonstrate in your technical submission that your product is compliant with the **Mandatory technical specifications to be demonstrated** of Annex “C” (criteria no. 2.1, 2.3, 2.5, 2.8 et 2.12 of Annex “A”).

*Note: The other Mandatory technical specifications of Annex “A” are not to be demonstrated but remain mandatory technical specifications to be met.*

Canada will evaluate only the documentation provided with a bidder's bid. Canada will not evaluate information such as references to Web site addresses where additional information can be found, or technical manuals or brochures not submitted with the bid.

##### 4.1.1.1 Mandatory Technical Criteria

See Annex “C” - Mandatory technical specifications to be demonstrated.

#### 4.1.2 Financial Evaluation

Total financial evaluation: Sum of total prices of items A + B + C + D mentioned in Annex "B" – Basis of Payment.

##### 4.1.2.1 SACC Manual Clauses

SACC Manual Clause [A0222T](#) (2014-06-26), Evaluation of Price - Canadian / Foreign Bidders

#### 4.2 Basis of Selection

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](#) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), 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 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>), 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/canada/esdc/labour's) 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.

### **5.2.3 Pre-tested**

The Supplier must provide written certification demonstrating that the unit has been pre-tested at the manufacturer's plant and that all elements of the system are included and functional.

## **PART 6 - RESULTING CONTRACT CLAUSES**

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

### **6.1 Security Requirements**

**6.1.1** There is no security requirement applicable to the Contract.

### **6.2 Requirement**

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

### **6.3 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.

### **6.4 Term of Contract**

#### **6.4.1 Delivery Date**

All the deliverables must be received on or before March 31, 2019.

#### **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: Corine Lavoie  
Title: Supply Officer  
Public Works and Government Services Canada  
Acquisitions Branch  
800 de la Gauchetière Ouest, Suite 1110, Montreal (Quebec), Canada, H5A 1L6

Telephone: 514-207-4777  
Facsimile: 514-496-3822  
E-mail address: corine.lavoie@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 *(Will be completed at contract award)*

The Project Authority for the Contract is:

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

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

### 6.5.3 Contractor's Representative *(to be completed by the tenderer)*

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 \$ \_\_\_\_\_ *(will be filled at the time of contract award)*. Customs duties are included and Applicable Taxes are extra.

The contract will be awarded in Canadian currency. The rate given by the Bank of Canada in effect on the bid solicitation closing date will be applied as a conversion factor.

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 Single Payment

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

### 6.6.4 SACC Manual Clauses

A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)

A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)

C2000C (2007-11-30), Taxes - Foreign-based Contractor

### 6.6.5 Electronic Payment of Invoices – Contract

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

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

### 6.7 Invoicing Instructions

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 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 \_\_\_\_\_ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

### 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 general conditions 2010A (2016-04-04) General Conditions - Goods (Medium Complexity)
- (c) Annex "A", Requirement;
- (d) Annex "B", Basis of payment
- (e) the Contractor's bid dated \_\_\_\_\_

Solicitation No. - N° de l'invitation  
01396-190916/A  
Client Ref. No. - N° de réf. du client  
01396-190916

Amd. No. - N° de la modif.  
File No. - N° du dossier  
MTA-8-41346

Buyer ID - Id de l'acheteur  
mta625  
CCC No./N° CCC - FMS No./N° VME

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## 6.11 **SACC Manual Clauses**

[G1005C](#) (2016-01-28) Insurance - No Specific Requirement

[A9062C](#) (2011-05-16) Canadian Forces Site Regulations

[B9028C](#) (2007-05-25) Access to Facilities and Equipment

[B7500C](#) (2006-06-16) Excess Goods

[B1501C](#) (2006-06-16) Electrical Equipment

## **ANNEX "A"**

### **REQUIREMENT**

#### **1.0 Background**

The robotic vehicle will be used for the following applications:

- mechanical weeding;
- research and development tool to design a platform for the detection of pathogens and pests in crops (field crops, vegetables or horticulture);
- ultimately, a better tool for assessing individual plant health and soil health.

The stated objectives imply that the robotic vehicle we wish to purchase can accept sensors of our choice, as well as other equipment design for spraying, fertilization and precision mechanical weeding, the whole constituting a "robotic platform".

\*\*\* It should be noted that for better understanding of this document, we define "robotic platform" as the fusion of the detection tools and the robotic vehicle that we want to purchase. The term "robotic vehicle" is defined as "unit" or the acronym "UGV". Throughout this text, we will use the term "unit". \*\*\*

#### **2.0 Mandatory technical specifications**

- 2.1 The unit **MUST BE** an autonomous robotic wheeled vehicle, which can among others, possess mechanically weeding tool;
- 2.2 The unit **MUST NOT BE** a prototype;
- 2.3 The unit **MUST BE** a commercial version;
- 2.4 The unit must have a mechanical weeding tool;
- 2.5 The unit must have a weight without payload of less than 1000 kg;
- 2.6 The unit must have a loading capacity of at least 200 kg
- 2.7 The unit must be stable in flat terrain or with slight slopes (<10%) and resistant in strong wind and rain conditions
  - 2.7.1 The unit must be four-wheel-drive (4WD and 4WS) with tires up to 300 mm wide. The tire profile should be suitable for driving in agricultural fields with loose, wet, furrowed and compacted soil conditions;
  - 2.7.2 The traction power (combined for all four wheels) must be at least 2 kW.
- 2.8 The unit must have a ground clearance between 80 and 120 cm;

- 
- 2.9 The unit must have one lane (center-to-center distance between each pair of front and rear wheels) that is easily adjustable to accommodate the width of a vegetable board (estimated at 150 cm  $\pm$  20 cm). Real-time adjustment is not required;
- 2.10 The unit must have an autonomy of more than 4 hours;
- 2.11 The unit must have a 100% electrical power supply whose source of energy comes from rechargeable lithium-ion batteries;
- 2.11.1 A charger for the supplied battery (s) must be included in the order. A battery monitoring system (BMS) must also be included;
- 2.12 The unit must have an electrical outlet for the connection of sensors and other electronic interfaces;
- 2.13 The unit must be equipped with an HMI (Human Machine Interface), for example a touch screen;
- 2.14 The unit must be able to receive GNSS RTK (Global Navigation Satellite System - Real Time Kinematic) signal for precise navigation within 5 cm. The unit must also contain a security system; it must be able to stop at the slightest obstacle and-or the loss of precision of the RTK (Real Time Kinematic) signal GNSS (Global Navigation Satellite System);
- 2.15 \*\*\* Related to the previous point \*\*\* The unit must be autonomous and follow a predefined circuit without human intervention. It means that it must be able to accept and execute an autonomous mission using Global Navigation Satellite System (GNSS) guidance coupled with high-definition camera vision and a computer file (e.g. shapefile type) describing its path, speed, points of departure and return. The unit must also have the ability to return automatically to his point of origin.
- 2.15.1 A remote control option must be available and included in the purchase in order to take control of the unit manually;
- 2.16 An Inertial Measurement Module (IMU) must be included to determine the orientation (Alpha, Phi, Kappa) and speed of the unit;
- 2.17 The unit must have an operating system based on EITHER:
- 2.17.1 a proprietary unit control software that can allow inputs from an independent platform to adapt the behavior of the robot based on the measurements, calculations and models that we develop and implement on an independent platform mounted on the robotic vehicle (unit). This platform will emit signals (e.g. TTL signals, or Transistor - Transistor - Logic) that the control unit of the unit will be able to receive and interpret to:
- 2.17.1.1 stop the progression of the unit
  - 2.17.1.2 restart the progress of the unit
  - 2.17.1.3 change the speed of movement of the unit
  - 2.17.1.4 interrupt the current mission
  - 2.17.1.5 task a new mission
  - 2.17.1.6 extract data in real time (GPS points)
- 2.17.2 OR software based on the ROS (Robot Operating System) language;

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### 3.0 Deliverables

3.1 The manufacturer or supplier must provide after-sales service for a minimum of three years. It must be accessible in case of problems. The requirements of the after-sales service are:

- 3.1.1 Phone support available in less than 16 hours;
- 3.1.2 Support by either:
  - 3.1.2.1 electronic means (emails, remote interactions with the material) and possibility that a technician can connect remotely to update or fix software problems;
  - 3.1.2.2 OR support by sending a technician on site;
- 3.1.3 Software updates must be provided as soon as available.

3.2 Transport: the unit must be able to be transported by a standard 1.83 m wide car trailer.

### 4.0 Training

- 4.1 A complete training must ideally be given in French, if not in English, at the Research and Development Center of Saint-Jean-sur-Richelieu to a maximum of four (4) users.
- 4.2 The training must include the following items, but not limited to: the maintenance, use and operation of the robot.
- 4.3 A manual for use and maintenance must be provided with the equipment ideally in French if not, in English [two (2) hard copies or an electronic version].
- 4.4 A list of parts including all supplies and accessories must also be provided.

### 5.0 Delivery

Delivery must occur no later than March 29th, 2019.

The robot must be delivered to the Saint-Jean-sur-Richelieu Research and Development Center located at the following address:

Agriculture and Agri-Food Canada  
Research and Development Center of Saint-Jean-sur-Richelieu  
430 Gouin Boulevard  
Saint-Jean-sur-Richelieu, Quebec J3B 3E6

## ANNEX "B"

### BASIS OF PAYMENT

Article	Description	Quantity	Unit Price	Total Price
<b>A</b>	UGV (Unmanned Ground Vehicle) as described in part 2.0 Mandatory Technical Specifications of Annex "A" – Requirement.	<b>1</b>	_____ \$	_____ \$
<b>B</b>	Delivery of the system as described in part 5.0 of Annex "A" – Requirement.	<b>1</b>	_____ \$	_____ \$
<b>C</b>	After-sales service as described in part 3.0 Deliverables of Annex "A" – Requirement.	<b>3 years</b>	_____ \$	_____ \$
<b>D</b>	Training as described in part 4.0 of Annex "A" - Requirement	<b>1</b>	_____ \$	_____ \$
	<b>TOTAL (A + B + C + D)</b>			_____ \$



## ANNEX "C"

### MANDATORY TECHNICAL SPECIFICATIONS TO BE DEMONSTRATED

The system must meet all MANDATORY requirements described in Section 2.0 of Appendix "A" - Requirement. Within the mandatory requirements, the following requirements will be evaluated.

**Note: No web links will be accepted. If you refer to a document or video, please submit a paper copy or an electronic copy on a USB.**

No.	Mandatory technical Specifications	Reference : Please specify where can be found these items within your technical/descriptive documents and/or technical literature/notes. (Page and/or Section)
2.1	The unit MUST BE an autonomous robotic wheeled vehicle, which can among others, possess <u>mechanically weeding</u> tool;	Page: _____ Section: _____
2.3	The unit MUST BE a commercial version;	Page: _____ Section: _____
2.5	The unit must have a weight without payload of less than 1000 kg;	Page: _____ Section: _____
2.8	The unit must have a ground clearance between 80 and 120 cm;	Page: _____ Section: _____
2.12	The unit must have an electrical outlet for the connection of sensors and other electronic interfaces;	Page: _____ Section: _____

## ANNEX "D"

Solicitation No. - N° de l'invitation  
01396-190916/A  
Client Ref. No. - N° de réf. du client  
01396-190916

Amd. No. - N° de la modif.  
File No. - N° du dossier  
MTA-8-41346

Buyer ID - Id de l'acheteur  
mta625  
CCC No./N° CCC - FMS No./N° VME

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### **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)

Solicitation No. - N° de l'invitation  
01396-190916/A  
Client Ref. No. - N° de réf. du client  
01396-190916

Amd. No. - N° de la modif.  
File No. - N° du dossier  
MTA-8-41346

Buyer ID - Id de l'acheteur  
mta625  
CCC No./N° CCC - FMS No./N° VME

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**ANNEX “E”**

**COMPLETE LIST OF COMPANY BOARD OF DIRECTORS**

**NOTE TO BIDDERS**

**WRITE ALL DIRECTOR’S SURNAMES AND GIVEN NAMES IN BLOCK LETTERS**

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**PBN (PROCUREMENT BUSINESS NUMBER):** \_\_\_\_\_