



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

Bid Receiving - PWGSC / Réception des
soumissions – TPSGC

11 Laurier St. / 11, rue Laurier

Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau

Québec

K1A 0S5

Bid Fax: (819) 997-9776

**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

Civilian Aircraft Division/Division des Avions Civils
Portage III 7C2 - 50

11 Laurier St./11 rue Laurier

Gatineau

Québec

K1A 0S5

Title - Sujet 20 small RPAS Systems	
Solicitation No. - N° de l'invitation F7054-202010/A	Date 2020-12-08
Client Reference No. - N° de référence du client F7054-202010	
GETS Reference No. - N° de référence de SEAG PW-\$CAG-008-28007	
File No. - N° de dossier 008cag.F7054-202010	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Standard Time EST on - le 2021-01-25 Heure Normale du l'Est HNE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: McCabe (008cag), Todd	Buyer Id - Id de l'acheteur 008cag
Telephone No. - N° de téléphone (873) 469-3839 ()	FAX No. - N° de FAX (819) 956-9110
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Specified Herein Précisé dans les présentes	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein – Voir ci-inclus	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	

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION	2
1.1 SECURITY REQUIREMENTS	2
1.2 STATEMENT OF WORK B4007T (2014-06-26)	2
1.3 DEBRIEFINGS	2
1.4 EPOST CONNECT SERVICE	2
PART 2 - BIDDER INSTRUCTIONS	2
2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS	2
2.2 SUBMISSION OF BIDS	2
2.3 ENQUIRIES - BID SOLICITATION	3
2.4 APPLICABLE LAWS	3
2.5 BID CHALLENGE AND RECOURSE MECHANISMS	3
PART 3 - BID PREPARATION INSTRUCTIONS	4
3.1 BID PREPARATION INSTRUCTIONS	4
PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION	5
4.1 EVALUATION PROCEDURES	5
4.2 BASIS OF SELECTION	6
PART 5 - CERTIFICATIONS	6
5.1 CERTIFICATIONS REQUIRED WITH THE BID	6
PART 6 - RESULTING CONTRACT CLAUSES	6
6.1 SECURITY REQUIREMENTS	6
6.2 STATEMENT OF WORK	6
TO BE ATTACHED AS ANNEX "A" STATEMENT OF WORK	6
6.3 STANDARD CLAUSES AND CONDITIONS	6
6.4 TERM OF CONTRACT	7
6.5 AUTHORITIES	7
6.6 PAYMENT	8
6.3 INVOICING INSTRUCTIONS	8
6.4 COMPLIANCE	8
6.5 APPLICABLE LAWS	9
6.6 PRIORITY OF DOCUMENTS	9
6.7 DISPUTE RESOLUTION	9
ANNEX "A"	10
STATEMENT OF WORK	10
ANNEX "C" TO PART 3 OF THE BID SOLICITATION	11
ELECTRONIC PAYMENT INSTRUMENTS	11

PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement associated with this bid solicitation.

1.2 Statement of Work B4007T (2014-06-26)

The Work to be performed is detailed under Appendix "A" Statement of Work 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 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](#) (2020-05-28) 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

No Substitute Products – B4027T (2020-07-01)

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 in the bid solicitation.

Note: For bidders choosing to submit using epost Connect for bids closing at the Bid Receiving Unit in the National Capital Region (NCR) the email address is:

tpsgc.dgareceptiondessoumissions-abbidreceiving.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.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 15 calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 Applicable Laws

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

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

2.5 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
 - Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

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. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

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 (3 hard copies)
Section II: Financial Bid (1 hard copies) Sealed separately
Section III: Certifications (1 hard copy)

PSPC Bid Receiving Unit:

PDP 0B2-103
11 Laurier Street
Gatineau, Quebec K1A 0S5
Canada
Building Portage III
Floor 0B2
Room 103

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.

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 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

Attached as RPAS Bid Evaluation

4.1.2 Financial Evaluation

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

1. The price of the bid will be evaluated as follows:
 - a. Canadian-based bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded.
 - b. foreign-based bidders must submit firm prices, Canadian customs duties, excise taxes and Applicable Taxes excluded. Canadian customs duties and excise taxes payable by Canada will be added, for evaluation purposes only, to the prices submitted by foreign-based bidders.
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. Although Canada reserves the right to award the Contract either on an FOB plant or FOB destination, Canada requests that bidders provide prices FOB their plant or shipping point and FOB destination. Bids will be assessed on an FOB destination basis.
4. For the purpose of the bid solicitation, bidders with an address in Canada are considered Canadian-based bidders and bidders with an address outside of Canada are considered foreign-based bidders.

4.2 Basis of Selection

4.2.1 Instructions to Bidders / Contractors

SACC Manual Clause A0031T (2010-08-16)

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS

Bidders must provide the required certifications 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.

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 Statement of Work

To be attached as Annex "A" Statement of Work

6.3 Standard Clauses and Conditions

Solicitation No. - N° de l'invitation
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Client Ref. No. - N° de réf. du client
F7054-202010

Amd. No. - N° de la modif.
File No. - N° du dossier
008cag.F7054-202010

Buyer ID - Id de l'acheteur
008cag
CCC No./N° CCC - FMS No./N° VME

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

6.3.1 General Conditions

2010A (2020-05-28), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract A90022C (2007-05-25)

The Work is to be performed during the period of TBD to TBD.

6.4.2 Delivery Date

All the deliverables must be received on or before _____ (TBD).

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: _____
Title: _____
Public Works and Government Services Canada
Acquisitions Branch
Directorate: _____
Address: _____

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

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

6.5.2 Project Authority

The Project Authority for the Contract is:

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

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

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

6.5.3 Contractor's Representative

TBD

6.6 Payment

6.6.1 Basis of Payment

Shall be attached as Annex "B" at Contract Award

6.6.2 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)

6.3 Invoicing Instructions

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract and approved by Canada if:

- a. an accurate and complete claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. the total amount for all milestone payments paid by Canada does not exceed _____ percent of the total amount to be paid under the Contract;
- c. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
- d. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.

Invoices shall be in accordance with Annex "B" – Basis of Payment

6.4 Compliance

6.4.1 Certifications

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.

6.5 Applicable Laws

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

6.6 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) 2010A (2020-05-28), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.;
- (d) Annex A, Statement of Work ;
- (e) the Contractor's bid dated TBD

6.7 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "Dispute Resolution".

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008cag
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ANNEX "A"

STATEMENT OF WORK

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008cag
CCC No./N° CCC - FMS No./N° VME

ANNEX “C” to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ () VISA Acquisition Card;
- ☐ () MasterCard Acquisition Card;
- ☐ () Direct Deposit (Domestic and International);
- ☐ () Electronic Data Interchange (EDI);
- ☐ () Wire Transfer (International Only);
- ☐ () Large Value Transfer System (LVTS) (Over \$25M)



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Coast Guard

Garde côtière



Canadian Coast Guard

Statement of Work Remotely Piloted Aircraft System

Published under the Authority of:

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Canadian Coast Guard
Fisheries and Oceans Canada
Ottawa, Ontario
K1A 0E6

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Printed on recycled paper

Table of Contents

SECTION 1	INTRODUCTION.....	4
SECTION 2	PROJECT REQUIREMENTS.....	4
2.1	OBJECTIVES.....	5
2.2	SCOPE	5
SECTION 3	GENERAL DESCRIPTION OF OPERATIONAL CAPABILITY	6
3.1	EXISTING SYSTEM SHORTFALLS, CAPABILITY GAPS OR DEFICIENCIES	6
3.2	SUPPORTING DOCUMENTS.....	6
3.3	OPERATIONAL AND SUPPORT CONCEPT	7
3.3.1	Concept of Operations.....	7
SECTION 4	CAPABILITIES REQUIRED.....	7
4.1	KEY PERFORMANCE PARAMETERS (KPPs)	7
4.2	SYSTEM PERFORMANCE	10
4.2.1	Interoperability (Stakeholder Interface)	10
4.2.2	Human Interface Requirement	10
4.2.3	Logistics and Readiness	11
SECTION 5	SYSTEM SUPPORT	13
5.1	MAINTENANCE AND PRODUCT SUPPORT	13
5.1.1.1	<i>Maintenance Training.....</i>	<i>13</i>
5.2	SUPPLY.....	13
5.3	SUPPORT EQUIPMENT	13
5.4	TRAINING	14
5.4.1	General	14
5.4.2	Training Plan	14
5.4.2.1	<i>Pilot Training.....</i>	<i>15</i>
5.5	OPTIONS.....	17
5.5.1	Option for Additional Training	17
5.5.2	Option for Additional Equipment.....	17
5.5.3	Options for Spares	17

SECTION 6 SYSTEM DEPLOYMENT 17

SECTION 7 SCHEDULE AND DELIVERABLES 18

 7.1 SCHEDULE 18

 7.2 PROJECT MILESTONES DELIVERABLES 18

SECTION 8 GLOSSARY 1

Section 1 INTRODUCTION

The Canadian Coast Guard (CCG), on behalf of the Minister of Fisheries and Oceans, is responsible to provide the personnel, assets and infrastructure for maritime Search and Rescue services, Environmental Response, Navigable Waters Protection, Conservations and Protection, and Icebreaking Services in Canada's waters of federal jurisdiction. Coast Guard personnel serve around the clock, putting their own lives at risk to assist mariners in distress regardless of the weather and location.

With the great majority of goods entering and leaving Canada through shipping, Coast Guard programs are directly linked to national economic prosperity as safe waters preserves mariners' trust that help will come in time of need. To serve Canada to the best of its capacity, Coast Guard invests in training, technology and other means to enhance its service delivery.

Remotely Piloted Aircraft Systems (RPAS) show potential for enhancing Coast Guard mission capability, and safety while delivering Coast Guard's programs to Canadians. As such, CCG has identified the use of RPAS in Visual Line of Sight (VLOS) applications as a way to enhance its air capability and deliver on its mandate.

Section 2 PROJECT REQUIREMENTS

The Coast Guard has created a pilot program to procure and conduct operational tests and trials on remotely piloted aircraft, that are capable of operating from CCG ships or ashore, to support programs such as search and rescue (SAR), icebreaking, environmental response (ER), navigable waters protection, and conservation and protection (C&P). These systems would also support critical tasks we perform in the Arctic as part of our mandate, and in support of northern communities. As such, the CCG has a requirement to procure twenty (20), multi-rotor vertical take-off and landing (VTOL), up to 1.5 kg battery operated RPAS with endurance of 20 minutes or greater, with the capability of carrying a combined Electro Optical (EO) and Infrared (IR) payload with the option of a mounted spotlight.

In this, the initial pilot phase of the program, the RPAS will be used to test and trial potential enhancements to Coast Guard's ability to perform reconnaissance missions, and survey our lakes, oceans, coasts, waterways and fisheries, collecting data and detecting illegal activity to enhance protection, ensuring they remain healthy for future generations. They will also be used to enhance the way we provide marine response services and operate our maritime fleet by providing real-time intelligence to our ships and National Command Center (NCC), impacting all of Coast Guard's regional operations nationwide. The Coast Guard is required to operate in all areas of Canada, including the

East and West coasts, the Arctic, Great Lakes and St. Lawrence Seaway, as well as some inland waterways.

The RPAS is a technology already commercially available in multiple options, the device will be sufficiently small and light for one person alone to launch and operate with the assistance of an observer. The RPAS will require, in general, a short range (under 1.0 km) and be on scene with the endurance to support a short response operation.

2.1 OBJECTIVES

- Modernize and improve the level of services provided to operations in the Canadian Area of Operations;
- Support the full spectrum of Coast Guard programs such as Search and Rescue, Environmental Response, Vessels of Concern, aids to navigation, icebreaking; and
- Improve the contribution to the Coast Guard's all-hazards approach to Response.

2.2 SCOPE

The Contractor shall deliver twenty (20), multi-rotor vertical take-off and landing (VTOL) RPAS meeting the technical requirements as specified in paragraph 4.1 Key Performance Parameters. Additionally, the Contractor will deliver training and the necessary documentation to support the in-service life of the RPAS.

Throughout this SOW, the words "shall" or "must" are directive (mandatory), "may" and "should" are permissive and "will" is explanatory. The term Canada refers to the Government of Canada.

RPAS, sensors/payloads, and all ancillary/support equipment shall be in new condition except for any normal pre-delivery flight test activity.

Nothing contained or omitted from this Statement of Work shall affect or otherwise diminish the Contractor's obligation to deliver, at minimum, new, complete, fully functioning RPAS units. RPAS which are not listed with Transport Canada (TC) as being eligible for Advanced Operations will not be considered in this solicitation. Please see: <https://www.tc.gc.ca/en/services/aviation/drone-safety/choosing-right-drone.html>

Section 3 GENERAL DESCRIPTION OF OPERATIONAL CAPABILITY

3.1 EXISTING SYSTEM SHORTFALLS, CAPABILITY GAPS OR DEFICIENCIES

The Coast Guard has created a pilot program to procure and conduct operational tests and trials on RPAS. These RPAS are intended to be capable of operating from CCG ships or ashore and will support programs such as Search and Rescue (SAR), Icebreaking, Environmental Response (ER), navigable waters protection, and Conservation and Protection (C&P).

RPAS technology shows a great potential for enhancing CCG's mission capability and safety while delivering CCG programs to Canadians. As such, CCG has identified the use of RPAS in Visual Line of Sight (VLOS) applications as a way to enhance its air capability and deliver on its mandate.

3.2 SUPPORTING DOCUMENTS

The following documents provide further guidance to this Statement of Work:

Transport Canada - Standard 922 - RPAS Safety Assurance - *Canadian Aviation Regulations* (CARs)

<https://www.tc.gc.ca/en/transport-canada/corporate/acts-regulations/regulations/sor-96-433/standard-922.html>

Transport Canada - If you want to fly your drone outside the rules, you will need to apply for a Special Flight Operations Certificate (SFOC).

<https://www.tc.gc.ca/en/services/aviation/drone-safety/get-permission-fly-drone-outside-rules.html>

Canadian Aviation Regulations (SOR/96/433) Part IX – Remotely Piloted Aircraft Systems

<https://www.tc.gc.ca/en/transport-canada/corporate/acts-regulations/regulations/sor-96-433.html>

Transport Canada – New rules for drones in Canada

<https://www.tc.gc.ca/en/services/aviation/drone-safety/new-rules-drones.html>

Transport Canada – Drone safety, Flying your drone safely and legally, drone registration, drone pilot certification, where and where not to fly, reporting a drone

incident. https://www.tc.gc.ca/en/services/aviation/drone-safety.html?utm_source=VanityURL&utm_campaign=DroneJan2019

Transport Canada – Choosing the right drone for Advanced Operations
<https://www.tc.gc.ca/en/services/aviation/drone-safety/choosing-right-drone.html>

NAV CANADA - Flying your Remotely Piloted Aircraft (RPA) in Canadian Airspace
<https://www.navcanada.ca/EN/products-and-services/RPAS/Pages/default.aspx>

Ingress Protection (IP) definition
<http://www.dsmt.com/resources/ip-rating-chart/>

3.3 OPERATIONAL AND SUPPORT CONCEPT

3.3.1 Concept of Operations

The concept of operations for the RPAS includes the deployment of devices from:

- Shore. A qualified operator with observer will launch and recover the device from a shore location in support of VLOS operations.
- Vessel. A qualified operator with observer will launch and recover the device from a vessel in support of VLOS operations.

Planning/Operational Cycle:

The RPAS must be operational at the time of deployment and its initial lifecycle should allow it to operate for one year without original equipment manufacturer (OEM) maintenance.

Section 4 CAPABILITIES REQUIRED

4.1 KEY PERFORMANCE PARAMETERS (KPPs)

The following operational requirements for the system have been developed in alignment with traditional Canadian environmental conditions described through statistical analyses and input from subject matter experts.

RPAS CAPABILITIES	
Physical Requirements	
Diagonal Length	≤ 60 cm (excluding propellers)
Height	≤ 30 cm
Total Weight	≤ 2.0 kg (including battery, payload and propellers)
Disassembly	System must be able to be disassembled (without tools) for compact transport and storage and all system parts need to fit in the carrying hard case
Interchangeability of Parts	Parts such as arms, legs, propellers and payloads must be interchangeable in the field using non specialized or commonly available hand tools
LED Lights	Must be able to be turned off and on through the Control Station
Spotlight	Must be an OEM approved solution which can be user installed or removed
Navigation Lights	Must be in the visible light spectrum
Performance Characteristics	
Must be able to take off and land vertically from the ground and the deck of a vessel in motion using a remote controller	
Must be supplied with joysticks to control the aircraft	
Must be supplied with a hard carrying case with a handle for the RPAS and associated controller items and spares for field deployment	
Air vehicle system, including control of air vehicle and control of camera, must be able to be operated by a single operator	
Must be able to operate in pressure altitudes up to 7500 ft above sea level (ASL)	
Maximum speed must be a minimum of 50 km/per hour	
Data link range must be a minimum of 1000 m	
Must be able to operate in temperature ranges from -10° Celsius to +40° Celsius	
Flight time with its heaviest payload and spotlight in-use must be minimum 20 minutes at 15° Celsius.	
Must have built in fault tolerance including: <ul style="list-style-type: none"> - If low battery condition is not addressed by the operator, system must automatically fly to a pre-programmed location and land when battery is at critically low level; - System must attempt to reconnect if communication is lost between air vehicle and ground control station and if it cannot reconnect, system will automatically fly to a pre-programmed location and land; and - If the battery condition becomes critical, aircraft must immediately initiate a landing using its on-board obstacle avoidance systems to ensure the safest possible outcome. 	
RPAS hovering accuracy minimum requirement must be 2.0 meters in Global Positioning System (GPS) mode	
RPAS must have a sensor driven flight control system which allows the aircraft to maintain position and attitude without pilot input (automated hover mode)	

Statement of Work - Canadian Coast Guard Remotely Piloted Aircraft System

Complete system must be able to be set-up and launched within 5 minutes	
System must be able to perform a target lock/stare/track on a stationary and/or moving target (one target at a time)	
Must have a Return to Home feature that can be either the location of the Control Station (CS) or a predetermined geographical point	
Must come with the latest released version of the software/firmware at time of purchase, and allow for automatic updates for security and programming patches	
Camera & Video Payload	
Image Resolution EO	Minimum 10 Mega Pixels (MP)
Video Resolution EO	Minimum FHD 1920 x 1080p recorded
Definition & Frame Rate	All video must be full HD, recording at least 30 fps
The operator must be able to take still pictures, view the pictures within 5 minutes at proper resolution (fully downloaded) regardless if the drone is in flight mode or landed	
Picture must be visible on the controller at the ground control station or other device if the software allows	
The controller must be able to easily transfer the pictures for emailing in a non-proprietary format and generic email service (cellular or web service)	
Payload must be stabilized by at least 3 axis gimbal minimum	
Payload must be low light capable (manual control camera while in flight) and capable of nadir tilt	
IR cameras must be made available with minimum 640x480 pixels	
Payloads must be easily changed with normal tools from the system case	
Energy	
Propulsion and Operation	Electrically powered with removable battery(s)
Temperature Range	Must operate in temperatures -10°Celsius to +40°Celsius
Battery cells and connections must be enclosed within a self-contained hard cased unit with no external wires	
The RPAS must come with one set of spare batteries (a set is defined as the quantity required to operate the aircraft)	
Controller or Compatible Viewing Platform	
Controller or compatible viewing platform must be capable of being operated without an external light source at night	
The RPAS must have a Command and Control (C2) and Video Link Range of at least 1 km using the handheld Ground Control Station (GCS) built in antenna	
The controller or compatible viewing platform must be securely paired with the RPAS and secondary controller or compatible viewing platform	
Charging System(s)	
The charging station(s) for both batteries and controllers must be capable of both standard wall (120VAC) and vehicle (12VDC) charging methods	
Charging station must be capable of charging a minimum of two batteries at a time	
Flight Application	
Real time battery status, flight telemetry, link signal status, GPS status and any fault information must be displayed by the application on the compatible viewing	

platform or controller for the pilot's information
At minimum the software on the compatible viewing platform must have a low battery warning (RPAS and Controller), link strength indicator, loss of link warning, and a GPS status indicator
User Manual, Operational Checklists and Logs
The Bidder must provide a user manual per RPAS in the form of a printed and electronic manual (one (1) copy each per RPAS in English and French in an e-format easily accessible from Government software suites)
User manual must include instructions on: <ul style="list-style-type: none">- How to setup, launch, use, recover and store the product- How to care for the product components- How to change batteries and payloads- Pre-flight Check Sheets and Emergency Procedures- Troubleshooting- Pilot, RPAS, Maintenance, Abnormal Occurrence and System Modification Logbooks
If the system is upgraded during the warrantee period, the user manual must be updated accordingly, and new copies sent to the CCG
Payloads, Software, Support Equipment
These systems will require payloads and software to fulfill various CCG operational and support requirements, EO payload, IR payload, EO/IR payload with option of a mounted spotlight payload, etc.
The system must have the option of upgrading the data storage on-board the RPA

4.2 SYSTEM PERFORMANCE

4.2.1 Interoperability (Stakeholder Interface)

Using RPAS as an operational Response enabling equipment is a change in procedures that will need to be communicated to partners such as mariners, First Nations, Canadian Coast Guard Auxiliary (CCGA), industry, the public and associated communities, and government departments and agencies such as Fisheries and Oceans Canada (DFO), Canadian Armed Forces (CAF), Royal Canadian Mounted Police (RCMP), and Canada Border Services Agency (CBSA). Program personnel must maintain bidirectional communication with external stakeholders to prevent accidents in the area of operation of the RPAS.

4.2.2 Human Interface Requirement

The integration of RPAS as a shore and vessel-based SAR capability is foreseen to have minimal impact on Human Resources.

- Certification: Familiarization training for deployment, use, retrieval and maintenance can be developed internally to Coast Guard, in close cooperation with Safety personnel if and when required.
- Classification: No impact on classification and Work Descriptions is expected as the RPAS is a low-complexity device that will be used by trained personnel on an as required basis without much interference in their day to day responsibilities..

4.2.3 Logistics and Readiness

Sufficient spares, and ancillary parts for all associated components of the systems must be readily available for deployment to ensure uninterrupted operation for one year.

Section 5 SYSTEM SUPPORT

Support objectives include the equipment being maintained over its service life-cycle, the equipment's ability to interface with Coast Guard personnel and partners, ease of transportation and setup, as well as standardization and interoperability. The following sections provide further detail for each system of support in relation to RPAS.

5.1 MAINTENANCE AND PRODUCT SUPPORT

On-going preventative maintenance and parts replacement must be performed by Coast Guard personnel. Repairs and specialized maintenance, must be performed by the manufacturer as per the warranty.

5.1.1.1 Maintenance Training

The Contractor shall deliver maintenance documentation and training, as required, based on the system requirements. Maintenance training should be sufficient for the user to conduct field level maintenance, such as replacing consumable parts, calibrating systems, and troubleshooting common issues.

5.2 SUPPLY

All components of the RPAS must have spares readily available for deployment, use, and post-operations equipment care when required.

The Contractor shall provide a final Spares List.

The list will be retained by Canadian Coast Guard to support Canadian Coast Guard flight activities.

The Contractor shall provide an option to deliver aircraft spares for each aircraft for the duration of the Contract period.

5.3 SUPPORT EQUIPMENT

Support equipment account for the functional and safe use of the RPAS, for storage a hard Pelican style case and carrying pouch. There will also be a requirement for the contractor to supply and Anemometer and Hand Held Aviation Band radio for each system delivered.

5.4 TRAINING

Supplier is expected to present Ground School and Pilot training for up to forty (40) trainees.

5.4.1 General

The Contractor shall provide training courses for RPAS pilots in English or French in accordance with the Training Plan. These courses shall be delivered at the Contractor's facilities in North America or a mutually agreed on location in Canada.

For the purposes of this document, one training course is defined as one continuous training session, having a maximum of ten (10) participants from Canada.

All training and associated training materials shall be provided in English and French as required.

Unless otherwise agreed, the Contractor shall provide a complete set of training materials and manuals to each candidate upon arrival to training. All training materials and manuals shall be provided in hard copy and will be retained by each candidate.

5.4.2 Training Plan

The Bidder shall supply a preliminary Training Plan, as part of their proposal.

The Training Plan shall include the scheduling and complete course outlines.

The Final Training Plan shall be delivered two (2) weeks prior to the first training session.

The Contractor must provide all final program curriculum and materials to Canada for review and comment, two (2) weeks prior to the commencement of the first training course.

During the delivery of this training the Contractor must provide the complete Training Program in hard copy and in electronic format that is editable and can be used to train the RPAS operators and maintainers on the RPAS systems and all other aspects of the ground school.

The Contractor shall provide Canada with a written release and any other licence or authorization necessary to permit Canada to update, refine, translate, reproduce and use the Contractor provided training material so that Canada may conduct its own initial and recurrent training.

5.4.2.1 Pilot Training

The Contractor shall provide formal, documented pilot training (see specific requirements below).

The Contractor shall provide all program curriculum and materials to Canada for review and comment two (2) weeks prior to the commencement of the first training course.

The training shall provide the candidate with a thorough knowledge of the aircraft and its installed equipment as well as type endorsement to Transport Canada standards.

The Contractor shall include the following documentation during the delivery of Training:

5.4.2.1.1 The Contractor shall provide, a pilot training session for up to 40 participants, these numbers can be broken into smaller groups to better utilize training resources, within 45 days of receipt of the RPAS'. Ground School training shall can be through a combination of On-Line training and classroom training covering all the requirements of Transport Canada Pilot Certificate – Advanced Operations. The Ground School training will cover:

- a. Air law, air traffic rules and procedures;
- b. TC policies, guidance material and applicable RPAS related regulations related to the CARs;
- c. The class of airspace in which they intend to operate including the vertical and horizontal airspace boundaries and determining adjacent classes of airspace;
- d. Aeronautical charts and the Canada Flight Supplement;
- e. Air Traffic Control (ATC) services and procedures (where the operation is conducted in or near controlled airspace);
- f. The identification of hazardous in-flight situations and collision avoidance requirements and procedures;
- g. RPAS airframes, power plants, propulsion and systems;
- h. Human factors;
- i. Meteorology;
- j. Navigation;

- k. Type specific flight operations, RPAS systems, limitations, normal procedures and emergency procedures;
- l. Theory of flight;
- m. Radiotelephony (test for the Industry Canada Restricted Operators Certificate – Aeronautical (ROC-A)); and
- n. The Instructor will supply the student with Ground School Graduation certificate upon successful completion of the course.

5.4.2.1.2 Air Vehicle training will be carried out according to the suppliers standard course duration at one of the CCG locations or a mutually agreed upon location, after the students have completed the training in section 5.4.2.1.1. The pilot training session shall be conducted by a instructor qualified in the operation and instruction of the purchased RPAS instructor who will provide training to a level where the students, upon completion of this course, will be considered capable of passing the Transport Canada Flight Review. This training will compromise of the TC Knowledge Requirements for Pilots of Remotely Piloted Aircraft Systems 250 g up to and including 25 kg, operating within VLOS and will cover at least, but not limited to the following topics:

- a. Set up, test and operating procedures;
- b. Functionality of each of the system control features;
- c. Detailed list of selectable menu options and how they are accessed and activated;
- d. Flying practice for each of the participants, including specific scenarios related to inspection, search and rescue, environmental response, etc.;
- e. Payload operation.
- f. Basic troubleshooting; emergency procedures, and system maintenance;
- g. All RPAS systems used for training must be supplied by the Vendor, and will remain their property;
- h. All travel and expenses for Government of Canada participants will be the responsibility of the CCG;
- i. All necessary training materials to be provided by the Bidder, including manuals, handouts, PowerPoint presentation, resource material, schematics, and training devices; and

j. The Bidder's pilot training session will be a firm cost. Travel and living expenses incurred will be reimbursed in accordance with the National Joint Council Travel Directive.

k. The Instructor will supply the student with System specific Flight Training Graduation certificate upon successful completion of the course.

5.5 Options

5.5.1 Option for Additional Training

The Contractor shall provide an option for additional pilot/maintenance training valid for 12 months after delivery of the RPAS'.

5.5.2 Option for additional Equipment

The Contractor shall make available the options to purchase any of the following items under the Terms and Conditions of the Contract:

- a. Complete systems;
- b. Additional standard EO/IR payloads; and,
- c. Contractor supplied software and unique payloads.

5.5.3 Options for Spares

The Contractor shall provide an option to deliver aircraft spares for each aircraft for the duration of the Contract period or up to two (2) years from date of contract award.

Section 6 SYSTEM DEPLOYMENT

Given the scope of this innovation project, RPAS will be procured for operational testing and evaluation purposes. The devices will be distributed to CCG Response staff who have completed the mandatory training, the RPAS' will be utilized on an as required basis with a lessons learned database maintained.

Section 7 SCHEDULE AND DELIVERABLES

7.1 SCHEDULE

The project is positioned to start deploying RPAS in 2021. The deployment will be in coordination with training, Fleet and other Coast Guard Programs.

7.2 PROJECT MILESTONES DELIVERABLES

Acceptance of the milestones by Canada will in no way relieve the Contractor of responsibility for product quality and the responsibility for assuming any corrective measures should deficiencies be detected within the warranty period.

Milestone	Date (Weeks from Contract Award)
Contract Award	Week 0
Project Initiation Meeting	Week 1
Project Progress Review Meetings (PRM)	Week 6, 10, 14, 16
RPAS Delivery (all 20 units)	Week 6
Training	Week 6 to 13
Warranty ends	52 weeks following System acceptance
Contract Close-out	Week 53

Section 8 GLOSSARY

ACRONYM	TERM
ASL	Above Sea Level
ATC	Air Traffic Control
CAF	Canadian Armed Forces
CARs	Canadian Aviation Regulations
CBSA	Canadian Border Services Agency
CCG	Canadian Coast Guard
CCGA	Canadian Coast Guard Auxiliary
CS	Control Station
C&P	Conservation and Protection
C2	Command and Control
DFO	Fisheries and Oceans Canada
EO	Electro Optical
ER	Environmental Response
GCS	Ground Control Station
GPS	Global Positioning System
IP	Ingress Protection
IR	Infrared
KPP	Key Performance Parameters
NCC	National Command Center
OEM	Original Equipment Manufacturer
PMP	Project Management Plan
PRM	Progress Review Meeting
RCMP	Royal Canadian Mounted Police
ROC-A	Restricted Operators Certificate – Aeronautical
RPAS	Remotely Piloted Aircraft Systems

SAR	Search and Rescue
SFOC	Special Flight Operations Certificate
TC	Transport Canada
VLOS	Visual Line of Sight
VTOL	Vertical Take-Off and Landing



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Coast Guard

Garde côtière



Canadian Coast Guard

***Bid Evaluation Criteria
Remotely Piloted
Aircraft System***

Canada

Bid Evaluation Criteria - Canadian Coast Guard Remotely Piloted Aircraft System

1.1 Basis of Selection

Following the RFP closing, a phased evaluation and selection process will be initiated. Subject to any requests for clarification and proof and/or confirmation, responses will be required to meet the requirements associated with each phase.

The Evaluation and Selection Process phases are as follows:

Phase 1 – Confirmation of Compliance with all Mandatory Technical Criteria

Phase 3 – Evaluation of Financial Responses

Phase 4 – Identified Bidder

The technical proposals will be evaluated and scored in accordance with the scoring criteria described in the Response Evaluation Score Sheet attached as Annex A.

Phase 1 – Confirmation of Compliance with Mandatory Technical Criteria

To be declared compliant, a response must meet all Technical Mandatory (TM) Criteria.

Responses not meeting all TM criteria will be declared non-compliant. Non-compliant responses will be given no further consideration.

The Technical Evaluation consists of 3 criteria as follows.

Criteria number	Criteria name
TM 1	Project Management Plan
TM 2	Project Schedule
TM 3	Compliance Matrix

Phase 2 – Evaluation of Financial Responses

The financial responses of those Bidders who are technically compliant will have their financial proposals evaluated.

Phase 3 – Identified Respondent

The compliant Bidder with the lowest financial proposal will be selected for Contract Award.

Technical Evaluation

TM 1- Project Management Plan

The Bidder must provide a Project Management Plan (PMP). The PMP must address the following topics, as a minimum:

a. Human Resources (HR) Plan

The HR plan section should clearly identify the relevant personnel to be used in completion of the project and their roles and responsibilities. This should include a primary contact who will act as the Project Manager for the file and any other personnel to be assigned to the file.

b. Quality Management System

For the purposes of the PMP, any relevant processes or SOPs currently in place should be noted with a general overview of specific measures as applied to this project.

c. Tests and Trials Program

For the purposes of the PMP, this section should provide a high level understanding of the overall approach to tests and trials, and any particulars as it relates to this project. The Bidder must also identify their approach to address a deficiency if one is found during the course of tests and trials.

TM 2 - Project Schedule

The Bidder must provide a Project Schedule showing the planned chronological sequence of all activities, including design and project governance activities and any other activities required to achieve the objectives of the Work. The schedule must be in accordance with a recognized work breakdown structure. The schedule must be presented as a “Gantt Chart” (with dependencies included) and show milestones, key decision points and indicate the critical path.

The Project Schedule must be aligned with milestones as defined in 7.2 of the SOW.

TM 3 – Compliance Matrix

The Bidder must confirm whether they are compliant with each requirement by indicating 'yes' or 'no' in the compliance matrix. By confirming compliance with all requirements, the Bidder is confirming their ability and contractual commitment to deliver the technical products as defined herein.

RPAS CAPABILITIES		Compliance (Yes/No)	Supporting Details
Physical Requirements			
Diagonal Length	≤ 60 cm (excluding propellers)		
Height	≤ 30 cm		
Total Weight	≤ 2.0 kg (including battery, payload and propellers)		
Disassembly	System must be able to be disassembled (without tools) for compact transport and storage and all system parts need to fit in the carrying hard case		
Interchangeability of Parts	Parts such as arms, legs, propellers and payloads must be interchangeable in the field using non specialized or commonly available hand tools		
LED Lights	Must be able to be turned off and on through the Control Station		
Spotlight	Must be an OEM approved solution which can be user installed or removed		
Navigation Lights	Must be in the visible light spectrum		
Performance Characteristics			
Must be able to take off and land vertically (VTOL) from the ground and the deck of a vessel in motion using a remote controller			
Must be supplied with joysticks to control the aircraft			
Must be supplied with a hard carrying case with a handle for the RPAS and associated controller items and spares for field deployment			
Air vehicle system, including control of air vehicle and control of camera, must be able to be operated by a single operator			
Must be able to operate in pressure altitudes up to 7500 ft above sea level (ASL)			

Bid Evaluation Criteria - Canadian Coast Guard Remotely Piloted Aircraft System

Maximum speed must be a minimum of 50 km/per hour			
Data link range must be a minimum of 1000 m			
Must be able to operate in temperature ranges from -10° Celsius to +40° Celsius			
Flight time with its heaviest payload and spotlight in-use must be minimum 20 minutes on a 15° Celsius day			
Must have built in fault tolerance including: <ul style="list-style-type: none"> - If low battery condition is not addressed by the operator, system must automatically fly to a pre-programmed location and land when battery is at critically low level; - System must attempt to reconnect if communication is lost between air vehicle and ground control station and if it cannot reconnect, system will automatically fly to a pre-programmed location and land; and - If the battery condition becomes critical, aircraft must immediately initiate a landing using its on-board obstacle avoidance systems to ensure the safest possible outcome. 			
RPAS hovering accuracy minimum requirement must be 2.0 meters in GPS mode			
RPAS must have a sensor driven flight control system which allows the aircraft to maintain position and attitude without pilot input (automated hover mode)			
Complete system must be able to be set-up and launched within 5 minutes			
System must be able to perform a target lock/stare/track on a stationary and/or moving target (one target at a time)			
Must have a Return to Home feature that can be either the location of the Control Station (CS) or a predetermined geographical point			
Must come with the latest released version of the software/firmware at time of purchase, and allow for automatic updates for security and programming patches			
Camera & Video Payload			
Image Resolution EO Minimum 10 Mega Pixels (MP)			

Bid Evaluation Criteria - Canadian Coast Guard Remotely Piloted Aircraft System

Video Resolution EO Definition & Frame Rate	Minimum FHD 1920 x 1080p recorded All video must be full HD, recording at least 30 fps		
The operator must be able to take still pictures, view the pictures within 5 minutes at proper resolution (fully downloaded) regardless if the drone is in flight mode or landed			
Picture must be visible on the controller at the ground control station or other device if the software allows			
The controller must be able to easily transfer the pictures for emailing in a non-proprietary format and generic email service (cellular or web service)			
Payload must be stabilized by at least 3 axis gimbal minimum			
Payload must be low light capable (manual control camera while in flight) and capable of nadir tilt			
IR cameras must be made available with minimum 640x480 pixels			
Payloads must be easily changed with normal tools from the system case			
Energy			
Propulsion and Operation	Electrically powered with removable battery(s)		
Temperature Range	Must operate in temperatures -10°Celsius to +40°Celsius		
Battery cells and connections must be enclosed within a self-contained hard cased unit with no external wires			
The RPAS must come with one set of spare batteries (a set is defined as the quantity required to operate the aircraft)			
Controller or Compatible Viewing Platform			
Controller or compatible viewing platform must be capable of being operated without an external light source at night			
The RPAS must have a Command and Control and Video Link Range of at least 1 km using the handheld Ground Control Station (GCS) built in antenna			

Bid Evaluation Criteria - Canadian Coast Guard Remotely Piloted Aircraft System

The controller or compatible viewing platform must be securely paired with the RPAS and secondary controller or compatible viewing platform			
Charging System(s)			
The charging station(s) for both batteries and controllers must be capable of both standard wall (120VAC) and vehicle (12VDC) charging methods			
Charging station must be capable of charging a minimum of two batteries at a time			
Flight Application			
Real time battery status, flight telemetry, link signal status, GPS status and any fault information must be displayed by the application on the compatible viewing platform or controller for the pilot's information			
At minimum the software on the compatible viewing platform must have a low battery warning (RPAS and Controller), link strength indicator, loss of link warning, and a GPS status indicator			
User Manual, Operational Checklists and Logs			
The Bidder must provide a user manual per RPAS in the form of a printed and electronic manual (one (1) copy each per RPAS in English and French in an e-format easily accessible from Government software suites)			
User manual must include instructions on: <ul style="list-style-type: none"> - How to setup, launch, use, recover and store the product - How to care for the product components - How to change batteries and payloads - Pre-flight Check Sheets and Emergency Procedures - Troubleshooting - Pilot, RPAS, Maintenance, Abnormal Occurrence and System Modification Logbooks 			
If the system is upgraded during the warrantee period, the user manual must be updated accordingly, and new copies sent to the CCG			
Payloads, Software, Support Equipment			
These systems will require payloads and software to fulfill various CCG operational and support requirements, Electro Optical (EO) payload,			

Bid Evaluation Criteria - Canadian Coast Guard Remotely Piloted Aircraft System

Infrared (IR) payload, EO/IR payload with option of a mounted spotlight payload, etc.		
The system must have the option of upgrading the data storage on-board the RPA		