

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Travaux publics et Services gouvernementaux
Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7^{ème} étage
Montréal
Québec
H5A 1L6
FAX pour soumissions: (514) 496-3822

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

**Proposal To: Public Works and Government
Services Canada**

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

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

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

Comments - Commentaires

Title - Sujet Scanner Doppler Lidar	
Solicitation No. - N° de l'invitation K8D22-160161/A	Date 2015-09-11
Client Reference No. - N° de référence du client K8D22-16-0161	
GETS Reference No. - N° de référence de SEAG PW-\$MTA-550-13446	
File No. - N° de dossier MTA-5-38073 (550)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-10-27	
Time Zone Fuseau horaire Heure Avancée de l'Est HAE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Guernon (mta550), Émile	Buyer Id - Id de l'acheteur mta550
Telephone No. - N° de téléphone (514) 496-3585 ()	FAX No. - N° de FAX (514) 496-3822
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Stella Melo 4905 Duffering Street TORONTO Ontario M3H5T4 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7^{ème} étage
Montréal
Québec
H5A 1L6

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

K8D22-160161/A

Amd. No. - N° de la modif.

File No. - N° du dossier

MTA-5-38073

Buyer ID - Id de l'acheteur

mta550

CCC No./N° CCC - FMS No/ N° VME

K8D22-16-0161

REFER TO ENCLOSED DOCUMENT FOR CLAUSES AND CONDITIONS

TABLE OF CONTENTS

TABLE OF CONTENTS	1
PART 1 - GENERAL INFORMATION	2
1.1 SECURITY REQUIREMENTS	2
1.2 STATEMENT OF REQUIREMENT	2
1.3 Set-aside for Comprehensive Land Claims Agreement(s) Beneficiaries.....	2
1.4 DEBRIEFINGS.....	2
1.5 TRADE AGREEMENTS	2
PART 2 - BIDDER INSTRUCTIONS.....	2
2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS.....	2
2.2 SUBMISSION OF BIDS	3
2.3 ENQUIRIES - BID SOLICITATION.....	3
2.4 APPLICABLE LAWS.....	3
PART 3 - BID PREPARATION INSTRUCTIONS.....	4
3.1 BID PREPARATION INSTRUCTIONS	4
PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION.....	5
4.1 EVALUATION PROCEDURES	5
4.2 BASIS OF SELECTION	6
PART 5 - CERTIFICATIONS AND ADDITIONAL INFORMATION.....	6
5.1 CERTIFICATIONS PRECEDENT TO CONTRACT AWARD AND ADDITIONAL INFORMATION.....	6
PART 6 - RESULTING CONTRACT CLAUSES.....	7
6.1 SECURITY REQUIREMENTS	7
6.2 STATEMENT OF REQUIREMENT	7
6.3 STANDARD CLAUSES AND CONDITIONS.....	7
6.4 TERM OF CONTRACT	7
6.5 AUTHORITIES	8
6.7 PAYMENT	9
6.8 INVOICING INSTRUCTIONS	10
6.9 CERTIFICATIONS.....	10
6.10 APPLICABLE LAWS.....	10
6.11 PRIORITY OF DOCUMENTS	10
ANNEX "A".....	11
STATEMENT OF REQUIREMENT	
ANNEX "B"	11
BASIS OF PAYMENT.....	
ANNEX "C"	11
LIST OF MANDATORY TECHNICAL EVALUATION CRITERIA	
ANNEX "D".....	12
COMPLETE LIST OF BIDDER'S BOARD DIRECTORS.....	

PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement for this request for proposal.

1.2 Statement of Requirement

The Statement of Requirement is detailed in Annex «A» - Statement of Requirement attached and other documents that form part of the request for proposal and resulting contract.

1.3 Set-aside for Comprehensive Land Claims Agreement(s) Beneficiaries

"This procurement is reserved for beneficiaries of the following Comprehensive Land Claims Agreement(s) (CLCAs):

- Nunavut Land Claims Agreement;
- Gwich'in Comprehensive Land Claims Agreement;
- Kwanlin Dun First Nation Final Agreement;
- Ta'an Kwach'an Council Final Agreement;
- Inuvialuit Final Agreement.

1.4 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.5 Trade Agreements

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation "Subsection 3 of Section 01 Integrity Provisions - Bid of the Standard Instructions ([2003](#)) incorporated by reference above is deleted in its entirety and replaced with the following:

3. List of Names

- a. Bidders who are incorporated or who are a sole proprietorship, including those bidding as a joint venture, have already provided a list of names of all individuals who are directors of the Bidder, or the name of the owner(s), at the time of submitting an arrangement under the Request for Supply Arrangement (RFSA).
- b. These Bidders must immediately inform Canada in writing of any changes affecting the list of directors during this procurement process.

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

Delete: 60 days
Insert: 90 days

2.1.1 SACC Manual Clauses

B1000T Condition of material (2007-11-30)

2.2 Submission of Bids

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

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **SEVEN (7) calendar days** before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 Applicable Laws

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

Section I: Technical Bid (3 hard copies)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

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

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

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

Section I: Technical Bid

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

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation

3.1.2 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

Technical:

It is mandatory to provide technical/ descriptive documents for all products that you are offering to allow the technical evaluation. Failure to comply will render your proposal non responsive.

You have to demonstrate in your technical offer that all your products are compliant with every mandatory characteristics mentioned in Annex «C».

- 1- Compliance with the description of all requirements described in Annex «A» and other documents attached.
- 2- Acceptance of the terms and conditions of the request for proposal.

4.1.1.1 Mandatory Technical Criteria

Refer to Annex «C» attached.

IMPORTANT:

As per mandatory criterion 1.1.1 mentioned in Annex «C», you must submit list of previous customers (at least two years) and proof of purchase of the system or a similar version.

Canada reserves the right to validate the conformity of the information provided.

NOTE:

The closing date for this request for proposal will be considered as the reference date for the calculation of the periods specified in Annex «C».

4.1.2 Financial Evaluation

- 1- Compliance with the Basis of payment described in Annex «B» attached.

SACC Manual Clause

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

4.2 Basis of Selection

To be declared responsive, an offer must:

- A. Compliance with all technical and financial criteria of this Request of Proposal;
- B. The responsive offers with the lowest total evaluated prices, will be recommended for issuance of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.1.1 Integrity Provisions – List of Names (Refer to Annex «D» attached)

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - Labour's website](#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

There is no security requirement for this request for proposal.

6.2 Statement of Requirement

The Contractor must provide the requirement in accordance with Annex «A» - Statement of Requirements attached.

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

[2010A](#) (2015-09-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

4001 (2015-04-01) Hardware Purchase Lease and Maintenance, apply to and form part of the Contract;

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

4004 (2013-04-25), Maintenance and Support Services for Licensed Software, apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Date (To be completed by the Bidder)

All the deliverables must be received not later than: **March 1st, 2016.**

Bidder is required to indicate your best date of delivery _____

Solicitation No. - N° de l'invitation
K8D22-160161/A
Client Ref. No. - N° de réf. du client
K8D22-160161

Amd. No. - N° de la modif.
File No. - N° du dossier
MTA-5-38073

Buyer ID - Id de l'acheteur
MTA550
CCC No./N° CCC - FMS No./N° VME

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Émile Guernon
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Quebec Regional Office
800 de la Gauchetière Ouest, suite 7300, Montréal (Québec), Canada, H5A 1L6
Telephone: (514) 496-3585
Facsimile: (514) 496-3822
E-mail address: emile.guernon@tpsgc-pwgsc.gc.ca

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

6.5.2 Project Authority *(to be completed by Canada at the time of award)*

The Project Authority for the Contract is:

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

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

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

6.5.3 Contractor's Representative **(To be completed by the Bidder)**

Name and telephone number of the person responsible for:
General enquiries & Delivery follow-up

Name: _____
Telephone No. _____
Facsimile No. _____
E-mail address: _____

6.5.4 Contact at Customer Department

(To be completed by Canada at the time of award)

For all information related to invoicing and/or payments you may communicate with:

CUSTOMER DEPARTMENT: _____

NAME: _____

TELEPHONE NUMBER: _____

6.6 Payment

6.6.1 Basis of Payment – Firm Unit Prices

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a *firm unit price(s) as specified in contract for a cost of \$ _____* (insert the amount at contract award). Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 (Single Payment)

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

Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada.

6.7 SACC Manual Clauses

SACC Reference	Section	Date
A2000C	Foreign Nationals (Canadian Contractor)	2006/06/16
A2001C	Foreign Nationals (Foreign Contractor)	2006/06/16
B1501C	Electrical Equipment	2006/06/16
C2000C	Taxes – Foreign-based Contractor	2007/11/30
D0018C	Delivery, Inspection and Acceptance	2007/11/30
G1005C	Insurance	2008/05/12

6.8 Invoicing Instructions

Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

6.8.1 Invoices must be distributed as follows:

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

6.9 Certifications

6.9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if 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.

6.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____. (*Insert the name of the province or territory as specified by the Bidder in its bid, if applicable*)

6.11 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;
- (c) the supplemental general conditions 4003 (2010-08-16) Licensed Software;
- (d) the supplemental general conditions 4004 (2013-04-25) Maintenance and Support Services for Licensed Software;
- (e) the general conditions 2010A (2015-09-03) General Conditions - Goods (Medium Complexity);
- (f) Annex «A», Statement of Requirement;
- (g) Annex «B», Basis of Payment;
- (h) the Contractor's bid dated _____, as amended _____.

ANNEX «A»

Statement of Requirement

Refer to attached document

//

ANNEX «B»

Basis of Payment

Refer to attached document

//

ANNEX «C»

List of Mandatory Technical Evaluation Criteria

Refer to attached document

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Appendix A: Statement of Requirement

Low Cost Scanning Doppler Lidar

1. Introduction

Environment Canada (EC) is interested in acquiring four scanning Doppler Lidars for research and meteorological observation purposes.

The prime purpose of the Doppler Lidar is to take automated measurements of wind speed and wind direction. The instrument will be used for physical field studies of high impact weather in both warm season and cold season environments, as well as to investigate the synergy with Doppler LIDAR wind measurements at Iqaluit, and to develop Lidar applications in Arctic regions.

2.0 Technical Specifications

The Doppler Lidar must be required to operate autonomously (no operator required) with the option of remote control and from a location not easily accessible by an operator. It must operate continuously in extreme weather conditions (e.g., Canada's Arctic) year-round.

The Doppler Lidar must measure radial wind speed and direction, and include data quality parameters. The system must allow for the implementation of near real-time data transfer.

3.0 Mandatory Technical Specifications

The Doppler Lidar must meet each of the mandatory criterion outlined in Appendix C.

It must be possible to physically secure the Doppler Lidar to prevent damage.

4.0 Other Terms and Conditions

4.1 Documentation

The contractor must provide at the time of delivery, in English, user manuals/guides relating to the instrument's installation, calibration and alignment, operation, troubleshooting, and data processing.

The user software must document the underlying algorithms used in signal, data and product processing. The output data formats must be documented for decoding for external processing. Maintenance procedures must be documented.

4.2 Training

The Contractor must provide, at the time of delivery, all necessary training manuals to EC staff on-site to operate the Lidar, retrieve its data, and perform basic maintenance.

5.0 Delivery

Hardware Deliverables

Item #	Description	Quantity	Date
1	Fully operational scanning Doppler Lidar	4	March 1, 2016 or earlier

Document Deliverables

Item #	Description	Quantity	Date
1	User guide, software (operation and data processing) description, data format documentation, and training documentation (English) for the Lidar system	6	March 1, 2016 or earlier
2	Circuits, diagrams, details of calibration checks and acceptable limits	TBD	Upon request
3	Maintenance procedures	6	March 1, 2016 or earlier

All deliverables must be in accordance with best commercial standards. The Contractor must deliver the product in satisfaction of the contract requirements to:

Environment Canada; Government of Canada
 4905 Dufferin St., Toronto, ON
 M3H-5T4
 Attn: Zen Mariani

Appendix B: Basis of Payment

Item #	Description	Mark and Model # or Part # Complete by bidder	Qty	Unit Price \$	Total \$
1	Fully operational scanning Doppler Lidar with training documentation, hardware and software user manuals (English)		4		

**** Applicable Taxes extra**

Appendix C: Mandatory Technical Evaluation Criteria

1. Mandatory Requirements

At bid closing time, the Bidder must:

- Comply with the following Mandatory Requirements; and
- Provide the documentation which may include but is not limited to discussion points, equipment specifications, charts and diagrams to support compliance.

Proposals will be evaluated first on the basis of the mandatory requirements. Failure on the part of the bidder to meet one (1) or more of the mandatory requirements will result in the proposal being deemed non-compliant and ineligible for further consideration or evaluation.

The bidder should indicate the page number and section for each criterion in their proposal.

1.1 Mandatory General Requirements

ITEM #	MANDATORY MINIMUM REQUIREMENT	IDENTIFY WHERE THE SUPPORTING DOCUMENTATION IS LOCATED IN THE PACKAGE (PAGE(S) NUMBERS)
1.1.1	Operational Maturity The proposed system design must have successfully been deployed in the field for at least two years, from the time of bid closing. A list of previous customers (with addresses and phone number), together with proof of purchase of the system, or a similar version can be used to validate this requirement.	PAGE(S) AND/OR SECTION NUMBER: _____
1.1.2	Must be a pulsed Doppler LiDAR system.	PAGE(S) AND/OR SECTION NUMBER _____
1.1.3	Must have de-polarisation capability.	PAGE(S) AND/OR SECTION NUMBER: _____

1.2 Mandatory Technical Specifications

ITEM #	ITEM	MANDATORY MINIMUM REQUIREMENT	IDENTIFY WHERE THE SUPPORTING DOCUMENTATION IS LOCATED IN THE PACKAGE (PAGE(S) NUMBERS)
1.2.1 GENERAL			
1.2.1.1	System Operations	Once in operation, the system must be able to operate without operator intervention for an extended period of time (weeks). Operator must be able to start, stop LiDAR, configure scanning, display system and hardware parameters and data collection remotely (via internet connection) and locally.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.1.2	System Maintenance	Operator must be able to perform basic system maintenance (check disk usage, download data, delete and edit files) either remotely or locally.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.1.3	Display Functionality	Operator must be able to view basic products (time range) at the LiDAR site and remotely.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.1.4	Operating System	The Lidar system must be compatible with Windows 7 (or newer) or Linux.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.2 HARDWARE			
1.2.2.1	Environment	The SDL hardware must be: i) Weather proofed (system design must be such that electronics and sensors will be protected in precipitation, including freezing rain and strong wind conditions); ii) Temperature stabilized; iii) Include a minimum -25°C to maximum 40°C enclosure or better; iv) Humidity minimum 10% to maximum 100% or better.	PAGE(S) AND/OR SECTION NUMBER: _____

1.2.2.2	Deployment	Must be less than 1.0 m x 0.7 m x 0.5 m with minimum or no assembly required for field deployment (e.g., no internal alignment, optical adjustments, or electronic assembly required).	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.2.3	Cooling	Must include an active cooling unit.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.2.4	Power requirements	Must be 110-240VAC 50-60Hz (with DC converter supplied if required) drawing less than 250W.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.2.5	UPS	Must have a Universal Power Supply (UPS) to condition the input power and be sufficient to shut the system down.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.2.6	Internet Connection	Must provide at least one Ethernet / LAN port. connection	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.3 TRANSMITTER			
1.2.3.1	Eye safety	Must be eye safe. Class 1M (IEC/EN 60825-1 compliant)	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.3.2	Laser wavelength	Must be between 1.4 to 2.2 μm (maximum)	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.3.3	Laser pulse energy	Must be equal to or greater than 2 μJ (micro joule).	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.4 SCANNER OPERATION			
1.2.4.1	Scanner Operation	Must have an azimuth range of 0 to 360 degrees, must have an elevation range of 0° to 180°, and pointing accuracy must be 0.1°.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.4.2	Scanning modes	Must have the following scan modes: <ol style="list-style-type: none"> 1. Stare (or line of sight, constant in azimuth and elevation); 2. Plan Position Indicator (PPI, constant in elevation, scanning in azimuth); 3. Wind Profiling (scan in a sequence of fixed azimuths and elevations; typically but not limited to east-west, north-south and 	PAGE(S) AND/OR SECTION NUMBER: _____

		vertical beams); 4. Range Height Indicator (constant azimuth and scanning in elevation).	
1.2.5 PERFORMANCE			
1.2.5.1	Data Acquisition Range	Range of the data acquisition must be a minimum of 10 km line of sight.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.5.2	Radial wind velocity range	The system must allow for the detection of wind speeds of a minimum of 15 m/s.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.5.3	Wind velocity accuracy	The system must allow for the detection of wind velocity with an accuracy equal to less than 0.5 m/s.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.6 LIDAR CONTROL / CONFIGURATION / PRODUCTS			
1.2.6.1	Software	Must include software and license for off-line user processing.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.6.2	Data Storage	Must be able to store 5 days of LiDAR data and products on continuous operation mode.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.6.3	Output	The LiDAR data file output must include the following: 1. Scanner identification 2. Data acquisition time; 3. Beam position (azimuth and elevation); 4. Range resolution information 5. Data moments: a) Backscatter Intensity; b) Radial wind speed.	PAGE(S) AND/OR SECTION NUMBER: _____
1.2.6.4	LiDAR Control	Graphical interface for LiDAR control must include : 1. Instrument scan control; 2. Scan configuration; 3. Data acquisition settings (range resolution, maximum range, number of samples, etc); 4. Display of diagnostics and alerts.	PAGE(S) AND/OR SECTION NUMBER: _____