

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**

**Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada**  
**1713 Bedford Row**  
**Halifax, N.S./Halifax, (N.É.)**  
**B3J 1T3**  
**Bid Fax: (902) 496-5016**

## Request For a Standing Offer Demande d'offre à commandes

National Master Standing Offer (NMSO)  
Offre à commandes principale et nationale (OCPN)

Canada, as represented by the Minister of Public Works and Government Services Canada, hereby requests a Standing Offer on behalf of the Identified Users herein.

Le Canada, représenté par le ministre des Travaux Publics et Services Gouvernementaux Canada, autorise par la présente, une offre à commandes au nom des utilisateurs identifiés énumérés ci-après.

## Comments - Commentaires

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

**Issuing Office - Bureau de distribution**  
Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
B3J 3C9  
Nova Scot

<b>Title - Sujet</b> SO - HUMAN FACTORS	
<b>Solicitation No. - N° de l'invitation</b> W7707-145734/A	<b>Date</b> 2014-09-19
<b>Client Reference No. - N° de référence du client</b> W7707-14-5734	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$HAL-305-9339
<b>File No. - N° de dossier</b> HAL-4-73066 (305)	<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> <b>on - le 2014-10-07</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT
<b>Delivery Required - Livraison exigée</b> See Herein	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Collier, Susan	<b>Buyer Id - Id de l'acheteur</b> hal305
<b>Telephone No. - N° de téléphone</b> (902)496-5350 ( )	<b>FAX No. - N° de FAX</b> (902)496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE DRDC ATLANTIC 9 GROVE STREET DARTMOUTH NOVA SCOTIA B3A3C5 Canada	
<b>Security - Sécurité</b> This request for a Standing Offer does not include provisions for security. Cette Demande d'offre à commandes ne comprend pas des dispositions en matière de sécurité.	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<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>

Solicitation No. - N° de l'invitation

W7707-145734/A

Amd. No. - N° de la modif.

File No. - N° du dossier

HAL-4-73066

Buyer ID - Id de l'acheteur

hal305

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

W7707-14-5734

CCC No./N° CCC - FMS No/ N° VME

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## **TITLE : Request for Standing Offer – Human Factors**

### **PART 1 - GENERAL INFORMATION**

#### **1. Introduction**

The Request for Standing Offers (RFSO) is divided into seven parts plus attachments and annexes, as follows:

- |        |   |
|--------|---|
| Part 1 | General Information: provides a general description of the requirement;   |
| Part 2 | Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;   |
| Part 3 | Offer Preparation Instructions: provides offerors with instructions on how to prepare their offer to address the evaluation criteria specified;   |
| Part 4 | Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, and the basis of selection;   |
| Part 5 | Certifications: includes the certifications to be provided;   |
| Part 6 | Security, Financial and Insurance Requirements: includes specific requirements that must be addressed by offerors; and  |
| Part 7 | 7A, Standing Offer, and 7B, Resulting Contract Clauses:<br><br>7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;<br><br>7B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer. |

The Annexes include the Statement of Requirement, the Basis of Payment, the Federal Contractors Program for Employment Equity - Certification and any other annexes.

#### **2. Summary**

Defence Research and Development Canada (DRDC) Atlantic Research Centre require one (1) Departmental Individual Standing Offer (DISO) for Maritime Human Factors support to assist in the conduct of research related to human factors in the maritime domain on an 'as and when' required basis through a Standing Offer. Work under the Standing Offer will support behavioural and cognitive sciences research in various maritime contexts. The Standing Offer would support all Centres within Defence R&D Canada.

See Statement of Requirement attached as Annex A for details.

The period for placing call-ups against the DISO will be from date of issuance of the DISO to 31 March 2018.

"There is a security requirement associated with this requirement. For additional information, consult Part 6 - Security, Financial and Insurance Requirements, and Part 7A - Standing Offer. For more information on personnel and organization security screening or security clauses, offerors should refer to the Canadian Industrial Security Directorate (CISD), Industrial Security Program of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website. "

Offerors must submit a list of names , or other related information as needed, pursuant to section 01 of Standard Instructions 2006 and 2007.

For services requirements, the following sentence must be inserted:

"For services requirements, Offerors in receipt of a pension or a lump sum payment must provide the required information as detailed in article 3 of Part 2 of the Request for Standing Offers (RFSO)."

This requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

This requirement is subject to a preference for Canadian goods and/or services.

### **3. Security Requirement**

There is a security requirement associated with the requirement of the Standing Offer. For additional information, see Part 6 - Security, Financial and Insurance Requirements, and Part 7 - Standing Offer and Resulting Contract Clauses.

### **4. Debriefings**

Offerors may request a debriefing on the results of the request for standing offers process. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of the results of the request for standing offers process. The debriefing may be in writing, by telephone or in person.

## **PART 2 - OFFEROR INSTRUCTIONS**

### **1. Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the Request for Standing Offers (RFSO) 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.

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the clauses and conditions of the Standing Offer and resulting contract(s).

The 2006 (2014-06-26) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: one hundred and twenty (120) days

### **2. Submission of Offers**

Offers 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 Request for Standing Offers.

**Due to the nature of the Request for Standing Offers, transmission of offers by facsimile to PWGSC will not be accepted.**

### 3. Former Public Servant – M3025T Effective Date 2013-11-06

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, offerors must provide the information required below before the issuance of a standing offer. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of offers is completed, Canada will inform the Offeror of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the offer non-responsive.

#### Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the Financial Administration Act R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S. 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8.

#### Former Public Servant in Receipt of a Pension

As per the above definitions, is the Offeror a FPS in receipt of a pension? **YES ( ) NO ( )**

If so, the Offeror must provide the following information, for all FPS in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Offerors agree that the successful Offeror's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the

published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

**Work Force Adjustment Directive**

Is the Offeror a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **YES** ( ) **NO** ( )

If so, the Offeror must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

**4. Enquiries - Request for Standing Offers**

All enquiries must be submitted in writing to the Standing Offer Authority no later than five (5) calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.

Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors 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 offerors do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

**5. Applicable Laws**

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

Offerors may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their offer, 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 offerors.

### **PART 3 - OFFER PREPARATION INSTRUCTIONS**

#### **1. Offer Preparation Instructions**

Canada requests that offerors provide their offer in separately bound sections as follows:

Section I: Technical Offer (Two (2) hard copies)

Section II: Financial Offer (One (1) hard copy)

Section III: Certifications (One (1) hard copy)

Prices must appear in the financial offer only. No prices must be indicated in any other section of the offer.

Canada requests that offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

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>). To assist Canada in reaching its objectives, offerors 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 Offer**

In their technical offer, offerors should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

#### **Section II: Financial Offer**

Offerors must submit their financial offer in accordance with the Annex B, Basis of Payment. The total amount of Applicable Taxes must be shown separately.

#### **Section III: Certifications**

Offerors must submit the certifications required under Part 5.

#### **Payment by Credit Card**

Canada requests that offerors complete one of the following:

- (a) ( ) Government of Canada Acquisition Cards (credit cards) will be accepted for payment of call-ups against the standing offer.

The following credit card(s) are accepted:

VISA \_\_\_\_\_

Master Card \_\_\_\_\_

- (b) ( ) Government of Canada Acquisition Cards (credit cards) will not be accepted for payment of call-ups against the standing offer.

The Offeror is not obligated to accept payment by credit card.

Acceptance of credit cards for payment of call-ups will not be considered as an evaluation criterion.

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **1. Evaluation Procedures**

- (a) Offers will be assessed in accordance with the entire requirement of the Request for Standing Offers including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the offers.
- (c) The evaluation team will determine first if there are two (2) or more offers with a valid Canadian Content certification. In that event, the evaluation process will be limited to the offers with the certification; otherwise, all offers will be evaluated. If some of the offers with a valid certification are declared non-responsive, or are withdrawn, and less than two responsive offers with a valid certification remain, the evaluation will continue among those offers with a valid certification. If all offers with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other offers received will be evaluated.

#### **1.1. Technical Evaluation**

##### **1.1.1 Point Rated Technical Criteria**

Point Rated Evaluation Criteria are included in Annex D Offer Evaluation Plan.

#### **1.2 Financial Evaluation**

##### **1.2.1 See Annex D Offer Evaluation Plan**

### **2. Basis of Selection**

#### **2.1 See Annex D Offer Evaluation Plan**

### **3. Controlled Goods Program**

SACC Manual Clause A9130T (2014-06-26) Controlled Goods Program

## **PART 5 - CERTIFICATIONS**

Offerors must provide the required certifications and associated information to be issued a standing offer.

The certifications provided by offerors to Canada are subject to verification by Canada at all times. Canada will declare an offer non-responsive, will have the right to set-aside a standing offer, or will declare a contractor in default in carrying out any of its obligations under any resulting contracts, if any certification made by the Offeror is found to be untrue whether made knowingly or unknowingly during the offer evaluation period, during the Standing Offer period, or during the contract period.

The Standing Offer Authority will have the right to ask for additional information to verify the Offeror's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Standing Offer Authority may render the Offer non-responsive, may result in the setting aside of the Standing Offer or constitute a default under the Contract.

## **1. Certifications Required Precedent to Issuance of a Standing Offer**

### **1.1 Integrity Provisions - Associated Information**

By submitting an offer, the Offeror certifies that the Offeror and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Offer of Standard Instructions 2006. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

### **2.0 Certifications Required Precedent to Issuance of a Standing Offer**

The certifications listed below should be completed and submitted with the offer, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Standing Offer Authority will inform the Offeror of a time frame within which to provide the information. Failure to comply with the request of the Standing Offer Authority and to provide the certifications within the time frame provided will render the offer non-responsive

#### **2.1 Federal Contractors Program for Employment Equity - Standing Offer Certification**

By submitting an offer, the Offeror certifies that the Offeror, and any of the Offeror's members if the Offeror is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from Employment and Social Development Canada-Labour's website.

Canada will have the right to declare an offer non-responsive, or to set-aside a Standing Offer, if the Offeror, or any member of the Offeror if the Offeror is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of issuing of a Standing Offer or during the period of the Standing Offer.

#### **2.2 Former Public Servant – M3025T Effective Date 2013-11-06**

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, offerors must provide the information required below before the issuance of a standing offer. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of offers is completed, Canada will inform the Offeror of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the offer non-responsive.

## **Definitions**

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the Financial Administration Act R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- e. an individual;
- f. an individual who has incorporated;
- g. a partnership made of former public servants; or
- h. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S. 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8.

### **Former Public Servant in Receipt of a Pension**

As per the above definitions, is the Offeror a FPS in receipt of a pension? **YES ( ) NO ( )**

If so, the Offeror must provide the following information, for all FPS in receipt of a pension, as applicable:

- c. name of former public servant;
- d. date of termination of employment or retirement from the Public Service.

By providing this information, Offerors agree that the successful Offeror's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

### **Work Force Adjustment Directive**

Is the Offeror a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **YES ( ) NO ( )**

If so, the Offeror must provide the following information:

- h. name of former public servant;
- i. conditions of the lump sum payment incentive;
- j. date of termination of employment;
- k. amount of lump sum payment;
- l. rate of pay on which lump sum payment is based;
- m. period of lump sum payment including start date, end date and number of weeks;
- n. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

## **2.1 Canadian Content Certification**

**2.1.1** SACC Manual clause A3050T (2011-01-11) Canadian Content Definition

## **2.2 Status and Availability of Resources M3020C – Effective Date 2010-01-11**

If for reasons beyond its control, the Offeror is unable to provide the services of an individual named in its offer, the Offeror may propose a substitute with similar qualifications and experience. The Offeror

must advise the Standing Offer Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Offeror: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Offeror is unable to provide a substitute with similar qualifications and experience, Canada may set aside the standing offer.

## **2.3 Certifications Required with the Offer**

Offerors must submit the following duly completed certifications with their offer.

### **2.2.1 Canadian Content Certification**

**1.2.1.1** SACC *Manual* clause A3050T (2011-01-11) Canadian Content Definition

### **2.2.2 Canadian Content Certification**

This procurement is limited to Canadian goods.

The Offeror certifies that:

( ) a minimum of 80 percent of the total price for the offer consist of Canadian goods as defined in paragraph 1 of clause A3050T.

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6.(9), Example 2, of the Supply Manual.

## **PART 6 - SECURITY, FINANCIAL AND INSURANCE REQUIREMENTS**

### **1. Security Requirement**

1. At the Request for Standing Offers closing date, the following conditions must be met:
  - (a) the Offeror must hold a valid organization security clearance as indicated in Part 7A - Standing Offer;
  - (b) the Offeror's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicate in Part 7A - Standing Offer;
  - (c) the Offeror must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;
  - (d) the Offeror's proposed location of work performance or document safeguarding must meet the security requirement as indicated in Part 7A - Standing Offer;
  - (e) the Offeror must provide the address(es) of proposed location(s) of work performance or document safeguarding as indicated in Part 3 - Section IV Additional Information.
2. For additional information on security requirements, offerors should refer to the Canadian Industrial Security Directorate (CISD), Industrial Security Program of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

## 2. Insurance Requirements

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

## PART 7 - STANDING OFFER AND RESULTING CONTRACT CLAUSES

### A. STANDING OFFER

#### 1. Offer

1.1 The Offeror offers to fulfill the requirement in accordance with the Requirement at Annex "A".

#### 2. Security Requirement

2.1 The following security requirement (SRCL and related clauses) applies and form part of the Standing Offer.

1. The Contractor must, at all times during the performance of the Contract/Standing Offer, hold a valid Facility Security Clearance (FSC) at the level of **NATO SECRET with approved Document Safeguard Capability (DSC) at the level of NATO Secret** issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).
2. The Contractor/Offeror personnel requiring access to PROTECTED or CLASSIFIED information, assets or sensitive work site(s) must EACH hold a valid personnel security screening at the level of **Reliability Status, Confidential, or SECRET, as required, granted** or approved by CISD/PWGSC.
3. The Contractor/Offeror personnel requiring access to NATO CLASSIFIED information, assets or sensitive work site(s) **must be permanent residents of Canada or citizens of a NATO member country** and EACH hold a valid personnel security screening at the level of **NATO SECRET**, granted or approved by the appropriate delegated NATO Security Authority.
4. The Contractor/Offeror personnel requiring access to FOREIGN PROTECTED or CLASSIFIED information, assets or sensitive work site(s) **must EACH hold a valid** personnel security screening at the level of **Reliability Status, Confidential, or SECRET, as required, and processed** by the CISD at PWGSC.
5. Until the security screening of the Contractor personnel required by this Contract has been completely satisfactorily by the CISD, PWGSC, the Contractor personnel **MAY NOT HAVE ACCESS** to (CLASSIFIED/PROTECTED) information or assets, and **MAY NOT ENTER** sites where such information or assets are kept, without an escort.
6. The Contractor must complete and submit a Foreign Ownership, Control and Influence (FOCI) Questionnaire and associated documentation identified in the FOCI Guidelines for Organizations prior to contract award to identify whether a third party individual, firm or government can gain unauthorized access to COMSEC/INFOSEC or CLASSIFIED NATO information/assets. Public Works and Government Services Canada (PWGSC) will determine if the company is "Not Under FOCI" or "Under FOCI". When an organization is determined to be under FOCI, PWGSC will ascertain if mitigation

measures exist or must be put in place by the company so it can be deemed "Not under FOCI through Mitigation".

The Contractor should at all times during the performance of the contract possess a letter from PWGSC identifying the results of the FOCI assessment with a FOCI designation of Not Under FOCI or Not Under FOCI through Mitigation.

7. The Contractor MUST NOT utilize its information Technology systems to electronically process, produce or store any sensitive PROTECTED or CLASSIFIED information until CISD/PWGSC has issued written approval. After approval has been granted, these tasks may be performed at the level of NATO SECRET.
8. Subcontracts, which contain security requirements, are NOT to be awarded without the prior written permission of CISD/PWGSC.
9. This contract includes access to controlled goods. Prior to access, the contractor must be registered in the Controlled Goods Program of Public Works and Government Services Canada.
10. The Contractor/Offeror must comply with the provisions of the :
  - a. Security Requirement Check List and security guide (if applicable), attached at Annex C.
  - b. Industrial Security Manual (Latest Edition).

NOTE: There are multiple levels of personnel security screenings associated with this file. In this instance, a Security Classification Guide must be added to the SRCL clarifying these screenings. The Security Classification Guide is normally generated by the organization's project authority and/or security authority.

## **2.2 Offeror's Site or Premises Requiring Safeguard Measures**

The Offeror must diligently maintain up-to-date, the information related to the Offeror's site or premises, where safeguard measures are required in the performance of the Work, for the following addresses:

Address:

Street Number / Street Name, Unit / Suite / Apartment Number

City, Province, Territory / State

Postal Code / Zip Code

Country

## **3. Standard Clauses and Conditions**

All clauses and conditions identified in the Standing Offer and resulting contract(s) 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.

### **3.1 General Conditions**

2005 (2014-06-26) General Conditions - Standing Offers - Goods or Services, apply to and form part of the Standing Offer.

### **3.2 Standing Offers Reporting**

The Offeror must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Standing Offer. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card.

The Offeror must provide this data in accordance with the reporting requirements detailed in Annex "E ". If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Offeror must still provide a "nil" report.

The data must be submitted on a *quarterly basis* to the Standing Offer Authority.

The quarterly reporting periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31;

4th quarter: January 1 to March 31.

The data must be submitted to the Standing Offer Authority no later than thirty (30) calendar days after the end of the reporting period.

#### **4. Term of Standing Offer**

##### **4.1 Period of the Standing Offer**

The period for making call-ups against the Standing Offer is from date of issuance of the DISO to 31 March 2018.

#### **5. Authorities**

##### **5.1 Standing Offer Authority**

The Standing Offer Authority is:

Name: Susan Collier  
Title: Supply Specialist  
Public Works and Government Services Canada  
Acquisitions Branch  
Directorate: Atlantic Region  
Address: 1713 Bedford Row  
Halifax, Nova Scotia B3J 3C9

Telephone: 902- 496- 5350  
Facsimile: 902- 496-5016  
E-mail address: susan.collier@pwgsc-tpsgc.gc.ca

The Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, he is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

##### **5.2 Project Authority (To be given upon contract award)**

The Project Authority for the Standing Offer is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

Facsimile: \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

E-mail address: \_\_\_\_\_

The Project Authority for the Standing Offer is identified in the call-up against the Standing Offer.

The Project Authority is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up against the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

### **5.3 Offeror's Representative**

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

Facsimile: \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_

E-mail address: \_\_\_\_\_

### **6. Proactive Disclosure of Contracts with Former Public Servants**

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

### **7. Identified Users**

The Identified User authorized to make call-ups against the Standing Offer is: PWGSC.

### **8. Call-up Instrument**

The Work will be authorized or confirmed by the Identified User(s) using form *PWGSC-TPSGC 942, Call-up Against a Standing Offer*.

### **9. Limitation of Call-ups**

Individual call-ups against the Standing Offer must not exceed \$250,000.00 (Applicable Taxes excluded).

### **10. Financial Limitation**

The total cost to Canada resulting from call ups against the Standing Offer must not exceed the sum of \$ 1,600,000.00 (*Applicable Taxes excluded*) unless otherwise authorized in writing by the Standing Offer Authority. The Offeror must not perform any work or services or supply any articles in response to call ups which would cause the total cost to Canada to exceed the said sum, unless an increase is so authorized.

The Offeror must notify the Standing Offer Authority as to the adequacy of this sum when 75 percent of this amount has been committed, or three (3) months before the expiry date of the Standing Offer, whichever comes first. However, if at any time, the Offeror considers that the said sum may be exceeded, the Offeror must promptly notify the Standing Offer Authority.

## **11. 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 call up against the Standing Offer, including any annexes;
- b) the articles of the Standing Offer;
- c) the general conditions 2005 (2014-06-26), General Conditions - Standing Offers - Goods or Services
- d) the general conditions 2040 (2014-06-26) General Conditions – Research and Development ;
- e) Annex A, Statement of Requirement;
- f) Annex B Basis of Payment ;
- g) Annex C, Security Requirements Check List ;
- h) Annex D, Evaluation Plan;
- i) the Offeror's offer dated \_\_\_\_\_ (*insert date of offer*),

## **12. Certifications**

### **12.1 Compliance**

The continuous compliance with the certifications provided by the Offeror with its offer and the ongoing cooperation in providing associated information are conditions of issuance of the Standing Offer (SO). Certifications are subject to verification by Canada during the entire period of the SO and of any resulting contract that would continue beyond the period of the SO. If the Offeror does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Offeror in its offer is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and set aside the Standing Offer.

### **12.3 SACC Manual Clauses**

M3020 (2010-01-11) Status and Availability of Resources  
M3060C (2008-05-12) Canadian Content Certification

## **13. Applicable Laws**

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

## **B. RESULTING CONTRACT CLAUSES**

The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer.

### **1. Statement of Requirement**

The Contractor must perform the Work described in the call-up against the Standing Offer.

### **2. Standard Clauses and Conditions**

#### **2.1 General Conditions**

2040 (2014-06-26), General Conditions - Research and Development, apply to and form part of the Contract.

Section 19 Interest on Overdue Accounts, of 2040 (2014-06-26) General Conditions – Research and Development will not apply to payments made by credit cards.

### **3. Term of Contract**

#### **3.1 Period of the Contract**

The Work must be completed in accordance with the call-up against the Standing Offer.

### **4. Proactive Disclosure of Contracts with Former Public Servants**

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

### **5. Payment**

#### **5.1 Basis of Payment**

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, as determined in accordance with the Basis of Payment in Annex B, to a limitation of expenditure of \_\_\_\_\_ (insert amount at contract award). Custom duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

#### **5.2 Limitation of Expenditure**

1. Canada's total liability to the Contractor under the Contract must not exceed \$ \_\_\_\_\_. (to be determined) Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
  - a. when it is 75 percent committed, or

- b. four (4) months before the contract expiry date, or
  - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,
- whichever comes first.
- 3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

### **5.3 Method of Payment**

**Payments for each call-up will be made not more frequently than once a month.**

#### **5.3.1 Method of Payment – Progress Payments**

- 1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work, up to 90 percent of the amount claimed and approved by Canada if:
  - a. an accurate and complete claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
  - b. the amount claimed is in accordance with the basis of payment;
  - c. the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
  - d. all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.
- 2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted."
- 3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

### **5.3 SACC Manual Clauses**

A9117C (2007-11-30) T1204 – Direct Request by Customer Department  
C0705C (2010-01-11) Discretionary Audit  
C0711C (2008-05-12) Time Verification

## **6. Invoicing Instructions**

### **6.1 Invoicing Instructions – Progress Claim**

- 1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

- a. all information required on form PWGSC-TPSGC 1111;
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;

Each claim must be supported by:

- a. a copy of time sheets to support the time claimed;
  - b. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
  - c. a copy of the monthly progress report.
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
3. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSC-TPSGC 1111, and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.
- The Project Authority will then forward the original and one (1) copy of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.
4. The Contractor must not submit claims until all work identified in the claim is completed.

**7. Insurance**

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

**8. Controlled Goods Program**

A9131C (2014-06-26) Controlled Goods Program  
B4060C (2011-05-16) Controlled Goods

**9. Intellectual Property**

K3410C (2008-12-12) Canada to Own Intellectual Property Rights in Foreground Information

**10. Inspection and Acceptance**

The Project Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

**11. Site Regulations**

A9062C (2011-05-16) Canadian Forces Site Regulations

**12. Access to Facilities and Equipment**

B9028C (2007-05-25) Access to Facilities and Equipment

**13. Federal Contractors Program for Employment Equity - Default by the Contractor**

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

## **ANNEX "A"**

### **STANDING OFFER REQUIREMENT**

#### **Title**

#### **Standing Offer - Human Factors Support for Maritime-based Research**

#### **Requirement:**

Defence Research and Development Canada (DRDC) Atlantic Research Centre has a requirement for Maritime Human Factors support to assist in the conduct of research related to human factors in the maritime domain on an 'as and when' required basis through a Standing Offer. Work under the Standing Offer will support behavioural and cognitive sciences research in various maritime contexts. The Standing Offer would support all Centres within Defence R&D Canada.

#### **Non-disclosure**

All work carried out by the Contractor with respect to tasks under this contract will remain the property of Her Majesty. All reports, documentation, and extensions thereto shall be the property of Her Majesty and the Contractor shall not divulge, disseminate, or reproduce such reports and/or documentation to any other person without the prior written permission of Her Majesty.

#### **Controlled Goods**

The Contract involves controlled goods as defined in the Schedule to the Defence Production Act. The Contractor must identify those controlled goods to the Department of National Defence.

1. As the Contract requires production of or access to controlled goods that are subject to the Defence Production Act R. S. 1985, c. D-1, the Contractor and any subcontractors are advised that, within Canada, only persons who are registered, exempt or excluded under the Controlled Goods Program (CGP) are lawfully entitled to examine, possess or transfer controlled goods. Details on how to register under the CGP are available at: Controlled Goods Program.
2. When the Contractor and any subcontractors proposed to examine, possess or transfer controlled goods are not registered, exempt or excluded under the GCP at time of contract award, the Contractor and any subcontractors must, within seven (7) working days from receipt of written notification of the contract award, ensure that the required application(s) for registration or exemption are submitted to the CGP. No examination, possession or transfer of controlled goods must be performed until the Contractor has provided proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractor are registered, exempt or excluded under the GCP. Failure of the Contractor to provide proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractors are registered, exempt or excluded under the GCP, within thirty (30) days from receipt of written notification of contract award, will be considered a default under the Contract except to the extent that Canada is responsible for the failure due to delay in processing the application.
3. The Contractor and any subcontractor must maintain registration, exemption or exclusion from the CGP for the duration of the Contract and in any event for so long as they will examine, possess or transfer controlled goods.

#### **Contractor Personnel**

All proposed changes in Contractor personnel will be addressed by the contractor to Public Works and Government Services Canada who in turn will request DRDC Atlantic Research Centre's approval .

- All Contractor personnel will be named in the contract. If the contractor is unable to provide a specified individual listed in the contract, the contractor must provide a replacement of similar ability and bring person up to date on the job without any additional cost to the Department of National Defence (DND).
- And, provide the necessary information pertaining to security clearance and job-related ability.

### **Intellectual Property**

This requirement has been reviewed in accordance with "Basis For DRDC Ownership of Intellectual Property Arising From DRDC Contracts" form and it has been determined that the Intellectual Property arising from this requirement should rest with the Crown.

### **Evaluation Methodology**

The evaluation methodology will be based on a combination of Mandatory and Point Related Criteria.

### **Travel**

Travel is authorized when in support of individual call-ups, and as detailed within the individual call-up documentation. Individual call-up documentation must indicate possible travel to support that call-up. All travel and living expenses claimed will be in accordance to Treasury Board guidelines.

### **Equipment/Software Purchases**

Equipment and/or software expenditures must be specifically authorized in advance by the call-up. These items shall be limited to equipment and software that form an integral part of the work that supports the call-up and shall not exceed 10% of the Standing Offer ceiling. All items purchased during the execution of the call-up, and reimbursed by the Crown, shall become the property of the Crown and shall be delivered to DRDC as part of the final deliverables.

### **Deliverables**

In addition to the return of all non-expended items (equipment, software, books, etc.) acquired by the contractor in support of and claimed for under each call-up, the deliverables shall be:

1. Progress reports during the course of each call-up,
2. Individual reports as defined in the call-up.
3. All reports, documentation, and data, software, related to the work.
4. The Contractor will be required to provide written assurance of the removal of all artefacts (data, notes, interface designs, analysis software, etc.) developed for call-ups under this Standing Offer at the end of the contract period.

### **Report Standard and Format**

Reports will be to a standard acceptable to the initiator of the call-up. Should a report not be in accordance with the requirement of the work, the Project Authority (PA) shall have the right to reject it or require its correction.

The contractor shall supply one (1) final soft copy of the report for technical and security review to the Project Authority (PA) for review before call-up completion. The format will be in the form of a Microsoft Word .doc file. This review may require the contractor to make changes as directed by the PA. Review will be completed within 10 working days of receipt and the contractor will be required to address all review items to the satisfaction of the PA. The report shall comply with DND security and controlled goods standards.

### **Government Furnished Equipment**

Any requirement for Government Furnished Equipment (GFE) will be identified in individual call-up.

### **DRDC Support, Facilities and Responsibilities**

DRDC may provide the contractor with computer/e-mail accounts on select computers as required for on-site software development, data analysis, or other tasks, as specified within a call-up.

### **Control Procedures**

The contractor shall be in regular communication with the Project Authority of the call-up to review progress whenever there is a tasking in place. A formal start-of-contract kick-off meeting will be at the discretion of the PA for an individual call-up.

Inspection shall be by and to the satisfaction of the Project Authority (PA).

Invoice address:

Defence R&D Canada Atlantic Research Centre  
P.O. Box 1012  
Dartmouth, Nova Scotia  
B2Y 3Z7

Attention: Materiel Management

**Approval Prior To Publication**

All manuscripts for publication in scientific journals or the like, abstracts of oral presentations and any releases that describe portions of the contract work or related information shall be submitted to the PA for approval of release. If the inadvertent presence of either defence classified or proprietary material is determined, the PA will consult with the Contractor to redraft the relevant sections to their joint satisfaction to produce an unclassified text or theme without sensitive information. Review of manuscripts and releases will be completed within two months after receipt. Review of abstracts and any other releases will proceed rapidly and approval of release will follow without delay.

## **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: Physical, Cognitive, Modelling and Simulation, Analysis and Design, Workload and Task Analysis, Test, Evaluation and User Groups, Human Systems Integration, Training and Learning, System Safety and Survivability, and Project Management.

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 analysis 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.

### **References:**

- [1] *DRDC Toronto guidelines for compensation of subjects participating in research studies.*  
DRDC Toronto Research Centre TM 2008-138. See Annex F.

**ANNEX B:  
BASIS OF PAYMENT**

**(TO BE DETERMINED)**

**YOUR FINANCIAL OFFER WILL BE USED TO DETERMINE THE BASIS OF PAYMENT. NEGOTIATING OF THE PRICING BASIS MAY BE REQUIRED. IF THE PROPOSED HOURLY RATES ARE NOT THOSE NEGOTIATED WITH PWGSC, DETAILED FINANCIAL DATA SHOULD BE PROVIDED IF REQUIRED.**

**LABOUR:**

**FOR EACH INDIVIDUAL AND/OR LABOUR CATEGORY TO BE EMPLOYED ON CALL-UPS UNDER THE DISO, INDICATE THE ALL INCLUSIVE FIRM HOURLY RATE (INCLUDING OVERHEAD AND EXCLUDING PROFIT).**

**DIRECT CHARGES:**

**DIRECT COSTS FOR RENTED EQUIPMENT, CONSUMABLE MATERIALS, SUPPLIES AND COMPONENTS, LONG DISTANCE COMMUNICATION, SUBCONTRACTS, ETC. SHALL BE AT ACTUAL COST WITHOUT MARKUP AND WITHOUT ANY ALLOWANCE FOR OVERHEAD OR PROFIT, SUPPORTED BY RECEIPTS AND/OR DOCUMENTATION.**

**PROFIT:**

**STATE YOUR OFFERED PROFIT, IF ANY, AND THE BASIS ON WHICH IT IS COMPUTED AND APPLIED.**

**HARMONIZED OR GOODS AND SERVICES TAXES (HST/GST): MUST BE IDENTIFIED SEPERATELY.**

**EVALUATION OF PROPOSALS**

**THE PROPOSAL SHALL DESCRIBE HOW THE BIDDER INTENDS TO ADDRESS AND MANAGE WORK OF THE NATURE OUTLINED IN THE STANDING OFFER REQUIREMENTS. THE BIDDER MAY SUPPORT THE BID BY CONCISELY DESCRIBING SIMILAR WORK THAT IT HAS SUCCESSFULLY COMPLETED IN EACH OF THESE AREAS WHERE APPLICABLE EXAMPLES EXIST**

**ANNEX C**

**SECURITY REQUIREMENTS CHECK LIST**

The Security Requirements Check List (SRCL) (Annex C) appended to the bid solicitation package is to be inserted at this point and forms part of this document.

**ANNEX D****OFFER EVALUATION PLAN****TECHNICAL EVALUATION**

Technical Offers will be evaluated and scored in accordance with the point rated evaluation criteria listed below. Bidders shall submit a proposal that addresses the criteria in depth. The proposal shall describe in detail how the bidder intends to address and manage work of the nature outlined in the Statement of Work. The bidder shall support the bid by concisely describing similar work that it has successfully completed. They shall provide a "Cross Reference" index that identifies the paragraphs and page numbers associated with each criterion.

**MANDATORY REQUIREMENTS**

1. The proposal must be compliant with the security requirements.
2. The Bidder must have completed at least two (2) prior contracts relating to human sciences research within the past five (5) years.

**POINT RATED EVALUATION CRITERIA TECHNICAL PROPOSAL (maximum 500 points/minimum 350 points)****TECHNICAL PROPOSAL 140 POINTS MAX / 105 POINTS MIN**

The Bidder should demonstrate understanding of the:

- a) Potential scope, research approaches, and methodologies; (50 points)
- b) General proposed approach to work plan and deliverables; (50 points)
- c) Recognition of direct as well as peripheral problems and solutions proposed. (40 points)

<b>Technical Criteria 140 Points Max/ 105 Points Min</b>	<b>Score</b>	<b>Score Substantiation</b>
a) Demonstrated understanding of potential scope, research approaches, and methodologies.	50	<p><b>31-50: Excellent.</b> The bidder has a thorough understanding of project scope, research approaches, and methodologies. The bidder has extensive knowledge of the military domain.</p> <p><b>11-30: Adequate.</b> The bidder has adequate understanding of project scope, research approaches, and methodologies. The bidder demonstrates some knowledge of the military domain.</p> <p><b>0-10: Limited.</b> The bidder does not demonstrate an understanding of project scope, research approaches, and/or methodologies. The bidder fails to demonstrate adequate knowledge of the military domain.</p>
b) General proposed approach to work plan and deliverables	50	<p><b>31-50: Excellent.</b> The bidder demonstrates a thorough understanding of the work to be conducted and the plan to execute the work as well as a thorough understanding of deliverables required.</p> <p><b>11-30: Adequate.</b> The bidder demonstrates at least sufficient</p>

Technical Criteria 140 Points Max/ 105 Points Min	Score	Score Substantiation
		understanding of the work to be conducted and the plan to execute the work as well as deliverables required. <b>0-10: Limited.</b> The bidder either does not demonstrate an understanding of work to be conducted, and/or plan to execute the work, and/or deliverables required.
c) Recognition of direct as well as peripheral problems and solutions proposed	40	<b>26-40: Excellent.</b> The bidder identifies both direct and peripheral problems and provides viable solutions. <b>11-25: Adequate.</b> The bidder identifies problems in most areas and provides reasonable solutions. <b>0-10: Limited.</b> The bidder does not identify problems or identifies few problems and either does not provide solutions or provides solutions that are not realistic.
<b>Total Technical Score</b>		

#### PROPOSED TEAM AND COMPANY PROPOSAL 260 POINTS MAX / 195 POINTS MIN

The Bidder should demonstrate key personnels' academic and professional qualifications, relevant experience and competence proven by similar or related work in each of the following disciplines:

- a) Human factors knowledge and research in maritime command, control, communication, and information (C3I) socio-technical systems; (60 points)
- b) Human sciences – including human factors, human factors engineering, cognitive psychology, and behavioural sciences; (60 points)
- c) Physical ergonomics – including assessment, analysis, and design; (20 points)
- d) Human simulation and modelling - including human performance, and whole crew modelling; (50 points)
- e) Systems simulation and modelling – including software (e.g., scenarios/room layout/displays) and physical mock-up of workspace and platforms; (50 points)
- f) Scenario and experimental design. (20 points)

Proposed Team and Company Criteria 260 Points Max/ 195 Points Min	Score	Score Substantiation
Demonstration of key personnel academic and professional. qualifications, relevant experience and competence proven by similar or related work in each of the following disciplines. The proposal should provide the names of all personnel who would be assigned to each of the requirements (a-f) and their experience, education and qualifications should be demonstrated with curriculum vitae including peer-reviewed and other publications included.		

Proposed Team and Company Criteria 260 Points Max/ 195 Points Min	Score	Score Substantiation
Evaluation of this criterion will be based on the combined capability of all identified personnel.		
a) Human factors knowledge and research in maritime command, control, communication, and information (C3I) socio-technical systems	60	<p><b>41-60: Excellent.</b> Personnel have extensive knowledge and research experience in a range of human factors methods that are applicable to the C3I maritime domain. Personnel have appropriate academic and/or professional qualifications supporting the area of human factors.</p> <p><b>21-40: Adequate.</b> Personnel have adequate knowledge and research experience in a range of human factors methods applicable to the C3I maritime domain or have extensive experience in human factors knowledge and research experience in other domains. Personnel have adequate academic and/or professional qualifications supporting human factors.</p> <p><b>0-20: Limited.</b> Personnel have little knowledge or research experience in human factors methods either in the C3I maritime domain or in other domains. Personnel have insufficient academic and/or professional qualifications supporting human factors.</p>
b) Human sciences – including human factors, human factors engineering, cognitive psychology, and behavioural sciences	60	<p><b>41-60: Excellent.</b> Personnel have extensive knowledge and experience in the human sciences. Personnel have appropriate academic and/or professional qualifications supporting human sciences.</p> <p><b>21-40: Adequate.</b> Personnel have adequate knowledge and experience in human sciences. Personnel have adequate academic and/or professional qualifications supporting human sciences.</p> <p><b>0-20: Limited.</b> Personnel have little knowledge or experience in human sciences. Personnel have insufficient evidence supporting academic and/or professional qualifications in human sciences.</p>
c) Physical ergonomics – including assessment, analysis, and design	20	<p><b>14-20: Excellent.</b> Personnel have extensive experience in physical ergonomics and have sufficient appropriate supporting academic and/or professional qualifications.</p> <p><b>7-13: Adequate.</b> Personnel have adequate experience in physical ergonomics and have adequate supporting academic and/or professional qualifications.</p>

Proposed Team and Company Criteria 260 Points Max/ 195 Points Min	Score	Score Substantiation
		<b>0-6: Limited.</b> Personnel have little experience in physical ergonomics and have poor supporting academic and/or professional qualifications.
d) Human simulation and modelling - including human performance, and whole crew modelling	50	<p><b>31-50: Excellent.</b> Personnel have extensive experience in human simulation and modelling and have appropriate supporting academic and/or professional qualifications.</p> <p><b>11-30: Adequate.</b> Personnel have adequate experience in human simulation and modelling and have adequate supporting academic and/or professional qualifications.</p> <p><b>0-10: Limited.</b> Personnel have little experience in human simulation and modelling and have poor supporting academic and/or professional qualifications.</p>
e) Systems simulation and modelling – including software (e.g., scenarios/room layout/displays) and physical mock-up of workspace and platforms	50	<p><b>31-50: Excellent.</b> Personnel have extensive experience in systems simulation and modelling and have appropriate supporting academic and/or professional qualifications.</p> <p><b>11-30: Adequate.</b> Personnel have adequate experience in systems simulation and modelling and have adequate supporting academic and/or professional qualifications.</p> <p><b>0-10: Limited.</b> Personnel have little experience in systems simulation and modelling and have poor supporting academic and/or professional qualifications.</p>
f) Scenario and experimental design	20	<p><b>14-20: Excellent.</b> Personnel have extensive experience in scenario and experimental design and have appropriate supporting academic and/or professional qualifications.</p> <p><b>7-13: Adequate.</b> Personnel have adequate experience in scenario and experimental design and have adequate supporting academic and/or professional qualifications.</p> <p><b>0-6: Limited.</b> Personnel have little experience in scenario and/or experimental design and have poor supporting academic and/or professional qualifications.</p>
<b>Total Proposed Team and Company Score</b>		

**MANAGEMENT PROPOSAL****100 POINTS MAX / 75 POINTS MIN**

The Bidder should demonstrate:

- a) Proposed management of the project and demonstrated qualifications and experience of the project manager including: position within the organization; relevant experience in DRDC or DND projects or projects of similar nature; education (which must be in a related discipline within the field of work); demonstrated knowledge of naval environments; demonstrated ability to control costs and to produce a detailed workplan. (40 points)
- b) Company capability, including subcontractors if applicable, including relevant experience/competence proven by work in similar or related field, resource capability, risk of non-performance. (30 points)
- Adequacy of planned team organization, including availability of team members and back-up capability to carry out the project in the time frame allotted. (30 points)

<b>Management Criteria 100 Points Max/75 Points Min</b>	<b>Score</b>	<b>Score Substantiation</b>
a) Proposed management of the project and demonstrated qualifications and experience of the project manager including: position within the organization; relevant experience in DRDC or DND projects or projects of similar nature; education (which must be in a related discipline within the field of work); demonstrated knowledge of naval environments; demonstrated ability to control costs and to produce a detailed workplan.	40	<p><b>26-40: Excellent.</b> The proposed management has appropriate position within the company with sufficient experience in relevant DRDC or DND projects and education in a related discipline within the field of work. The proposed management has demonstrated in detail knowledge of naval environments, ability to control costs, and ability to produce a detailed workplan.</p> <p><b>11-25: Adequate.</b> The proposed management has appropriate position within the company with sufficient experience in relevant DRDC or DND projects and education in a related discipline and has demonstrated adequate knowledge of naval environments, ability to control costs, and ability to produce a detailed workplan.</p> <p><b>0-10: Limited.</b> The proposed management shows less than adequate evidence for any of the following: appropriate position within the company, experience in relevant DRDC or DND projects, education in a related discipline within the field of work, knowledge of naval environments, ability to control costs, and/or ability to produce a detailed workplan.</p>
b) Company capability, including subcontractors if applicable, including relevant experience/competence proven by work in related fields, resource capability, risk of non-performance.	30	<p><b>21-30: Excellent.</b> The bidder's organization has provided extensive evidence to show experience/competence proven by work in all related fields that may be required, and has provided evidence that subcontractors possess relevant experience in related projects within their domain of expertise.</p> <p><b>11-20: Adequate.</b> The bidder's organization has provided adequate</p>

Management Criteria 100 Points Max/75 Points Min	Score	Score Substantiation
		evidence to show experience/competence proven by work in all related fields that may be required, and has provided evidence that subcontractors possess relevant experience in related projects within their domain of expertise. <b>0-10: Limited.</b> The bidder's organization has not provided sufficient evidence to show experience/competence proven by work in all related fields that may be required, and/or has not provided evidence that subcontractors possess relevant experience in related projects within their domain of expertise.
c) Adequacy of planned team organization, including availability of team members and back-up capability to carry out the project in the time frame allotted.	30	<b>21-30: Excellent.</b> Based on the proposal the company has sufficient team members with necessary expertise and security clearances to be able to handle multiple call ups if required, and has demonstrated sufficient back-up capability should personnel become unexpectedly unavailable. <b>11-20: Adequate.</b> Based on the proposal the company has sufficient team members with necessary expertise and security clearances to be able to handle at least 2 call ups if required and has demonstrated sufficient back up capability should personnel become unexpectedly unavailable. <b>0-10: Limited.</b> Based on the proposal the company has insufficient team members with necessary expertise and security clearances to be able to handle at least 2 call ups if required. The company may or may not have adequately demonstrated sufficient back up capability should personnel become unexpectedly unavailable.
<b>Total Management Score</b>		

#### OCCUPATIONAL CATEGORIES

The standing offer comprises the following Occupational Categories: Physical, Cognitive, Modelling and Simulation, Analysis and Design, Workload and Task Analysis, Test, Evaluation and User Groups, Human Systems Integration, Training and Learning, System Safety and Survivability, and Project Management.

#### PERSONNEL CATEGORIES

Personnel will be categorized into Junior, Intermediate or Senior in each occupational category at the bidder's discretion based upon meeting the minimum levels of education and experience indicated below. The Project Management occupational category is only applicable at the Intermediate and Senior levels.

(i) Junior personnel must possess a minimum of a Bachelor's degree in a relevant specialty and two years of experience in the specific occupational category as evidenced by suitable project work supported by publications.

(ii) Intermediate personnel must possess a minimum of a Master's degree in a relevant specialty (with the exception of the Specialist – Project Management occupational category) and four years of experience or a Bachelor's degree and six years of experience in the specific occupational category as evidenced by suitable project work supported by publications.

(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.

(iv) Senior personnel must possess a minimum of a Master's degree in a relevant specialty (with the exception of the Project Management occupational category) and eight years of experience, or Bachelor's degree and twelve years of relevant experience in the specific occupational category as evidenced by suitable project work supported by publications.

(v) Senior personnel for the Project Management occupational category must possess a minimum of a Project Management Professional (PMP) certification and ten years of experience in Project Management as evidenced by suitable project work supported by publications.

The Crown reserves the right to review courses taken in the event the relevance of a university degree is in question.

Examples of applicable university degree programs include:

- Human Factors;
- Ergonomics;
- Engineering – Industrial, Systems, Systems Design, Computer, Software;
- Psychology – Cognitive, Experimental, Industrial, Organizational;
- Computer science;

Other university programs that may be applicable depending on specific course selection include:

- Engineering – disciplines other than above;
- Psychology – specialties other than above;
- Kinesiology;
- Physiology;
- Management – including but not limited to Industrial management, Human resources management

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

## FINANCIAL EVALUATION (MAXIMUM TOTAL 300 POINTS)

The Financial Offers of offers with responsive Technical/Management Proposals will be scored in accordance with the following:

**FOR EVALUATION PURPOSES ONLY**, a Financial Offer's all inclusive firm hourly rates (including overhead and excluding profit), **taxes extra**, will be used to calculate the Financial Offer's "Price for evaluation", **rounded to the nearest cent**, as follows:

where H = highest proposed rate, L = lowest proposed rate, and A = average of remaining proposed rates

If one (1) hourly rate is proposed, "Price for evaluation" = proposed rate

If two (2) hourly rates are proposed, "Price for evaluation" =  $(5/6 \times H) + (1/6 \times L)$

If three (3) or more hourly rates are proposed, "Price for evaluation" =  $(1/2 \times H) + (1/6 \times L) + (1/3 \times A)$

**For example**, fictionally assuming responsive **Bid A** proposes the following hourly rate:

Project Manager	\$99.00
Human Factors Engineer	\$99.00
Data Analyst	\$99.00
Subject Matter Expert	\$99.00
Software Engineer	\$99.00
Computer Programmer	\$99.00

For this example, one (1) hourly rate is proposed:  
"Price for evaluation" = proposed rate = \$99.00

**Continuing the example**, responsive **Bid B** proposes the following hourly rates:

Project Manager	\$99.00
Human Factors Engineer	\$99.00
Data Analyst	\$66.73

For this example, two (2) hourly rates are proposed:

H = highest proposed rate = \$99.00

L = lowest proposed rate = \$66.73

"Price for evaluation" =  $(5/6 \times H) + (1/6 \times L) = (5/6 \times \$99.00) + (1/6 \times \$66.73) = \$93.62$

**Continuing the example**, responsive **Bid C** proposes the following hourly rates:

Project Manager	\$94.00
Human Factors Engineer	\$75.00
Software Engineer	\$62.00
Data Analyst	\$51.00
Computer Programmer	\$38.00

For this example, five (5) hourly rates are proposed:

H = highest proposed rate = \$94.00

L = lowest proposed rate = \$38.00

A = average of remaining proposed rates =  $(\$75.00 + \$62.00 + \$51.00)/3$

"Price for evaluation" =  $(1/2 \times H) + (1/6 \times L) + (1/3 \times A)$   
 $= (1/2 \times \$94.00) + (1/6 \times \$38.00) + [1/3 \times (\$75.00 + \$62.00 + \$51.00)/3] = \$74.22$

**Continuing the example**, each responsive bid's calculated "Price for evaluation" shall then be prorated as per the following:

Bid A's "Price for evaluation" = \$99.00

Bid B's "Price for evaluation" = \$93.62

Bid C's "Price for evaluation" = \$74.22

**Formula:**

**Price Proposal Score =**

Lowest "Price for evaluation"/Subject "Price for evaluation" x 300 points (rounded to the nearest point)

Lowest "Price for evaluation" = Bid C's "Price for evaluation" = \$74.22

Bid A's **Price Proposal Score** =  $\$74.22/\$99.00 \times 300 = 225$  points

Bid B's **Price Proposal Score** =  $\$74.22/\$93.62 \times 300 = 238$  points

Bid C's **Price Proposal Score** =  $\$74.22/\$74.22 \times 300 = 300$  points

**Continuing the example**, each responsive bid's Total Overall Points shall then be calculated as per the following:

**TOTAL OVERALL PRICE POINTS (300 POINTS MAXIMUM) =**

**TOTAL TECHNICAL PROPOSAL POINT RATED CRITERIA POINTS  
(500 POINTS MAXIMUM)**

**+**

**PRICE PROPOSAL SCORE (300 POINTS MAXIMUM)**

**BASIS OF SELECTION**

To be considered responsive, a bid must:

- (a) Meet all the mandatory requirements of the solicitation; and
- (b) Obtain the required minimum of 70 percent of the points for each of the rated criteria in the specified in the solicitation and achieve an overall score of at least 75 percent in each rated portion. The total overall technical rating is performed on a scale of 500 points.

Bids not meeting (a) or (b) above will be given no further consideration. The responsive offer with the highest Total Overall Points will be recommended for award of a contract. In the case of a tie, the offer with the highest technical proposal (maximum 500 points), of the tied offers, will be recommended for issuance of a standing offer.

Annex E  
Standing Offer Usage Report Example

<b>COMPANY NAME:</b>	<b>Company Name:</b> <i>(Insert company name here)</i>	<b>REPORT TOTALS</b>
<b>STANDING OFFER NO.:</b>	<b>SO#</b> <i>(Insert SO # here)</i>	<b>PAST USAGE TO DATE:</b> <i>(insert past usage since start date of SO)</i>
		<b>USAGE THIS QUARTER:</b> <i>(insert usage this quarter)</i>
<b>PERIOD OF REPORT:</b>	<b>Period:</b> <i>(Insert date here)</i>	<b>TOTAL USAGE TO DATE:</b> <i>(Insert total of usages above)</i>

CALL UP NUMBER	DATE OF CALL-UP	CUSTOMER/SHIP NAME	CALL-UP VALUE	PO Number

**Annex F  
Criminal Code of Conduct Form**

**CRIMINAL CODE OF CONDUCT**

**BOARD OF DIRECTORS**

**COMPLETE LIST OF EACH INDIVIDUAL WHO ARE CURRENTLY DIRECTORS OF THE  
BIDDER**

**NOTE TO BIDDERS:  
WRITE DIRECTORS SURNAMES AND GIVEN NAMES IN BLOCK LETTERS**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

\* ADD MORE LINES IF NEEDED.

**ANNEX G**

**References:**

*DRDC Toronto guidelines for compensation*



Government of Canada /  
Gouvernement du Canada

Contract Number / Numéro du contrat

W7707-145734

Security Classification / Classification de sécurité

UNCLAS

SECURITY REQUIREMENTS CHECK LIST (SRCL)

LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE		
1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine	2. Branch or Directorate / Direction générale ou Direction	
DND	ORDC	
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant	
4. Brief Description of Work / Brève description du travail Human Factors Support to Maritime-based Research		
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?		
<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui		
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?		
<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui		
6. Indicate the type of access required / Indiquer le type d'accès requis		
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS?		
<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui		
(Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)		
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.		
<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui		
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?		
<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui		
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès		
Canada <input checked="" type="checkbox"/>	NATO / OTAN <input checked="" type="checkbox"/>	Foreign / Étranger <input checked="" type="checkbox"/>
7. b) Release restrictions / Restrictions relatives à la diffusion		
No release restrictions / Aucune restriction relative à la diffusion <input checked="" type="checkbox"/>	All NATO countries / Tous les pays de l'OTAN <input checked="" type="checkbox"/>	No release restrictions / Aucune restriction relative à la diffusion <input checked="" type="checkbox"/>
Not releasable / À ne pas diffuser <input type="checkbox"/>		
Restricted to: / Limité à <input type="checkbox"/>	Restricted to: / Limité à <input type="checkbox"/>	Restricted to: / Limité à <input type="checkbox"/>
Specify country(ies) / Préciser le(s) pays	Specify country(ies) / Préciser le(s) pays	Specify country(ies) / Préciser le(s) pays
7. c) Level of information / Niveau d'information		
PROTECTED A / PROTÉGÉ A <input checked="" type="checkbox"/>	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ <input type="checkbox"/>	PROTECTED A / PROTÉGÉ A <input checked="" type="checkbox"/>
PROTECTED B / PROTÉGÉ B <input checked="" type="checkbox"/>	NATO RESTRICTED / NATO DIFFUSION RESTREINTE <input type="checkbox"/>	PROTECTED B / PROTÉGÉ B <input checked="" type="checkbox"/>
PROTECTED C / PROTÉGÉ C <input type="checkbox"/>	NATO CONFIDENTIAL / NATO CONFIDENTIEL <input type="checkbox"/>	PROTECTED C / PROTÉGÉ C <input type="checkbox"/>
CONFIDENTIAL / CONFIDENTIEL <input checked="" type="checkbox"/>	NATO SECRET / NATO SECRET <input checked="" type="checkbox"/>	CONFIDENTIAL / CONFIDENTIEL <input checked="" type="checkbox"/>
SECRET <input checked="" type="checkbox"/>	COSMIC TOP SECRET / COSMIC TRÈS SECRET <input type="checkbox"/>	SECRET <input checked="" type="checkbox"/>
TOP SECRET / TRÈS SECRET <input type="checkbox"/>		TOP SECRET / TRÈS SECRET <input type="checkbox"/>
TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>		TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>

TBS/SCT 350-103(2004/12)

Security Classification / Classification de sécurité

UNCLAS

Canada



Government  
of Canada

Gouvernement  
du Canada

Contract Number / Numéro du contrat

W7707-145734

Security Classification / Classification de sécurité

UNCLAS

PK

**PART A (continued) / PARTIE A (suite)**

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?  
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? ☒ No ☐ Yes  
Non Oui

If Yes, indicate the level of sensitivity

Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?  
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? ☒ No ☐ Yes  
Non Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :

Document Number / Numéro du document :

**PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)**

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

☒ RELIABILITY STATUS  
COTE DE FIABILITE  
☐ TOP SECRET - SIGINT  
TRÈS SECRET - SIGINT  
☐ SITE ACCESS  
ACCÈS AUX EMPLACEMENTS

☒ CONFIDENTIAL  
CONFIDENTIEL  
☐ NATO CONFIDENTIAL  
NATO CONFIDENTIEL

☒ SECRET  
SECRET  
☒ NATO SECRET  
NATO SECRET

☐ TOP SECRET  
TRÈS SECRET  
☐ COSMIC TOP SECRET  
COSMIC TRÈS SECRET

Special comments

Commentaires spéciaux

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.

REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?  
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? ☐ No ☒ Yes  
Non Oui

If Yes, will unscreened personnel be escorted?

Dans l'affirmative, le personnel en question sera-t-il escorté?

☐ No ☒ Yes  
Non Oui

**PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)**

**INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS**

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?  
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS? ☐ No ☒ Yes  
Non Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?  
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC? ☒ No ☐ Yes  
Non Oui

**PRODUCTION**

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?  
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ? ☒ No ☐ Yes  
Non Oui

**INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)**

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?  
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS? ☐ No ☒ Yes  
Non Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?  
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale? ☒ No ☐ Yes  
Non Oui

TBS/SCT 350-103(2004/12)

Security Classification / Classification de sécurité

UNCLAS

Canada



Government  
of Canada

Gouvernement  
du Canada

Contract Number / Numéro du contrat

W 7707 - 145734

Security Classification / Classification de sécurité

UNCLAS

26

**PART C - (continued) / PARTIE C - (suite)**

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.  
Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.  
Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

**SUMMARY CHART / TABLEAU RÉCAPITULATIF**

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC						
	A	B	C	CONFIDENTIAL	SECRET	TOP SECRET	NATO RESTRICTED	NATO CONFIDENTIAL	NATO SECRET	COSMIC TOP SECRET	PROTECTED PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET	
				CONFIDENTIAL		TRÈS SECRET	NATO DIFFUSION RESTREINTE	NATO CONFIDENTIEL		COSMIC TRÈS SECRET	A	B	C	CONFIDENTIEL		TRÈS SECRET	
Information Assets Renseignements / Biens Production					✓				✓								
IT Media / Support TI					✓				✓								
IT Link / Lien électronique																	

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?

La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☒ No  
Non

☐ Yes  
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?

La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☒ No  
Non

☐ Yes  
Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



Government of Canada  
Gouvernement du Canada

Contract Number / Numéro du contrat

W7707-145734

Security Classification / Classification de sécurité

UNCLAS

PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Charge de projet de l'organisme

Name (print) - Nom (en lettres moulées)

Jacquelyn Crebolder

Title - Titre

Defence Scientist

Signature

Telephone No. - N° de téléphone

902-426-3100 x296

Facsimile No. - N° de télécopieur

902-426-9554

E-mail address - Adresse courriel

jaxqu.crebolder@drdc-rddc.gc.ca

Date

Jan 30 2014

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)

Dawn Murray - CF MP GP HQ - Industrial Security

Title - Titre

Security

Signature

Telephone No. - N° de téléphone

SPCL Team Lead  
Tel: 613-949-1036 / Fax: 613-949-1069

Facsimile No. - N° de télécopieur

E-mail address - Adresse courriel

Date

4 February 2014

15. Are the following documents (e.g., Security Classification Guide) attached?

Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?

☐ No / ☒ Yes  
Non / Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)

Susan Collier

Title - Titre

Supply Specialist

Signature

Telephone No. - N° de téléphone

902-496-5350

Facsimile No. - N° de télécopieur

902-496-5016

E-mail address - Adresse courriel

Susan.collier@psgc-pwgsc.gc.ca

Date

Aug 12 / 14

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (i)

Paul Lepinski

Signature

Telephone No. - N° d

Agent à la Sécurité des contrats

Contract Security Officer

Paul.Lepinski@tpsgc-pwgsc.gc.ca

Téléphone : 613 957-1294

Journal

Date

27-FEB-2014

# **DRDC Toronto guidelines for compensation of subjects participating in research studies**

Matthew Duncan  
David Eaton  
Tonya Hendriks  
Allan Keefe  
Tom M. McLellan  
Robert D. Michas  
Megan M. Thompson

## **Defence R&D Canada – Toronto**

Technical Memorandum  
DRDC Toronto TM 2008-138  
September 2008

Principal Author

*Original signed by Tom M. McLellan, Ph.D.*

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Tom M. McLellan, Ph.D.

Senior Defence Scientist/Individual Readiness Section

Approved by

*Original signed by Bob Cheung, Ph.D*

---

Bob Cheung, Ph.D.

Acting Head/Individual Readiness Section

Approved for release by

*Original signed by Joseph V. Baranski, Ph.D*

---

Joseph V. Baranski, Ph.D

Acting Chief Scientist

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## Abstract

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DRDC Toronto is the Agency's research centre that provides guidance, innovation and knowledge about the human's response to the complex and stressful environments that impact CF members in preparation for, during and following humanitarian, peace-keeping and warfighting operations. The Agency has invested in DRDC Toronto to ensure that we can simulate and study these responses with human experimentation conducted by our scientists during in-house laboratory or field experimentation. Central to this capability is the need to recruit subjects, both military and civilian, that are willing to experience certain degrees of stress that are beyond what they would experience during their normal day, and/or that are willing to commit the time for participation that enables the study to be completed in an appropriate time-frame. New consolidated guidelines were needed to establish consistent and transparent procedures for generating rates of compensation that would still enable free and informed consent to be obtained according to Tri-Council Policy guidelines. The new guidelines are intended to be applicable for all studies involving human subjects at DRDC Toronto and perhaps could be extended, in principle, across the Agency. The report includes the rationale behind the development of these new guidelines together with examples of how to use the spreadsheet that will be available for all scientific and technical staff to apply to their studies.

## Résumé

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RDDC Toronto est le centre de recherche de l'Agence qui conseille, fournit les innovations et assure la gestion des données pour tout ce qui touche la réponse humaine aux situations complexes et intenses qui ont des répercussions sur les membres des FC lors de la préparation, de l'exécution ou à la suite de leurs opérations d'aide humanitaire, de maintien de la paix ou de combat. L'Agence a investi dans RDDC Toronto afin de s'assurer que nous pouvons simuler et étudier ces réponses dans le cadre d'expérimentations menées par nos scientifiques, que ce soit sur le terrain ou dans nos laboratoires. Il est essentiel pour cette organisation de pouvoir recruter des sujets — militaires et civils — qui acceptent de subir des niveaux de stress supérieurs à ceux qu'ils vivraient au cours d'une journée normale et/ou de les encourager à donner de leur temps pour permettre la conduite de ces études dans un cadre temporel adéquat. De nouvelles lignes de conduite unifiées étaient nécessaires pour élaborer des procédures cohérentes et transparentes qui permettraient d'établir des taux de rémunération qui nous donneraient toujours la possibilité d'obtenir un consentement libre et informé, conformément aux directives de l'Énoncé de politique des trois Conseils. Ces nouvelles lignes de conduite doivent pouvoir être utilisées dans le cadre de toutes les études de RDDC Toronto faisant appel à des sujets humains et pourraient, en principe, être utilisées dans toutes les études de l'Agence. Le présent rapport comprend les explications justifiant l'élaboration de ces nouvelles lignes de conduite et donne également des exemples d'utilisation de la feuille de calcul. Celle-ci pourra être utilisée par tout le personnel scientifique et technique dans le cadre de ses études.

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## Executive summary

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### DRDC guidelines for compensation of subjects participating in research studies

**Matthew Duncan, David Eaton, Tonya Hendriks, Allan Keefe, Tom M. McLellan, Robert D. Michas and Megan M. Thompson; DRDC Toronto TM 2008-138; Defence R&D Canada – Toronto.**

**Introduction or background:** DRDC Toronto is the Agency's research centre that provides guidance, innovation and knowledge about the human's response to the complex and stressful environments that impact CF members in preparation for, during and following humanitarian, peace-keeping and warfighting operations. The Agency has invested in DRDC Toronto to ensure that we can simulate and study these responses with human experimentation conducted by our scientists during in-house laboratory or field experimentation. Central to this capability is the need to recruit subjects, both military and civilian, that are willing to experience certain degrees of stress that are beyond what they would experience during their normal day, and/or that are willing to commit the time for participation that enables the study to be completed in an appropriate time-frame. New consolidated guidelines were needed to establish consistent and transparent procedures for generating rates of compensation that would still enable free and informed consent to be obtained according to Tri-Council Policy guidelines.

**Method:** Under the governance of the Director General and through oversight and guidance from the Chief Scientist, a seven-member committee of scientists and technical professionals representing the different research sections within DRDC Toronto was formed for the purpose of creating new guidelines. It was critical that these new guidelines would not only provide consistent and transparent procedures for generating rates of compensation but also they must enable free and informed consent to be obtained in accordance with the Tri-Council Policy statements that govern the ethics of research involving human subjects. The committee met 4 times from January through April 2008 and assigned different tasks to team members for each meeting.

**Results:** The new guidelines considered compensation for both the stress and discomfort of the study together with the commitment of time made by the subject during their participation. One of the outcomes involved the development of a spreadsheet that will enable investigators to clearly define rates of compensation for a given experiment. The completed spreadsheet will require Section Head approval and will be required, together with the document approval form and subject information package, to be submitted to the Human Research Ethics Committee for their consideration during the review of the protocol.

**Significance and Future Plans:** These new rates of compensation can be consistently applied to all studies involving human subjects at DRDC Toronto and, in principle, across the Agency and can be easily updated to include new stressors or adjustments to the hourly rate for the subject's time.

## Sommaire

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### Lignes directrices de RDDC concernant la rémunération des sujets participant à des études de recherche

**Matthew Duncan, David Eaton, Tonya Hendriks, Allan Keefe, Tom M. McLellan, Robert D. Michas et Megan M. Thompson; Équipe de RDDC Toronto 2008-138; R et D pour la défense Canada – Toronto.**

**Introduction ou contexte :** RDDC Toronto est le centre de recherche de l'Agence qui conseille, fournit les innovations et assure la gestion des données pour tout ce qui touche la réponse humaine aux situations complexes et intenses qui ont des répercussions sur les membres des FC lors de la préparation, de l'exécution ou à la suite de leurs opérations d'aide humanitaire, de maintien de la paix ou de combat. L'Agence a investi dans RDDC Toronto afin de s'assurer que nous pouvons simuler et étudier ces réponses dans le cadre d'expérimentations menées par nos scientifiques, que ce soit sur le terrain ou dans nos laboratoires. Il est essentiel pour cette organisation de pouvoir recruter des sujets — militaires et civils — qui acceptent de subir des niveaux de stress supérieurs à ceux qu'ils vivraient au cours d'une journée normale et/ou de les encourager à donner de leur temps pour permettre la conduite de ces études dans un cadre temporel adéquat. De nouvelles lignes de conduite unifiées étaient nécessaires pour élaborer des procédures cohérentes et transparentes qui permettraient d'établir des taux de rémunération qui nous donneraient toujours la possibilité d'obtenir un consentement libre et informé, conformément aux directives de l'Énoncé de politique des trois Conseils.

**Méthode :** Un comité de sept scientifiques et techniciens professionnels représentant les différentes sections de recherche de RDDC Toronto a été formé. Ce comité relève du Directeur général; le Scientifique en chef en assure quant à lui la supervision et l'encadrement. Le but de ce comité était d'élaborer de nouvelles lignes de conduite. Ces nouvelles lignes de conduite devaient non seulement définir des procédures cohérentes et transparentes en ce qui concerne l'établissement de taux de rémunération, mais il était essentiel qu'elles permettent aussi d'obtenir un consentement libre et éclairé, conformément à L'Énoncé de politique des trois Conseil qui régit l'éthique de la recherche avec des êtres humains. Le comité s'est réuni à quatre occasions entre janvier et avril 2008 et différentes tâches ont été attribuées aux membres de l'équipe pour chaque réunion.

**Résultats :** Ces nouvelles lignes directrices cherchent à établir une rémunération tenant compte du stress et des désagréments liés à l'étude, ainsi que du temps que le sujet a consacré à l'étude dans le cadre de sa participation. Un des objectifs visait la mise au point d'une feuille de calcul qui permettra aux experts de définir clairement les taux de rémunération pour une expérience donnée. Une fois remplie, la feuille de calcul devra recevoir l'approbation du chef de section. Elle devra aussi être présentée, accompagnée du formulaire d'approbation ainsi que des renseignements relatifs aux sujets, au Comité d'éthique en matière d'étude sur des sujets humains afin d'être examinée durant la révision du protocole.

**Portée et recherches futures :** Ces nouveaux taux de rémunération peuvent être utilisés de façon systématique dans toutes les études de RDDC Toronto qui font appel à des sujets humains et, en principe, à toutes les études de l'Agence. Ces taux peuvent facilement être mis à jour afin

d'inclure de nouveaux facteurs de stress ou des modifications au taux horaire du sujet pour son temps.

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## **Acknowledgements**

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# 1 Background

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Defence Research and Development Canada (DRDC), and in particular DRDC Toronto, conducts research that requires human volunteers on a regular basis. As part of the oversight process for the conduct of these experiments, the DRDC Human Research Ethics Committee (HREC) requires the submission and review of all experimental protocols prior to providing ethics approval permitting the initiation of subject recruitment and eventual data collection. The HREC follows guidelines and policies established in 2001 by Canada's Tri-Council, which is comprised of membership from the Canadian Institute of Health Research (CIHR), the Natural Sciences Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC). The Tri-Council produced a policy statement entitled "*Ethical Conduct for Research Involving Human Subjects*". All scientists and technical professionals are encouraged to visit the Tri-Council Policy website to read this document ([www.pre.ethics.gc.ca](http://www.pre.ethics.gc.ca)). Section 2 of that document highlights fundamental and important issues related to obtaining free and voluntary consent from volunteers. Article 2.2 states that free and informed consent must be voluntarily given, without manipulation, undue influence or coercion. Part D article 2.4 of section 2, which deals with informing potential subjects, states in Table 1 that additional information on any costs, payments, reimbursement for expenses or compensation for injury are to be provided to the volunteers as part of the process of obtaining free and voluntary consent.

DRDC Toronto has been providing compensation to volunteers for the stress and discomfort of experimental protocols for a long time. However, the first formal set of guidelines that categorized experimental procedures and conditions on a scale of stress levels from 0 to 5 was developed in 1992 by what was then the Biosciences Division<sup>1</sup>. These stress levels were converted to rates of compensation based on Treasury Board guidelines that clearly established limits for experimental stress allowance to Canadian Forces (CF) members in accordance with the Queen's Regulations and Orders, now covered by Defence Administrative Orders and Directives (DAOD) 5061-1<sup>2</sup> and the Compensation Benefits and Instructions (CBI) 205.48<sup>3</sup>. A few years later in 1995 another set of compensation guidelines was produced by what was then the Command Group<sup>4</sup> to assist with prescribing rates of compensation for volunteers participating in psychology experiments that involved metrics and stress different from those defined by the Biosciences Division.

DAOD 5061-1 clearly states that CF members are entitled to an allowance that indemnifies them for the stress and discomfort of their participation in an experiment but makes no reference to a similar allowance for DND civilian employees. In fact, there are no Treasury Board guidelines that describe a similar allowance for civilian government employees who volunteer to participate in an experiment. Historically, since volunteers for DRDC Toronto experiments were sometimes comprised of CF members, government civilian employees and non-government civilians, the limits set by CBI 205.48 for CF members were applied to all volunteers. Yet, DAOD 5061-1 clearly states that CF members are considered to be on duty and that civilian DND employees are

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<sup>1</sup> K.N. Ackles, Stress Allowance for DND Experimental Subjects, Memorandum 7200-2 (BIO), December 1992.

<sup>2</sup> [www.admfincs.forces.gc.ca/admfincs/subjects/daod/5061/1\\_e.asp](http://www.admfincs.forces.gc.ca/admfincs/subjects/daod/5061/1_e.asp)

<sup>3</sup> [www.forces.gc.ca/dgcb/cbi/engraph/cbi\\_chapter-205\\_e.asp?sideSection=6&section=3](http://www.forces.gc.ca/dgcb/cbi/engraph/cbi_chapter-205_e.asp?sideSection=6&section=3)

<sup>4</sup> R.A. Pigeau, Command Group's Guide to Stress Compensation for Human Subjects, 1995.

considered to be at work. Thus, during their participation in an experiment they are being compensated for both the stress of the study and their time since they continue to receive their salary while they are involved as a subject. This is not the current situation for civilian non-government volunteers.

The experimental protocols that are used at DRDC Toronto today involve integrative designs that overlap the physiological and psychological paradigms of previous years. It was evident that disparities in rates of compensation could develop when applying both sets of the old guidelines to these new integrative protocols. As such, there is a need to develop one set of guidelines that is consistent and oversees the compensation to volunteers for their stress and discomfort. In addition, the complexity and invasiveness of our methodology has expanded and the guidelines developed back in the early 1990's are insufficient to characterize the extent of the stress that may be imposed on our volunteer's today. Finally, there is a need to define rates of compensation for government and non-government civilian volunteers that are defensible in the absence of Treasury Board guidelines.

In January 2008, under the direction of the Chief Scientist DRDC Toronto, a committee comprised of representatives from the different research sections was formed with the following objectives:

1. To formulate one consolidated guideline for compensation of stress that is consistent throughout DRDC Toronto and could be applied throughout the Agency.
2. To consider options for methods of compensation for the subject's commitment of time.
3. To develop defensible guidelines for all volunteers whether they are CF members, civilian government employees or civilian non-government employees.

These objectives were to be accomplished while remaining cognizant of the importance of obtaining free and voluntary consent without undue influence or coercion.

## **2 Our Approach**

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The committee met four times from January through April 2008 and assigned different tasks to team members for each meeting. Discussions that ensued led to the consensus agreement surrounding the approach for compensation that is presented in the report that follows. One of the outcomes from our approach involved the development of a spreadsheet that will enable investigators to clearly define rates of compensation for a given experiment. The completed spreadsheet will require Section Head approval and will be required, together with the document approval form and subject information package, to be submitted to the HREC for their consideration during the review of the protocol.

### **2.1 Step 1 – Establishing Boundaries or Limits of Compensation**

One of the committee's initial tasks was to canvas national and international colleagues in academic and government institutions to seek boundaries or limits to levels of compensation that are considered acceptable practice elsewhere. Not surprisingly the boundaries were quite large, ranging from no compensation to rates of compensation that could reach as high as \$400 for a single invasive procedure performed in a clinical environment. Some foreign government research establishments relied heavily on military volunteers and provided no compensation for their time since they were considered to be on duty. However, at one government institution military volunteers were provided a monthly stress allowance for their participation. Thus, these practices are similar to our Treasury Board guidelines and CBI 205.48 and DAOD 5061-1.

Academic institutions within Canada that received grants from the Tri-Council (CIHR, NSERC or SSHRC) typically provided compensation that was structured according to the stress of the experiment and the time required for the subject to participate in the study. Again, rates of compensation varied substantially but could exceed the equivalent of \$25/hour for experiments that were considered quite stressful such as immersion in cold water. Consistent for all of the academic and government research institutions was their requirement for Institute Review Board (IRB) approval of their proposals, which included approval of the intended rates of compensation. At no time were the boundaries presented above considered coercive for obtaining informed consent by an IRB reviewing the protocol.

### **2.2 Structuring a Basis for Payment**

The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans does not require experimental subjects to be paid, but it does put conditions on the payment of subjects in terms of the amount. Specifically, the following statement is taken from Section 1, Part C1<sup>5</sup>;

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<sup>5</sup> The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Section 1, Sub-section C1

“Above the threshold of minimal risk, the research warrants a higher degree of scrutiny and greater provision for the protection of the interests of prospective subjects. There is a similar threshold regarding undue or excessive offers of benefit. As an offer of payment in relation to research participation exceeds the normal range of benefits open to the research subject, it is increasingly likely to amount to an undue incentive for participation.”

The Tri-Council Policy statement also describes in Section 2, Part D1<sup>6</sup> the information that should be included in the consent form in order that a research ethics board can ascertain whether “the development of a payment structure for research participation might place undue pressure on research subjects either to join or remain within a research project”.

National Defence falls under Schedule 1 of the Financial Administration Act (FAA) along with 20 other federal departments. Since DRDC is a Special Operating Agency under National Defence, no payment shall be made unless a person authorized by the Minister of National Defence certifies that the work has been performed according to the contract or in the case of any other payment, that the payee is eligible for or entitled to the payment.<sup>7</sup>

Since a contractual arrangement would not be consistent with the volunteer nature of informed consent, this type of payment structure would be construed as unethical by the Tri-Council. Therefore, any payment to experimental subjects requires certification by the Minister’s authorized person that “the payee is eligible for or entitled to the payment.”

In an experiment there are three possible categories for payment:

- a. a reimbursement for expenses incurred to participate as a volunteer. These may include travel, meals, accommodation, incidentals, child care, and others;
- b. an honorarium for participation related to the stress imposed on the subject and their commitment of time; and
- c. a claim in the event of an accident or injury.

The eligibility for payment reimbursement of costs and claims for injury or accident are covered by the Treasury Board Secretariat’s (TBS) Volunteers Policy<sup>8</sup>, which permits reimbursement for expenses incurred and “protects volunteers against financial and other risks.”

Paying a subject for the discomfort and stress associated with an experiment and their commitment of time for their participation is not covered by the TBS Volunteer Policy. An alternative payment option is the honorarium, which is most often paid to volunteers to government boards and committees. As of 2003, the Contract Policy was updated to exclude honoraria. The Contract Policy defines an honorarium payment as:

“Not one made under a contractual arrangement; rather it is a gratuitous payment as distinguished from compensation for service or hire, and the recipient, if not

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<sup>6</sup> Ibid, Section 2, Sub-section D1.

<sup>7</sup> FAA, Part III, Article 34.

<sup>8</sup> [http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/vp-pb/vp-pb\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/vp-pb/vp-pb_e.asp)

paid [the honorarium], cannot sue in a Court of Law. Accordingly, the Contracting policy does not govern honoraria.”<sup>9</sup>

In the context of our human-based research studies within DRDC, we wish to compensate our subjects as a way to say thank you for their participation. The definition of an honorarium above is consistent with this philosophy. Thus, the experimental volunteer would still come under the Volunteer Policy and would be covered for costs and injury/accidents but could still be paid an honorarium.

## Guidance on honoraria

A draft TBS policy<sup>10</sup> from 2001 sets out restrictions on honoraria.

“An institution’s managers should also take into account the need for equity in determining the amount of an honorarium. The payment should be consistent with the amounts an institution normally pays for similar services and/or with the payments typically made for such services in other institutions of the Government of Canada.”

As discussed in section 2.1, boundaries for establishing limits for rates of compensation were quite large. However, it is important to reiterate that all of these rates were reviewed at other institutions by an IRB that was governed by Tri-Council policy and none of these review boards considered the rates to be coercive.

The same draft policy provides general guidance (for 2001) for honoraria amounts and tax implications:

- Public servants and individuals whose participation is integral to their job duties or role in the organization are normally not paid an honorarium. [*see below*]
- Honoraria generally range between \$200 and \$500 per day, but are not to exceed \$1000 per month. [*The ability to apply a daily rate is supported by Health Canada.*<sup>11</sup>]
- Amounts larger than \$200 per day normally require justification.
- Honorarium payments exceeding \$500 per year are taxable benefits and the department will issue a T4-A.
- The recipient is required to provide a Social Insurance Number or goods and services tax registration number or business registration number prior to receiving payment for the issuance of the T4-A.

Members of the Public Service may receive an honorarium<sup>12</sup> if:

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<sup>9</sup> [http://www.tbs-sct.gc.ca/pubs\\_pol/dcgpubs/Contracting/contractingpol\\_4\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/Contracting/contractingpol_4_e.asp)

<sup>10</sup> [http://www.iog.ca/projects/tbs\\_consultation\\_policy.pdf](http://www.iog.ca/projects/tbs_consultation_policy.pdf)

<sup>11</sup> [http://www.hc-sc.gc.ca/dhp-mps/prodpharma/activit/sci-com/anti-infect/sacait\\_tor\\_ccstai\\_att\\_e.html](http://www.hc-sc.gc.ca/dhp-mps/prodpharma/activit/sci-com/anti-infect/sacait_tor_ccstai_att_e.html)

- there is no apparent, potential or real conflict of interest between their official duties and the outside activity;
- the work/activity for which they would be receiving an honorarium is an outside activity conducted on their own time; (they cannot be paid an honorarium if the work is part of their official duties and done during working hours, for which they are already receiving a salary);
- the outside activity must be conducted in a manner that will not call into question their capacity to perform their official duties;
- they cannot directly or indirectly use government property of any kind for anything other than officially approved activities;
- they cannot knowingly take advantage of, or benefit from, information that is obtained in the course of their official duties and responsibilities and that is not generally available to the public, for use in their outside activities.

Health Canada and Environment Canada procedures for paying honoraria require that a participant in an event receive a letter of invitation stating the services that are expected, the amount of the honorarium, the expenses that will be covered, and how these will be reimbursed. After participating an invoice detailing the honorarium and expenses incurred (if applicable), with original receipts attached and a copy of the invitation letter must be submitted to Finance for payment. This is very analogous to our current procedure. Prior to participating in an experiment, the subject reads and signs the consent form which could be considered an analog to the invitation letter. The consent form includes the activities the subject will participate in and remuneration provided (it should also include expenses that will be covered). After participating, a general allowance claim is prepared on the subject's behalf and sent to Finance for payment.

## **2.3 Compensation for Stress through the Consolidation of Previous Guidelines**

Rather than try to create entirely new guidelines for the different stressors that are part of the research designs within DRDC Toronto, we have consolidated and updated the previous guidelines developed by the Biosciences Division and Command Group into a single package, which is shown in Annex A.

## **2.4 Compensation for Time**

The following considerations would apply to non-government civilians or public servants participating in an experiment on their own time. As of 1998, the Federal Government downloaded to the provinces the responsibility to set a minimum wage. Between now and 2010, the Ontario Government has legislated that the current minimum wage will increase to \$10 per hour. To be consistent with that target, that rate was selected as the initial construct for determining compensation for the subject's commitment of their personal time to participate in

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<sup>12</sup> [http://www.psagency-agencefp.gc.ca/veobve/question\\_week/question\\_week\\_e.asp#18](http://www.psagency-agencefp.gc.ca/veobve/question_week/question_week_e.asp#18)

the study. If and when the provincial minimum wage exceeds \$10 per hour then our rates of compensation would be adjusted accordingly.

A somewhat arbitrary ceiling was adopted to establish a maximum compensation that might be received for one day. In theory, a subject who was required to participate for an entire day (e.g., a sleep deprivation study) could receive \$240 for the compensation of time. It was decided that this total would be capped at 85% or \$204 using the current rate of compensation for time of \$10 per hour. Once again, if the provincial minimum wage increases to above \$10 per hour then so would the daily maximum. The daily ceiling, however, would remain titrated to 85% of the theoretical maximum that would be paid for a 24-hour time commitment by the subject.

To be consistent with placing a ceiling on the daily maximum, weekly and monthly maximums were also titrated accordingly. The weekly ceiling was capped at 3 times the daily maximum, or currently \$612, using the rationale that few studies involved a commitment by the subject of more than 3 days during any given week. The monthly maximum was also capped at 3 times the weekly, or 9 times the daily, maximum. This monthly ceiling thus equates to \$1836 at this time. It is important to note that our weeks are defined as 7-day cycles and our months are defined as 30-day cycles that start with the volunteer's first day of participation in the experiment. Thus the week and month are not set by the calendar but instead are defined by the duration of the experiment.

## **2.5 Combining Compensation for both Stress and Time**

It was the consensus of the committee that the new guidelines needed to provide for an appropriate blend of compensation for both the stress and discomfort of the experiment as well as the subject's commitment of time. For example, compensation for participation in an experiment that was very stressful and involved numerous invasive procedures but was of very short duration should be properly weighted to reflect the stress. Conversely, compensation for an experiment that involved minimal stress but required many hours of the subject's time should reflect that latter commitment.

In order to create this appropriated balance, the committee decided that individual stressors, shown in Annex A, that were applicable to a given experimental protocol would be additive. Thus, if a particular experimental day involved light exercise at 40°C while wearing protective clothing for an hour or more (stress level 5), while measuring core temperature with a rectal probe (stress level 1) and obtaining blood samples through a venous catheter (stress level 2), then these stress levels would be additive. Each stress level was assigned an equivalent weighting of 5% of the daily maximum. Thus, for the example above, subjects would receive 40% of the daily maximum (\$81.60) as compensation for stress. If the experiment lasted 3 hours then non-government civilians and public servants participating on their own time would receive an additional \$30 for their commitment of time or a total compensation of \$121.60. Several other examples of these calculations are presented in Annex B.

When selecting stressors to include in the summation of total stress for an experiment, keep in mind that each instance of a unique class of psychological stressor is to be represented as a single instance of that stressor. For example, a battery of 5 separate cognitive tasks followed by an interview administered together in a single session does not translate into 6 instances of level 1 stress for a total sum of 6 stress levels. The multiple instances of the cognitive task are to be

considered as a single instance of the stressor so the total stress level would be 2 (all cognitive tasks + interview). Note that this applies only to the psychological stressors.

It must be emphasized that the above discussion applies only to non-government civilians and public servants participating in an experiment on their own time. For CF members and for public servants participating during work hours, CBI 205.48 clearly stipulates the maximum allowance, currently set at \$60.61, which can be received for stress. These individuals would receive no further compensation for time since they are considered to be on duty or at work, respectively, while they are participating.

It should be apparent that CF members and public servants participating during work hours would receive exactly the same stress allowance. Also, non-government civilians and public servants participating on their own time would also receive exactly the same total compensation for stress and their commitment of time. However, between these 2 groups of participants (CF members and public servants participating during work hours versus non-government civilians and public servants participating on their own time) compensation for stress may be different due to the ceiling imposed by CBI 205.48 and the total compensation may be different due to the different way that the subject's time is compensated.

### 3 The Spreadsheet

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One of the objectives of the committee was to develop a spreadsheet that could be used easily by all staff during the preparation, planning and execution phases of an experiment. Completion of the spreadsheet would become a necessary component of the Section Head and HREC approval processes prior to beginning the actual subject recruitment phase of the study. This spreadsheet and user instructions can be found at the following link

[http://corpranet.toronto.drdc-rddc.gc.ca/corpranet/rsrch\\_exp/stress\\_remun\\_guidelines](http://corpranet.toronto.drdc-rddc.gc.ca/corpranet/rsrch_exp/stress_remun_guidelines).

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## 4 Summary and Recommendations

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This report describes the basis for a new set of guidelines to govern the compensation of volunteer subjects participating in DRDC Toronto experimentation. The guidelines can be applied universally to cover CF members, civilian government employees as well as non-government civilian volunteers. To assist in the implementation of these guidelines, it is recommended that Section Heads;

- i. provide internal guidance and oversight to rates of compensation calculated for their section protocols,
- ii. sign a completed spreadsheet that details rates of compensation to be included with the protocol approval form and subject information package sent to the HREC for review, and
- iii. be responsible for the management of their civilian government employee's participation in experiments.

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## Annex A Consolidated Stress Guidelines

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### I. Thermal Environmental Stress

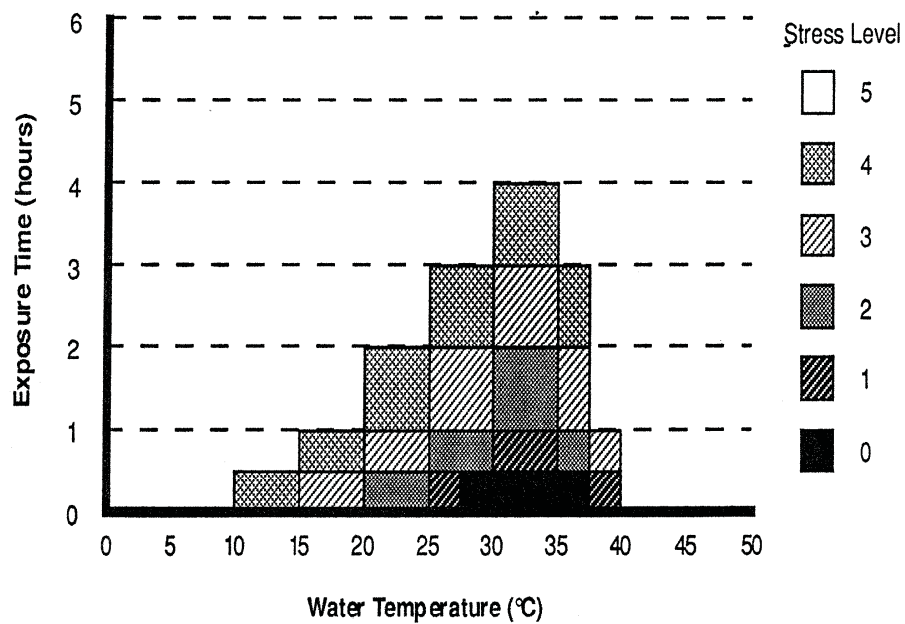
Exposure to environmental conditions outside the normal thermal comfort range imposes an environmental thermal stress on the body. In addition, duration of exposure to this environment increases the degree of discomfort felt by the subject. A series of charts have been developed which attempt to relate the degree of discomfort and stress to clothing, experimental procedures, ambient conditions, and duration of the test.

#### Explanation of Terms Used in Thermal Environmental Stress Charts

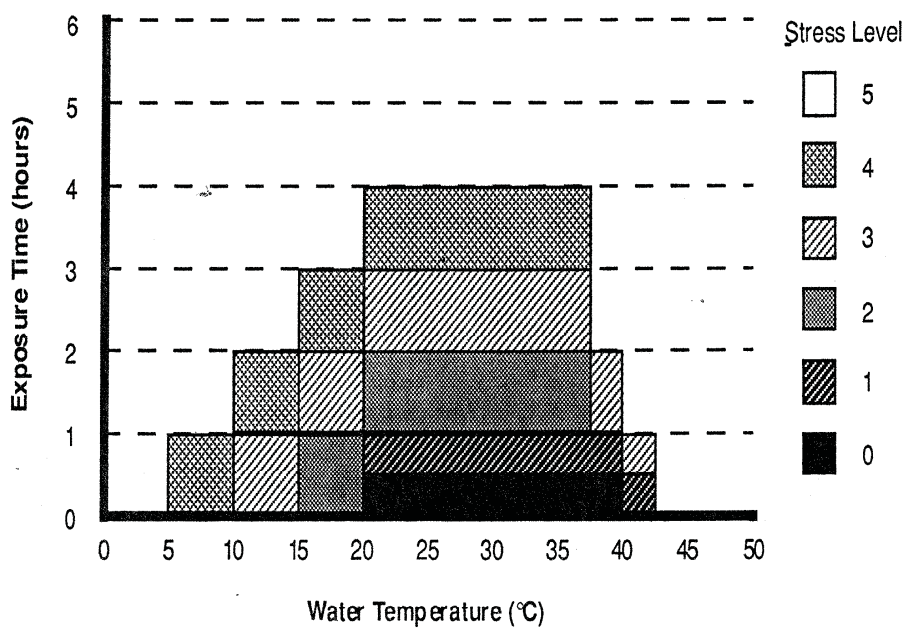
- Nude:** This refers to the wearing of minimal clothing, such as shorts or a swimsuit, with or without a T-shirt. The clothing is worn only for modesty. For water immersion studies only, “dressed” (see below) is the same as “nude”.
- Dressed:** This refers to the wearing of a broad range of clothing. It could include as little as summer combat fatigues (or street clothes such as jeans and shirt, or jogging suit), through complete flight gear for aircrew, to a full chemical defence ensemble plus flight gear or army webbing. The clothing will generally add some insulation to the body, which could be beneficial in the cold but detrimental in the heat, but it is not intended to protect against environmental stress. Arctic clothing is excluded from this category and is dealt with specifically below.
- Protected:** This refers to the use of clothing and/or equipment that is specifically designed to protect the user against the thermal effects of the environment. In the case of water immersion studies, the protective garment would be some form of wet or dry immersion suit, or even a hot water suit. For air exposures, protective garments would be cooling suits for heat exposures, or heavily insulated items (Arctic parkas, ski suits, sleeping bags, etc) for cold exposures. The term does not generally refer to chemical defence protective clothing, since such clothing adds thermal stress to the body as opposed to protecting against thermal stress.
- Partial Immersion:** This refers to water immersion of a portion of the body such as a finger, hand, arm, foot, or leg. In general, the remainder of the body is in a thermoneutral ambient environment.
- Light Work:** This refers to a level of activity that can be sustained for extended periods of time without undue fatigue, or a comparable metabolic rate that may arise from shivering. In general, the additional heat produced in the body will provide some protection against minor cold stress, and will reduce tolerance to heat exposure slightly.
- Heavy Work:** This refers to a level of activity that cannot be sustained for a long period of time without fatigue. The heat production in the body can extend tolerance to cold somewhat (think of cross country skiing and the clothing worn for that activity), but will severely curtail tolerance to heat exposure.

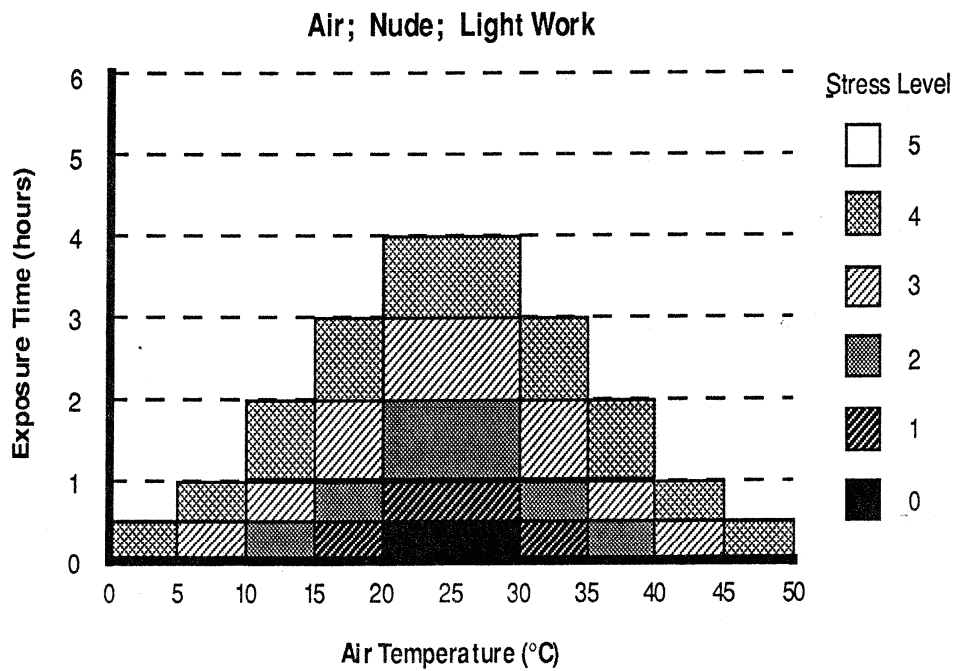
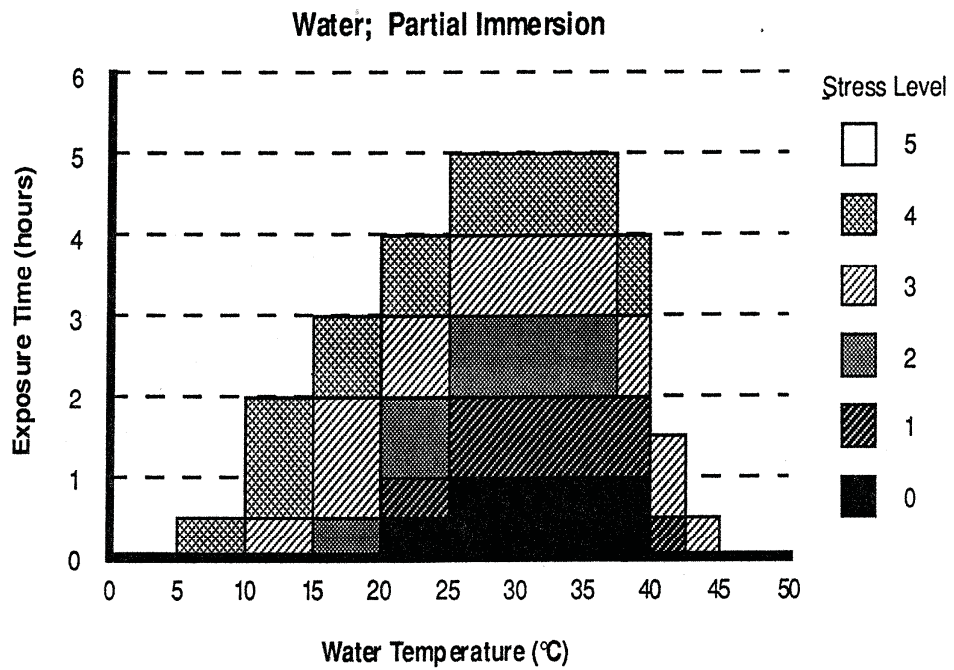
Note that there are an infinite number of combinations of ambient temperature, clothing, and work rate that the charts attempt to cover. Judgment will be required in unusual cases in order to arrive at a fair assessment of the degree of stress. In that sense, the charts are not fixed references, but merely guidelines for the experimenter.

Water; Nude

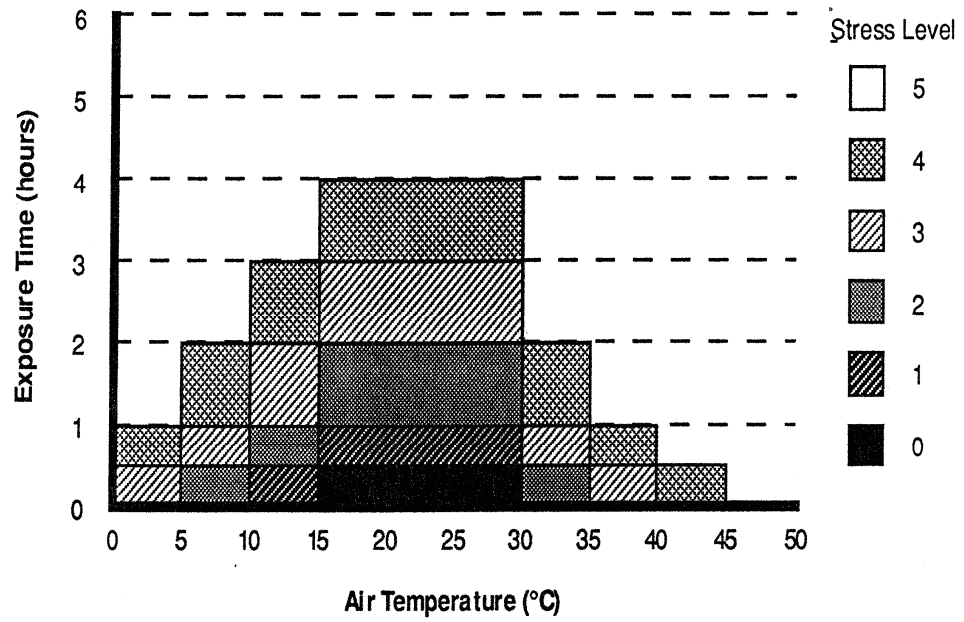


Water; Protected

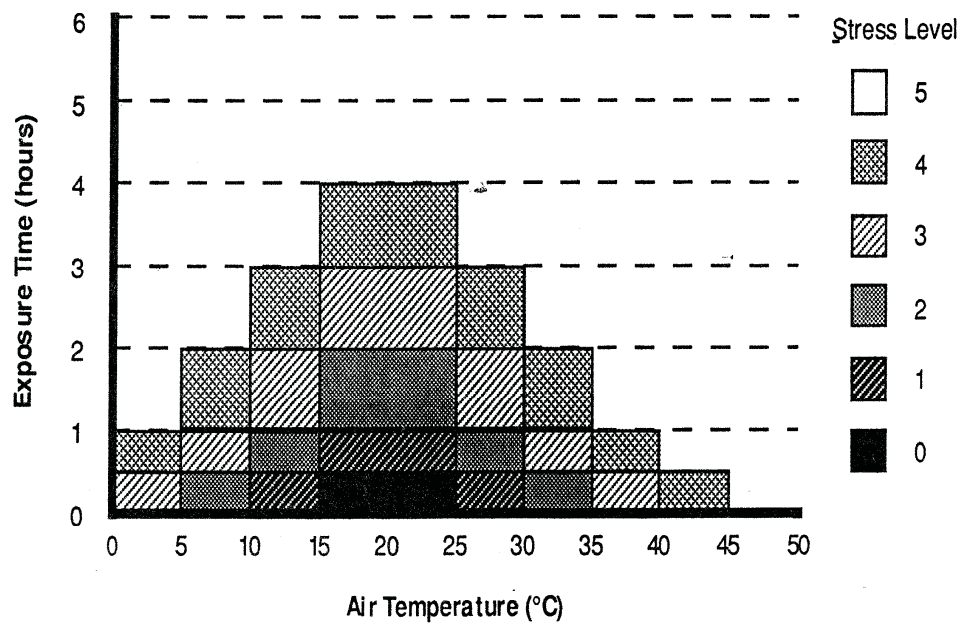




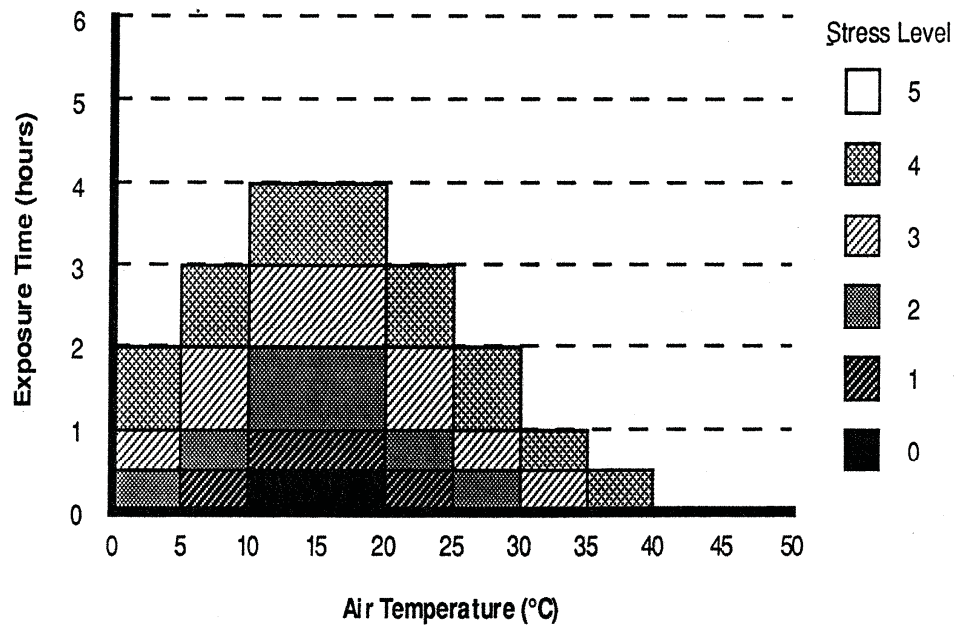
### Air; Nude; Heavy Work



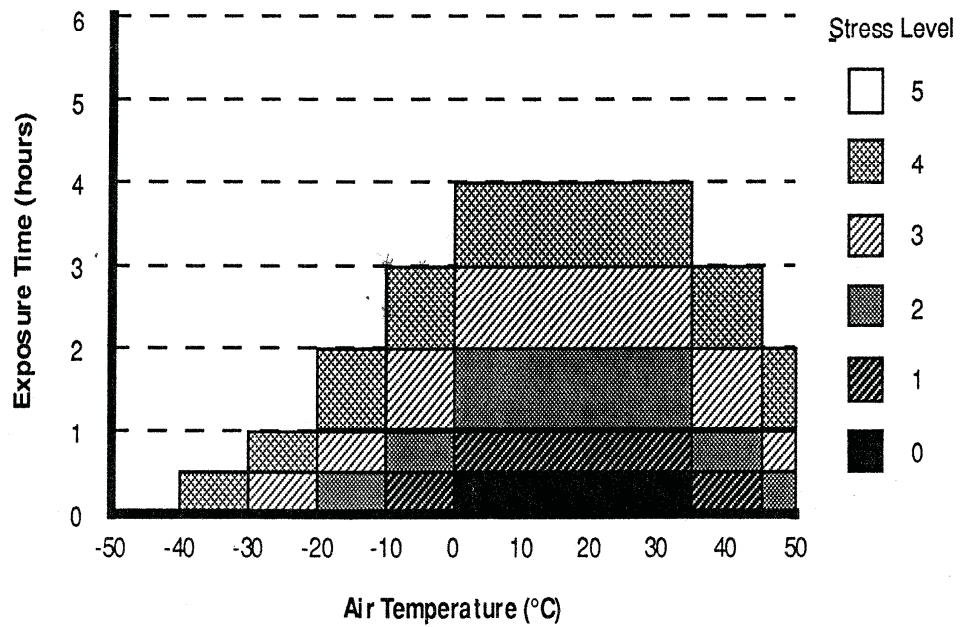
### Air; Dressed; Light Work



### Air; Dressed; Heavy Work

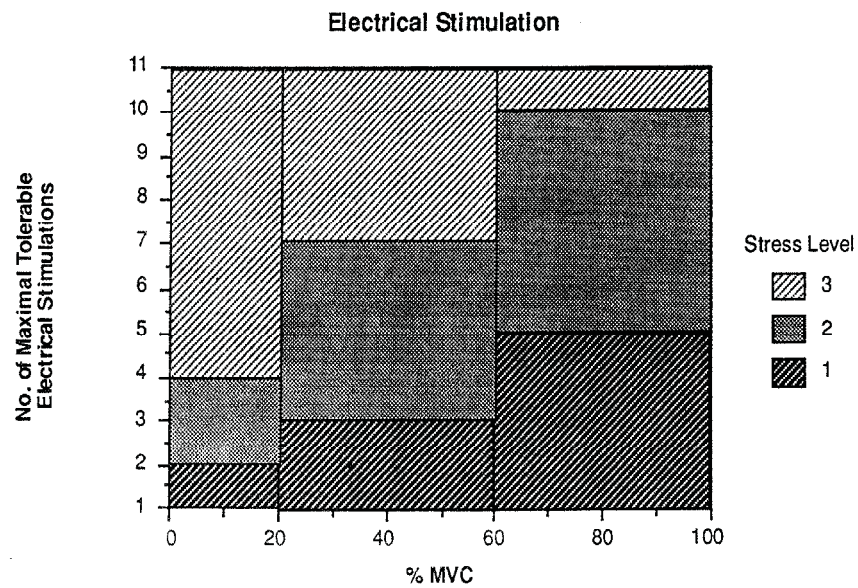
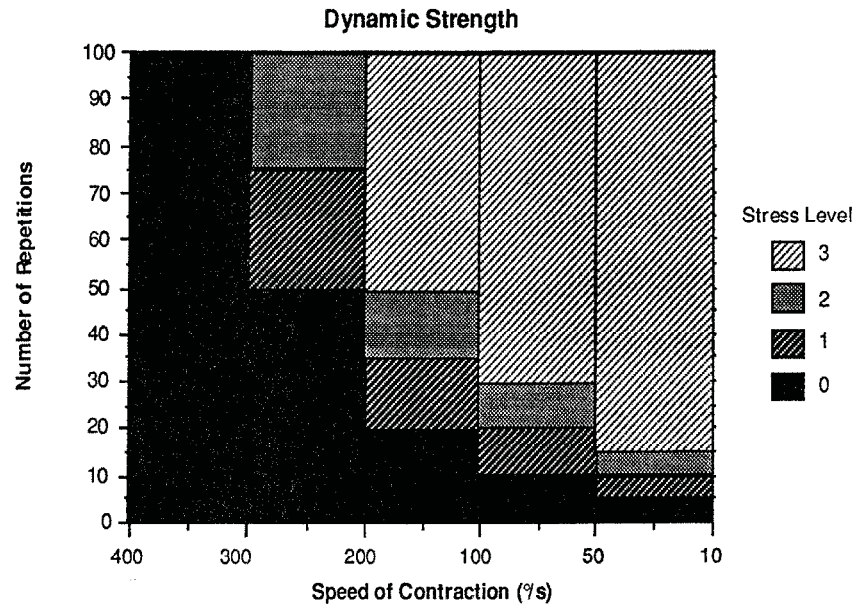


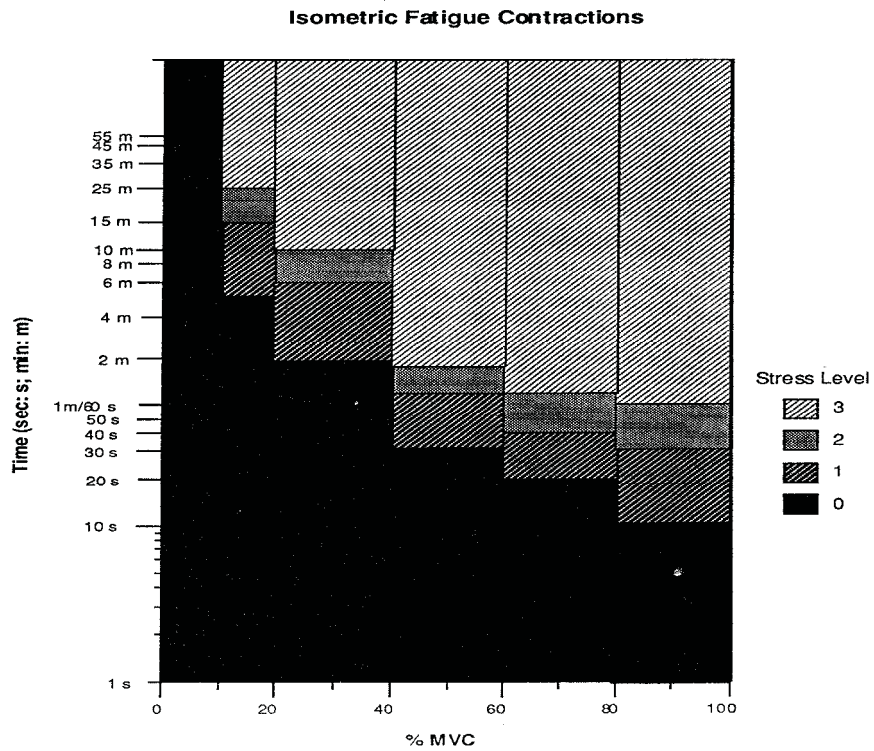
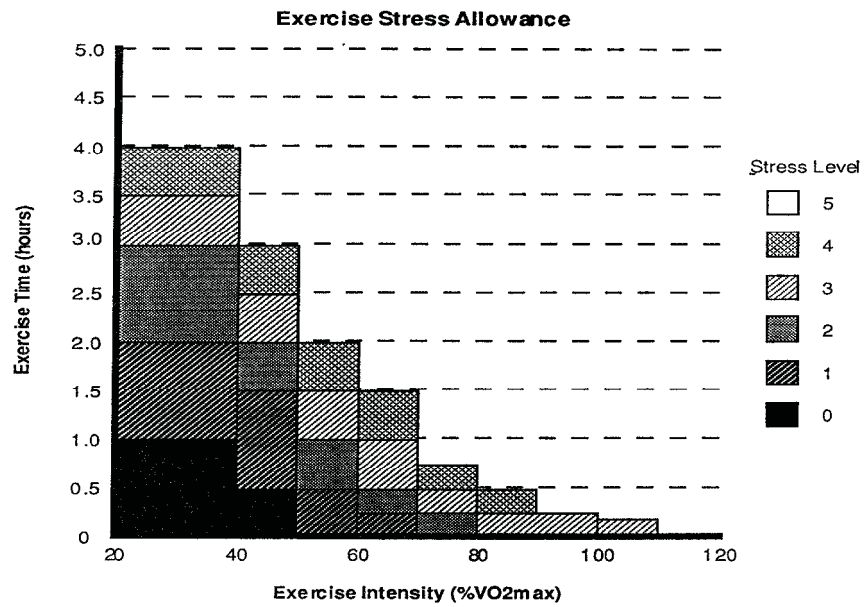
### Air; Protected



## II. Exercise Stress

Exercise stress has been categorized in the following figures according to time or duration of exercise as well as the percentage of maximal capacity.





### III. Blood and Tissue Sampling and Invasive Procedures

Procedure	Number	Stress Level
Finger or ear prick	1-4 5 or more	1 2
Venipuncture	1 2 or more	1 2
Venous catheterization	1 each additional	2 +1
Arterial catheterization	1 each additional	5 5
Muscle biopsy	1 each additional incision	5 5
Muscle temperature probe	each	5
Subcutaneous temperature probe	each	2
Rectal probe	each	1
Oesophageal probe	each	2
Drug Ingestion	each	0-3 depending on severity of side effects
Dye dilution	each	0-3 depending on severity of side effects

#### IV. Other Instrumentation Procedures

Procedure	Stress Level
Thoracic impedance cardiography	1
EEG electrodes or ERP electrode net	1
Infrared temperature probe	0
ECG, skin thermistors and humidity sensors	0
Ingestion of radiopill	0
Use of spirometry equipment	0
Tilt table restrictive posture	1
Wrist actigraphy	0
Use of active heating or cooling vests to prevent the fall or rise of core temperature, respectively	0
Wearing eye tracking or helmet mounted displays	1

## V. Additional Environmental Stressors

Environmental Stress	Stress Level
Partial Pressure Breathing	0-5 depending on PPB level and duration
Hyperbaria	0-5 depending on protocol severity
Hypoxia	0-5 depending on protocol severity
Noise	1-3 depending on intensity and duration
Motion Sickness	0-5 depending on protocol severity
+G <sub>z</sub> acceleration	0-5 depending on G level and duration

## VI. Psychological Stressors

Psychological Stress  (when multiple instances of each category of stressors are used, treat as 1 instance of that stressor category)	Stress Level
Questionnaire	0
Questionnaire (content that covers stressful life events)	2
Questionnaire (content that evokes distressing emotions)	2
Interviews (face-to-face)	1
Interviews (content that covers stressful life events)	2

Interviews (content that evokes distressing emotions)	2
Interviews (special populations + content that evokes distressing emotions)	3
Cognitive Tasks	1-2 depending on the task
Socially Induced Stress (group work)	1
Socially Induced Stress (public speaking)	2
Socially Induced Stress (stress/embarrassment regarding content)	2
Sleep Deprivation	0-3 depending on duration
Unrestrained posture	0-2 depending on position
Restrained posture	1-3 depending on position
Confinement with sensory isolation	1-2 depending on duration
Deception (minimal such as false feedback)	1
Deception (higher level with emotional stimuli)	2

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## Annex B Examples of Rates of Compensation for Experimental Protocols

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### 1. L-528, Heat Strain While Wearing a new Chemical and Biological Uniform During Mission Oriented Protective Posture (MOPP) 1 and 4.

This protocol involved 7 visits to the laboratory with each visit separated by at least 1 week. Visit 1 involved a medical screening, maximal test of aerobic fitness and underwater weighing for body density. The max test and underwater weighing could be completed in about 1 hour. Each of the other 6 visits involved exercise at 35°C for up to 3 hours while wearing protective clothing, the insertion of an intravenous catheter and a rectal probe. Given subject prep time and showering at the end of the exercise and heat stress, 4 hours were estimated as a requirement for the subject's time. The compensation for these sessions together with the total compensation for the protocol and the average hourly rate of compensation are tabulated below.

Session	Time (h)	Stress Level	Compensation
Aerobic fitness test and underwater weighing	1	3	\$40.60 (\$10 for time and \$30.60 for stress)
Familiarization	4	i. Exercise + heat stress in protective clothing = 5 ii. Venous catheter = 2 iii. Rectal probe = 1 Total = 8	\$121.60 (\$40 for time + \$81.60 for stress)
5 Experimental Sessions separated weekly	Each session = 4	Each session as above for a total of 8 stress units/session	\$121.60/session
<b>Total</b>	<b>25</b>		<b>\$770.20</b> <b>(\$30.81/hour)</b>

**2. L-493, Understanding the Neurochemical and Immunological Mechanisms That Define Limits to Human Physical and Cognitive Function During Acute Heat Stress.**

This protocol involved 4 visits to the laboratory with each visit separated by at least 1 week. Visit 1 involved a medical screening, maximal test of aerobic fitness and underwater weighing for body density. The max test and underwater weighing could be completed in about 1 hour. The second visit involved the determination of blood volume by injecting a dye into one arm and sampling blood from the other arm. The procedure required 2 hours to be completed. The third visit was a familiarization visit with exposure to all test conditions but did not require exercise to exhaustion in the heat and was scheduled to be completed in 3 hours whereas 5 hours was scheduled for the last visit because subjects were asked to continue to exercise in the heat until exhaustion. The compensation for these sessions together with the total compensation for the protocol and the average hourly rate of compensation are tabulated below.

Session	Time (h)	Stress Level	Compensation
Aerobic fitness test and underwater weighing	1	3	\$40.60 (\$10 for time and \$30.60 for stress)
Blood Volume	2	i. 2 venous catheters = 3 ii. Injection of dye = 3	\$81.20 (\$20 for time and \$61.20 for stress)
Familiarization	3	i. Exercise + heat stress for 30 min in protective clothing = 3 ii. Venous catheter = 2 iii. Rectal probe = 1 Total = 6	\$91.20 (\$30 for time + \$61.20 for stress)
Experimental Session	5	i. Exercise + heat stress to exhaustion in protective clothing = 5 ii. Venous catheter = 2 iii. Rectal probe = 1 Total = 8	\$131.60 (\$50 for time and \$81.60 for stress)
<b>Total</b>	<b>11</b>		<b>\$344.60</b> <b>(\$31.33/hour)</b>

### 3. L-302, Exercise performance 1, 3, and 6 hours after caffeine ingestion.

This protocol involved 8 visits to the laboratory with each visit separated by at least 1 week. Visit 1 involved a medical screening and a maximal test of aerobic fitness. The max test could be completed in about 1 hour. The second visit was a familiarization visit with exposure to all test conditions except for the ingestion of a drug. This visit was expected to be completed in 2 hours. The remaining 6 visits involved exercise to exhaustion 1, 3 or 6 hours after the ingestion of a drug or placebo. Given subject prep time, exercise time and showering after exercise, the total time for each visit was calculated as an additional 2 hours above the 1, 3 or 6 hour period following ingestion of the capsule. The compensation for these sessions together with the total compensation for the protocol and the average hourly rate of compensation are tabulated below.

Session	Time (h)	Stress Levels	Compensation
Aerobic fitness test and underwater weighing	1	3	\$40.60 (\$10 for time and \$30.60 for stress)
Familiarization	2	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 Total = 6	\$81.20 (\$20 for time + \$61.20 for stress)
Experimental Session 1	3	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 Total = 6	\$91.20 (\$30 for time and \$61.20 for stress)
Experimental Session 2	3	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 iii. Drug ingestion = 2 Total = 8	\$111.60 (\$30 for time and \$81.60 for stress)
Experimental Session 3	5	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 Total = 6	\$111.20 (\$50 for time and \$61.20 for stress)
Experimental Session 4	5	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 iii. Drug ingestion = 2 Total = 8	\$131.60 (\$50 for time and \$81.60 for stress)
Experimental Session 5	8	i. Exercise to exhaustion at 80%max = 4 ii. Venous catheter = 2 Total = 6	\$141.20 (\$80 for time and \$61.20 for stress)
Experimental Session 6	8	i. Exercise to exhaustion at 80%max = 4	\$161.60 (\$80 for time and \$81.60 for stress)

		ii. Venous catheter = 2 iii. Drug ingestion = 2 Total = 8	
<b>Total</b>	<b>35</b>		<b>\$870.20</b> <b>(\$24.87/hour)</b>

**4. L-238, High altitude man-rating of on-board oxygen generating system (OBOGS) for Hawk Mk 127 aircraft (RAAF lead-in fighter)**

This protocol involved subject medical screening (4 h), pressure breathing training (<1 h), and up to 6 altitude test sessions (1 rapid decompression familiarization, 5 experimental) separated by at least 2 days, limited to 2 per week (2 h each including 1 h oxygen pre-breathe). The familiarization altitude profile was a rapid decompression from 24K to 50K ft for <10s while breathing 100% oxygen throughout. Experimental session profiles were: 1) gradual ascents to 35K, 43K and 48K ft for 1 min at each altitude; 2) rapid decompression to 45K ft for 2 min breathing 100% oxygen; 3) repeat of #2 to 50K ft; 4) rapid decompression to 45K ft for 1 min after breathing OBOGS mix; and 5) repeat of #4 to 50K ft. Nominal pressure breathing levels were: 20, 26, 31 and 34 mm Hg at 43K, 45K, 48K and 50K ft, respectively. Sessions 4 and 5 involve hypoxia exposure. The compensation for these sessions together with the total compensation for the protocol and the average hourly rate of compensation are tabulated below.

<b>Session</b>	<b>Time (h)</b>	<b>Stress Level</b>	<b>Compensation</b>
PPB training,	1	PPB = 1	\$20.20 (\$10 for time, \$10.20 for stress)
Familiarization, Experimental Sessions 1 & 3	2	PPB = 2	\$40.40/session (\$20 for time, \$20.40 for stress)
Experimental Session 2	2	iii. PPB = 1	\$30.20 (\$20 for time, \$10.20 for stress)
Experimental Session 4	2	iv. PPB = 1 v. Hypoxia = 2	\$50.60 (\$20 for time, \$30.60 for stress)
Experimental Session 5	2	i. PPB = 2 ii. Hypoxia = 2	\$60.80 (\$20 for time, \$40.80 for stress)
<b>Total</b>	<b>13</b>		<b>\$283.00</b> <b>(Time average: \$21.77 hour)</b>

## 5. L-591, Team Communication and Information Sharing

This protocol involves a single session lasting approximately three hours. The task is a collaborative information gathering intelligence and problem solving task. Participants work in teams of either 4 or 17 people. They are required to share discrete bits of information in order to identify the Who, What, When, and Where of an impending terrorist attack. The cognitive components of the task mostly involve deductive logical reasoning. There is a practice session followed by an experimental session. Participants then fill out a questionnaire.

Session	Time (h)	Stress Level	Compensation
Task training,	1	Cognitive Task = 1	\$10.00 (\$10 for time, \$0.0 for stress because cognitive task is multiple instance with experimental session)
Experimental Session	1	Cognitive Task = 1	\$20.20/session (\$10 for time, \$10.20 for stress because this cognitive task is counted as 1 instance)
Questionnaire and debriefing	1	Questionnaire = 0	\$10.00 (\$10 for time, \$0 for stress)
<b>Total</b>	<b>3</b>		<b>\$40.20</b> <b>(Time average: \$13.40 hour)</b>

## List of symbols/abbreviations/acronyms/initialisms

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BIO	Biosciences
CBI	Compensation and Benefits Instructions
CF	Canadian Forces
CIHR	Canadian Institute of Health Research
DAOD	Defence Administrative Orders and Directives
DND	Department of National Defence
DRDC	Defence Research and Development Canada
FAA	Financial Administration Act
HREC	Human Research Ethics Committee
IRB	Institute Review Board
NSERC	Natural Science and Engineering Research Council
SSHRC	Social Sciences and Humanities Research Council
TBS	Treasury Board Secretariat

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DRDC Toronto is the Agency's research centre that provides guidance, innovation and knowledge about the human's response to the complex and stressful environments that impact CF members in preparation for, during and following humanitarian, peace-keeping and warfighting operations. The Agency has invested in DRDC Toronto to ensure that we can simulate and study these responses with human experimentation conducted by our scientists during in-house laboratory or field experimentation. Central to this capability is the need to recruit subjects, both military and civilian, that are willing to experience certain degrees of stress that are beyond what they would experience during their normal day, and/or that are willing to commit the time for participation that enables the study to be completed in an appropriate time-frame. New consolidated guidelines were needed to establish consistent and transparent procedures for generating rates of compensation that would still enable free and informed consent to be obtained according to Tri-Council Policy guidelines. The new guidelines are intended to be applicable for all studies involving human subjects at DRDC Toronto and perhaps could be extended, in principle, across the Agency. The report includes the rationale behind the development of these new guidelines together with examples of how to use the spreadsheet that will be available for all scientific and technical staff to apply to their studies.

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human ethics, stress allowances, Tri-Council policy, informed consent