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Bid Fax: (902) 496-5016

Title - Sujet
SO - HUMAN FACTORS

Solicitation No. - N° de l'invitation	Date
W7707-145734/A	2014-09-29
Client Reference No. - N° de référence du client	**Amendment No. - N° modif.**
W7707-14-5734	001
File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
HAL-4-73066 (305)	

GETS Reference No. - N° de référence de SEAG
PW-$HAL-305-9339

Date of Original Request for Standing Offer
Date de la demande de l'offre à commandes originale 2014-09-19

Revision to a Request for a Standing Offer
Révision à une demande d'offre à commandes

National Master Standing Offer (NMSO)

Offre à commandes principale et nationale (OCPN)

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2014-10-07

Time Zone
Fuseau horaire
Atlantic Daylight Saving Time ADT

Address Enquiries to: - Adresser toutes questions à:	Buyer Id - Id de l'acheteur
Collier, Susan	hal305
Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(902) 496-5350 ( )	(902) 496-5016

Delivery Required - Livraison exigée

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

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

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

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Security - Sécurité
This revision does not change the security requirements of the Offer.
Cette révision ne change pas les besoins en matière de sécurité de la présente offre.

Instructions: See Herein

Instructions: Voir aux présentes

Acknowledgement copy required / Accusé de réception requis	Yes - Oui	No - Non
	☐	☐

The Offeror hereby acknowledges this revision to its Offer.
Le proposant constate, par la présente, cette révision à son offre.

Signature **Date**

Name and title of person authorized to sign on behalf of offeror. (type or print)
Nom et titre de la personne autorisée à signer au nom du proposant.
(taper ou écrire en caractères d'imprimerie)

For the Minister - Pour le Ministre

Issuing Office - Bureau de distribution
Atlantic Region Acquisitions/Région de l'Atlantique Acquisitions
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B3J 3C9
Nova Scot

Canada

Amendment 001 is being raised to incorporate the following and to answer questions from potential bidders as follows:

Delete in its entirity:
APPENDIX 1:
STATEMENT OF WORK

Insert:
APPENDIX 1:
STATEMENT OF WORK

Human Factors Support for Maritime-based Research

Background
The Royal Canadian Navy (RCN) is undergoing platform refits, upgrades, and new procurements (e.g., Joint Support Ship (JSS); Canadian Surface Combatant (CSC); Arctic Offshore Patrol Ship (AOPS); Victoria Class Submarine (VCS)), in order to meet the needs of today's defence and security operations. The work engages human factors, in the form of guidelines and research, to ensure that physical environments, platforms, and technology are designed and procured to meet the needs and capabilities of operational personnel.

Human factors is an interdisciplinary science and engineering component of human systems integration aimed at optimizing a socio-technical system through the integration of the human into the system, while recognizing the cognitive and physical limitations of the human. From an operator or individual perspective, example factors of interest might be information requirements, operator workload, situation awareness, human stress, fatigue, error reduction and response rate. From the whole-crew or whole system viewpoint, areas of interest might revolve around the design and characteristics of ship platforms, number of crew required, and training and skill levels.

Defence Research and Development Canada (DRDC) provides expertise and human factors guidance and design principles to the RCN and engages in studying and addressing human factors issues in maritime environments, platforms, and supporting technologies. Research in the maritime domain can focus on surface platforms, surface platforms and unmanned aerial and underwater vehicles, and it can include a strong interaction with the land and air domains. Human factors resources from industry are sometimes required to support research programs. This Standing Offer is to provide an avenue for DRDC to access human factors contractor support to human factors research in the maritime domain.

Requirement

The scope of the proposed work is to provide support to human factors research and development associated with maritime operations, as and when required.

The standing offer comprises the following Occupational Categories:

- Human Factors (Cognitive)
- Human Factors (Physical)
- Human Factors Engineer
- Modelling and Simulation
- Project Management

The same resource can be used for multiple categories provided they meet the experience requirements for those categories.

Occupational Categories

Human Factors (Cognitive) – Cognitive human factors is concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system. (Relevant topics include mental workload, decision-making, skilled performance, human-computer interaction, human reliability, work stress, training and learning.) Relevant experience may include but is not limited to, interviews and focus groups, lab or simulator-based experiments, and field trials.

Human Factors (Physical) - Physical human factors are concerned with anatomical, anthropometric, physiological and biomechanical characteristics as they relate to physical activity. (Relevant topics include working postures, materials handling, repetitive movements, work related musculoskeletal disorders.). Relevant experience may include but is not limited to, interviews and focus groups, lab or simulator-based experiments, and field trials.

Human Factors Engineering - is concerned with the application of human factors to the analysis, development, design, certification, operation, and maintenance of human-machine systems. These systems may be used in command and control environments for, but not limited to, military planning, options analysis, or mission management.

Modelling and Simulation – is concerned with the design, development, testing, documentation, and technical support of software models and simulations to support human factors analysis, human factors research, human systems integration, or military training, experiments, or systems design.

Project Management - is concerned with the application of knowledge, skills, tools and techniques to project activities to meet project requirements.

Human factors support could include, but is not limited to: human factors analysis; work domain analysis, cognitive requirements analysis; development of design concepts for maritime command, control, communication and information (C3I) systems; physical ergonomics requirements analysis and design; prototyping design concepts; simulation of existing and conceptual C3I maritime systems; human performance modelling; whole crew modelling; human in the loop experimentation and human performance evaluation.

Individual requirements could include, but are not limited to, the following:

1. Developing research plans including but not limited to, methods, approaches, techniques, analyses, risks, risk mitigations, and timelines.
2. Conducting reviews of scientific and military literature on topics related to human factors in the maritime domain. Example topics are: interface design for maritime systems; human factors and information displays; visualization of information; automation; decision support for maritime C3 systems; crewing platforms and whole-ship crewing.
3. Conducting data collection through the use of human factors engineering (HFE) methods. Examples might be, using HFE techniques to support knowledge elicitation, and task and cognitive task analyses.
4. Conducting data collection through human in the loop experimentation. Designing and conducting human in the loop experiments to assess human performance in maritime environments and/or platforms.
5. Recruiting and scheduling Subject Matter Experts (SMEs) and participants for interviews or human research experiments. This activity may include reimbursing participants (the monetary amount for reimbursement shall not exceed that defined under the DRDC Human Research Guidelines [1]).
6. Developing scenarios to support data collection. Examples are, paper and pencil format to support data collection through interviews or table-top exercises, or software-based scenarios to augment the realism and fidelity of operator displays in a laboratory setting.
7. Providing expertise in building simulations and modelling environments to support the modelling of individual human performance and whole team performance and/or options analysis.
8. Designing and administering interview protocols, surveys, and questionnaires.
9. Collecting, formatting, analyzing, and interpreting quantitative and qualitative data, including data attained through field and sea trials. The contractor may be required to collect human performance data during field or sea trials.
10. Reporting results of tests and evaluations, including methods used, as well as any limitations of results.
11. Providing recommendations and guidance both to DRDC and to the Canadian Forces based on results of studies, in the form of reports and verbal presentations.
12. Providing interim reports, and final reports, on work conducted.

Following is an example project that includes many of the tasks that may be required to be performed under this Standing Offer. Numbers in brackets [ ] refer to the list of individual requirements above:

The example is framed around providing recommendations for the number of crew required to use a new piece of technology onboard a Canadian platform. A structured research plan is drawn up that includes methods, metrics, approaches, timelines, etc. (1).
The project requires an in-depth understanding of current crew assignment to stations and the functionality of the existing sonar system, as well as a detailed understanding of the functionality of the new system [2]. Human factors engineering methods are applied [3; 8] to elicit knowledge and information about the new and old systems from Subject Matter Experts [5]. To further the knowledge base, documentation on the operation of the current and new systems is reviewed [2]. A comprehensive task analsysis for the existing system is built [3], and a function analysis is built for the new system [3].
To understand how operators use the system, and to compare baseline human performance to operation of the future system, a human in the loop study is designed and conducted [4]. An operational scenario is built [6] to support the study. Measures of performance are identified and appropriate tools for data collection chosen and/or designed [1]. Using the scenario and an existing team trainer that mocks up the complete as-is sonar room, human performance data is collected while the crew mans the sonar room over a 2-day simulated operation. Examples of data collected include: latency and accuracy on tasks; measures of workload and alertness of the crew during the course of the operation [9].
A comparison study is conducted using the same scenario and measures of performance with operators manning the new sonar system [4]. Options for crewing the new system are generated and tested [9].
Modelling of workload for crew members is completed [7] and various options for crewing with the new sonar system are constructed and tested. Modelling the effect on whole ship crew and tasks of different crewing options [7] is also constructed.
The data is analyzed, synthesized and interpreted and the findings collated to provide recommendations on the number of crew required to optimally use the new submarine sonar system [10; 11;12].
Interim reports are delivered throughout the project and a final report is provided at project end [12].

Expertise
Work may draw on diverse expertise, including: human factors, human factors engineering, cognitive psychology, system analysis, software design and development, human factors interface design, concept development, survey design, data collection and analysis, human in the loop experiment design; human performance simulation and modelling, crew modelling, physical space simulation, and software development.

Delete in its entirity
Annex B: Occupational Categories

Insert:
Annex B: Occupational Categories
OCCUPATIONAL CATEGORIES
The standing offer comprises the following Occupational Categories: Human Factors (Cognitive): Human Factors (Physical): Human Factors Engineering: Modelling and Simulation: Project Management

Questions 1:
Due to the complexity of the information required through this Standing Offer process, we request a three (3) week extension to the closing date, to 28 October 2014.

Answer 1:
DRDC is not able to extend the deadline because there are projects in need of a contracting avenue to be in place as soon as is possible. An example is human factors work for the Canadian Surface Combatant project, where work activities are waiting for a contracting means.

Question 2:
Please confirm that the Contractor is not required to perform the work on site in Halifax, but is free to perform the work remotely at their own facilities (assuming the Contractor facilities meet the appropriate security requirements).

Answer 2:
The Standing Offer will be made available to all DRDC labs within the Agency across Canada. It will be possible to conduct much of the work at the Contractor's site. However, there may be occasions where off-site work is required – for example: attending Project Review Meetings, participating in field/sea trials, visits to DND sites for data collection, and other reasons as needed.

Question 3:
In the evaluation of point rated criteria for the proposed team (pages 30-32 of the RRP), the phrase "Personnel have extensive experience" or similar appears throughout the evaluation criteria. Could you be more specific as to what qualifies as "extensive", "adequate", and "little" (e.g. is there a specific qualification grid we can use to determine the experience level)?

Answer 3;
Specifics as to what qualifies for the levels of 'Excellent'. 'Adequate', 'Limited' are outlined in Proposed Team and Company Criteria'.

Question 4:
In the evaluation of point rated criteria for the proposed team (pages 30-32 of the RFP), there is a wide range of points available for "Excellent", "Adequate", or "Limited" experience. For example, for a resource ranked as "Excellent" the points range from 41 to 60. Could you provide guidance as to how it will be determined how many points are assigned to a resource that falls within this ranking? How will it be determined that a resource ranked as "Excellent" gets 41 points as opposed to 60 points, or somewhere in between?

Answer 4:
Proposed Team and Company Criteria' - Levels (e.g., 'excellent'. 'adequate', 'limited') are made up of several components. For example, a) Human Factors knowledge and research in maritime C3I socio-technical systems – consists of evaluation based on: 'knowledge','research', 'academic', 'professional' qualifications, 'methods' applicable in 'human factors' and 'maritime C3I'. The number of components addressed and the way they are addressed will affect the score within a level (e.g.,41-60).

Question 5:
Please clarify how a "team" (i.e. if more than one resource is provided) for one of the six criteria (pages 30-32 of the RFP) will be evaluated. The RFP states "Evaluation of this criterion will be based on the combined capability of all identified personnel". Consider the example that two resources, X and Y, are proposed in category B (Human sciences - including human factors, human factors engineering, cognitive psychology, and behavioural sciences). Resource X has extensive experience in human factors and human factors engineering, but no experience in cognitive psychology and behavioural sciences. Resource Y has no experience in human factors and human factors engineering, but extensive experience in cognitive psychology and behavioural sciences. Please confirm that in this example, the combined experience of the two resources will result in an "Excellent" rating.

Answer 5:
As per 'Proposed Team and Company Criteria' – "Evaluation of this criterion will be based on the combined capability of all identified personnel".

Question 6:
An "extensive experience" for a junior resource should not be the same as an "extensive experience" for a senior resource. How will you differentiate the points allocations if we present a junior vs a senior resource in a given work category? The current allocation of points seems to favour senior resources for this contract.

Answer 6:
See point 5. The assessment is based on team.

Question 7:
Would the cumulative experience of several junior resources for a particular criteria combine to provide "extensive experience"?

Answer 7:
Knowledge provides a foundation for an individual's progression. It does not sum across individuals. For example, if each of 3 people can count to 10 that does not mean that collectively they can count to 30.

Question 8:
The Request for Standing Offer indicates in Annex D/Basis of Selection, that "The responsive offer with the highest Total Overall Points will be recommended for award of a contract". Please confirm that through this Standing Offer process there will be only one qualified company which will obtain one contract (i.e. this is not a qualification phase with several qualified companies which have to compete for each call-up).

Answer 8:
Only 1 company will obtain one contract, and this is not a qualification phase.

Question 9:
Please confirm that we may propose different rates for different resources proposed in the same work category. For example, a junior and a senior proposed in the Human simulation and modelling work category can have different rates.

Answer 9:
You may propose different rates for different resources proposed in the same work category providing they meet the requirements as stipulated in the RFSO.

Question 10:
Please confirm that we may propose different rates for the same resource proposed in different work categories. For example, the same resource can qualify as a senior in Scenario and experimental design work category but can qualify also as an intermediate in the Human sciences work category.

Answer 10:
Yes, you may propose different rates for the same resources proposed in different categories as long as they meet the requirements as stipulated in the RFSO. The successful bidder must perform work in accordance with the Statement of work in the RFSO.

Question 11:
Please confirm that the research experience (including publications) realized while obtaining a PhD degree will be considered as pertinent work experience and can be used to qualify as intermediate or senior personnel.

Answer 11:
Research experience including publications can be used as evidence of pertinent work experience if the work is relevant to the requirements outlined in the Statement of Work.

Question 12:
Some universities do not offer a Master degree in psychology, for example (the students pass directly from Bachelor degree to Ph.D.). In this situation, how you evaluate a Ph.D. graduate having four additional years of experience? Would this resource qualify as a senior personnel? Can a Ph.D. graduate having two additional years of experience qualify as an intermediate personnel?

Answer 12:
The evaluation is based on years of relevant experience.

Question 13:
The RFSO contains a list of "disciplines" (used as the evaluation criteria, pages 30-32 of RFSO), a list of "Occupational Categories" (page 34 of RFSO), and a list of "Personnel Categories" (page 34 of RFSO). It is unclear as to whether bidders are required to provide rates for the combination of "Occupational Categories" and "Personnel Categories", or for the combination of "disciplines" and "Personnel Categories", or if we should provide rates for our own list of labour categories. In order to have a fair evaluation of price amongst bidders, it would seem that there should be a standard list of categories for which rates should be supplied.

Answer 13:
Please refer to revised APPENDIX 1: STATEMENT OF WORK on page 1 of AMENDMENT 001.

Question 14:
Both the intermediate and senior personnel categories require a Master's degree (with the exception of the Project Manager occupational category). While this makes sense for speciality categories (e.g. Cognitive), we do not think it is required for some other categories (e.g. a modeling and simulation software developer). We request that the requirement for a Master's degree is limited to specific occupational categories.

Answer 14:
Bidder is refered to Personnel Categories point ii): “….or a Bachelor’s degree and six years of experience in the specific occupational category….”

Question 15:
Please confirm that the selected Bidder for this RFSO will not be precluded from working on related projects (e.g. JSS, CSC, AOPS, VCS, etc.).

Answer 15:
The successful bidder must perform work in accordance with the Statement of work in the RFSO.

Question 16:
Please confirm that experience of the Bidder includes experience of any subcontractors.

Answer 16:
Yes, experience of the bidder includes experience of any subcontractors.

Question 17:
Page 35 item iii) of the RFP states the following:

"(iii) Intermediate personnel for Project Management occupational category must possess a minimum of a Project Management Professional (PMP) certification and four years of experience in Project Management as evidenced by suitable project work supported by publications."

Project management personnel must have experience "as evidenced by suitable project work supported by publications." Please clarify the nature of the publications required. Can the Crown please confirm that a project management plan and or similar documentation published by the resource in questions would satisfy this requirement?

Answer 17:
DRDC wishes to remove the reference to publications for the Project Management Occupational Category [ii) Intermediate and v) Senior].
a. Remove "supported by publications".
b. The bidder is refered to the scoring table for more details of the evaluation for the PMP.

Question 18:
Each type of specialist domain should include junior, intermediate, and senior level staff. Two different groups of specialities are provided: the bulleted list on page 30 items a through f of the RFP

a) Human factors knowledge and research in maritime command, control, communication, and information (C3I) socio-technical systems

b) Human sciences – including human factors, human factors engineering, cognitive psychology, and behavioural sciences;)

c) Physical ergonomics – including assessment, analysis, and design;

d) Human simulation and modelling - including human performance, and whole crew modelling;

e) Systems simulation and modelling – including software (e.g., scenarios/room layout/displays) and physical mock-up of workspace and platforms;

f) Scenario and experimental design.

and those described in the paragraph under 'Occupational Categories' on page 34 of the RFO. Would the Crown please clarify which list of specialities should be used to categories the personnel on our team?

Answer 18:
Please refer to revised APPENDIX 1: STATEMENT OF WORK on page 1 of AMENDMENT 001. The revised Occupational Categories should be used to categorize the personnel of the team. As an example, Human Factors Engineering - Senior, Intermediate, Junior resources..

Question 19:
In the summary on page 3 of the RFP Resulting Contract is described as a 'Departmental Individual Standing Offer'(SO) whereas in Annex A on page 21 it says the standing offer would support all Centres within DRDC. Please clarify the expected users of this SO.

Answer 19:
The SO will be made available to all of DRDC across Canada.

Question 20:
Past RFPs from DRDC have typically defined labour categories being sought along with their associated criteria. In turn, the financial evaluation requested bidder rates to be specified for either each labour category or resources assigned to the individual labour categories. This provides a straightforward and consistent approach for evaluating multiple proposals. This does not appear to be the approach for this RFP. It appears the bidder is provided the flexibility to define their own set of labour/occupational categories. Is this correct? No. Occupational Categories have been revised for clarity and to make consistent across bidders. What is the rationale for choosing this approach? And how can you ensure that all bidders are evaluated against the same criteria?

Answer 20:
See revised APPENDIX 1: STATEMENT OF WORK **on page 1 of Amendment 001 or clarity and to make consistent across bidders.**

Question 21:

With respect to the Occupational Categories specified on pg. 34 of the RFP, the following points of clarification are being sought:
a. Can additional information be provided to further define each Occupational Category (e.g., Physical, Cognitive)?

Answer 21:
See revised APPENDIX 1: STATEMENT OF WORK **on page 1 of Amendment 001**

Question 22:
Is the bidder required to provide resources against each of the Occupational Categories?

Answer 22:
No. However, lack of resources may affect the evaluation.

Question 23:
The Financial Evaluation provides examples of occupational categories (e.g., Software Engineer, Subject Matter Expert, Computer Programmers) that do not appear to map directly to the Occupational Categories presented on pg. 34. Can the bidder include additional categories of this nature?

Answer 23:
The Financial Evaluation provides a ficticious example. Other Occupational Categories cannot be added.

Question 24:
If the bidder proposes a non-specialized Occupational Category, such as Software Engineer, do personnel still require a Masters for the Senior and Intermediate positions?

Answer 24:
Not applicable with revised Occupaational Categories.

Question 25:
This opportunity is of significant interest to our business objectives. In order to generate a competitive bid and assemble a team to address the clients requirements, we respectfully request an extension of 3 weeks.

Answer 25:
DRDC is not able to extend the deadline due to the requirement for work to begin asap.

ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME