

**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

Title - Sujet Wireless Telemetry System	
Solicitation No. - N° de l'invitation W2671-15JG80/A	Date 2015-10-16
Client Reference No. - N° de référence du client W2671-15JG80	
GETS Reference No. - N° de référence de SEAG PW-\$EDM-017-10594	
File No. - N° de dossier EDM-5-38206 (017)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-11-30	Time Zone Fuseau horaire Mountain Standard Time MST
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: Logan, Elizabeth	Buyer Id - Id de l'acheteur edm017
Telephone No. - N° de téléphone (780) 497-3956 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE AEROSPACE ENGINEERING TEST EST. CFB COLD LAKE 6HGR MEDLEY Alberta T0A2M0 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

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

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

Solicitation No. - N° de l'invitation

W2671-15JG80/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

edm017

Client Ref. No. - N° de réf. du client

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EDM-5-38206

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PART 1 - GENERAL INFORMATION

1.1 Statement of Requirement

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 Mandatory Performance Specifications and achieving the highest technical score and the lowest financial score.

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** (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

B1000T (2014-06-26) Condition of Material - Bid

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.

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)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft 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

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

See Annex A, MANDATORY SPECIFICATIONS

4.1.2 Financial Evaluation

Bidders must submit their financial bid in Canadian Funds in accordance with the Basis of Payment, with their bid at time of bid closing

4.1.3 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

- 4.1.4** The evaluated price will be calculated using the Bidder's firm unit prices as provided in Annex B, multiplied by the total quantity for each line item. The evaluated price will be the total aggregate price of the extended prices for all line items.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the highest point rating based on meeting all Mandatory Performance Specifications and achieving the highest technical score and the lowest financial score will be recommended for award 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 Required with the Bid

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

5.1.1 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form \(http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html\)](http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – List of Names

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.

5.2.2 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](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

6.1.1 There is no security requirement applicable to this Contract.

6.2 Statement of Requirement

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 Mandatory Performance Specifications and achieving the highest technical score and the lowest financial score. Delivery is to be completed no later than March 24, 2016.

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](#) (2015-07-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

6.4.1 Delivery Date

All the deliverables must be received on or before March 24, 2016.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Elizabeth Logan
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Western Region
Address: ATB Place, North Tower
5th Floor – 10025 Jasper Avenue
Edmonton, AB T5J 1S6

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Telephone: 780- 497-3956
Facsimile: 780- 497- 3510
E-mail address: elizabeth.logan@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

The Project Authority for the Contract is: (will be inserted at contract award)

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 - Firm Price, Firm Unit Price(s) or Firm Lot Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit price(s), as specified in Annex B for a cost of \$ _____ (*amount to be inserted 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 Single Payment

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

6.6.4 SACC Manual Clauses

SACC Manual clause C2000C (2007-11-30), Taxes – Foreign-based Contractor

6.7 Invoicing Instructions

6.7.1 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.

6.7.2 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.
- b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract

6.8 Certifications

6.8.1 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.

6.9 Applicable Laws

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

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 (2015-07-03) - Goods (Medium Complexity);
- (c) Annex A, Statement of Requirement;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated _____ (to be completed by bidder)

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6.11 SACC Manual Clauses

SACC Manual Clause B1501C (2006-06-16), Electrical Equipment
SACC Manual Clause B7500C (2006-06-16), Excess Goods

6.12 Insurance

SACC Manual Clause G1005C (2008-05-12) Insurance

ANNEX A **REQUIREMENT**

Wireless Telemetry System

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 Mandatory 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 March 24, 2016.

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 wireless telemetry system is being sought as a replacement.

The goal of this procurement is to obtain a wireless 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 wireless 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 term transducer will be used to refer to a Wheatstone bridge type transducer.

MANDATORY REQUIREMENTS

The Bidder's proposed equipment must meet the Mandatory Specifications detailed below. Proposals must be supported by proper documentation to support each mandatory requirement. Any proposals not meeting all of the mandatory requirements will be given no further consideration.

The Bidder must submit with their proposal at time of bid closing supporting technical documents such as: technical specifications, literature, brochures or other similar supporting documentation, which clearly demonstrates that the Bidder's proposed equipment meets each of the specifications all Mandatory Specifications. This information will be used to verify compliance with all Mandatory Specifications. If any of the mandatory specifications is not identified in the Bidder's existing technical documents, the Bidder must address separately, in their proposal, how it meets that particular equipment specification.

Item No.	Description	Met	Not Met	Reference page from Proposal
M1	<p><u>Wireless Telemetry System</u></p> <p>The wireless telemetry system must be capable of the following:</p> <ul style="list-style-type: none"> - Provide voltage excitation to transducers; - Acquire output voltage signals from the transducers; - Wirelessly transmit transducer output signals from the rotating tail rotor assembly to a receiver in the helicopter; - Provide output voltage signals from the receiver to an existing data acquisition system. 			
M2	<p><u>Wireless Data Transmission</u></p> <p>The wireless 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.</p>			
M3	<p><u>Telemetry Transmitter Power</u></p> <p>The wireless telemetry system transmitter(s) must have sufficient power to transmit all digitized input signals to an antenna mounted no more than 30.5 cm (12 inches) away, but cannot exceed 100 milliWatts effective isotropically radiated power.</p>			
M4	<p><u>Receiving Antenna</u></p> <p>The receiving antenna can be externally or internally mounted, but must weigh less than 1.13 kg (2.5 pounds) and have a mounting point to be affixed to existing aircraft structure.</p>			
M5	<p><u>Output Signal Characteristics</u></p> <p>The wireless telemetry system must be capable of outputting each transducer signal as a separate analog voltage signal with a magnitude of at least +/-5VDC that has been filtered at the same cut-off frequency as the input signal anti-aliasing filter.</p>			
M6	<p><u>Physical Dimensions - Wireless Telemetry System Installation in Helicopter Cabin</u></p> <p>The wireless telemetry system 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.</p>			

Item No.	Description	Met	Not Met	Reference page from Proposal
M7	<p><u>Physical Interface - Wireless Telemetry System Installation to Rotating Tail Rotor Assembly</u></p> <p>The wireless 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.</p>			
M8	<p><u>Physical Dimensions - Wireless Telemetry System Installation on Rotating Tail Rotor Assembly</u></p> <p>The wireless 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.</p>			
M9	<p><u>Installed Weight - Wireless Telemetry System Installation on Rotating Tail Rotor Assembly</u></p> <p>The wireless 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).</p>			
M10	<p><u>Electrical Power - Wireless Telemetry System Installation on Rotating Tail Rotor Assembly</u></p> <p>The wireless 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.</p>			
M11	<p><u>Electrical Interface - Wireless Telemetry System Installation on Rotating Tail Rotor Assembly</u></p> <p>Electrical connections to the wireless telemetry system installation on the rotating tail rotor assembly must use securable connectors.</p>			
M12	<p><u>Transducer Electrical Excitation Accuracy</u></p> <p>The wireless telemetry system installation on the rotating tail rotor assembly must provide excitation to the transducers with an accuracy of 0.5%.</p>			
M13	<p><u>Supporting Documentation</u></p> <p>Bidders must provide supporting documentation clearly identifying compliance for each of the Mandatory Criteria with their bid.</p>			

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.

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

A total technical point score will be calculated by taking 60% of the Section 3.2 points (A) and 40% of the Section 3.3 points (B) as per the calculation below:

Total Section 3.2 Points Achieved

$$(A) \quad \frac{\text{Total Section 3.2 Points Achieved}}{380} \times 60 = \text{points (A)}$$

$$(B) \quad \frac{\text{Total Section 3.3 Points Achieved}}{100} \times 40 = \text{points (B)}$$

$$(A) + (B) = \text{Total Technical Points}$$

Technical Merit Criteria

Number of Data Channels

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

Transducer Excitation

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

Input Signal Conditioning

Points	10	20	30
Criteria	The wireless telemetry system is capable of fixed signal conditioning enabling the acquisition of an input analog voltage signal with a magnitude range of +/-50mVDC.	The wireless telemetry system is capable of per-channel, user adjustable, signal conditioning enabling the acquisition of an input analog voltage signal with a magnitude range from +/-5mVDC to +/-50mVDC.	The wireless telemetry system is capable of per-channel, user adjustable, signal conditioning enabling the acquisition of an input analog voltage signal with a magnitude range from +/-5mVDC to +/-5VDC.

Anti-Aliasing Filtering

Points	10	20	30
Criteria	The wireless telemetry system provides an analog anti-aliasing filter for each input data channel with a cut-off frequency of at least 280 Hz.	The wireless telemetry system provides an analog anti-aliasing Butterworth filter for each input data channel with a cut-off frequency of at least 280 Hz.	The wireless 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.

Input Signal Sample Rate

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

Signal Resolution

Points	10	20	30
Criteria	The wireless telemetry system acquires the input analog signal from each transducer with a minimum resolution of 10 bits.	The wireless telemetry system acquires the input analog signal from each transducer with a minimum resolution of 12 bits.	The wireless telemetry system acquires the input analog signal from each transducer with a minimum resolution of 16 bits.

Electrical Power

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

Electromagnetic Compatibility/Interference (EMC/EMI)

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

Acceleration Environment

Points	10	20	30
Criteria	The wireless telemetry system is capable of operation at typical helicopter acceleration levels as shown through previous airworthy installations.	The wireless telemetry system is capable of operation at acceleration levels up to 5G in all directions as shown through previous airworthy installations.	The wireless 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.

Vibration Environment

Points	10	20	30
Criteria	The wireless telemetry system is capable of operation in typical helicopter tail rotor vibration exposure environment as shown through previous airworthy installations.	The wireless 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.

Altitude Environment

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

Temperature Environment

Points	10	20	30
Criteria	The wireless 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 wireless 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 wireless 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.

Humidity Environment

Points	10	20	30
Criteria	The wireless telemetry system is capable of operating in typical North American humidity environments as shown through previous airworthy installations.	The wireless 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

Dust and Water Ingress

Points	10	20	30
Criteria	The wireless telemetry system components installed external to the fuselage are sealed to prevent dust and water ingress as shown through previous airworthy installations.	The wireless 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.

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.

Solicitation No. - N° de l'invitation
W2671-15JG80/A
Client Ref. No. - N° de réf. du client
W2671-15JG80

Amd. No. - N° de la modif.
File No. - N° du dossier
EDM-5-38206

Buyer ID - Id de l'acheteur
EDM017
CCC No./N° CCC - FMS No./N° VME

ANNEX "B"

Basis of Selection/Basis of Payment

Annex "B" – Basis of Selection/Basis of Payment, when completed will be considered the Financial Bid.

Unit price(s) below must be firm and in Canadian funds including Canadian customs duties, excise taxes, delivery charges which are to be Delivered Duty Paid (DDP) to destination as indicated herein.

The responsive bid with the lowest evaluated price will be recommended for award of a contract.

The amount of the Goods and Services Tax shall be shown as a separate item.

Description	Unit of Issue	Firm Unit Price (Canadian Funds)	Evaluated Total (Canadian Funds)
Wireless Telemetry System in compliance with Annex A - Requirement Make _____ Model # _____	1	\$ _____	\$ _____
GST		\$ _____	\$ _____

Delivery Date

All the deliverables must be received on or before March 24, 2016.

The delivery date offered is _____ (as specified by the Bidder) taking into account the above mandatory delivery date.