RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

T.P.S.G.C./P.W.G.S.C.
Gare maritime Champlain
901, Cap-Diamant
Québec
Québec
G1K 4K1

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet
Concept UAV and develop UAV target

Solicitation No. - N° de l'invitation	**Date**
W7701-104135/A	2011-07-11

Client Reference No. - N° de référence du client
W7701-10-4135

GETS Reference No. - N° de référence de SEAG
PW-$QCL-026-13883

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
QCA-1-34006 (026)	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2011-08-03

Time Zone
Fuseau horaire
Heure Avancée de l'Est
HAE

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Gallant, Julie	qcl026

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(418) 649-2931 ( )	(418) 648-2209

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
R & D POUR LA DÉFENSE CANADA VALCARTIER
BATIMENT 53
2459 BLVD PIE XI NORD
QUEBEC
Québec
G3J1X5
Canada

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
voir doc	

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**

Issuing Office - Bureau de distribution
T.P.S.G.C./P.W.G.S.C.
Gare maritime Champlain
901, Cap-Diamant
Québec
Québec
G1K 4K1

Canada

TITLE : SEMI-AUTONOMOUS UNMANNED AERIAL VEHICLE OPERATIONS IN LAND AND MARITIME ENVIRONMENTS

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PART 1 - GENERAL INFORMATION

1. Introduction

The bid solicitation document is divided into sevenparts plus attachments and annexes as follows:

Part 1 General Information: provides a general description of the requirement;

Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;

Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The annexes include :

Annex A	Statement of Work
Annex B	Basis of Payment
Annex C	Contractor Disclosure of Foreground Information
Annex D	Security Requirements Check List.

2. Summary

Objectives: The contractor will advance the state of technology in three themes related to semi-autonomous unmanned aerial vehicle operations for land and maritime environments. Theme 1 objectives are to undertake parametric analysis and experimental studies of control and environmental factors that affect successful recovery of unmanned aerial vehicles onboard Navy vessels. Theme 2 objectives are to develop reactive avoidance concepts for dismounted soldier airborne sensors and to validate the concepts through field testing. Theme 3 objectives are to develop and validate target handoff concepts that can be used by multiple mobile platforms to share target location information.

The organization for which the services are to be rendered is Defence Research and Development Canada - Valcartier (DRDC - Valcartier).

The period of the Contract is from date of Contract to 31st March 2013, with possibility to extend the term of the Contract by one additional one-year period.

Estimated amount of available funding for this contract : $260,000.00, GST extra, for the period of the Contract and $50,000.00, GST extra, for the optional work that would be performed during the additional one-year period.

All the work is to be carried out on site at Defence Research and Development Canada - Valcartier, located at 2459 Pie-XI Blvd North, Quebec City, Quebec.

Defence Research and Development Canada - Valcartier has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada.

There is a security requirement associated with this requirement. For additional information, consult Part 6 - Security, Financial and Other Requirements, and Part 7 - Resulting Contract Clauses. Bidders should consult the "Security Requirements for PWGSC Bid Solicitations - Instructions for Bidders" (http://www.tpsgc-pwgsc.gc.ca/app-acq/lc-pl/lc-pl-eng.html#a31) document on the Departmental Standard Procurement Documents Web site.

The requirement is subject to the Agreement on Internal Trade (AIT).

The requirement is limited to Canadian goods and/or services.

3. **Debriefings**

After contract award, 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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

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* (http://sacc.pwgsc.gc.ca/sacc/index-e.jsp) 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 (2011-05-16) 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: sixty (60) days
Insert: one hundred twenty (120) days

1.1 SACC Manual Clauses

A7035T(2007-05-25), List of Proposed Subcontractors

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.

Due to the nature of the bid solicitation, **bids transmitted by facsimile or/and e-mail to PWGSC will not be accepted.**

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority at julie.gallant@tpsgc-pwgsc.gc.ca 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 questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

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

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

5. Basis for Canada's Ownership of Intellectual Property

Defence Research and Development Canada - Valcartier has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada.

> *The Treasury Board, granted Defence Research and Development Canada exemption from the Treasury Board Policy on "Title to Intellectual Property Arising Under Crown Procurement Contracts"*

6. Maximum Funding

The maximum funding available for the contract resulting from the bid solicitation is **260,000.00 CAD for the period of the Contract and 50,000.00 CAD for the optional work** (Goods and Services Tax or the Harmonized Sales Tax extra, as appropriate). Bids valued in excess of this amount will be considered non-responsive. This disclosure does not commit Canada to pay the maximum funding available.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I : Technical Bid (5 hard copies)
Section II : Financial Bid (2 hard copies)
Section III : Certifications (1 hard copie)

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 30% recycled paper;
(c) print double sided (duplex printing);
(d) use a numbering system that corresponds to the bid solicitation; and
(e) submit bound bids using cerlox, staples, etc., but no binders.

1.1 Section I: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should clearly address and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

1.2 Section II : Financial Bid

Bidders must submit their financial bid in accordance with the following :

A Total Cost to a Limitation of Expenditure, which must not exceed the maximum funding specified in Part 2. The total amount of Goods and Services Tax or Harmonized Sales Tax is to be shown separately, if applicable. The information should be provided in accordance with the Financial Bid Presentation Sheet at Attachment 1.

1.2.1 SACC Manual Clauses

C3011T (2010-01-11), Exchange Rate Fluctuation

1.3 Section III : Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

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.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

Refer to Attachment 2, *Mandatory and Point Rated Technical Criteria*.

1.1.2 Point Rated Technical Criteria

Refer to Attachment 2, *Mandatory and Point Rated Technical Criteria*.

1.2 Financial Evaluation

1.2.1 Mandatory Financial Criteria

The Bidder must submit a Basis of Payment to a Limitation of Expenditure that does not exceed the maximum funding specified in Part 2, GST/HST excluded, FOB Destination (for goods), all applicable customs duty and excise taxes included.

1.2.2 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

2.1 Basis of Selection - Highest Rated Within Budget

To be declared responsive, a bid must:

(a) comply with all the requirements of the bid solicitation;

(b) meet all mandatory technical evaluation criteria;

(c) obtain the required minimum points for each criterion and each group of criteria with a pass mark; and

(d) obtain the required minimum points overall for the technical evaluation criteria which are subject to point rating.

Bids not meeting (a) or (b) or (c) or (d) will be declared non responsive. The responsive bid with the

highest number of points will be recommended for award of a contract, provided that the total evaluated price does not exceed the budget available for this requirement. In the event that the highest number of points is obtained by more than one responsive bid, 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. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

1. Certifications Precedent to Contract Award

The certifications in Attachment 3, Certifications Precedent to Contract Award, should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

1. Security Requirement

1. Before award of a contract, the following conditions must be met:

   (a) the Bidder must hold a valid organization security clearance as indicated in Part 7 - Resulting Contract Clauses;

   (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicated in Part 7 - Resulting Contract Clauses;

   (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites.

2. Bidders are reminded to obtain the required security clearance promptly. Any delay in the award of a contract to allow the successful bidder to obtain the required clearance will be at the entire discretion of the Contracting Authority.

3. For additional information on security requirements, bidders should consult the “Security Requirements for PWGSC Bid Solicitations - Instructions for Bidders” (http://www.tpsgc-pwgsc.gc.ca/app-acq/lc-pl/lc-pl-eng.html#a31) document on the Departmental Standard Procurement Documents Web site.

2. Financial Capability

SACC Manual clause A9033T (2010-08-16), Financial Capability

3. Controlled Goods Requirement

SACC Manual clause A9130T (2008-12-12), Controlled Goods Program

PART 7 - RESULTING CONTRACT CLAUSES

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

1. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled _____, dated _____.

1.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A, **task G** of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time during the second year of the Contract (from 1 April 2012 to 31 March 2013), by sending a written notice to the Contractor at least 30 calendar days prior to the Contract expiry date.

1.2 Disclosure Certification

On completion of the Work, the Contractor must submit to the Technical Authority and to the DND Procurement Authority a copy of the Disclosure Certification attached as Annex C stating that all applicable disclosures were submitted or that there were no disclosures to submit under Section 28 of the general conditions 2040.

2. 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* (http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp) *Manual* issued by Public Works and Government Services Canada.

2.1 General Conditions

2040 (2011-05-16), General Conditions - Research & Development, apply to and form part of the Contract.

2.2 Supplemental General Conditions

The following supplemental general conditions apply to and form part of the Contract:

4002 (2010-08-16), Software Development or Modification Services

2.3 SACC Manual Clauses

K3410C (2008-12-12), Canada to Own Intellectual Property Rights in Foreground Information
K3305C (2008-05-12), License to Intellectual Property Rights in Foreground Information.

3. Security Requirement

1. The Contractor must, at all times during the performance of the Contract, hold a valid Designated Organization Screening(DOS), issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).

2. The Contractor personnel requiring access to sensitive work site(s) must EACH hold a valid RELIABILITY STATUS, granted or approved by CISD/PWGSC.

3. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.

4. The Contractor must comply with the provisions of the:

(a) Security Requirements Check List and security guide (if applicable), attached at Annex D;
(b) Industrial Security Manual (Latest Edition).

4. Term of Contract

4.1 Period of Contract

The period of the Contract is from date of Contract to 31 March 2013 inclusive.

4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to one additional one year period, from 1 April 2013 to 31 March 2014 under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time during the second year of the contract (1 April 2012 to 31 March 2013), by sending a written notice to the Contractor at least 30 calendar days prior to the Contract expiry date. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Julie Gallant
Public Works and Government Services Canada
Acquisitions Branch
901, Cap Diamant, Quebec, Canada, G1K 4K1
Telephone: 418-649-2931
Facsimile: 418-648-2209
E-mail address: julie.gallant@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.

5.2 Technical Authority

The Technical Authority for the Contract is: ***(to be completed at Contract award)***

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

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

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

5.3 Contractor's Representative

Administrative representative :

Name : _____
Telephone : _____
Facsimile : _____
Email : _____

Technical representative :

Name : _____
Telephone : _____
Facsimile : _____
Email : _____

6. Payment

6.1 Basis of Payment

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, and profit, as determined in accordance with the Basis of Payment in Annex B, to a limitation of expenditure of $_____ (**amount to be inserted at contract award**). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable."

6.2 Limitation of Expenditure

1. Canada's total liability to the Contractor under the Contract must not exceed $ _____(**amount to be inserted at contract award**) . Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:

   (a) when it is 75 percent committed, or

   (b) four (4) months before the Contract expiry date, or

   (c) as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,

   whichever comes first.

3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

6.3 Method of Payment

6.3.1 Progress Payments

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work up to 90 percent of the amount claimed and approved by Canada if:

   (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111(http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf) and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

   (b) the amount claimed is in accordance with the Basis of payment;

   (c) the total amount for all progress payments paid by Canada does not exceed 90 percent of

the total amount to be paid under the Contract;

(d) all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.

2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the right to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

6.3.2 Funding by Fiscal Year

Despite the Total Estimated Cost (Limitation of Expenditure) specified in the Contract, and unless otherwise authorized in writing by the Contracting Authority, the maximum amount which may be paid for work completed in the period ending 31 March of the year specified is as follows:

Period from date of Contract to 31 March 2012 : $130 000,00
Period of 1st April 2012 to 31 March 2013 : $130 000,00
Period of 1st April 2013 to 31 March 2014 : $50 000,00 **Optional**

6.4 SACC Manual Clauses

A9117C (2007-11-30), T1204 - Direct Request by Customer Department
C0305C (2008-05-12), Cost Submission

6.5 Discretionary Audit

SACC Manual Clause C0705C (2010-01-11), Discretionary Audit

7. Invoicing Instructions - Progress Claim

1. The Contractor must submit a claim for progress payment using form PWGSC-TPSGC 1111 (http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf).

Each claim must show:

(a) all information required on form PWGSC-TPSGC 1111;
(b) all applicable information detailed under the section entitled “Invoice Submission” of the general conditions;
(c) a list of all expenses;

Each claim must be supported by:

(a) a copy of time sheets to support the time claimed;
(b) a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
(c) a copy of the monthly progress report.

2. Goods and Services Tax (GST) or Harmonized Sales Tax (HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the following address for certification.

   ATTN: Mrs Suzanne Larrivée
   Public Works and Government Services Canada
   Champlain Harbour Station
   901, Cap Diamant, room 240
   Québec, Québec
   G1K 4K1

   The Contracting Authority will then forward the original and two (2) copies of the claim to the Technical Authority for appropriate certification after inspection and acceptance of the Work takes place, and onward submission to the Payment Office for the remaining certification and payment.

4. The Contractor must not submit claims until all work identified in the claim is completed.

8. Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

8.1 SACC Manual Clauses

A3060C (2008-05-12), Canadian Content Certification

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (**to be inserted at contract award**).

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 4002 (2010-08-16), Software Development or Modification Services;
(c) the general conditions 2040 (2011-05-16), General Conditions - Research & Development;;
(d) Annex A, Statement of Work;
(e) Annex B, Basis of Payment;
(f) Annex C, Contractor Disclosure of Foreground Information;
(g) Annex D, Security Requirements Check List
(h) the Contractor's bid dated _____

11. Defence Contract

SACC Manual clause A9006C (2008-05-12), Defence Contract

12. Foreign Nationals (Canadian Contractor)

SACC Manual clause A2000C (2006-06-16), Foreign Nationals (Canadian Contractor)

13. Insurance

SACC Manual clause G1005C (2008-05-12), Insurance

14. Controlled Goods Program

SACC Manual clause A9131C (2008-12-12), Controlled Goods Program
SACC Manual clause B4060C (2008-05-12), Controlled Goods

15. Site Regulations

The Contractor must comply with all standing orders or other regulations, instructions and directives in force on the site where the Work is performed.

16. Identification Badge

SACC Manual clause A9065C (2006-06-16), Identification Badge

17. Progress Reports

1. The Contractor must submit ***monthly*** reports, in electronic format, on the progress of the Work, to both the Technical Authority and the Contracting Authority.

2. The progress report must contain two parts:

   (a) PART 1 : The Contractor must answer the following three questions:

      (i) Is the project on schedule?

      (ii) Is the project within budget?

      (iii) Is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

      Each negative response must be supported with an explanation.

   (b) PART 2 : A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

      (i) A description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.

      (ii) An explanation of any variation from the work plan.

      (iii) A description of trips or conferences connected with the Contract during the period of the report.

      (iv) A description of any major equipment purchased or constructed during the period of the report.

ANNEX A

STATEMENT OF WORK

PROJECT TITLE :
Semi-Autonomous Unmanned Aerial Vehicle Operations In Land And Maritime Environments

OBJECTIVES :
The objectives of the work are :
The work described in this technical specification covers three themes related to semi-autonomous unmanned aerial vehicle operations.
Theme 1 Ship Recovery of UAV
- To undertake a parametric study of factors that affect successful recovery of unmanned aerial vehicles onboard Canadian Patrol Frigates and to develop and implement new flight control algorithms using the DRDC Hardware-in-the-loop facility.
- To evaluate and validate through field testing, the performance of flight control algorithms running onboard MicroPilot MP2028 and Procerus Kestrel autopilots that are installed in the DRDC small unmanned aerial testbed in representative ship recovery scenarios.

Theme 2 Reactive Avoidance Concepts
- To develop reactive avoidance concepts for dismounted soldier airborne sensors using parametric simulation studies based on the Gazebo/Player development environment.
- To evaluate and validate through field testing, reactive avoidance algorithms and navigation sensor options onboard a Linux-based navigation daughterboard that is connected to the DRDC micro aerial testbed.

Theme 3 Target Handoff Concepts
- To develop target handoff concepts that permit exchange of target location data among a team of unmanned aerial vehicles based on onboard position, inertial and range sensors.
- To evaluate and validate through field testing, target position determination employing candidate target handoff algorithms and sensor suites mounted onboard DRDC micro aerial testbeds.

BACKGROUND INFORMATION :
The use of semi-autonomous aerial platforms has garnered great interest for maritime forces. The ability of ships to defend themselves depend on their capability to detect threats. Currently, sensors are installed on ship masts to position them as high as possible to aid early detection of threats. If sensor height is a key factor for early detection, then it is logical to locate the sensors on airborne platforms. Since navy ships operate in many different sea-state conditions, it is important that the airborne platform is capable of operating in these conditions. The ability to recover semi-autonomous aerial assets is a prime concern because the platform is decelerating in a turbulent airwake environment. Before introducing this new type of platform into the Forces, it is advantageous to first study the factors that affect successful recovery in a simulation environment that uses as much of the candidate avionic components as possible to capture the limitations imposed by the computational resources. The simulation environment also allows development of algorithms that optimize the accuracy of the available inertial sensor data for flight stability and control. Once an understanding is obtained through simulation, the validity of the control algorithms and the effects of critical extrinsic factors need to be demonstrated through field testing.

In the Land environment, micro aerial vehicles (MAVs) that carry sensor payloads are envisioned as tools that will help the dismounted soldier gain increased situational awareness in his local environment. To be useful for the soldier, any type of semi-autonomous airborne sensor must be able to self-navigate to some degree. Traditional navigation methods consist of data fusion between Global Positioning

System (GPS) and Inertial Measurement Unit (IMU) information. However, many of the flight scenarios envisioned for MAVs in urban terrain, indoors, or in hostile jammed environments will not be conducive to the utilisation of GPS to obtain inertial position data. Navigation in GPS-denied areas can be performed using an IMU only. However, the size, weight, and power constraints of MAVs severely limits the quality of IMUs that can be placed on-board the MAVs, making IMU-only navigation extremely inaccurate. New methods based on data from acoustic or vision navigation sensors that are combined with IMU data and reactive collision algorithms are required to improve the navigation abilities of the MAV particularly with respect to its ability to avoid obstacles. The selected navigation architectures need to be evaluated and validated through field testing.

When a group of semi-autonomous aerial vehicles, where each vehicle is controlled by an individual dismounted soldier, are employed in a Land environment for surveillance operations, a potential threat that is detected by one soldier may need to be observed by other soldiers either for better vantage points or for positive identification purposes. In order to generate position data for the potential threat, the position of each semi-autonomous aerial vehicle must be known in addition to the position of the threat relative to each vehicle. Various GPS signal-types exist to determine the position of the vehicle. However, as noted previously, GPS signals may not be available so another basis for location is needed. Determining the location of the threat requires the availability of bearing, elevation and range data that is measured by target location sensors. The accuracies of these sensors coupled with the accuracy of the vehicle position will affect the ability of another soldier to see the intended threat as the target data is handed off from vehicle to vehicle. A target handoff architecture comprised of target location sensors, vehicle position determination algorithms and target handoff algorithms is required. The proposed target handoff architectures must be evaluated through field trials for their ability to accurately locate a threat among a team of semi-autonomous aerial vehicles equipped with surveillance sensors.

ACRONYMS:
AHRS – attitude heading reference system
DRDC – Defence R&D Canada
GNC – guidance navigation control
GPS – global positioning system
ID – identification
IMU – inertial measurement unit
MAT – micro aerial testbed
MAV – micro aerial vehicle
PID – proportional integral derivative
PWM – pulse width modulation
SUAT – small unmanned fixed wing aerial testbed
UAV – uninhabited aerial vehicle
6DOF – six degree-of-freedom

DETAILED STATEMENT OF WORK & WORK PLAN:
The work plan is divided into a series of work elements that will deliver the technologies sought for semi-autonomous unmanned aerial vehicle operations.

A. Ship Recovery of UAV Study
1. Integrate, into the DRDC Valcartier MP2128 Hardware in the loop (HIL) facility, Simulink models that simulate the relative wind speed and direction, wave and airwake disturbances that could affect the recovery of a fixed-wing UAV onboard a Canadian Patrol Frigate
2. Develop a 6 degree of freedom (6DOF) model for an Aerosonde-type airframe.
3. Develop guidance, navigation and flight control algorithms that permit autonomous UAV ship recovery in a variety of scenarios.
4. Implement 6DOF model and guidance, navigation and flight control algorithms in the MP2128 HIL

facility.

5. Carry out parametric HIL simulations with autonomous UAV recovery for a variety of relative wind speed and direction, wave and airwake conditions.
6. Determine the recovery success probabilities as a function of relative wind speed and direction, wave and airwake conditions.

B. Ship Recovery of UAV Experimentation

1. Design and fabricate a tachometer using Hall Effect timing sensing and PWM or analog output. The tachometer shall be compatible with the MicroPilot autopilot and Procerus Kestrel electrical specifications.
2. Carry out pre-testing of MicroPilot system consisting of MP2128 autopilot, electronic compass, GPS antenna, tachometer, onboard and ground radio modems and ground control station with Horizon software.
3. Mount the MicroPilot system in the DRDC small unmanned fixed wing aerial testbed (SUAT) and carry out a preliminary ground test of system functions under static and taxiing conditions.
4. Flight test the SUAT and adjust the PID gains using the procedure recommended by manufacturer.
5. Upload waypoint file and execute the DRDC preliminary flight test plan to evaluate system behaviour. Save datalog.
6. Upload waypoint file corresponding to the planned ship recovery trajectory and fly pattern to evaluate the default control algorithm against the selected relative wind direction condition. Save datalog.
7. Reprogram autopilot with the selected guidance, navigation and flight control (GNC) code from A.3., upload the waypoint file and execute DRDC preliminary flight test plan to evaluate system behaviour. Save datalog.
8. Upload waypoint file corresponding to the planned ship recovery trajectory and fly pattern to evaluate the selected GNC algorithm against the selected relative wind direction condition. Save datalog.
9. Reduce logged data to engineering units and produce plots of position, inertial, and control surface actuation commands to evaluate performance of the default and selected GNC algorithms.
10. Carry out pre-testing of Procerus system consisting of Kestrel autopilot, 3-axis magnetometer, GPS antenna, tachometer, onboard radio modem, commbox and ground control station with Virtual Cockpit.
11. Repeat items 2. to 9. with Procerus system.

C. Reactive Avoidance Concepts

1. Carry out a literature review to : a) identify acoustic, infrared or vision sensors that have been used for navigation in GPS-denied environments, b) identify reactive avoidance algorithms appropriate for semi-autonomous micro-aerial vehicles, and c) identify vision–based algorithms used for inertial and navigation functions.
2. Develop and assemble a GPS/inertial data acquisition system based on a Gumstix Overo processor that is appropriately sized for the DRDC micro aerial testbed (MAT). The MAT is based on a quadrotor design and is capable of hovering and slow translational flight.
3. Mount the inertial data acquisition system on the MAT and carry out a sequence of flight maneuvers to acquire data for parameter ID analysis.
4. Develop the 6DOF kinematic equations that describe the MAT dynamics.
5. Determine the parameters in the 6DOF equations using appropriate system identification techniques and quantify the accuracy of the identification. Employ Kalman or complementary filtering techniques to the inertial data if required.
6. Develop the 6DOF MAT model for the Gazebo/Player development environment. Gazebo has been selected to take advantage of the developments made by the world-wide robotics community who use this simulation enviroment.
7. Develop a parametric study based on the navigation sensors and reactive avoidance algorithms found in the literature search. Develop a virtual obstacle course that consists of cubes, cylinders and walls that exercise the capabilities of the sensors and algorithms. Determine appropriate metrics that

can be used to compare system performance.
8. Develop the sensor behaviors and data output protocols code with the reactive avoidance algorithms in the Gazebo/Player development environment.
9. Carry out the parametric study along with a parameter sensitivity study.
10. Analyze results and determine viable reactive avoidance concepts useful for MAT-type platforms.

D. Reactive Avoidance Experimentation
1. Design a flexible navigation Gumstix daughterboard architecture to interface with the DRDC MAT autopilot which is based on the Mikrokopter NaviCtrl and FlightCtrl code and avionics.
2. For the set of navigation sensors selected from the results determined in Task C.9., fabricate and prepare the hardware and device software interfaces for the Gumstix daughterboard.
3. Develop the interface hardware and software between the Gumstix navigation daughterboard and the MAT autopilot.
4. Prepare cross-compiled Ubuntu/Player image for the Gumstix.
5. Verify communication between the navigation sensors, Gumstix daughterboard and MAT autopilot.
6. Verify MAT flight stability and maneuverability with the navigation sensors and daughterboard under MAT stabilized flight testing.
7. Develop data protocol and software interface with DRDC Optitrack Tracking Tools data streaming module.
8. Develop velocity control algorithm for MAT autopilot using Tracking Tools data stream as input.
9. Activate navigation sensor and implement velocity control and reactive avoidance algorithm from Task C.9.
10. Set-up arena with equivalent obstacles used in Task C.9. and validate simulation results by running experiments and measuring performance metrics determined in Task C.7.

E. Target Handoff Concepts
1. Carry out literature search on commercially available miniaturized high accuracy attitude heading reference systems (AHRS) and rangefinders.
2. Develop Euler and quaternion-based equations to calculate target location based on team member A home location, bearing, elevation and linear distance between target and home location.
3. Develop error analysis equations for Task E.2.
4. Develop target handoff equations based on team member B location and team member A home location, bearing, elevation and measured linear distance.
5. Develop error analysis equations for Task E.4.
6. Develop sensor Player device with the characteristics of the target handoff instrumentation identified in Task E.1.
7. Implement the equations from Task E.2 and Task E.4 in the Task E.6. Player device definition.
8. Set-up two virtual MATs with the Player target handoff device in the Gazebo/Player development environment.
9. Develop test scenarios using obstacle course definition from Task C.7.
10. Evaluate the target handoff concept in terms of team member location and target location accuracy.

F. Target Handoff Experimentation
1. Integrate commercially available miniaturized high accuracy attitude heading reference systems and laser range finders into two navigation Gumstix daughterboards as designed in Task D.1.
2. Implement the target handoff device from Task E.6. into Ubuntu/Player for two Gumstix daughterboards.
3. Set-up target location markers at five height/bearing/elevation locations relative to two reference home locations in the DRDC Optitrack arena.
4. Carry out accuracy and error propagation testing of the target handoff algorithm using a single static MAT as instrumented in Task F.1.
5. Carry out accuracy and error propagation testing of the target handoff algorithm under dynamic

conditions using a single MAT as instrumented in Task F.1.
6. Carry out accuracy and error propagation testing of the target handoff algorithm using a two static MATs as instrumented in Task F.1.
7. Carry out accuracy and error propagation testing of the target handoff algorithm using one static MAT and one dynamic MAT as instrumented in Task F.1.
8. Carry out accuracy and error propagation testing of the target handoff algorithm using two dynamic MATs as instrumented in Task F.1.

G. Optional work for fiscal year 2013/2014 Aggressive Maneuvering Flight Control Concepts
1. Carry out a literature review to identify control algorithms developed for DRDC MAT-type platforms. The algorithms should cover linear, nonlinear, robust, adaptive, intelligent, and optimal control architectures.
2. Using the 6DOF kinematic equations of motion developed in Task C.5., develop based on the literature information from Task G.1. a control architecture appropriate for the MAT in a Matlab/Simulink development environment.
3. Evaluate the feasibility of advanced control algorithm strategies for aggressive maneuvers such as small constant radius turns, high speed short distance forward motion arrest, high lateral acceleration turns, and rapid ascent and descent maneuvers.
4. Evaluate stability, response, settling time and robustness of algorithms.
5. Implement control architecture for the MAT model in Gazebo/Player development environment.
6. Develop a virtual obstacle course that consists of cubes, cylinders and walls that exercise the capabilities of the control algorithms
7. Validate control algorithms in Gazebo/Player environment.

SPECIAL INSTRUCTIONS :
The contractor must perform the work on site at Defence Research and Development Canada – Valcartier, located at 2459 Pie-XI Blvd. North, Quebec City, Quebec. Such on-site work is essential for the execution of the work as defined in this technical specification for the following reasons: (1) to carry out the specialized technical development by employing the DRDC Valcartier in-house analytical tools, and node-locked software, and site-unique components, mobile and static test platforms, and systems, (2) to ensure the integration and integrity of all the components, systems, devices, and platforms operating on the DRDC information network, (3) to contribute to and use the tools, databases and software licenses that reside on-site in the DRDC Valcartier laboratories and accessible only through the DRDC Valcartier intranet.

MATERIAL/SUPPORT TO BE SUPPLIED BY DND TO CONTRACTOR:
The contractor will have access to the following equipment and software:
DRDC MP2128 HIL facility with node-locked Horizon-based ground control station;
MicroPilot 2128 autopilot system with datalink and node-locked Horizon-based ground control station;
DRDC Small Unmanned Testbed;
Procerus Kestrel autopilot system with datalink and node-locked Virtual Cockpit-based ground control station;
Kestrel software development kit licensed to DRDC;
Sbg IG-500N AHRS unit with Software Development Kit;
Computer with Ubuntu/Player development environment connected to the DRDC information network;
DRDC Micro-Aerial Testbed; Mikrokopter NaviCtrl and FlightCtrl open source code;
DRDC Optitrack-based test arena with node-locked Tracking Tools;
computer with Matlab/Simulink which is licensed to DRDC and connected to the DRDC information network.

Note: All DND furnished equipment must remain and be used on-site at the DRDC Valcartier Autonomous Systems Integration Laboratory or the Indoor Integrated Environment for Autonomous Multi-Vehicle Research facility during normal working hours.

MATERIAL/SUPPORT TO BE SUPPLIED BY CONTRACTOR TO DRDC VALCARTIER:
All electronic components developed and purchased, and software developed in the course of this project must be returned to DRDC Valcartier.

Note: The material must be delivered to the Receiving Department at DRDC Valcartier.

MEETINGS:
Project progress must be regularly reviewed via informal meetings where technical problems can be resolved and future work planned. Meeting will be held at DRDC Valcartier at mutually agreed times and will be presided by the scientific authority. The contractor must prepare the agenda, minutes and journal. The agenda will contain, as a minimum, the following points:
a) budget update
b) comparison between the work-to-date and the work objectives
c) a detailed description of the work accomplished since the last meeting
d) problems encountered
e) way ahead

At a minimum, once every three weeks, demonstrations will be given in the DRDC Valcartier facilities. The frequency of these meetings may be increased if deemed necessary, upon request from the contractor or from the technical authority.

REPORTS/DELIVERABLES :

REPORTS:
All reports, other than letter reports, must be provided in at least 5 printed copies on 8-1/2 by 11 inch paper. Two electronic copies of each report in LaTeX or Word and in PDF format along with source code must also be provided on CD or DVD. The language of correspondence is **English**. Reports must be formatted in accordance with DRDC standard. The standard will be provided by scientific technical authority. Each report shall have a title page, signature page, abstract and executive summary. The abstract and executive summaries will be provided in English and French.

All mathematical models, scripts, techniques, and algorithms developed and/or modified during the course of the contract must be supplied in Matlab-Simulink RTW-compliant, MicroPilot-compliant, Kestrel-compliant, Gumstix-compliant or Gazebo/Player-compliant format prior to the end of the contract.

The contractor shall provide support to DRDC Valcartier scientists for the use of tools, algorithms, software and hardware developed, used or bought during the course of the contract.

The contractor, upon the approval of the scientific authority, shall purchase and deliver to DRDC Valcartier all electronic components, and accessories necessary for the completion of the work in Task B.1., Task C.2, Task D.2. and Task F.1. up to a value of $11000. All hardware must be returned to DRDC Valcartier at the end of the contract.

In the event that the sum of $11000 is not required, upon the approval of the scientific authority and the contracting authority, this sum can be converted to equivalent working hours according to the agreed hourly rate specified in the contract.

The main deliverables from this contract are listed below and must be added to the Section's document management system as per the instructions to be provided by the technical authority. For each work

element , the contractor must deliver a technical report containing as a minimum:

1. titlepage
2. abstract
3. executive summary
4. table of contents
5. list of figures
6. list of tabes
7. task objectives
8. introduction
9. background
10. sections as applicable containing

10.1 mathematical formulation of numerical models
10.2 implementation of mathematical formulations
10.3 results of numerical analyses
10.4 experimental set-up and design
10.5 description of hardware and software environment
10.6 results of experimental trials

11. conclusions
12. recommendations
13. bibliography
14. annexes as required containing

14.1 documentation of source code
14.2 software users guide
14.3 documentation for installation of development environments
14.4 calculations for component design
14.5 raw and analyzed results from numerical and analytical simulations
14.6 raw and analyzed results from experimental trials

DELIVERABLES:
In addition to the technical report that summarizes the results for each work element, each work element will deliver:

A. Ship Recovery of UAV Study

A.1 Integration of Simulink models that simulate the relative wind speed and direction, wave and airwake disturbances that could affect the recovery of a fixed-wing UAV onboard a Canadian Patrol Frigate into the DRDC Valcartier MP2128 Hardware in the loop (HIL) facility.

A.2 Development of a 6 degree of freedom (6DOF) model for an Aerosonde-type airframe, development of guidance, navigation and flight control algorithms that permit autonomous UAV ship recovery in a variety of scenarios, implementation of 6DOF model and guidance, navigation and flight control algorithms in the MP2128 HIL facility.

A.3 Parametric HIL simulations with autonomous UAV recovery for a variety of relative wind speed and direction, wave and airwake conditions and determination of recovery success probabilities as a function of relative wind speed and direction, wave and airwake conditions.

B. Ship Recovery of UAV Experimentation

B.1 Design and fabrication details of a tachometer using Hall Effect timing sensing and PWM or analog output, pre-testing details of MicroPilot system consisting of MP2128 or Kestrel autopilot, electronic compass, GPS antenna, tachometer, onboard and ground radio modems and ground control station with Horizon or Virtual Cockpit software

B.2 Installation details of MicroPilot or Kestrel system installation in the DRDC small unmanned aerial testbed (SUAT).

B.3 Results from preliminary ground testing of system functions under static and taxiing conditions, results from flight testing of the SUAT and adjustment of the PID gains using the procedure recommended by manufacturer.
B.4 Results from preliminary flight testing, results from planned ship recovery flight trials.
B.5 Results and analyses from flight tests with selected guidance, navigation and flight control (GNC) algorithms.
B.6 Results from data reduction and analyses based on performance metrics.

C. Reactive Avoidance Concepts
C.1 Literature review of acoustic, infrared or vision sensors that have been used for navigation in GPS-denied environments.
C.2 Identification of reactive avoidance algorithms appropriate for semi-autonomous micro-aerial vehicles.
C.3 Identification of vision–based algorithms used for inertial and navigation functions.
C.4 Development and assemblage of a GPS/inertial data acquisition system based on a Gumstix Overo processor that is appropriately sized for the DRDC micro aerial testbed (MAT).
C.5 Details of assembly of inertial data acquisition system on the MAT.
C.6 Details of parameter ID trials and analyses.
C.7 Development of 6DOF kinematic equations that describe the MAT dynamics.
C.8 Determination of the parameters in the 6DOF equations that used appropriate system identification techniques.
C.9 Quantification of the accuracy of the identification.
C.10 Details of Kalman or complementary filtering techniques used.
C.11 Development of the 6DOF MAT model for the Gazebo/Player development environment.
C.12 Development of the parametric study based on the navigation sensors and reactive avoidance algorithms found in the literature search.
C.13 Development of the virtual obstacle course that consists of cubes, cylinders and walls that exercise the capabilities of the sensors and algorithms.
C.14 Determination of the appropriate metrics that were used to compare system performance.
C.15 Development of the sensor behaviors and data output protocols code with the reactive avoidance algorithms in the Gazebo/Player development environment.
C.15 Results of the parametric study along with a parameter sensitivity study.
C.16 Analysis of results and determination of viable reactive avoidance concepts useful for MAT-type platforms.

D. Reactive Avoidance Experimentation
D.1 Details of the design of a flexible navigation Gumstix daughterboard architecture that was interfaced with the DRDC MAT.
D.2 Description of the selected navigation sensors and hardware and device software interfaces for the Gumstix daughterboard.
D.3 Development of the interface hardware and software between the Gumstix navigation daughterboard and the MAT autopilot.
D.4 Details of the preparation of the cross-compiled Ubuntu/Player image for the Gumstix.
D.5 Results from the verification of the communication between the navigation sensors, Gumstix daughterboard and MAT autopilot.

E. Target Handoff Concepts
E.1 Literature search of commercially available miniaturized high accuracy attitude heading reference systems (AHRS) and rangefinders.
E.2 Development of Euler and quaternion-based equations to calculate target location based on team member A home location, bearing, elevation and linear distance between target and home location.
E.3 Development of error analysis equations.

E.4 Development of target handoff equations based on team member B location and team member A home location, bearing, elevation and measured linear distance, development of error analysis equations.
E.5 Development of sensor Player device with the characteristics of the target handoff instrumentation.
E.6 Details of the implementation of the equations from Task E.2 and Task E.4 in the Task E.6.
E.7 Details of Player device definition.
E.8 Details of the set-up of the two virtual MATs with the Player target handoff device in the Gazebo/Player development environment.
E.9 Development of test scenarios using obstacle course definition from Task C.7.
E.10 Evaluation of the target handoff concept in terms of team member location and target location accuracy.

F. Target Handoff Experimentation
F.1 Details of the integration of commercially available miniaturized high accuracy attitude heading reference systems and laser range finders into two navigation Gumstix daughterboards as designed in Task D.1.
F.2 Emplementation of the target handoff device from Task E.6. into the Ubuntu/Player environment on two Gumstix daughterboards.
F.3 Details of the set-up of target location markers at five height/bearing/elevation locations relative to two reference home locations in the DRDC Optitrack arena.
F.4 Results from accuracy and error propagation testing of the target handoff algorithm using a single static MAT as instrumented in Task F.1.
F.5 Results from accuracy and error propagation testing of the target handoff algorithm under dynamic conditions using a single MAT as instrumented in Task F.1.
F.6 Results from accuracy and error propagation testing of the target handoff algorithm using a two static MATs as instrumented in Task F.1.
F.7 Results from accuracy and error propagation testing of the target handoff algorithm using one static MAT and one dynamic MAT as instrumented in Task F.1.
F.8 Results from accuracy and error propagation testing of the target handoff algorithm using two dynamic MATs as instrumented in Task F.1.
F.9 Analysis of results.

G. Aggressive Maneuvering Flight Control Concepts (optional)
G.1 Literature review to identify control algorithms developed for DRDC MAT-type platforms.
G.2 Development of the control architecture appropriate for the MAT in a Matlab/Simulink development environment.
G.3 Evaluation of the feasibility of advanced control algorithm strategies for aggressive maneuvers such as small constant radius turns, high speed short distance forward motion arrest, high lateral acceleration turns, and rapid ascent and descent maneuvers.
G.4 Evaluation of the stability, response, settling time and robustness of algorithms.
G.5 Implementation of the control architecture for the MAT model in Gazebo/Player development environment.
G.6 Development of the virtual obstacle course that consists of cubes, cylinders and walls that exercise the capabilities of the control algorithms.
G.7 Validation of the control algorithms in Gazebo/Player environment.

Note: Deliverable and/or material must be received through the Receiving Department at DRDC Valcartier.

OTHER DELIVERABLES
In addition to the disclosure obligation under Section 28 of the general conditions 2040, any Foreground

Information must be fully disclosed and documented by the Contractor in the technical reports delivered by the Contractor to the Technical Authority under this Contract.

ANNEX B

BASIS OF PAYMENT

Will be identified in the contract.

ANNEX C

CONTRACTOR DISCLOSURE OF FOREGROUND INFORMATION

Please see reference applicable in your contract to look into Article 1 - Interpretation of 2040 General Conditions to obtain the complete definition of the term Foreground Information and thus to help you to determine the information which must be revealed. http://sacc.pwgsc.gc.ca/sacc/query-e.jsp.

The Contractor shall respond to the following questions:

1. Contract No.:
2. What is the descriptive title of the FIP (Foreground Intellectual Property)?
3. Abbreviated description of the FIP and, if applicable, of the different systems and sub-systems.
4. What is or was the objective of the project?
5. Explain how the FIP meets the objective of the project (for example: the advantage of the new solution, what problem did the FIP resolve or what benefits did the FIP deliver).
6. Under which category (ies) would you best describe the FIP and why: Patents, Inventions, Trade Secrets, Copyright, Industrial Designs, Rights in Integrated Circuit Topography, Know-how, Other?
7. Describe the features or aspects of the FIP that are novel, useful and not obvious.
8. Has the FIP been tested or demonstrated? If yes, please summarise the results.
9. Has any publication or disclosure to others been made? If so, to whom, when, where and how?
10. Provide names and addresses of the inventors.
11. Provide an explicit and detailed description of the FIP developed during the contract (Refer to pertinent section of the technical report, if necessary).

Please specify name and position of person approving / authorizing this disclosure. This person is to sign and date the disclosure.

_____ _____

Name: Date
Title:

(Internal DRDC Valcartier)

_____ _____

Nom Date
Titre : (Technical authority)

ANNEX D

SECURITY REQUIREMENTS CHECK LIST

The Security Requirements Check List (SRCL) appended to the bid solicitation package is to be inserted at this point and forms part of this document

ATTACHMENT 1

FINANCIAL BID PRESENTATION SHEET

PART 1 OF THE FINANCIAL BID PRESENTATION SHEET - TASKS A to F

1.1 LABOUR: at firm all-inclusive rates, GST/HST extra, F.O.B. Destination (for goods), in accordance with the following:

BIDDERS ARE REQUESTED TO QUOTE ONE RATE PER PROPOSED RESOPURCE, PER PERIOD.

If the ressource works for a subcontractor, bidders must also provide the name of the subcontractor.

Proposed Resources	Firm Hourly Rate				Extended Total per Resource
	Proposed Contract Period				
	Date of Award to 31 March 2012	Total Est. Hours	1st April 2012 to 31 March 2013	Total Est. Hours	
	$		$		$
	$		$		$
	$		$		$
	$		$		$
	$		$		$
	$		$		$

TOTAL ESTIMATED LABOUR: $_____

Items 1.2 through 1.7 shall be completed if the Bidder's rates in 1. above do not include the following:

1.2 EQUIPMENT: at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED EQUIPMENT: $ _____

1.3 RENTALS: at actual cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED RENTALS: $ _____

1.4 MATERIALS AND SUPPLIES: at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED MATERIALS AND SUPPLIES: $ _____

The “total estimated materials and supplies” is evaluated to $11,000.00.

1.5 SUBCONTRACTS: at actual cost without markup

Support for the proposed subcontractor's price is required in the same details as that required for the Bidder’s price. The estimated price for subcontracts should include all direct charges and travel & living expenses which would be to the account of the subcontractor.

TOTAL ESTIMATED SUBCONTRACTS: $ _____

1.6 TRAVEL & LIVING: at actual cost without markup but not to exceed the limits of the Treasury Board Travel Directive. With respect to the TB Travel Directive, only the meal, private vehicle and incidental allowances specified in Appendices B, C and D of the TB Travel Directive http://www.tbs-sct.gc.ca/hr-rh/gtla-vgcl/ and the other provisions of the directive referring to “travellers” rather than those referring to “employees”, are applicable. *Details are to be provided on a separate sheet.*

TOTAL ESTIMATED TRAVEL & LIVING: $ _____

1.7 OTHER DIRECT CHARGES: at actual cost without markup

TOTAL ESTIMATED OTHER DIRECT CHARGES: $ _____

ESTIMATED COST TO A LIMITATION OF EXPENDITURE - TASKS A to F **$260 000.00 (GST/HST extra)**

PART 2 OF THE FINANCIAL BID PRESENTATION SHEET - TASK G (OPTIONAL WORK)

2.1 LABOUR: at firm all-inclusive rates, GST/HST extra, F.O.B. Destination (for goods), in accordance with the following:

BIDDERS ARE REQUESTED TO QUOTE ONE RATE PER PROPOSED RESOPURCE, PER PERIOD.

If the ressource works for a subcontractor, bidders must also provide the name of the subcontractor.

Proposed Resources	Firm Hourly Rate Option Period		Extended Total per Resource
	1st April 2013 to 31 March 2014	Total Est. Hours	
	$		$
	$		$
	$		$
	$		$
	$		$
	$		$

TOTAL ESTIMATED LABOUR: $_____

Items 2.2 through 2.7 shall be completed if the Bidder's rates in 1. above do not include the following:

2.2 EQUIPMENT: at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED EQUIPMENT: $ _____

2.3 RENTALS: at actual cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED RENTALS: $ _____

2.4 MATERIALS AND SUPPLIES: at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED MATERIALS AND SUPPLIES: $ _____

2.5 SUBCONTRACTS: at actual cost without markup

Support for the proposed subcontractor's price is required in the same details as that required for the Bidder's price. The estimated price for subcontracts should include all direct charges and travel & living expenses which would be to the account of the subcontractor.

TOTAL ESTIMATED SUBCONTRACTS: $ _____

2.6 TRAVEL & LIVING: at actual cost without markup but not to exceed the limits of the Treasury Board Travel Directive. With respect to the TB Travel Directive, only the meal, private vehicle and incidental allowances specified in Appendices B, C and D of the TB Travel Directive http://www.tbs-sct.gc.ca/hr-rh/gtla-vgcl/ and the other provisions of the directive referring to "travellers" rather than those referring to "employees", are applicable. *Details are to be provided on a separate sheet.*

TOTAL ESTIMATED TRAVEL & LIVING: $ _____

2.7 OTHER DIRECT CHARGES: at actual cost without markup

TOTAL ESTIMATED OTHER DIRECT CHARGES: $ _____

ESTIMATED COST TO A LIMITATION OF EXPENDITURE - TASK G (OPTIONAL WORK) **$50 000.00 (GST/HST extra)**

ATTACHMENT 2

MANDATORY AND POINT RATED TECHNICAL CRITERIA

1. Mandatory Technical Criteria

NONE

2. Point Rated Technical Criteria

EVALUATION CRITERIA	MAX	MIN
1. TECHNICAL PROPOSAL **Note: The bidder will receive from 0 to 10 points for each of the criteria listed in this category, according to how well the bid meets the requirements set out in the criteria.**	**40**	**24**
1.1 Understanding of the context, scope and objectives The bid should demonstrate a full understanding of the context, scope and objectives, and should not be limited to the description contained in the Statement of Work. The bidder should clearly demonstrate, in his own words, that he has fully understood the context, scope and objectives for each of the 7 tasks detailed in the Statement of Work.	10	
1.2 Proposed strategy and methodology The bidder should clearly present the technical approach and methodology that he proposes to use. The technical approach and methodology should be consistent, relevant to the 7 tasks, complete and realistic. Innovation will also be evaluated.	10	
1.3 Allocation of resources The bidder should clearly present how he plans to allocate resources for the 7various tasks of the Statement of Work, as well as the exact role of each of these resources in carrying out these tasks. The allocation of resources should be realistic, relevant and appropriate to the project realization.	10	6
1.4 Distribution of effort The bidder should clearly present the distribution of work for each of the 7 tasks, that is, the estimated number of hours of work for each resource. The distribution of the efforts should be realistic according to the characteristics of the project.	10	6

2. QUALIFICATIONS OF PROPOSED RESOURCES (EXPERIENCE AND ACADEMIC TRAINING) For each of the sub-criterion, the bidder should indicate the name of the resource(s) proposed and the résumé(s) should be included with the proposal. To be qualified as a main resource, an individual must participate, at least, for 40% of the total hours of the project.	**130**	**78**
2.1 Experience of the main resource(s) directly involved in the project 1/3 point for each month of experience up to the maximum of 36 months (12 points maximum for each criterion). Points are allocated for each main resource proposed, who has participated in projects pertaining to the required fields of expertise. The months of experience corresponds to the number of months for which the resource has worked on delivery of relevant projects in each of the categories below. *Examples of relevant information allowing for a complete evaluation of experience are as follows:* *- Topic of the project or the experience;* *- Nature of the project of experience;* *- name of client, including name and telephone number of a point of contact able to confirm the information;* *- Exact dates of the project or the experience (month and year of start/end);* *- Exact dates of the involvement of the resource (month and year of start/end);* *- Tasks conducted by the resource during the project or the experience;* *- Reports and conference papers that proposed resource has written.* *Note that concurrent experiences will be considered only once.*		
2.1.1 Experience in micro and small aerial vehicle navigation and control algorithm development	12	6
2.1.2 Experience with reactive collision avoidance techniques based on optical sensors	12	4
2.1.3 Experience with fixed wing and fixed-pitch multi-rotor aerial vehicle parameter identification techniques	12	6
2.1.4 Experience in Matlab/Simulink and Real-Time Workshop	12	
2.1.5 Experience with open source multi-robot simulator, with drivers for sensors and objects, which is compatible with open source robot control interface servers.	12	4
2.1.6 Experience with programming low cost, commercially sold and supported	12	

autopilots using vendor software development kits. **2.1.7** Experience in the design, development and implementation of hardware-in-the-loop (HWIL) systems based on low cost commercially sold and supported autopilots **2.1.8** Experience with high accuracy object tracking and position data generation using arena-type vision-based systems **2.1.9** Experience in electronic design and circuit fabrication **2.1.10** Experience with micro or small aerial vehicle system flight testing	12 12 12 12	6
2.2 Academic training (field of study and degree) Each person proposed as a main resource shall be evaluated separately and the total score for this sub-criterion will be the average. *Points will be given for certificate or diploma from a recognized Canadian university or college, or the equivalent as established by a recognized Canadian academic credentials assessment service*, if obtained outside Canada.* **The list of recognized organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: http://www.cicic.ca/indexe.stm* **10 points:** PhD degree in Electrical Engineering or Aerospace Engineering or Mechanical Engineering with at least one graduate-level course in control systems or a specialization in guidance, navigation or control **8 points:** PhD degree in Electrical Engineering or Aerospace Engineering or Mechanical Engineering **6 points:** Master's degree in Electrical Engineering or Aerospace Engineering or Mechanical Engineering with at least one graduate-level course in control systems or a specialization in guidance, navigation or control **4 points:** Master's degree in Electrical Engineering or Aerospace Engineering or Mechanical Engineering **0 point:** any other situation	10	4
3. BIDDER'S QUALIFICATIONS	**46**	**18**
3.1 Bidder's overall technical experience in the development of guidance, navigation and control technologies for micro or small unmanned aerial vehicles 1/3 point per month of experience up to a maximum of 36 months (12 points maximum) **3.1.1** Experience in guidance, navigation and control algorithm development	36	18

3.1.2 Experience in hardware-in-the-loop system development **3.1.3** Experience in flight dynamics modeling and flight testing of micro or small unmanned aerial vehicles		
3.2 Bidder's experience in micro or small aerial vehicle navigation and control development during the last five years **10 points :** The bidder completed at least 5 military R&D contracts in micro or small aerial vehicle navigation and control **6 points** : The bidder completed between 2 and 4 military R&D contracts in micro or small aerial vehicle navigation and control **2 points :** The bidder completed at least 1 military R&D contracts in micro or small aerial vehicle navigation and control **0 point** : The bidder did not complete a military R&D contracts in micro or small aerial vehicle navigation and control	10	
TOTAL	**216**	**130**

ATTACHMENT 3

CERTIFICATIONS PRECEDENT TO CONTRACT AWARD

1. Federal Contractors Program for Employment Equity - Certification

1.1 Federal Contractors Program - $200,000 or more

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at $200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

   Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the *Government Contracts Regulations*. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.

3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

   The Bidder or the member of the joint venture

   (a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;

   (b) ( ) is not subject to the FCP, being a regulated employer under the *Employment Equity Act*, S.C. 1995, c. 44**;**

   (c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of $200,000 or more), in which case a duly signed certificate of commitment is attached;

   (d) ( ) is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC.)

Further information on the FCP is available on the HRSDC Web site (http://www.hrsdc.gc.ca/eng/labour/equality/fcp/index.shtml).

2. Former Public Servant Certification

Contracts with former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts with FPS, bidders must provide the information required below.

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

(a) an individual;
(b) an individual who has incorporated;
(c) a partnership made of former public servants; or
(d) a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means, in the context of the fee abatement formula, a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act,* R.S., 1985, c. C-17, the *Defence Services Pension Continuation Act*, 1970, c. D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c. R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c. R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c. M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

Is the Bidder a FPS in receipt of a pension as defined above? **YES ( ) NO ( )**

If so, the Bidder must provide the following information:

(a) name of former public servant;
(b) date of termination of employment or retirement from the Public Service.

Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction

program? **YES ( ) NO ( )**

If so, the Bidder must provide the following information:

(a) name of former public servant;
(b) conditions of the lump sum payment incentive;
(c) date of termination of employment;
(d) amount of lump sum payment;
(e) rate of pay on which lump sum payment is based;
(f) period of lump sum payment including start date, end date and number of weeks;
(g) number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is $5,000, including the Goods and Services Tax or Harmonized Sales Tax.

Certification

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

3. Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that:

( ) the service(s) offered is(are) a Canadian service as defined in paragraph 2 of clause A3050T.

3.1 SACC Manual clause A3050T (2010-01-11), Canadian Content Definition

4. Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder

and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

5. Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

6. Language Capability

The Bidder certifies that it has the language capability required to perform the Work, as stipulated in the Statement of Work.

_____

Signature of Authorized Representative

_____

Name of Authorized Representative

_____

Date

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SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine	2. Branch or Directorate / Direction générale ou Direction
DND	DRDC
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant

4. Brief Description of Work / Brève description du travail
Semi-Autonomous Unmanned Aerial Vehicle Operations in Land and Maritime Environments

5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	☒ No Non	☐ Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	☒ No Non	☐ Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis		
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)	☒ No Non	☐ Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	☐ No Non	☒ Yes Oui
6. c) Is this a commercial courier or delivery requirement with **no** overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale **sans** entreposage de nuit?	☒ No Non	☐ Yes Oui

7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès

Canada ☐	NATO / OTAN ☐	Foreign / Étranger ☐

7. b) Release restrictions / Restrictions relatives à la diffusion

Canada	NATO / OTAN	Foreign / Étranger
No release restrictions / Aucune restriction relative à la diffusion ☐	All NATO countries / Tous les pays de l'OTAN ☐	No release restrictions / Aucune restriction relative à la diffusion ☐
Not releasable / À ne pas diffuser ☐		
Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : ☐	Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : ☐	Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays : ☐

7. c) Level of information / Niveau d'information

Canada	NATO / OTAN	Foreign / Étranger
PROTECTED A / PROTÉGÉ A ☐	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ ☐	PROTECTED A / PROTÉGÉ A ☐
PROTECTED B / PROTÉGÉ B ☐	NATO RESTRICTED / NATO DIFFUSION RESTREINTE ☐	PROTECTED B / PROTÉGÉ B ☐
PROTECTED C / PROTÉGÉ C ☐	NATO CONFIDENTIAL / NATO CONFIDENTIEL ☐	PROTECTED C / PROTÉGÉ C ☐
CONFIDENTIAL / CONFIDENTIEL ☐	NATO SECRET / NATO SECRET ☐	CONFIDENTIAL / CONFIDENTIEL ☐
SECRET / SECRET ☐	COSMIC TOP SECRET / COSMIC TRÈS SECRET ☐	SECRET / SECRET ☐
TOP SECRET / TRÈS SECRET ☐		TOP SECRET / TRÈS SECRET ☐
TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) ☐		TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) ☐

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PART A *(continued)* / PARTIE A *(suite)*

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?
If Yes, indicate the level of sensitivity:
Dans l'affirmative, indiquer le niveau de sensibilité :
☒ No / Non ☐ Yes / Oui

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?
☒ No / Non ☐ Yes / Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :
Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

☒ RELIABILITY STATUS / COTE DE FIABILITÉ	☐ CONFIDENTIAL / CONFIDENTIEL	☐ SECRET / SECRET	☐ TOP SECRET / TRÈS SECRET
☐ TOP SECRET– SIGINT / TRÈS SECRET – SIGINT	☐ NATO CONFIDENTIAL / NATO CONFIDENTIEL	☐ NATO SECRET / NATO SECRET	☐ COSMIC TOP SECRET / COSMIC TRÈS SECRET
☐ SITE ACCESS / ACCÈS AUX EMPLACEMENTS			

Special comments:
Commentaires spéciaux : Accès au site du RDDC - Valcartier

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?
☒ No / Non ☐ Yes / Oui

If Yes, will unscreened personnel be escorted?
Dans l'affirmative, le personnel en question sera-t-il escorté?
☐ No / Non ☐ Yes / Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?
☒ No / Non ☐ Yes / Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?
☒ No / Non ☐ Yes / Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?
☒ No / Non ☐ Yes / Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?
☒ No / Non ☐ Yes / Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?
☒ No / Non ☐ Yes / Oui

PART C - *(continued)* / PARTIE C - *(suite)*

For users completing the form **manually** use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire **manuellement** doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form **online** (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category / Catégorie	PROTECTED / PROTÉGÉ			CLASSIFIED / CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET	NATO RESTRICTED / NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL / NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET / COSMIC TRÈS SECRET	PROTECTED / PROTÉGÉ A	PROTECTED / PROTÉGÉ B	PROTECTED / PROTÉGÉ C	CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET
Information / Assets / Renseignements / Biens	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Production	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
IT Media / Support TI	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
IT Link / Lien électronique	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☒ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☒ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).

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PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées)	Title – Titre	Signature
F.C. Wong	Defence Scientist	

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
418-844-4000 x4200	418-844-4502	franklin.wong@drdc-rddc.gc.ca	7 January 2011

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)	Title – Titre	Signature
Lesly Pineda	Contract Security Analyst	

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
(613) 949-1220	(613) 949-1069	lesly.pineda.forces.gc.ca	April 13, 2011

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached?
Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?
☐ No / Non ☒ Yes / Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)	Title – Titre	Signature

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées)	Title – Titre	Signature
Ryan Dear	Contract Security Officer	

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
613-941-5026	613-954-4171	Ryan.Dear@TPSGC-PWGSC.GC.CA	2011-04-18

CIAP
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