



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave. Jaspe
5th floor/5e étage
Edmonton
Alberta
T5J 1S6
Bid Fax: (780) 497-3510

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

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

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet Wireless Telemetry System	
Solicitation No. - N° de l'invitation W2671-16DL08/A	Date 2016-07-04
Client Reference No. - N° de référence du client W2671-16DL08	
GETS Reference No. - N° de référence de SEAG PW-\$EDM-064-10803	
File No. - N° de dossier EDM-6-39051 (064)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-08-15	Time Zone Fuseau horaire Mountain Daylight Saving Time MDT
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: Scott, Dallas H.	Buyer Id - Id de l'acheteur edm064
Telephone No. - N° de téléphone (780) 497-3578 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Aerospace Engineering Test Establishment, Department of National Defence BLDG 171 MDC, 4 Wing Cold Lake Cold Lake, Alberta T9M 2C6	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	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

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PART 1 - GENERAL INFORMATION

1.1 Statement of Requirement

The requirement is detailed under Article 6.2 of the resulting contract clauses.

1.2 Debriefings

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

1.3 Trade Agreements

The requirement is subject to the provisions of 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>) 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 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

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

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

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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 Alberta.

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 (1 hard copy)

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 Electronic Payment of Invoices

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

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

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

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3.1.2 Exchange Rate Fluctuation

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

Section III: Certifications

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

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

Failure to meet any of the following mandatory criteria will render your submission non-compliant and be given no further consideration.

- a) Ability to meet the Statement of Requirement, Minimum Performance Specifications, and Evaluation Criteria as described in Annex "A", Annex "B", and Annex "C".

4.1.2 Financial Evaluation

In Annex "D", Basis of Payment; "Quantity" will be multiplied by the "Firm Unit Price" to calculate "Total Evaluated Bid Price"

SACC Manual Clause [A0220T](#) (2014-06-26), Evaluation of Price

4.2 Basis of Selection

4.2.1 Basis of Selection – Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum points specified in **Annex "C"** for the technical evaluation
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be **60%** for the technical merit and **40%** for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of **60%**.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of **40%**.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

	Bidder 1	Bidder 2	Bidder 3
Overall Technical Score	115/135	89/135	92/135
Bid Evaluated Price	\$55,000.00	\$50,000.00	\$45,000.00
Technical Merit Score	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
Calculations Pricing Score	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
Combined Rating	83.84	75.56	80.89
Overall Rating	1st	3rd	2nd

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the [Integrity and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the [Integrity and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969) website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

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.

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5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Education and Experience

SACC Manual clause [A3010T](#) (2010-08-16), Education and Experience

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract

6.2 Statement of Requirement

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

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

2010A (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before 2017-03-31

6.4.2 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "D" of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Dallas Scott
Procurement Officer
Public Services and Procurement Canada
Acquisitions Branch
Western Region

ATB Place, North Tower
5th Floor, 10025 – Jasper Avenue
Edmonton, AB T5J 1S6

Telephone: 780 – 497 – 3578
Facsimile: 780 – 497 – 3510
E-mail address: dallas.scott@pwgsc-tpsgc.gc.ca

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

6.5.2 Project Authority (will be inserted at contract award)

The Project Authority for the Contract is:

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

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

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

6.5.3 Contractor's Representative (to be completed by bidder)

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

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

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as specified in in Annex "D" 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 Limitation of Price

SACC Manual clause C6000C (2011-05-16), Limitation of Price

6.6.3 Method of Payment

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

6.6.4 SACC Manual Clauses

C2000C (2007-11-30), Taxes - Foreign-based Contractor
C2002C (2010-01-11), Duties and Taxes - Foreign-based Contractor - State of California
C2605C (2008-05-12), Canadian Customs Duties and Sales Tax - Foreign-based Contractor
C2608C (2015-02-25), Canadian Customs Documentation
C5201C (2008-05-12), Prepaid Transportation Costs

6.6.5 Electronic Payment of Invoices – Contract

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

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

6.7 Invoicing Instructions

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

Each invoice must be supported by:

- a. a copy of time sheets to support the time claimed;
 - b. a copy of the release document and any other documents as specified in the Contract;
 - c. a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
 - d. a copy of the monthly progress report.
2. Invoices must be distributed as follows:
 - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.9 Applicable Laws

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

6.10 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the general conditions [2010A](#) (2016-04-04) - Goods (Medium Complexity);
- (c) Annex "A", Statement of Requirement;
- (d) Annex "B", Minimum Performance Specifications;
- (e) Annex "C", Evaluation Criteria;
- (f) Annex "D", Basis of Payment;
- (g) the Contractor's bid dated _____ (to be completed by bidder)

6.11 Defence Contract

SACC Manual clause [A9006C](#) (2012-07-16), Defence Contract

6.12 SACC Manual Clauses

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

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

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

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

[A2000C](#) (2006-06-16), Foreign Nationals (Canadian Contractor)

OR

[A2001C](#) (2006-06-16), Foreign Nationals (Foreign Contractor)

ANNEX "A"

STATEMENT OF REQUIREMENT

PURPOSE

Department of National Defence (DND), Cold Lake, Alberta, has a requirement for the supply, delivery and offloading of one (1) Wireless Telemetry System with the highest point rating based on meeting all Minimum Performance Specifications and achieving the highest technical score and the lowest financial score.

Aerospace Engineering Test Establishment (AETE) requires specialized equipment to wirelessly interconnect Wheatstone bridge type transducers installed on the rotating tail rotor assembly of a CH146 Griffon helicopter to a data acquisition system installed in the helicopter cabin.

Delivery is to be completed no later than **2017-03-31**

BACKGROUND

AETE's CH146 test aircraft is currently configured with a cabin mounted data acquisition system and with Wheatstone bridge type transducers installed on components of the rotating tail rotor assembly. For transducer excitation and signal return, the transducers and data acquisition system are interconnected through electrical wiring and a mechanical slip ring assembly mounted on the tail rotor drive shaft gear box. Due to shortcomings with the mechanical slip ring installation a telemetry system is being sought as a replacement.

The goal of this procurement is to obtain a rotating telemetry system that can wirelessly interconnect existing Wheatstone bridge type transducers mounted on the CH146 helicopter rotating tail rotor assembly to an existing data acquisition system installed in the helicopter cabin. The rotating telemetry system must be capable of: providing voltage excitation to Wheatstone bridge type transducers installed on the rotating tail rotor assembly; acquiring the output analog voltage signals from the transducers installed on the rotating tail rotor assembly; and wirelessly transmitting the transducer output signals to a receiver system mounted in the helicopter cabin. The receiver system must provide output ports that can be hardwired to the input ports of an existing data acquisition system installed in the helicopter cabin.

TERMINOLOGY

For the purpose of this document the following terms are defined:

- "Transducer" refers to a 350 Ohm or 1000 Ohm Wheatstone bridge type transducer;
- "Securable connector" refers to the mating of the connector plug and receptacle by means other than a friction fit.

ANNEX "B"

MINIMUM PERFORMANCE SPECIFICATIONS

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

1. It is mandatory for bidders to provide the following information before the solicitation closing date: Bidders **must** show compliance by addressing each performance specification in the Compliance Matrix, whether the product offered "meets" or "does not meet".
2. It is requested that supporting technical documentation, including but not limited to, specification sheets, technical brochures, photographs or illustrations be provided with the bid at solicitation close and be cross-referenced on the Compliance Matrix for each performance specification to outline where in the supporting technical documentation it demonstrates compliance. Supporting technical documentation will also be used to evaluate all items listed in Annex "C", Evaluation Criteria. It is the Bidders responsibility to ensure that the submitted supporting technical documentation provides detail to prove that the proposed product(s) meet the requirements of the Performance Specification. If published supporting technical document is not available, the Bidder should prepare a written narrative complete with a detailed explanation of how its bid demonstrates technical compliance.
3. If the supporting documentation referenced above has not been provided at bid closing, the Contracting Authority will notify the Bidder that they must provide supporting documentation within two (2) business days following notification. Failure to comply with the request of the Contracting Authority within that time period, will deem the bid non-responsive and the bid will be given no further consideration.
4. Bidders must address any concerns with the performance specifications in written detail to the Contracting Authority before bid closing as outlined in the solicitation document.
5. Failure to meet each performance specification will result in the bid being deemed non-responsive, and be given no further consideration.

DELIVERY

All deliverables must be delivered to the specified location on or before **2017-03-31**

Please indicate below: (to be completed by bidder)

☐ Meet Delivery Requirement

OR

☐ Unable to Meet Delivery Requirement

COMPLIANCE MATRIX

Item No.	Description	Met	Not Met	Reference page from Proposal
M1	<u>Rotating Telemetry System</u> The rotating telemetry system must be capable of the following: Provide voltage excitation to transducers on rotating tail rotor assembly; Acquire output voltage signals from the transducers on rotating tail rotor assembly; Wirelessly transmit transducer output signals from the rotating tail rotor assembly to a receiver in the helicopter; Output voltage signals to an existing data acquisition system in the helicopter cabin.			
M2	<u>Wireless Data Transmission</u> The rotating telemetry system must be capable of wireless transmission of the acquired transducer output signals from the rotating tail rotor assembly to a cabin mount receiver system without the utilization of a slip ring.			
M3	<u>Telemetry Transmitter Power</u> The rotating telemetry system transmitter(s) must have sufficient power to transmit all input signals to an antenna mounted no more than 30.5 cm (12 inches) away, but cannot exceed 100 milliWatts effective isotropically radiated power.			
M4	<u>Receiving Antenna</u> The receiving antenna can be externally or internally mounted on the helicopter airframe, but must weigh less than 1.13 kg (2.5 pounds) and have a mounting base/flange to be affixed to existing aircraft structure.			
M5	<u>Output Signal Filtering</u> The rotating telemetry system must be capable of outputting each transducer signal as a separate analog voltage signal that has been filtered at the same cut-off frequency as the input signal anti-aliasing filter.			
M6	<u>Output Signal Determinism</u> The rotating telemetry system must be capable of taking a given input and consistently producing a known output. In addition, any signal delays produced by the rotating telemetry system must be consistent and defined.			
M7	<u>Physical Dimensions – Rotating telemetry system Receiver installation in Helicopter Cabin</u> The rotating telemetry system receiver installation in the helicopter cabin will be mounted to a shelf of an existing pallet structure and must have maximum physical dimensions, including mounting flanges, of no larger than 20.3 cm (8 inches) height x 38.1 cm (15 inches) width x 38.1 cm (15 inches) length.			

Item No.	Description	Met	Not Met	Reference page from Proposal
M8	<u>Physical Interface - Rotating telemetry system installation to Rotating Tail Rotor Assembly</u> The rotating telemetry system installation on the rotating tail rotor assembly must be capable of being securely mounted onto a drive shaft with a maximum diameter of 5.08 cm (2 inches) and a shaft length of 7.6 cm (3 inches), without permanent modifications to the shaft.			
M9	<u>Physical Dimensions - Rotating telemetry system installation on Rotating Tail Rotor Assembly</u> The rotating telemetry system installation on the rotating tail rotor assembly drive shaft must be less than 17.8 cm (7 inches) in diameter and less than 8.9 cm (3.5 inches) wide.			
M10	<u>Installed Weight - Rotating telemetry system installation on Rotating Tail Rotor Assembly</u> The rotating telemetry system installation on the rotating tail rotor assembly drive shaft must be balanced up to rotating speeds of at least 1800 RPM and must have a mass less than 1.59 kg (3.5 pounds).			
M11	<u>Electrical Power - Rotating telemetry system Installation on Rotating Tail Rotor Assembly</u> The rotating telemetry system installation on the rotating tail rotor assembly must receive electrical power from wireless power transmission, energy harvesting or an internal battery capable of providing transducer excitation and telemetry transmitter(s) power for at least three hours.			
M12	<u>Electrical Interface - Rotating telemetry system Installation on Rotating Tail Rotor Assembly</u> Electrical connections to the rotating telemetry system installation on the rotating tail rotor assembly must use securable connectors.			
M13	<u>Transducer Electrical Excitation Accuracy</u> The rotating telemetry system installation on the rotating tail rotor assembly must provide excitation to the transducers with an accuracy of 0.5%.			
M14	<u>Supporting Documentation</u> Bidders must provide supporting documentation clearly identifying compliance for each of the Mandatory Criteria with their bid.			

ANNEX "C"

EVALUATION CRITERIA

Bidders must achieve a minimum of 10 points in every sub-section of Section 3.2 - Technical Merit Criteria, for a minimum total of 140 points, to be considered further in this solicitation. Lab test certification must be provided to demonstrate compliance with MIL-STD-704F, MIL-STD-810G or MIL-STD-461G standards listed below.

Bidders must achieve a minimum of 20 points in Section 3.3 - Credibility Criteria.

3.2 Technical Merit Criteria

3.2.1 Number of Data Channels

Points	10	20	30
Criteria	The rotating telemetry system is capable of acquiring differential analog voltage signals from at least 16 Wheatstone Bridge type transducers.	The rotating telemetry system is capable of acquiring differential analog voltage signals from at least 24 Wheatstone Bridge type transducers.	The rotating telemetry system is capable of acquiring differential analog voltage signals from at least 32 Wheatstone Bridge type transducers.

3.2.2 Transducer Excitation

Points	10	20	30
Criteria	The rotating telemetry system is capable of providing per-channel voltage excitation between 2VDC and 10VDC inclusive at 20 mAmps to each Wheatstone Bridge type transducer.	The rotating telemetry system is capable of providing per-channel voltage excitation between 2VDC and 10VDC inclusive at 40 mAmps to each Wheatstone Bridge type transducer.	The rotating telemetry system is capable of providing per-channel, user adjustable voltage excitation from 2VDC to 10VDC inclusive at 40 mAmps to each Wheatstone Bridge type transducer.

3.2.3 Input Signal Conditioning

Points	10	20	30
Criteria	The rotating telemetry system is capable of fixed pre-sample gain that enables the acquisition of an input analog voltage signal with an amplitude range of +/- 5 mVDC/VDC of excitation and maximizes the input range of the analogue to digital convertor.	The rotating telemetry system is capable of per-channel, user adjustable, pre-sample gain that enables the acquisition of an input analog voltage signal with an amplitude range from +/- 0.5 mVDC/VDC to +/- 5 mVDC/VDC of excitation and maximizes the input range of the analogue to digital convertor.	The rotating telemetry system is capable of per-channel, user adjustable, pre-sample gain that enables the acquisition of an input analog voltage signal with an amplitude range from +/- 0.5 mVDC/VDC to +/- 0.5 VDC/VDC of excitation, and allows for offset adjustment up to 50% of the analogue to digital convertor input signal range, and maximizes the input range of the analogue to digital convertor.

3.2.4 Anti-Aliasing Filtering

Points	10	20	30
Criteria	The rotating telemetry system provides an analog anti-aliasing filter with a minimum cut-off frequency of 280 Hz.	The rotating telemetry system provides an analog anti-aliasing Butterworth filter with a minimum cut-off frequency of 280 Hz.	The rotating telemetry system provides a per-channel, analog anti-aliasing Butterworth filter of at least 6-poles, with an adjustable cut-off frequency range from 50 to 1000 Hz.

3.2.5 Input Signal Sample Rate

Points	10	20	30
Criteria	The rotating telemetry system samples each of the minimum of 16 input analog signals at a sample rate of at least 1,100 samples per second.	The rotating telemetry system samples each of the minimum of 16 input analog signals at a user-adjustable sample rate range of 100 to 10,000 samples per second.	The rotating telemetry system samples each of the minimum of 16 input analog signals at a user-adjustable sample rate range of 100 to 10,000 samples per second.

3.2.6 Signal Resolution

Points	10	20	30
Criteria	The rotating telemetry system acquires the input analog signal from each transducer with a minimum resolution of 10 bits (this does not include error checking bits).	The rotating telemetry system acquires the input analog signal from each transducer with a minimum resolution of 12 bits (this does not include error checking bits).	The rotating telemetry system acquires the input analog signal from each transducer with a minimum resolution of 16 bits (this does not include error checking bits).

3.2.7 Electrical Power

Points	10	20	30
Criteria	The rotating telemetry system receiver is capable of operation when supplied either 12 to 28VDC or 115VAC at 400 Hz.	The rotating telemetry system receiver is capable of operation when supplied either 28VDC or 115VAC at 400 Hz.	The rotating telemetry system receiver is capable of operation when supplied either 28VDC or 115VAC at 400 Hz and utilizes electric power in accordance with MIL-STD-704F.

3.2.8 Electromagnetic Compatibility/Interference (EMC/EMI)

Points	10	20	30
Criteria	The rotating telemetry system radiated emissions and conducted emissions are compatible with typical helicopter operating equipment as shown through previous airworthy installations.	The rotating telemetry system radiated emissions and conducted emissions do not exceed MIL-STD-461G for Air Force RE102 and CE102.	N/A

3.2.9 Acceleration Environment

Points	10	20	30
Criteria	The rotating telemetry system is capable of operation at typical helicopter acceleration levels as shown through previous airworthy installations.	The rotating telemetry system is capable of operation at acceleration levels up to 5G in all directions as shown through previous airworthy installations.	The rotating telemetry system must be capable of operation at acceleration levels up to 5G in all directions IAW MIL-STD-810G Method 513.7 Procedure II.

3.2.10 Vibration Environment

Points	10	20	30
Criteria	The rotating telemetry system is capable of operation in typical helicopter tail rotor vibration exposure environment as shown through previous airworthy installations.	The rotating telemetry system is capable of operation in helicopter vibration exposure levels (as defined by Table 514.7D-IIIa and Figure 514.7D-3 in Annex D of MIL-STD-801G Method 514.7 *) IAW MIL-STD-801G Method 514.7 Procedure I, Category 14.	N/A

* The vibration exposure area is defined as "On/Near Drive System Elements"; the tail rotor rotation speed (1T) is 27.7 Hz and the blade count (m) of 2.

3.2.11 Altitude Environment

Points	10	20	30
Criteria	The rotating telemetry system is capable of operation at typical helicopter altitudes as shown through previous airworthy installations.	The rotating telemetry system is capable of operation at altitudes up to 10,000 feet as shown through previous airworthy installations.	The rotating telemetry system is capable of operation at altitudes up to 10,000 feet IAW MIL-STD-810G Method 500.6 Procedure II.

3.2.12 Temperature Environment

Points	10	20	30
Criteria	The rotating telemetry system is capable of operating in ambient temperatures from at least 0 deg C to + 30 deg C as shown through previous airworthy installations.	The rotating telemetry system is capable of operating in ambient temperatures from at least - 40 deg C to +55 deg C as shown through previous airworthy installations.	The rotating telemetry system is capable of operating in ambient temperatures from at least - 40 deg C to +55 deg C IAW MIL-STD-810G Method 501.6 Procedure II and Method 502.6 Procedure II.

3.2.13 Humidity Environment

Points	10	20	30
Criteria	The rotating telemetry system is capable of operating in typical North American humidity environments as shown through previous airworthy installations.	The rotating telemetry system is capable of operation over the range of temperatures and humidity levels IAW MIL-STD-810G Method 507.6 Procedure I Natural Cycles.	N/A

3.2.14 Dust and Water Ingress

Points	10	20	30
Criteria	The rotating telemetry system components installed external to the fuselage are sealed to prevent dust and water ingress as shown through previous airworthy installations.	The rotating telemetry system components installed external to the fuselage are sealed to prevent dust and water ingress such that it achieves an IP (Ingress Protection) rating of at least IP54 IAW IEC Standard 60529.	N/A.

3.3 Credibility Criteria

Points	Criteria
+10	Previous Experience The equipment supplier has previous experience developing systems for the instrumentation of rotating shafts using wireless data systems.
+10	Proven Design The equipment supplier has sold a similar system to another customer within the last 2 years.
+30	Previous Use on Aircraft The system has been used successfully on at least one aircraft flight test application.
+50	Previous Use on a Bell 212/412 Helicopter The system has been previously installed onto a Bell 212/412 tail rotor to collect flight test data.

Maximum Number of Points Available

3.2	Technical Merit Criteria	380
3.3	Credibility Criteria	100

Deliverables

The table below indicates the type of Rotating Telemetry System and quantity needed:

Item	Description	Quantity
1	Rotating Telemetry System (as summarized in Mandatory Criteria M1)	1

ANNEX "D"

BASIS OF PAYMENT

Instruction to Bidders:

- It is mandatory for bidders to provide the following information before the solicitation closing date: Bidders **must** fully complete the table below and submit it with their bid.
- Firm Unit Price must be to FOB destination including all delivery charges and customs duties and Applicable Taxes, Delivered Duty Paid.
- Firm Unit Price do not include Applicable taxes. Applicable taxes will be added as a separate line item to any invoice issued as a result of a Contract.
- All Firm Unit Price is in Canadian Dollars.

Delivery location:

DND/AETE
4 Wing Cold Lake
BLDG 171 MDC
Cold Lake, AB T9M 2C6

Item	Description	Proposed Equipment	Quantity	Firm Unit Price	Extended Price
1	All inclusive cost for the supply and delivery of the Wireless Telemetry System in compliance with the Statement of Requirement, Minimum Performance Specifications, and Evaluation Criteria as described in Annex "A", Annex "B", and Annex "C".	<i>Make:</i> <i>Model:</i>	1	\$ _____/ea	\$ _____
TOTAL EVALUATED BID PRICE					\$ _____

Solicitation No. - N° de l'invitation
W2671-16DL08/A
Client Ref. No. - N° de réf. du client
W2671-16DL08

Amd. No. - N° de la modif.
File No. - N° du dossier
EDM-6-39051

Buyer ID - Id de l'acheteur
EDM064
CCC No./N° CCC - FMS No./N° VME

ANNEX "E" TO PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

(Bidder to complete as applicable)

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

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