Fisheries and Oceans Canada | Pêches et Océans Canada

Materiel and Procurement Services
200 Kent Street, Station 9W087
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FP802-150046

September 16, 2015

Subject: Invitation to Tender: FP802-150046

Title: Developing Search Optimization Methodologies for Canadian Coast Guard Maritime Search and Rescue

ADDENDUM: NO. 3

Further to the above mentioned Request for Proposal documentation previously posted on the Government Electronic Tendering Site (GETS), BuyandSell.gc.ca, Addendum **(#3)** is hereby issued.

Department of Fisheries and Oceans

Bid Closing Date: September 22, 2015
Time: 14:00 Hours (2:00 pm) Eastern Daylight Time (EDT)
File No: FP802-150046

Q1 **What is meant by the word "assist" and "aid" in the following text. It is not clear what type of assistance is expected or the number of assistance hours expected.**

- Assist Canadian Coast Guard (CCG) in adapting the manual SAR Resource Planning component in CANSARP to accommodate a new Monte Carlo probability field;
- Assist CCG in developing a visual equivalent to the "Body of Water Searched"

functionality present for deterministic drift in CANSARP;

- Aid ITS in efforts to develop and implement the module within the CANSARP environment such that results will be displayed graphically within the Automated Search Planning Tool (ASPT) user interface;

A1 Although the contracted resources might use computers for their own purposes to provide the formulas and guidance as to Monte Carlo and other methods, the actual programming of CANSARP (for the integration of these methods) will be performed by CCG IT staff members.
Coast Guard ITS is primarily responsible for the programing and integration of the algorithms and/or methods that are developed as part of this project by the successful bidder. Although this does not preclude the bidder from working with the source code, the contracted resources do not have to be programmers in order to perform the work. Coast Guard ITS will provide a working copy of the development environment for testing purposes, including hardware. However, Coast Guard will be doing all of the implementation and integration work. We will work with the contractor to ensure that we are implementing the algorithms properly.
Specifically looking at the first two bullets:

- Assist Canadian Coast Guard (CCG) in adapting the manual SAR Resource Planning component in CANSARP to accommodate a new Monte Carlo probability field;
- Assist CCG in developing a visual equivalent to the "Body of Water Searched" functionality present for deterministic drift in CANSARP.

These two bullets refer to changes to existing calculations and algorithms within CANSARP that will have to occur as part of the project. These two elements are part of the project plan as can be seen in the **Preliminary Methodology Review** section.

Preliminary Methodology Review

The contractor shall submit a Preliminary Methodology Design document (PMD) for review. The Requirements Specification (RS) will be used as the basis for the PMD; the preliminary framework of the methodology shall be developed. This preliminary methodology will provide a high level description of major components of the methodology to be employed and it will address the following:

- **Changes required to the formulas for calculating Probability of Detection (POD);**
- **An initial strategy for calculating "Body of Water Searched" using the Monte Carlo drift field; and,**

The third bullet in question is immediately below:

- Aid ITS in efforts to develop and implement the module within the CANSARP environment such that results will be displayed graphically within the Automated Search Planning Tool (ASPT) user interface;

The third bullet refers to the visual display of the new optimized SAR planning method within CANSARP. We will require a significant level of interaction between the contractor and the Coast Guard implementation team to ensure that the Coast Guard has properly implemented the newly developed methodology. Note that this bullet should have come after the following, in order to be clearer.

- Using the probability grid returned by the CANSARP Monte Carlo drift module, create and recommend an optimal layout of search and rescue patterns for a maritime search to maximize Probability of Detection (POD) and Probability of Success (POS)

Finally, with regard to time estimates, the contractor is responsible for providing time estimates in their initial project work plan (deliverable). There are no set time limits for these specific tasks. They are to be determined as part of the Project Work Plan which the contractor will submit as the first milestone deliverable in consultation with Coast Guard ITS.

Following a closer examination of the call for proposals, we have some questions regarding the deliverables: Development and Implementation:

Q2 **How can the two beta releases be deliverables by the contactor if the implementation is to take place at the CCGC by the ITS CANSARP development team?**

A2 The contractor's role is to work with the Coast Guard programming group in properly implementing the SAR

optimization model that the contractors have developed. The contractors are responsible for validating that their model has been properly implemented and will have to adjust their model based on feedback from the first beta release for implementation in the second beta release. It is expected that there will be very close collaboration between the programmers and the developers during this implementation.

The contractor will be responsible for ensuring that the events take place, as the Proposed Project Leader will be responsible to ensure that the product is delivered within the schedule set out in the Project Plan. The schedule may be modified at the discretion of the Project Authority, within reason (e.g. delays out of the control of the contractor, etc.). A copy of the development environment will be provided to the Contractor for testing purposes.

Q3 **Is the contractor expected to code and implement or is the contractor's role limited to act as an advisor, designer and architect?**

A3 While some of the contracted resources may be have the skills to contribute to the coding aspect, it is not a requirement of this contract. Should the Proposed Project Leader decide to use other contracted resources for coding and implementation, it cannot be used as a reason to delay the project schedule, as it is not a requirement of this contract. The primary role of the contractor is not only to advise, design and architect but also to ensure delivery according to the schedule, as set described in the answer to the previous question.

Q4 **Is the module that computes a Monte Carlo probability field already developed and implemented (or partially so)? What is expected from the contractor with regards to the Monte Carlo probability field module?**

A4 A module has been obtained and is being integrated into CANSARP.

Considering the statement "Using the probability grid returned by the CANSARP Monte Carlo drift module, create and recommend an optimal layout of search and rescue patterns for a maritime search to maximize Probability of Detection (POD) and Probability of Success (POS)", the contractor is expected produce guidelines or drawings, advise, test and otherwise apply their expertise related to search and rescue resource optimization to maximize the effectiveness of the output by CANSARP. This could include, but is not limited to, providing visual representations and/or recommending changes to samples provided by CCG programmers. The Proposed Project Lead is expected to, to ensure delivery of a product that improves the overall Probability of Success, as previously stated.

Thank you,

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