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**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

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<b>Title - Sujet</b> Polar Helicopter Project	
<b>Solicitation No. - N° de l'invitation</b> F7013-230428/A	<b>Amendment No. - N° modif.</b> 002
<b>Client Reference No. - N° de référence du client</b> F7013-230428	<b>Date</b> 2024-02-23
<b>GETS Reference No. - N° de référence de SEAG</b> PW-SCAG-014-29228	
<b>File No. - N° de dossier</b> 014cag.F7013-230428	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Eastern Standard Time EST <b>on - le 2025-12-05</b> Heure Normale de l'Est HNE	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Blahey, Tim	<b>Buyer Id - Id de l'acheteur</b> 014cag
<b>Telephone No. - N° de téléphone</b> (873) 354-1679 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

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<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

## **Polar Helicopter Project**

### **Request for Information (RFI) Amendment 002**

The purpose of RFI amendment 002 is to:

Publish the questions and answers (Q&A) that Industry has asked to date of the Polar Helicopter Project Team, regarding the RFI.

#### **Question 1**

Some of the required items listed in the RFI constitute a significant level of non-recurring engineering. Does the Polar Helicopter project have budget guidelines?

#### **Answer**

At this time, Canada does not have any budgetary constraints for this procurement, as the project team will be reviewing the financial information received from interested suppliers during the Industry Engagement Process.

#### **Question 2**

Reference: Polar Helicopter RFI, page A-12, Table 2: Additional Polar Helicopter Equipment – Mission Equipment - Retractable desktop workstation located in the cabin.

*Question:*

Is this workstation a simple flat surface, or is the expectation to have power and/or mission display(s) and/or controls for an EO/IR system?

#### **Answer**

The helicopter cabin area must be equipped with a retractable (or fold down) flat surface desktop work station. The desktop work station must include the following:

- i. Electrical outlet sufficient for powering a laptop computer.
- ii. Interface to sensor data connections from the EO/IR camera and synthetic aperture radar.

The helicopter must also be equipped with a removable workstation seat, to allow the operator to use the desktop workstation during flight.

#### **Question 3**

Reference 1: Polar Helicopter RFI page A-4, Section 5.3

The proposed helicopter must have a main rotor blade folding capability that allows the blades to be folded and spread for flight operations aboard the CCG Polar Icebreaker vessels in conditions up to and including World Meteorological Organization (WMO) sea state six.

Reference 2: Polar Helicopter RFI page A-6, Section 5.17

While secured inside the polar icebreaker hangar with the main rotor blades in the folded position, the proposed helicopter must remain secured in conditions up to WMO sea state eight.

*Question:*

In order to ensure capability, a roll and pitch angle of the landing deck would need to be provided. Ships of different sizes and shapes react differently in the same sea state.

**Answer**

The Polar Icebreaker will be equipped with a Helideck Motion System (HMS). The HMS shall be capable of :

- i. measuring and displaying the pitch and roll of the flight deck;
- ii. measuring and displaying the significant heave rate of the flight deck; and
- iii. display the quiescent periods of flight deck.

**Question 4**

Recognizing the number of hours flown by helicopter while deployed to be 350 hrs, would Canada have an indication of the number of hours flown from ashore in between deployments?

**Answer**

An estimate of 260 hours per year per helicopter for shipboard operations and 90 flight hours per year per helicopter for shore based flights.

**Question 5**

What is the expected amount of time between deployments?

**Answer**

Ship based deployments are estimated at 256 continuous days. The time between deployments can range from eight to ten weeks.

**Question 6**

What are the annual refresher training requirements for pilots including simulator time?

**Answer**

Canada has not yet determined its annual refresher pilot training requirements.

Recurrent training will be conducted on an annual basis in a Level D Full Flight Simulator that is Night Vision Imaging System certified in accordance with the Canadian Aviation Regulatory requirements. Cockpit and emergency procedures training, as part of the overall training solution, may be conducted in a Level 5 or higher Flight Training Device. Please consider providing a detailed response to the RFI Question 8 - Questions to Industry – Training Solutions.

## **Question 7**

To determine the configuration and technical requirements around the operations in Sea State 6 and Sea State 8, in particular the blade folding in Sea State 6, the movement acceleration and angles of the helicopter on the deck need to be quantified so we can assess the suitability of the proposed helicopter.

## **Answer**

Seakeeping model tests have been completed for the Canadian Coast Guard (CCG) Polar Icebreaker which is fitted with an active anti-roll tank. The conditions used to determine the pitch and roll angle of ship were as follows:

- i. 10.5 metre draft
- ii. Sea State 6 – Mean Significant Wave Height is 5 metres, Modal Period is 12.4 seconds
- iii. Bretschneider Spectrum of waves (short-crested waves)
- iv. Speed – range between 0 and 12 knots.
- v. Active anti-roll tank equipped

The maximum pitch and roll angle in Sea State 6 was determined to be:

Maximum Roll Angle ~ 6.5 degrees

Maximum Pitch Angle = 1.39 degrees

## **Question 8**

Could the Canadian Coast Guard (CCG) provide some metrics on the ship such as length, width, cruise speed, B/GM ratio (B=Breadth of ship, GM=metacentric height)?

## **Response**

The CCG Polar Icebreaker information requested is as follows:

Length = 158.18 m

Breadth = 28m

Cruise Speed (economic transit speed) = 12 kts

Metacentric Height (GM) = 3.38 m is a transverse metacentric height in design loading condition that includes free surface correction

B/GM Ratio = 28/3.38

## **Question 9**

The RFI specifies that the proposed helicopter must be Transport Canada Civil Aviation (TCCA) certified as a Transport Category Rotorcraft, however, some of the mandatory requirements exceed commercial design certification criteria. The most significant example of this is the requirement for the aircraft to be able to withstand shipboard conditions up to Sea State 8.

## **Answer**

Canada would like to address the concerns you have raised:

**Requirements:** We acknowledge that our initial requirements may appear ambitious. However, our intention was to cast a wide net during the Request for Information (RFI) process. By doing so, we aim to explore all available options and innovations within the industry. Rest assured that we are open to refining these requirements based on availability, practical feasibility and cost-effectiveness.

**Sea State Conditions:** The new CCG Polar Icebreaker will be operating in Canada's Arctic region and will encounter extreme weather conditions. The vessel is being designed to withstand Sea State 8 conditions resulting in unique challenges for the Polar Helicopter to be safely secured within the vessel hangar. The vessel is being designed with an 'Active Anti-Roll Tank' which will help to minimize the lateral motion of the vessel. While the pitch, roll, and acceleration data for the Polar Icebreaker in Sea State 8 conditions are unknown at this time, Polar Icebreaker model testing in Sea State 6 conditions has determined the following maximum pitch and roll angles of the ship:

Maximum Roll Angle ~ 6.5 degrees

Maximum Pitch Angle = 1.39 degrees

The conditions for the Sea State 6 model testing were as follows:

- i. 10.5 metre draft
- ii. Sea State 6 – Mean Significant Wave Height is 5 metres, Modal Period is 12.4 seconds
- iii. Bretschneider Spectrum of waves (short-crested waves)
- iv. Speed – range between 0 and 12 knots.
- v. Active anti-roll tank equipped

Canada understands your comments regarding the Sea State 8 requirement in the RFI. Canada looks forward to reviewing Industry feedback to the Polar Helicopter RFI and may refine the mandatory requirements as needed following an analysis of availability, suitability, and cost.

The primary goal of the RFI is to assess industry capabilities and understand the expected costs associated with different helicopter solutions. We seek to make informed decisions based on a comprehensive evaluation of available options.

Your insights will significantly contribute to our requirements' development and evaluation process.