



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

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Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau, Québec K1A 0S5

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**LETTER OF INTEREST**

**LETTRE D'INTÉRÊT**

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Electrical & Electronics Products Division

11 Laurier St./11, rue Laurier

7B3, Place du Portage, Phase III

Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> Calibration and Repairs Services	
<b>Solicitation No. - N° de l'invitation</b> W8486-184754/A	<b>Date</b> 2018-04-05
<b>Client Reference No. - N° de référence du client</b> 6000421198	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$HN-467-74692
<b>File No. - N° de dossier</b> hn467.W8486-184754	<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 2018-05-07</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Dubé, Robert	<b>Buyer Id - Id de l'acheteur</b> hn467
<b>Telephone No. - N° de téléphone</b> (873) 469-3936 ( )	<b>FAX No. - N° de FAX</b> (819) 953-4944
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE Ramp 8, Room C-1113 C/O QETE Warehouse 45 Sacre-Coeur Blvd Gatineau Quebec J8X 1C6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<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>

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

**for**

### **Calibration and Repairs of Test, Measurement and Diagnostic Equipment (TMDE)**

**for**

### **The Department of National Defence (DND)**

#### **NOTE:**

This is not a bid solicitation.

Canada is seeking feedback from the Industry with respect to Calibration and associated repairs of Test, Measurement and Diagnostic Equipment (TMDE) Services

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## 1. Purpose and Nature of the Request for Information (RFI)

Public Services and Procurement Canada (PSPC), on behalf of the Department of National Defence (DND), is requesting Industry feedback to assist with the formulation and implementation of a Performance-Based Enterprise-wide Sustainment Solution for the DND / Canadian Armed Forces (CAF) Calibration Programme.

The purpose of this RFI is to solicit relevant input from Industry on best practices that could contribute to the Government of Canada (GoC) establishing an enterprise-wide sustainment solution for the departmental Calibration Programme that will align and optimize both Canada's and Industry's ability to deliver Performance, Value for Money, Flexibility and Economic Benefits.

Canada will consider the information gathered during the Industry Engagement(s) and decide on a course of action that may include some or all of the Industry feedback.

The GoC is seeking Industry feedback from companies who preferably:

- Are involved Calibration and Repair of Test, Measurement and Diagnostic Equipment (TMDE); and
- Do business in the Aerospace and Defence Sectors.

This RFI is neither a call for tender nor a Request for Proposal (RFP). No agreement or contract will be entered into based on this RFI. The issuance of this RFI is not to be considered in any way a commitment by the Government of Canada (Canada), nor as authority to potential respondents to undertake any work that could be charged to Canada. This RFI is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein.

Although the information collected may be provided as commercial-in-confidence (and, if identified as such, will be treated accordingly by Canada), Canada may use the information to assist in drafting performance specifications (which are subject to change) and for budgetary purposes.

Respondents are encouraged to identify, in the information they share with Canada, any information that they feel is proprietary, third party or personal information. Please note that Canada may be obligated by law (e.g. in response to a request under the Access of Information and Privacy Act) to disclose proprietary or commercially-sensitive information concerning a respondent (for more information: <http://laws-lois.justice.gc.ca/eng/acts/a-1/>).

Respondents are asked to identify if their response, or any part of their response, is subject to the Controlled Goods Regulations.

Participation in this RFI is encouraged, but is not mandatory. There will be no short-listing of potential suppliers for the purposes of undertaking any future work as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation in any potential subsequent solicitation.

Respondents will not be reimbursed for any cost incurred by participating in this RFI.

The RFI closing date published herein is not the deadline for comments or input. Comments and input will be accepted any time up to the time when/if a follow-on solicitation is published.

## 2. Objectives of the RFI

The GoC is seeking a solution for the DND/CAF Calibration Programme with an optimal division of responsibilities between Government and Industry. Canada wishes to optimize the sustainment solution by determining the appropriate balance of in-house versus commercial calibration services to respond to current and foreseen requirements of the Calibration Programme.

The type of industry feedback being sought will focus on the following areas of interest:

- The activities required to sustain Performance-Based Enterprise-wide Sustainment Solution and the optimal division of responsibilities between Government and Industry;
- Sustainment options, implementation/schedule and related costs;
- A performance management framework including a definition of outcomes and high-level metrics;
- Considerations associated with any potential tendering process, potential contractual terms and conditions, and their impact on contracted outcomes; and
- Approaches to meeting and leveraging the four principles of the GoC Sustainment Initiative: Performance, Value for Money, Flexibility and Economic Benefits.

The complete list of requirements and activities to sustain the DND/CAF Calibration Programme is detailed at Annex A.

A list of questions is provided in Annex B. Note that the information requested is for information purposes only and will allow PSPC to clearly define the requirement for the required services and obtain additional information for the development of bid evaluation criteria.

## 3. Background Information

The DND/CAF Calibration Programme is an essential part of the department's Maintenance Acquisition and Support (MA&S) Function with the main goal of ensuring the safe and optimum performance of platforms, weapons systems and equipment by maintaining the quality of measurement and ensuring the proper working of test equipment and instruments used to perform maintenance.

Calibration is a fundamental aspect of maintenance, which also includes inspection, troubleshooting and fault isolation, repair, overhaul, testing, conditioning, modification incorporation, parts recertification, restoration, storage and reactivation, recovery or salvage of technical equipment, servicing and elementary work as specified in approved maintenance procedures for each platform, weapon system or equipment.

DND/CAF currently manages a centralized Calibration Programme. The Assistant Deputy Minister (Materiel) (ADM(Mat)) is responsible to maintain an efficient, cost-effective programme that meets the needs of a broad spectrum of stakeholders throughout DND/CAF and ensures compliance to national and departmental policies and best practices for metrology.

The DND/CAF Calibration Programme is applying the Sustainment Initiative framework that has been developed to create more cost-effective and flexible sustainment contracts. Further details concerning the Sustainment Initiative are available on <https://buyandsell.gc.ca/policy-and-guidelines/policy-notifications/PN-118>. "Effective June 8, 2016, every new and existing military maintenance and repair procurement valued at \$20 million or more will follow a coherent and standardized interdepartmental

approach guided by the four principles of sustainment: performance, value for money, flexibility and economic benefits. These principles will inform decision making by the applicable Defence Procurement Strategy (DPS) governance committee.”

The GoC may choose to conduct one-on-one consultations following the RFI to further discuss industry responses regarding a Performance-Based Enterprise-Wide Sustainment Solution for the DND/CAF Calibration Programme. Industry Engagement will be an important opportunity for both Canada and Industry to interact, answer questions and discuss topics, which may include:

- Requirements for Calibration and Repair of Test Equipment Services;
- The following key areas identified in Annex A:
  - Commercial calibration services;
  - In-situ calibrations;
  - Subcontract management;
  - Repairs to TMDE;
  - Obsolescence management;
  - Calibrations for speciality functions;
  - Management Information System integration;
  - Managed services; and
  - Training and personnel development.
- How to best address the four Sustainment Initiative (SI) principles and requirements:
  - Performance – defence equipment that is operationally ready and mission capable;
  - Value for Money – the required outcomes are procured at a price commensurate with the market rate for comparable procurements;
  - Flexibility – an adaptable and scalable support system that can readily be adjusted to changes in operational requirements and/or operating budgets; and
  - Economic Benefits – leverage industrial benefits from defence procurements to create jobs and economic growth for companies in Canada.

## **4. Security Requirement and Security Clause of the Resulting Contract**

There is a Security requirement associated with this requirement and the clause below will form part of the solicitation document and resulting Contract.

### **4.1 Security Requirement**

1. At the date of bid closing, the following conditions must be met:

- 
- (a) the Offeror must hold a valid organization security clearance as indicated in Section 4.2 of the RFI;
  - (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 indicated in Section 4.2 of the RFI;
  - (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 Section 4.2 of the RFI; and
  - (e) the Offeror must provide the address(es) of proposed location(s) of work performance or document safeguarding as indicated in Section 4.2 of the RFI.
2. Offerors are reminded to obtain the required security clearance promptly. Any delay in the issuance of a Contract to allow the successful offeror to obtain the required clearance will be at the entire discretion of the Contracting Authority.
  3. For additional information on security requirements, offerors should refer to the Canadian Industrial Security Directorate (CISD), Industrial Security Program of Public Services and Procurement Canada (PSPC) (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

## 4.2 Security Clause of the Resulting Contract

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid Facility Security Clearance at the level of **SECRET**, issued by the Canadian Industrial Security Directorate (CISD), PSPC.
2. The Contractor/Offeror personnel requiring access to PROTECTED/CLASSIFIED information, assets or sensitive work site(s) must EACH hold a valid personnel security screening at the level of **SECRET** as required, granted or approved by CISD/PSPC.
3. The Contractor/Offeror MUST NOT remove any PROTECTED/CLASSIFIED information from the identified work site(s), and the Contractor/Offeror must ensure that its personnel are made aware of and comply with this restriction.
4. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PSPC.
5. The Contractor/Offeror must comply with the provisions of the:
  - a. Security Requirements Check List and security guide (if applicable), attached at Annex X;
  - b. *Industrial Security Manual* (Latest Edition).

It is the responsibility of the interested suppliers to ensure that the information required concerning the security clearance is provided on time to either the requesting authority or the Canadian Industrial Security Directorate (CISD) of Public Services and Procurement Canada (PSPC).

Suppliers who currently do not meet the facility security clearance requirements and (or) personnel security clearance are advised to initiate the security clearance process immediately by requesting

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sponsorship from the Contracting Authority by e-mail at the address in Section 7.1. The request must include the following information:

- a) legal name of the suppliers' organization;
- b) complete address of the suppliers' organization;
- c) telephone and fax numbers;
- d) name of President or CEO of the suppliers' organization;
- e) language preference (English or French); and
- f) Supplier's Procurement Business Number (PBN).

The Canadian and Industrial Security Directorate (CISD) of PSPC will then send the interested supplier the paperwork which needs to be completed.

If the supplier wishes to propose the services of an individual who has obtained a security clearance from a government department or agency other than CISD/PSPC, the supplier's Company Security Officer is to contact CISD and request either a transfer or a duplicate of the security clearance of the individual.

For any inquiries concerning any security requirements, suppliers should contact CISD at 1-866-368-4646, or (613) 948-4176 in the National Capital Region, CISD Website: <http://ssi-iss.tpsgc-pwgsc.gc.ca/>

## 5. Legislation Trade Agreements, and Government Policies

The following is indicative of some of the legislation, trade agreements and government policies that could impact any follow-on solicitation(s):

- a) Canadian Free Trade Agreement (CFTA);
- b) North American Free Trade Agreement (NAFTA);
- c) World Trade Organization – Agreements on Government Procurement (WTO-AGP);
- d) Canada-European Union Comprehensive Economic and Trade Agreement (CETA);
- e) Canada-Chile Free Trade Agreement (CCFTA);
- f) Canada-Colombia Free Trade Agreement;
- g) Canada-Panama Free Trade Agreement;
- h) Canada-Peru Free Trade Agreement (CPFTA);
- i) Canada-Honduras Free Trade Agreement;
- j) Canada-Korea Free Trade Agreement ;
- k) Industrial and Regional Benefits (IRBs);
- l) Defence Procurement Strategy (DPS);
- m) Federal Contractors Program for Employment Equity (FCP-EE);
- n) Controlled Goods Regulations;
- o) International Traffic in Arms Regulations (ITAR); and
- p) Defence Production Act.

## 6. Schedule

In providing responses, the following schedule should be utilized as a baseline:

- Request for Information (RFI)
- One-on-One sessions (as necessary)
- RFP issued
- Evaluation of Bids



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- Contract Award

## 7. Important Notes to Respondents and Submission Requirements

### 7.1 Enquiries

Interested respondents must submit their responses and enquiries **electronically** to the PSPC Contracting Authority, identified below:

Name: **Robert (Bob) Dubé**  
Title: **Supply Specialist**

Public Services and Procurement Canada (PSPC)  
Acquisitions Branch  
Logistics, Electrical, Fuel and Transportation Directorate (LEFTD)

Telephone: **873-469-3936**  
Facsimile: **819-953-4944**  
E-mail: **[robert.dube@tpsgc-pwgsc.gc.ca](mailto:robert.dube@tpsgc-pwgsc.gc.ca)**

### 7.2 Response Format

- a) **Cover Page:** If the response includes multiple volumes, respondents are requested to indicate on the front cover page of each volume the title of the response, the solicitation number, the volume number and the full legal name of the respondent. A point of contact for the Respondent should be included in the package.
- b) **Title Page:** The first page of each volume of the response, after the cover page, should be the title page, which should contain:
  - i. the title of the respondent's response and the volume number;
  - ii. the name and address of the respondent;
  - iii. the name, address and telephone number of the respondent's contact;
  - iv. the date; and
  - v. the RFI number.
- c) **Numbering System:** Respondents are requested to prepare their response using a numbering system corresponding to the one in this RFI. All references to descriptive material, technical manuals and brochures included as part of the response should be referenced accordingly.
- d) **Language of Response:** Responses may be provided in English or French, at the preference of the respondent.
- e) **Response Parameters:** Respondents are reminded that this is an RFI and not an RFP and, in that regard, respondents should feel free to provide their comments and/or concerns in addition to their responses, where applicable, alternative recommendations regarding how the requirements or objectives described in this RFI could be satisfied. Respondents are also invited to provide comments regarding the content, format and/or organization of any draft documents included in this RFI. Respondents should explain any assumptions they make in their responses.PSPC

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reserves the right to seek clarifications from a respondent for any information provided in response to this RFI, either by telephone, in writing or in person.

- f) **Response Confidentiality:** Respondents are requested to clearly identify those portions of their response that are proprietary. The confidentiality of each respondent's response will be maintained. Items that are identified as proprietary will be treated as such except where PSPC determines that the enquiry is not of a proprietary nature. PSPC may edit the questions or may request that the respondent do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all interested parties.

There is no page limit on the response to be provided. Respondents are requested to respond to all questions posted in Annex B.

### 7.3 Submission of Responses

- a) **Time and Place for Submission of Responses:** Responses are to be submitted electronically to the Contracting Authority in Section 7.1.
- b) **Responsibility for Timely Delivery:** Each respondent is solely responsible for ensuring its response is delivered on time to the Contracting Authority in Section 7.1.

### 7.4 Nature of Responses Requested

Respondents are requested to provide their comments, concerns and, where applicable, alternative recommendations regarding how the requirements or objectives described in this RFI could be satisfied. Respondents are also invited to provide comments regarding the content, format and/or organization of any draft documents included in this RFI. Respondents should explain any assumptions they make in their responses.

## 8. Treatment of Responses and upcoming One-on-One Meetings (as necessary)

- a) **Use of Responses:** Responses will not be formally evaluated. The responses received may, however, be used by Canada to develop or modify procurement strategies or any draft documents contained in this RFI. Canada will review all responses received by the RFI closing date. Canada may, in its discretion, review responses received after the RFI closing date.
- b) **Review Team:** A review team composed of representatives of the client and PSPC will review the responses. Canada reserves the right to hire any independent consultant, or use any Government resources that it considers necessary to review any response. Not all members of the review team will necessarily review all responses.
- c) **Follow-up Activity:** Canada may, in its discretion, contact any respondents to follow up with additional questions or for clarification of any aspect of a response. Also PSPC reserves the right to request a one-on-one meeting with any respondent. During this meeting respondents will be requested to provide an overall presentation, which will be followed by questions from PSPC. PSPC reserves the right to set the agenda, the number of attendees and the date, time and length of these one-on-one meetings. Please note that these meetings are not to include marketing-type presentations. Respondent participation in any one-on-one meeting is **not mandatory** for this RFI, nor will non-participation preclude any supplier from participating in any potential final RFP resulting from this process. All meetings will be treated as confidential. Canada will not reimburse any respondent for expenses incurred for any follow-up activities.

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## 9. Closing date for the RFI

Responses to this RFI are to be submitted to the PSPC Contracting Authority identified above, on or before **May 7, 2018**.

Changes to this RFI may occur and will be advertised on the Government Electronic Tendering System (GETS). Canada asks respondents to visit BuyandSell at <https://buyandsell.gc.ca/for-government> regularly to check for changes, if any.

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## **ANNEX A – SUSTAINMENT SOLUTION REQUIREMENTS**

### **DND/CAF CALIBRATION PROGRAMME SUSTAINMENT SOLUTION REQUIREMENTS<sup>1</sup>**

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<sup>1</sup> This document contains partial information from Part 1 of the SBCA Questionnaire for the DND/CAF Calibration Programme, which was endorsed by the Director-level Governance Committee for the Defence Procurement Strategy on 14 December 2017.

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## EXECUTIVE SUMMARY

The DND/CAF Calibration Programme is an essential part of the DND/CAF Maintenance Acquisition and Support Function (MA&S) with the main goal of ensuring the safe and optimum performance of platforms, weapons systems and equipment by maintaining the quality of measurement and ensuring the proper working of test equipment and instruments used to perform maintenance.

The Calibration Programme currently consists of: four regional government-owned, government operated (GOGO) calibration centres (Halifax, Trenton, Cold Lake, and Esquimalt), two contractor-owned, contractor-operated calibration (COCO) centres (Dartmouth and Ottawa) operated as part of commercial contracts with industry, and a central DND calibration centre located at the National Printing Bureau in Gatineau, Quebec (QETE).

There are two contracts that were awarded to Pylon Electronics Inc. (Ottawa) and Pylon Atlantic Inc. (Dartmouth) who effectively act as two calibration centres within the programme. The commercial contracts currently entail 54.4 percent of the number of calibrations conducted annually within the Calibration Programme (i.e. 18,923 calibrations in FY 16/17), which includes in-situ calibrations, subcontracts and repairs to Test, Measurement and Diagnostic Equipment (TMDE) primarily in the Central and East Coast regions. The current contracts for the commercial portion of the Calibration Programme was due to expire on 31 March 2017 after a five-year period. The contracts have since been extended for two additional one-year extension periods that will expire on 31 March 2019.

This Annex details the CAF system-level operational requirements for the Calibration Programme, the in-service support solution-specific requirements and assesses the four sustainment principles.

The analysis of the four sustainment principles shows that the DND/CAF Calibration Programme is already achieving significant benefits by being a centrally managed programme. The programme itself is quite complex and demands the ongoing engagement with a large number of key stakeholders, which is well underway. A more formal approach to governance and oversight of the programme will, however, be necessary.

The overall environment itself has and is continuing to change: the nature of calibrations is becoming increasingly complex, the numbers of calibration within the scope of the commercial portion of the programme is rising annually, and the new sustainment solutions for other platforms, weapons systems and equipment may also change the nature of future calibration requirements.

The current contracts for commercial services are working well, but they are not performance-based or incentivized per se. Equally, the operations of the GOGO calibration centres are based on the status quo, which does not easily allow for modifications or optimization of the system. There is a significant amount of existing data that will still need to be assessed in order to support the options analysis. These assessments will also allow the SBCA to address many of the identified gaps in terms of demonstrating value for money and flexibility, and to set the conditions for a fruitful analysis of the various options.

Leveraging of economic benefits for Canadian industry was not considered for the existing commercial calibration contracts in terms of the Industrial and Regional Benefits (IRB) and Industrial and Technological Benefits (ITB) policies as the contracts were subject to International Trade Agreements. In addition, the ITB policy cannot be applied to the upcoming calibration services contracts given that the

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requirement is subject to International Trade Agreements and DND does not intend to request PSPC invoke a National Security Exception.

There may, however, be potential opportunities to leverage the next commercial contracts for other government departments or agencies thereby increasing Crown efficiency.

The initial investigations during Phase 1 of the SBCA has highlighted the following areas for consideration under the future sustainment solution that will be investigated in greater depth during the next phase:

- Performance-based approach (internal and external).
- Incentives.
- Opportunity to change contracting approach to help control costs of subcontracts and repairs.
- Need for flexibility in contracting approach for scalability in the short and long term, addressing technical advances and being prepared to restore critical services if required.
- Clarification of the authorities and responsibilities within the Calibration Programme, and continued formalization/updating of the programme is required.

The main objective of the SBCA will be to optimize the sustainment solution by determining the appropriate balance of in-house versus commercial calibration services. The scope of the SBCA will include the following areas that will be investigated during the options analysis phase:

- Commercial calibration services.
- In-situ calibrations.
- Management of subcontracts.
- Repairs to TMDE.
- Obsolescence management.
- Calibrations for speciality functions.
- Management Information System integration.
- Managed services.
- Training and personnel development.

The SBCA team will continue detailed discussions with industry, and other internal stakeholders, with a view to obtaining information to conduct the options analysis and prepare for a Request for Proposal.

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## SUSTAINMENT BUSINESS CASE ANALYSIS

### 1.1 Programme Background

#### 1.1.1 Programme Name

Department of National Defence (DND)/Canadian Armed Forces (CAF) Calibration Programme.

#### 1.1.2 System/Equipment Information

The DND/CAF Calibration Programme is an essential part of the DND/CAF Maintenance Acquisition and Support Function (MA&S) with the main goal of ensuring the safe and optimum performance of platforms, weapons systems and equipment by maintaining the quality of measurement and ensuring the proper working of test equipment and instruments used to perform maintenance.

DND/CAF currently manages a centralized Calibration Programme:

- Assistant Deputy Minister (Materiel) (ADM(Mat)) is the Functional Authority for MA&S.
- Calibration is a fundamental aspect of maintenance, which also includes inspection, troubleshooting and fault isolation, repair, overhaul, testing, conditioning, modification incorporation, parts recertification, restoration, storage and reactivation, recovery or salvage of technical equipment, servicing and elementary work as specified in approved maintenance procedures for each platform, weapon system or equipment.<sup>i</sup>
- QETE Superintendent is the Programme Authority. QETE 5 is the Technical Authority responsible to maintain an efficient, cost-effective programme that meets the needs of a broad spectrum of stakeholders throughout DND/CAF and ensures compliance to national and departmental policies and best practices for metrology.

The DND/CAF Calibration Programme is in itself an enterprise-level sustainment solution for DND/CAF.

#### 1.1.3 Current Sustainment Arrangement(s) Information

While QETE falls under Director General Land Engineering Project Management (DGLPEM) for administration, it is tasked with managing the overall DND/CAF Calibration Programme on behalf of ADM(Mat).

The Calibration Programme currently consists of: four (4) regional government-owned, government operated (GOGO) calibration centres (Halifax, Trenton, Cold Lake, and Esquimalt), two (2) contractor-owned, contractor-operated calibration (COCO) centres (Dartmouth and Ottawa) operated as part of commercial contracts with industry, and a central DND calibration centre located at the National Printing Bureau in Gatineau, Quebec (QETE).

Each DND-owned calibration centre is managed and funded by their responsible Operational Authority/Level 1 (e.g. the Royal Canadian Navy or Royal Canadian Air Force) with additional National Procurement (NP) funds transferred annually from ADM(Mat) for specified functions, tasks and services within the Calibration Programme.



The QETE calibration centre acts as the Department's *Primary Standards Laboratory* that provides primary, secondary, reference, working and traveling (i.e. transfer) measurement standards to the other calibration centres, and technical advice and calibration services to staff divisions/directorates in ADM(Mat), the operational authorities and other Technical Specialty Areas (TSAs) in QETE.<sup>ii</sup>

The main elements of the DND/CAF Calibration Programme today are:

- General Purpose Test Equipment (GPTE) – lifecycle materiel management (LCMM)/technical authority for Test, Measurement and Diagnostic Equipment (TMDE), including coordination of with other LCMMs for procurement and repair and overhaul of TMDE.
- Test Equipment Maintenance Management Information System (TEMMIS).
- Metrology (Measurement Science):
  - Expertise and advice to DND/CAF.
  - DND Primary Standards Laboratory (QETE 5-2).
  - Maintenance of DND measurement standards.
- Support to Technical Specialty Areas (e.g. Failure Analysis, Crash Investigation, Reverse Engineering and Technical Imagery).
- Four regional Government-owned calibration centres across Canada.
- Total personnel: 16 military, 50 civilian, and contractor support operating under various contract vehicles.
- Two contracts for commercial calibration services.

With the assistance of Director Land Procurement (DLP), QETE oversees contracts that provide commercial calibration services to the DND/CAF Calibration Programme. Currently, there are two contracts that were awarded to Pylon Electronics Inc. (Ottawa) and Pylon Atlantic Inc. (Dartmouth) who effectively act as two calibration centres within the programme (i.e. W8486-10BQ98-001 and W8486-10BQ98-002 respectively).<sup>iii, iv</sup>

The commercial contracts currently entail 54.4 percent of the number of calibrations conducted annually within the Calibration Programme (i.e. 18,923 calibrations were performed by Pylon in FY16/17), which includes in-situ calibrations, subcontracts and repairs to TMDE primarily in the Central and East Coast regions.

## 1.2 SBCA Trigger(s)

The current contracts for the commercial portion of the Calibration Programme were due to expired on 31 March 2017 after a five-year period. The contracts were essentially established as a renewal of the situation that had been in place for a relatively long period of time prior to 2012. The existing contracts have since been extended for two additional one-year extension periods that will expire 31 March 2019.

There is no intent to renew the commercial contracts as is. QETE initiated a detailed Calibration Programme Review and started the SBCA process in mid-2016 to be ready to establish a new contract for commercial calibration services within a renewed calibration programme with the intent of having a new

contract in place before the current contracts expire. Depending on the scope of the new services and the extent of potential internal changes, there could be a significant transition effort required.

The SBCA began shortly after the start of the programme review due to the change in policy, “effective June 8, 2016, every new and existing military maintenance and repair procurement valued at \$20 million or more will follow a coherent and standardized interdepartmental approach guided by the four principles of sustainment: performance, value for money, flexibility and economic benefits. These principles will inform decision making by the applicable Defence Procurement Strategy (DPS) governance committee.”

Key drivers for the Calibration Programme SBCA are:

- Technology. Calibration requirements and the nature of calibrations are continuing to change over time in several important ways that drive programme complexities and costs that are difficult to forecast with any degree of certainty.
  - Maintenance and sustainment concepts are evolving. Many projects, weapon system managers, and equipment management teams are undergoing their own SBCA processes to revise sustainment solutions for platforms, weapons systems and equipment that are expected to impact the Calibration Programme depending on how much is contracted out within traditional Integrated Logistics Support (ILS), Optimized Weapons Systems Support (OWSS), In-Service Support (ISS) or resulting sustainment solutions.
  - DND/CAF continues to introduce new TMDE to support the MA&S Function on a weekly/monthly basis, either due to new purchases or replacements. The full lifecycle management of TMDE has been quite challenging, especially with many line items being managed by LCMMs outside of the Calibration Programme, but reliant on the programme for calibrations.
  - The complexity of new test equipment and instruments continues to increase steadily. Newer multifunction TMDE usually need several functions calibrated each time, and many calibrations and repairs rely on the Original Equipment Manufacturer (OEM) complicating the situation for contracting and subcontracting of calibrations and repairs.
  - The maintenance, repair and overhaul of legacy systems, combined with difficulties in forecasting new requirements, authorizing and affecting repairs and/or obtaining replacements, demands a significant amount of due diligence and places constant pressures on the LCMMs and the Calibration Programme.
- Personnel. Due to the evolving nature of the Calibration Program, determining the optimal solution of contracted versus Public Service personnel has become a significant challenge. Further, ongoing professional training, and audits of personnel/laboratory competencies, is also very difficult to achieve in the current environment largely due to increasing demands for higher levels of competency.
- Demand for Accreditation. The demand to demonstrate **Metrological Traceability**<sup>v</sup> within the metrology sector overall has always been paramount. Throughout the sector, traceability is typically assured by quality management systems based on ISO 17025 (General Requirements for the Competence of Testing and Calibration Laboratories). The aerospace and defence industry in particular, is increasingly demanding that calibrations be conducted by accredited laboratories

and, for certain critical functions, by laboratories that are formally accredited for particular parameters, especially when demonstrating traceability of standards back to a national standard and ultimately to the Système International (SI).

- **Funding Pressures.** The sustainment of military equipment represents a significant investment. In Canada, DND's Materiel Group allocates over \$2.5B annually for the procurement of sustainment services in support of Canadian Armed Forces (CAF) equipment. Numerous factors are driving the Sustainment Initiative and the need to modernize sustainment and the Calibration Programme:
  - Lessons learned from Optimized Weapons System Management (OWSM) and In-Service Support Contractor Framework (ISSCF) - one size does not fit all;
  - The Defence Procurement Strategy governance requirements;
  - DND's existing fleets are aging and cost more to sustain;
  - Growing complexity of military equipment adding pressure to budgets;
  - Government of Canada procurement modernization;
  - Current model limits flexibility;
  - Improve industry competitiveness in the global market;
  - Opportunities to leverage best practices from allies;
  - Opportunities to improve relationships with suppliers;
  - Limited incentives for supplier innovation; and
  - Fall 2016 Auditor General report on operating and maintenance support for military equipment.

### 1.3 Assumptions

QETE will remain responsible for the Calibration Programme for DND/CAF within the current oversight provided by DGLEPM. QETE 5 will remain the DND/CAF Technical Authority for Calibration and Metrology, including: maintaining the DND Primary Standards Laboratory, managing measurement standards, maintaining a working relationship with the National Metrology Institution (i.e. National Research Council of Canada), managing commercial contracts for calibration services, acting as the Calibration Authority for DND/CAF, participating in the NATO Standardization Programme, and providing metrology expertise and advice to large number of key stakeholders within DND/CAF.

The current elements of the DND/CAF Calibration Programme, including the regional calibration centres, and more importantly the services that are provided to the environmental commands and the central programme, are expected to continue for the foreseeable future in some form or other. DND/CAF is, however, willing and open to all innovative ideas for how calibration services are delivered. The SBICA process itself is not designed to develop a plan for many of the programmatic issues or transformations that are expected to be required as a result of the decisions made during the SBICA process – the SBICA will focus on developing the sustainment solution for the DND/CAF Calibration Programme. Any

addition to or modification of an element of the Calibration Programme, in whole or in part, will therefore potentially need to be further developed as a parallel or follow-on activity to this SBCA and the Calibration Programme Review. It will be imperative that a comprehensive transformation plan be developed to implement any resulting internal changes.

## 1.4 Constraints

The Calibration Programme must continue to be a centrally-managed programme within the MA&S Function in ADM(Mat). Failure to maintain a central programme implies that every project, programme, weapons support manager, equipment management team and/or system sustainment solution would have to maintain sufficient expertise in metrology and would need to manage their own standards and calibrations, where it would be extremely difficult to maintain traceability or find any efficiencies for DND/CAF.

The scope of the Calibration Programme does not include managing or conducting calibrations for the following types of equipment:

- Anything within Measurement Canada's mandate (i.e. Weights and Measures Act for Trade).<sup>vi</sup>
- Radiac equipment.
- Cryptographic and communication security equipment.
- Medical equipment (i.e. any devices that are used for patient diagnostics, patient care or patient treatment).
- Law enforcement equipment (i.e. devices that are used in the enforcement of the Civil Act or Criminal Code).
- Explosive ordnance (i.e. all munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents).

The delivery of the Calibration Programme is regulated by a variety of general and MA&S-specific policies and regulations, some of which are also in need of major updates (e.g. Procurement Administration Manual, Financial Administration Manual, Supply Administration Manual, MMI 1059 Electrical/Electronic and Physical Properties Test and Measurement Equipment Design/Maintenance and Calibration Authority and Technical Responsibilities, Lifecycle Materiel Manager's Handbook, AF-9000 and related Canadian Forces Technical Publications, etc.). Higher-precedent policies in particular do place a number of constraints on the programme. There have been several recent changes that will demand additional review and modifications to governing policies, regulations and procedures for the Calibration Programme itself (e.g. changes to procurement rules and approval processes for high-cost repair and overhaul), and changes are expected as a direct result of this SBCA process. Specific changes will be identified throughout the process.

Many of the specifics contained in the current Canadian Forces Technical Order (CFTO) C-06-020-001/AM-001, Maintenance Policy Test Equipment Calibration Policy should not be looked at as constraints on the Calibration Programme, as the CFTO is essentially a reflection of the status quo as it was in July 2012. A complete re-write of the CFTO is expected as a key output following the SBCA.

Starting in FY 2017/18, all authorized instruments that require calibration will need to be registered in the Defence Resource Management Information System (DRMIS), where they will be managed from a

supply/calibration recall perspective. The legacy TEMMIS will be decommissioned when its functionalities are fully integrated into DRMIS.

DND/CAF have been directed to comply with the following:<sup>vii</sup>

- “L1s shall comply with policies and direction as detailed by QETE ensuring that all authorized CAF test, measurement and diagnostic equipment receives its periodic calibration. Test, measurement and diagnostic equipment calibration intervals shall be established by the Technical Authority for the individual test equipment in accordance with its design, operational environment and proven long-term stability. The calibration interval for individual test equipment shall be specified in the TEMMIS / DRMIS database.”
- “L1s shall consult with QETE before buying test, measurement and diagnostic equipment and to forecast calibration requirements.”

This SBICA will not directly address the following scope of activities that must continue to be delivered internally by the Calibration Programme:

- Governance and programme management.
- Routine stakeholder engagement and support.
- Maintenance of programme policies, regulations and procedures.
- Metrology expertise to DND/CAF.
- LCMM functions for General Purpose Test Equipment (i.e. C70F, C70G and SM72A).
- Management information system (e.g. TEMMIS) and integration with DRMIS and other enterprise systems.
- DND/CAF Primary Standards Laboratory.

## 1.5 Dependencies

The Calibration Programme is a pan-DND/CAF programme operated by QETE 5 and administered under Director General Land Engineering Programme Management (DGLPEM) on behalf of ADM(Mat). There are a significant number of key stakeholders across DND/CAF that are dependent on the Calibration Programme to help ensure the safe operation of platforms, weapon systems, equipment and instruments and conduct effective maintenance of that equipment. These systems are all in different phases of their lifecycle.

QETE engages individually with these stakeholders for longer-term planning purposes within existing governance mechanisms such as the Common NP Working Group chaired by DGLPEM. The Calibration Programme will continue to conduct ongoing, periodic engagement with all key stakeholders with a view to providing metrology advice, managing existing TMDE and forecasting future requirements that may impact the nature, scope or funding of the Calibration Programme, including its commercial contracts and departmental capabilities.

The transition from TEMMIS to DRMIS relies on direct support from several important internal stakeholder that will need to continue to be managed and coordinated through QETE 5.

The Calibration Programme is also reliant on the Environmental Services/Operational Authorities for both the coordination and execution of the programme. The current operation of the GOGO laboratories themselves depend on funds, resources and support from their respective chains of command and on funds transferred from the NP Programme managed by QETE.

## **1.6 Sustainment Requirements Analysis**

### **1.6.1 Identification of Requirements**

#### ***1.6.1.1 Sustainment Objectives***

The sustainment objectives for the DND/CAF Calibration Programme are:

- OBJECTIVE 1. Establish and maintain an efficient and cost-effective, centrally-managed enterprise sustainment solution for the DND/CAF Calibration Programme responsible to the Maintenance Acquisition and Support (MA&S) Functional Authority (i.e. Assistant Deputy Minister (Materiel)) and responsive to the environmental services.
- OBJECTIVE 2. Ensure DND/CAF platforms, weapons systems and equipment are maintained using calibrated Test, Measurement and Diagnostic Equipment (TMDE) to ensure materiel assurance.
- OBJECTIVE 3. Develop an optimized, integrated solution to provide calibration services such that equipment, instruments, systems and subsystems are calibrated on a recurring basis using commonly accepted metrology principles.
- OBJECTIVE 4. Identify and adapt to evolving requirements for a large variety of key internal stakeholders that includes new capital projects, weapons systems managers, equipment management teams and other DND equipment and sustainment projects undergoing their own revisions of traditional Integrated Logistics Support (ILS), Optimized Weapons System Support (OWSS), In-Service Support (ISS) or Sustainment Initiative SBICA that will impact on special tools and test equipment, TMDE, metrology expertise for contracting, or overall calibration needs.
- OBJECTIVE 5. Conduct periodic engagements with all key stakeholders with a view to providing metrology advice, managing existing TMDE, and forecasting future requirements that may impact the nature or scope of the Calibration Programme or the Sustainment Business Case, including its commercial contract(s) and departmental capabilities.
- OBJECTIVE 6. Holistically assess the sustainment solution using the Sustainment Initiative Principles (Performance, Value for Money, Flexibility and Economic Benefits).

#### ***1.6.1.2 CAF System Level Operational Requirements***

The DND/CAF system-level operational requirements for the Calibration Programme are:

- Ensure that calibrated equipment and instruments comply with the requirements of the Maintenance Acquisition and Support (MA&S) Functional Authority, Airworthiness, Land Materiel Assurance and Naval Materiel Assurance programmes.

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- DND/CAF TMDE require periodic calibration to ensure the operational effectiveness of platforms, weapons, equipment and supporting systems.
  - The Calibration Programme and metrology Technical Specialty Area (TSA) seeks to ensure that metrology principles are applied throughout the DND/CAF MA&S Function (i.e. uncertainty of measurements, confidence in measurements, calibration, traceability, etc.).
  - All TMDE shall be calibrated at regular intervals through authorized facilities with full metrological traceability.<sup>viii, ix, x</sup>
  - Ultimately, all calibrations conducted must be traceable to the Système International (SI) through one of the following:<sup>xi</sup>
    - Calibrations provided by a competent laboratory;
    - Certified values of certified reference materials provided by a competent producer with stated metrological traceability to the SI; or
    - Direct realization of the SI units ensuring by comparison, directly or indirectly, with national or international standards.
  - Safety (Airworthiness, Land Materiel Assurance, Naval Material Assurance, SUBSAFE, etc.). Perform compliant calibrations. Equipment must receive certified calibrations in accordance with AF 9000 and appropriate CFTOs/maintenance policies. Specifics include, but are not limited to:
    - Minimum of an annual calibration or as prescribed for each equipment or instrument.
    - Retain (or maintain access to) test reports, calibration certificates, calibration data and other records for audit or investigation purposes.<sup>xii</sup>
    - Calibrations are to be performed by trained, competent personnel.<sup>xiii</sup>
  - Technical Airworthiness. Any support equipment, measuring device, test equipment and test apparatus used in the performance of maintenance shall:<sup>xiv</sup>
    - Meet the specifications in the applicable maintenance manual of the approved maintenance program with respect to accuracy, considering the intended use;
    - Be calibrated in accordance with the calibration requirements published by the manufacturer of the measuring device, test equipment and test apparatus, and accompanied by an acceptable calibration certificate or record;
    - Be calibrated by an organization who has a quality management system acceptable to the Technical Airworthiness Authority (TAA) and whose calibration procedures are traceable to a national standard; and
    - Be assessed, when the calibration certificate, record or report identifies that the measuring device, test equipment and/or test apparatus was found to be in an 'Out-of-Tolerance' condition. In such case, the organization shall determine if any aeronautical products are affected and take appropriate action.
  - Turnaround Time. Routine turnaround time for equipment calibrations within current limits (i.e. 10 days). Turnaround times for prioritized calibrations for operational requirements or surges (e.g. increased operational readiness) (i.e. within three (3) days).

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- Responsiveness. Capable of responding to urgent operational requirements on a case-by-case basis with a turnaround time of less than three (3) days.
  - Deployment Support. Provide continuous support for mission essential functions for deployed operations either through the use of spares or direct support to deployed operations (e.g. reach-back ability to surge with priority turnaround).
  - In-situ calibrations. Perform in-situ calibrations for TMDE or instruments that cannot be moved or where it does not make economic sense to do so for a large variety of users throughout DND/CAF. This requirement implies the employment of trained, vetted and equipped local personnel or mobile calibration teams/services.
  - Affordability. The programme must stay within budget allocation and be flexible to account for budgetary constraints that may be applied on a periodic basis (e.g. budget pressures or changes in priorities during the fiscal year or from year to year).
  - ISO 10725 (General Requirements for the Competence of Testing and Calibration Laboratories). Comply with the various requirements within ISO 17025 (i.e. general, structural, resources, process and management system). Calibrations performed for the Calibration Programme shall be conducted by competent laboratories and subject to verification in accordance with ISO 17025.
  - MIL-STD-45662A (Calibration Systems Requirements). Ensure compliance with Mil-Std-45662A to establish and maintain a system for the calibration of all TMDE used in fulfilment of contractual requirements (i.e. quality assurance, accuracy of measurement standards, environmental controls, interval of calibrations, calibration procedures, out-of-tolerance conditions, adequacy of the calibration system, calibration sources, records, calibration status, control of subcontractor calibrations, storage and handling and amendments and revisions).
  - Management Information System. Manage an enterprise-level management information system (currently TEMMIS – Test Equipment Maintenance Management Information System) to coordinate and assist in the management of the Calibration Programme across DND/CAF.
  - Information Management. Defence Resource Management Information System (DRMIS). Ensure compliance with DND Enterprise Information Systems requirements. All authorized instruments that require calibration will need to be registered in DRMIS, where the process to manage the calibration of these instruments will be managed. TEMMIS will be decommissioned when its function is completely integrated into DRMIS.

### ***1.6.1.3 Applicability of Industrial and Technological Benefits (ITB) - Value Proposition (VP)***

Trade agreements apply to the current commercial contracts for calibration services.

For the Calibration Programme, the following major trade agreements will apply:

- North American Free Trade Agreement (NAFTA);
- World Trade Organization Agreement-Agreement on Government Procurement (WTO-AGP);
- Canadian Free Trade Agreement (CFTA); and
- Canada-European Union Comprehensive Economic and Trade Agreement (CETA).



The ITB policy cannot be applied to the upcoming calibration services contracts as this DND requirement has been classified by PSPC as G SIN code JX6635D – Electrical and Electronic Test Equipment, Calibration Services – Repair and is subject to International Trade Agreements.

In addition, DND does not intend to request PSPC invoke a National Security Exception for this requirement as per DAOD 3016-0 National Security Exception (NSE) Under Trade Agreements, given that Canada's security interests are not at risk. The calibration services to be competitively procured are of a commercial nature.

While the ITB policy cannot be applied to the commercial contracts due to international trade agreements, the principle of Economic Benefits will still be assessed as part of the SBCA process.

## **1.6.2 Desired Alignment to the Four Sustainment Principles**

### ***1.6.2.1 Performance***

Given that the Calibration Programme itself is an enterprise sustainment solution for DND/CAF, many of the CAF operational-level requirements detailed above also apply to the ISS solution-specific requirements that in theory do not change whether they are fulfilled in-house or contracted out. The desired performance-specific requirements are:

- P1. Availability. Provision of goods and services to operations and maintenance support as and when required.
- P2. Reliability. Maximize the maintenance-free period of in-service time.
- P3. Suitability. Fit, form and function with a defined state of configuration and serviceability.
- P4. Safety. Compliance with safety, Airworthiness and materiel assurance programme regulations.
- P5. Deployability. Required maintenance and logistics support for deployed operations, including the ability to project and reach-back.
- P6. Effectiveness. Maximize operational readiness and the ability to generate, employ and sustain capability.
- P7. National Security Interests. Identify, maintain and/or improve elements related to the sustainment of specific equipment to satisfy applicable National Security Interests, and comply with National Defence Security Orders and Directives, access to Controlled Goods and International Traffic in Arms Regulations (ITAR).
- P8. Traceability. Demonstrate traceability for technical authorities and operational authorities.
- P9. Repairs. Effect the repairs of TMDE and measurement standards in an efficient, effective, economic manner working closely with the LCMMs, equipment management teams, weapons systems manager and project teams.
- P10. Obsolescence Management. Manage the obsolescence of TMDE and measurement standards in an efficient, effective, economic manner working closely with the LCMMs, equipment management teams, weapons systems manager and project teams.

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P11. Subcontracts. Oversee subcontractor work for in-situ calibrations, repairs to TMDE and/or calibrations that must be performed by original equipment manufacturers (OEMs) or other contracted services.

**1.6.2.1.1 How will performance requirements be addressed under the intended future sustainment arrangements?**

Quality management is difficult to fully achieve in the current system in that there are limited provisions for applying or auditing the detailed requirements as specified in ISO 17025 or any review of “quality management acceptable to the TAA.” Initial feedback from industry indicates that it is not possible for industry to fully comply with ISO 17025 accreditation when it receives its measurement standards as Government Furnished Equipment from QETE, who do not currently have an ISO 17025 system in place. There is an in-house initiative with the goal of reviewing and formalizing the elements of ISO 17025 for internal laboratories (i.e. calibration centres). It is expected that this undertaking will take several years to implement fully. Many aspects of an ISO-compliant system are in place within the calibration centres and only need to be better documented, audited and formally accredited. Achieving the full intent of related requirements will demand major changes to future contracts, performance-based approaches and parallel internal changes, especially for primary and secondary measurement standards that contribute directly to traceability requirements.

The future sustainment arrangement will establish acceptable turn-around times between DND/CAF pickup points and the contractor that DND intends to have tracked to establish performance metrics related to the sustainment arrangement. The capture of information for turn-around time metrics will include all DND/CAF pickup points, including operational units. DND intends to work with the contractor to determine the best mechanism to record this information and establish these metrics.

The management of obsolescence both in terms the continued suitability of some TMDE and/or the availability of ongoing support from an OEM has become challenging as the scope of the Calibration Programme has increased. DND will look to incentivize the contractor to have them ensure there is continued support for TMDE repairs, or recommend replacement when they have determined existing DND TMDE can no longer be supported.

The future sustainment arrangement intends to incentive the management, performance, and cost control of subcontracts that are required for calibration services that are not attainable by the prime contractor.

**1.6.2.1.2 What are the perceived benefits of achieving the requested performance (operational readiness and mission capability)?**

TMDE is recalled for calibrations on a scheduled basis – calibrations are performed and instruments are returned into service. As there is no current performance management system that reviews the requirements for TMDE, there is a significant amount of TMDE on shelves acting as spares or simply waiting decommissioning. DND believes there is an opportunity to find cost-effective, efficient solutions as an overall system, and put measures in place to strive for continuous improvement. Direct savings are not expected overnight. Instead, it will be important to establish and use management performance data, institute an ongoing lessons-learned process and continuously improve performance within the complex calibration system and better understand the full “cost of ownership” throughout.

The perceived benefit of progressing towards a performance-based, preferably incentivized approach will increase the Calibration Programme’s ability to find direct and indirect efficiencies. The role of the

LCMMs of the various supply accounts is also important to the successful implementation of any changes to the calibration system. The Calibration Programme must continue to be sensitive to the lifecycle needs of the LCMMs, weapons system managers, equipment management teams and projects, particularly the maintenance programs' use of the TMDE instruments, such as in technical airworthiness. The opposite will be true as well in that these key stakeholders must work with the Calibration Programme and the contractor to determine future calibration needs and work closely to develop a performance-based approach to help eliminate unnecessary spares, etc. in a more proactive manner.

**1.6.2.1.3 Are there any related limitations and constraints whereby desired performance cannot be achieved due to circumstances beyond the control of Canada?**

DND does not believe there are limitations and constraints whereby desired performance cannot be achieved due to circumstances beyond the control of Canada.

Given the very wide range of TMDE in the programme, there are, however, important considerations for developing an effective sustainment solution:

- 1) Given the requirement to calibrate most TMDE to OEM specifications, it is usually best practice to contract that work with the appropriate OEM unless there are suitable, equivalent capabilities that exist or could be developed within the Calibration Programme. When work must go to a particular OEM either directly or indirectly by subcontract, it can be difficult to control costs when there are no mechanisms for doing so. Depending on calibration type and the size of a fleet of instruments, internal resources or central contractor facilities can develop calibration procedures and conduct calibrations, and some repairs if required, in a cost-effective manner. Specific business cases and production planning will help optimize the sustainment solution.
- 2) For legacy systems or unique functions, it may not make sense for Canada to divest itself of in-house capabilities simply because some of this work could be done by commercial contractors. There will usually be significant non-recurring, setup costs and investments in measurement standards and other devices and training that must be considered. There will likely also be additional advantages for consolidating certain measurement parameters depending on expected throughput and expectations for leveraging similar work once a capability is established.
- 3) Some TMDE may still be under warrantee when undergoing calibrations – the warrantee status of each instrument must be considered in the event that they cannot be calibration or are deemed in need of repair. The management processes and direct links to the various LCMMs must be developed within the delivery of the Calibration Programme.
- 4) Obsolescence is considered on a case-by-case basis during the lifecycle management of TMDE (and measurement standards) depending on business cases established to consider the current and future needs of the users, historic costs of calibrations and repairs, the forecasted availability of support from in-house capabilities, contractors or OEMs, and the costs associated with procuring new TMDE.
- 5) For some instruments that are supported by the Calibration Programme, and for in-situ calibrations in particular, there are security, controlled goods, materiel assurance (e.g. Cyber Mission Assurance) and ITAR constraints that will limit who can perform the calibrations or have access to sites. Additional constraints related to DRMIS will also limit the location of terminals and access to the system: these constraints are within the control of Canada.

### **1.6.2.2 Value for Money**

The value for money-specific requirements are:

- V1. Smart Buyer. Product knowledge, business acumen, programme management expertise and visibility into cost, technical drivers. Enabled through transparency of data.
- V2. Balanced Risk. Risk transfer to other parties matches the responsibility and scope (Risks = Premiums).
- V3. Efficiency. Delivery of goods and services at reduced level of effort. Requirement exists both through initial arrangement and a continuous improvement system
- V4. Incentives. Rewards and remedies to drive desired behaviour to deliver outcomes and achieve targets.
- V5. Continuity. Maintenance of the contractual framework and performance over contract duration.
- V6. “Should-Cost” Determination. Active “smart buyer” efforts in partnership with industry must drive towards a clear understanding of costs and a recognition of the value of the services.
- V7. Repairs. Obtain repairs of TMDE within the Calibration Programme at fair market prices without undue delays.

#### **1.6.2.2.1 How will the intended future sustainment arrangement satisfy the Canadian Government's requirement to obtain value for money as defined by the above value for money requirements?**

Current work for commercial calibration services is paid as a fixed monthly rate and on a transactional basis for calibrations performed. The current approach functions well as originally designed where two commercial contracts operate as separate COCO calibration centres within the Calibration Programme, which are centrally controlled by the Technical Authority (QETE 5-4). Recording the information in TEMMIS and several internal spreadsheets, the Technical Authority manages the details of each calibration, subcontract and repair authorization. The information is reviewed to confirm that the work was done and invoiced properly per best practices. While appropriate controls are in place to ensure compliance and fiscal oversight, there is however very little use of current data to assess value for money, make comparisons, understand baselines, assess trends or set targets. A significant amount of management time and energy is devoted to maintaining the status quo in terms of overall performance of the Calibration Programme for both internal and external elements. Better metrics and performance management approaches would assist greatly in this manner and should therefore be assessed during the options analysis phase to compare options for delivering the programme and assessing value for money.

#### **1.6.2.2.2 What are the specific perceived benefits related to those value for money requirements that will not be achieved under the future sustainment arrangements?**

DND does not believe there are limitations and constraints whereby desired value for money requirements cannot be achieved due to circumstances beyond the control of Canada.

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**1.6.2.2.3 What limitations and constraints hinder the ability to obtain value for money in the sustainment of this weapons system or sub-system?**

In terms of obtaining value for money in the commercial services portion of the Calibration Programme, DND does not believe there are any real limitations or constraints that would hinder DND/CAF once the full scope of what will be included in those services have been determined.

The Calibration Programme is currently not set up to take advantage of existing data within the system, making it difficult to learn from past performance, assess trends or help forecast future needs, but the goal is to address these deficiencies in the future sustainment arrangement. A significant amount of time and energy will be still be needed to successfully transfer past data from the legacy TEMMIS system to DRMIS. The existing data will, however, be further evaluated during the next phase to help determine better metrics and establish a baseline performance for the options analysis phase and subsequent operations of the programme. This information will be communicated to Industry in the Request for Proposal.

**1.6.2.3 Flexibility**

The flexibility-specific requirements are:

- F1. Scalability. Budgetary, operational tempo, fleet size, systems capability, fleet life.
- F2. “Plan B”. Canada’s control over critical elements to allow for contract de-scoping, termination and follow-on solicitations.
- F3. Evolution. An ability to adapt to change resulting from continuous improvement and technological advances.

**1.6.2.3.1 What has helped, or will help you to achieve flexibility on your programme as defined by the above flexibility requirements?**

The options analysis will consider contractual methods to ensure scalability in terms of short-term surges or temporary slowdowns and longer-term modifications to the number or nature of the calibrations, subcontracts or repairs that may be required in future years. While the number of calibrations conducted by the current contract is trending upwards annually, and is likely to continue, the new contract must be flexible to fluctuations (up or down) and allow major changes due to a number of factors.

Better governance and oversight of the Calibration Programme within ADM(Mat) and the maintenance organizations within the L1 Operational Authorities, including routine assessments of related SBCAs, will help to better forecast the calibration requirements over time. The number of calibrations required, technical requirements and the proactive determination of whether other projects will contract out such services within their SBCA sustainment solutions or whether TMDE from those other projects will be added to the central calibration requirements must be addressed on an ongoing basis. Developing the expertise and providing metrology/calibration advice to other SBCAs will also provide a degree of flexibility and help in their contracting efforts.

Risks associated with the “Plan B” requirement (i.e. the need to maintain control over critical elements of the sustainment solution) will be mitigated by: choosing not to contract out critical services; ensuring that there is sufficient redundancy within the programme for other critical capabilities discussed below; and ensuring the ability to quickly restore or re-contract services in the event of a contract failure. The

specific mechanisms will be developed in Phase 2. The core elements of the Calibration Programme that will continue to be delivered by the programme management office and Technical Authority are:

- Program Governance and management.
- Stakeholder engagement and support.
- Metrology expertise to DND/CAF.
- LCMM function for TMDE.
- TEMMIS/DRMIS.
- Participation in international programmes (e.g. NATO) and metrology bodies (e.g. NCSLI).
- Primary Standards Laboratory.

**1.6.2.3.2 What are the specific benefits related to those flexibility requirements that will be achieved with the future sustainment arrangements?**

The Calibration Programme is expected to evolve to better manage its various elements and be ready to manage a potentially very different commercial services contract. Mechanisms for a more formal programme are being developed, including formalizing the DAOD, updating programme governance, developing routine stakeholder engagement, implementing a new management framework, optimizing program delivery, growing metrology expertise and improving the quality management system, all aimed at improving readiness of the programme and its people to adapt.

The Calibration Programme is a no-fail system. The options analysis will investigate the flexibility requirements in greater detail to recommend ways of ensuring, in particular, that Canada minimizes the risk of experiencing gaps in critical services and that the sustainment solution will be suitably adaptable to respond to emerging and sometimes very urgent operational requirements of the CAF. DND intends to work with the contractor to address and integrate the flexibility requirements.

**1.6.2.3.3 What related limitations and constraints will prevent obtaining the required level of flexibility for sustainment?**

The limitations and constraints are similar to those in paragraph 1.6.2.2 Value for Money. Existing data must be analyzed and appropriate metrics put in place to better manage the overall Calibration Programme and its sustainment solution.

The implementation of performance-based contracting and best practices will be investigated in the next phase. The difficult aspects foreseen in developing the details for the next contract will be related to the intersections and interdependencies between the GOGO calibration centres, the end users and the maintenance authorities for the various TMDE.

**1.6.2.4 Economic Benefits**

The economic benefits requirements are:

- E1. Develop/Maintain/Grow Domestic Industrial Capabilities. The contract's ability to maintain and be prepared to develop/grow domestic industrial capability for calibration services.

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- E2. Establish/Maintain/Increase Technological “Value”. The contract’s ability to effect technological change.
- E3. Economic Growth. The contract’s ability to enhance Canada’s economy through innovation, human resources, capital formation, technological development and exports.
- E4. Canadian Jobs Creation. The contract’s ability to increase the quantity and quality of jobs within the Canadian defence and aerospace sectors, including metrology and calibration services.

DND intends to work with the contractor to leverage the economic benefit requirements. Specific solutions are expected to vary dependent on the final scope of the contract and unique circumstances.

### **1.6.3 Summary of the Initial Analysis and Four Sustainment Principles**

The initial analysis of the four sustainment principles shows that the DND/CAF Calibration Programme is already achieving significant benefits by being a centrally managed programme. The programme itself is quite complex and demands the ongoing engagement with a large number of key stakeholders, which is well underway. A more formal approach to internal governance and oversight of the programme, however, will help greatly in this regard.

The overall environment itself has and is continuing to change: the nature of calibrations is becoming increasingly complex, the numbers of calibration within the scope of the commercial portion of the programme is rising annually, and the new sustainment solutions for other platforms, weapons systems and equipment may also change the nature of future calibration requirements. Routine periodic interaction with all the stakeholders, including being part of the SBCA process for projects that may have an impact on the Calibration Programme, would help to forecast future requirements and address some of the assessed gaps.

The current contracts for commercial services are working well, but they are not performance-based or incentivized. There is a significant amount of existing data that should be assessed in order to support the options analysis and operate more on a performance management basis. These assessments will also allow the SBCA to address many of the identified gaps in terms of demonstrating value for money and flexibility, and set the conditions for a fruitful analysis of the various options and an optimized programme in the long term.

Leveraging of economic benefits for Canadian industry was not considered for the existing commercial calibration contracts in terms of the Industrial and Regional Benefits (IRB) and Industrial and Technological Benefits (ITB) policies as the contracts were subject to International Trade Agreements. In addition, the ITB policy cannot be applied to the upcoming calibration services contracts given that PSPC has determined the requirement is subject to International Trade Agreements and DND has confirmed that it does not intend to request PSPC invoke a National Security Exception.

There are, however, opportunities to potentially leverage the next commercial contracts for other government departments or agencies thereby increasing Crown efficiency, or to allow the winning bidder to also provide calibration services to other companies in the defence and aerospace sectors.

## 1.7 Requirements for Additional Investigation

The initial investigations during Phase 1 of the SBCA have highlighted the following areas in the future sustainment solution that will be investigated in greater depth during the next phase:

- Performance-based approach (internal and external).
- Incentives.
- Opportunity to change contracting approach to help control costs of subcontracts and repairs, and better manage obsolescence of TMDE and measurement standards.
- Need for flexibility in contracting approach for scalability in the short and long term, addressing technical advances and being prepared to restore critical services if required.
- Clarification of the authorities, responsibilities and accountabilities within the Calibration Programme, and continued formalization/updating of the programme is required.

## 1.8 Conclusions

While the DND/CAF Calibration Programme still needs to become more formalized and must continue adapting to the changing environment, it is already achieving strategic benefits by being a centrally managed programme within the MA&S Function in ADM(Mat), and one that is reasonable well-integrated with and responsive to the Operational Authorities (i.e. Army, Navy and Airforce).

The Calibration Programme Review and SBCA will continue striving to mature the programme, grow its level of competency in metrology, and proactively respond to evolving needs of a large variety of key stakeholders while striving for additional efficiencies and cost savings.

DND/CAF must be ready to commit to internal changes to the Calibration Programme that will likely emanate from important decisions being made as a result of a thorough investigation of the options during Phase 2 and 3 of this SBCA. Given the complex organizational nature of the overall programme that involves multiple L1s, there may be a need for additional parallel initiatives to plan and implement necessary changes.

## 1.9 Next Steps

Internally, the first major steps to formalize the Calibration Programme and set the conditions to implement any resulting changes will be to formulate and publish DAODs for the programme. A new policy DAOD will establish the authorities for the Calibration Programme to be published early in 2018 with an instructional DAOD following immediately thereafter to detail specific responsibilities within the programme. Additionally, appropriate service-level agreements will be established between ADM(Mat) and the L1 Operational Authorities, especially to govern calibration centres operating within their organization.

The main objective of the SBCA will be to optimize the sustainment solution by determining the appropriate balance of in-house versus commercial calibration services to respond to current and foreseen requirements of the Calibration Programme and the expectations of DND/CAF L1s. The scope of the SBCA will include the following areas that will be investigated in greater detail in the next phase:

- Commercial calibration services.



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- In-situ calibrations.
- Subcontract management.
- Repairs to TMDE.
- Obsolescence management.
- Calibrations for speciality functions.
- Management Information System integration.
- Managed services.
- Training and personnel development.

Continue detailed discussions with industry as indicated in the detailed engagement plan (i.e. conduct a Request for Information with a view to obtaining information to conduct the options analysis and prepare for the Request for Proposal).

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## End Notes

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<sup>ii</sup> **PRIMARY MEASUREMENT STANDARD** is defined as “measurement standard established using a primary reference measurement procedure, or created as an artifact, chosen by convention.” *International Vocabulary of Metrology – Basic Concepts and Associated Terms (VIM)*, Bureau international des poids et mesures, 3<sup>rd</sup> Edition, 2008, paragraph 5.4. A **SECONDARY MEASUREMENT STANDARD** is a “measurement standard established through calibration with respect to a primary measurement standard for a quantity of the same kind.” Ibid, paragraph 5.5.

<sup>iii</sup> <https://buyandsell.gc.ca/procurement-data/contract-history/W8486-10BQ98-001-HN-1>.

<sup>iv</sup> <https://buyandsell.gc.ca/procurement-data/contract-history/W8486-10BQ98-002-HN-0>.

<sup>v</sup> **METROLOGICAL TRACEABILITY** is defined as “property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to measurement uncertainty.” *International Vocabulary of Metrology – Basic Concepts and Associated Terms (VIM)*, Bureau international des poids et mesures, 3<sup>rd</sup> Edition, 2008, paragraph 2.41.

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<sup>vii</sup> FY 17/18 ADM(Mat) Functional Planning Guidance, May 2017.

<sup>viii</sup> *International Vocabulary of Metrology – Basic Concepts and Associated Terms (VIM)*, Bureau international des poids et mesures, 3<sup>rd</sup> Edition, 2008, paragraph 2.41.

<sup>ix</sup> The property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties. Traceability ... applies to measurements / calibrations made from the prime system or subsystem through an unbroken chain of comparisons to the national reference standards. [MIL-HDBK-1839A, 27 Nov 2000].

<sup>x</sup> **CALIBRATION** is an “operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement standards and corresponding indications with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication.” *International Vocabulary of Metrology – Basic Concepts and Associated Terms (VIM)*, Bureau international des poids et mesures, 3<sup>rd</sup> Edition, 2008, paragraph 2.39.

<sup>xi</sup> ISO/FDIS 17025:2017 para 6.5.

<sup>xii</sup> ISO/FDIS 17025:2017 para 7.8.

<sup>xiii</sup> ISO/FDIS 17025:2017 para 6.2.

<sup>xiv</sup> DND, C-05-005-001/AG-001, Technical Airworthiness Manual (TAM), [Master Copy Available online: <http://www.forces.gc.ca/en/business-regulations-technical-airworthiness/technical-airworthiness-manual.page>], para 3.1.2.S2 Performance of Maintenance.

## **ANNEX B – Questions to the Industry**

Canada is requesting Industry feedback to assist with the formulation and implementation of a Performance-Based Enterprise-Wide Sustainment Solution for the departmental Calibration Programme on behalf of the Department of National Defence (DND). The following are main focus areas of the RFI:

- The activities required to sustain an Enterprise-wide Sustainment Solution and the optimal division of responsibilities between Government and Industry;
- Sustainment options, implementation/schedule and related costs;
- A performance management framework including a definition of outcomes and high-level metrics;
- Considerations associated with any potential tendering process, potential contractual terms and conditions, and their impact on contracted outcomes; and
- Approaches to meeting and leveraging the four principles of the GoC Sustainment Initiative: Performance, Value for Money, Flexibility and Economic Benefits.

As detailed at Annex A, the core elements of the DND/CAF Calibration Programme that are expected to continue to be delivered by the DND/CAF programme office and Technical Authority are described below. DND is, however, willing and open to all innovative options, models and concepts for the Enterprise Sustainment Solution for calibration and encourages respondents to disclose and describe their ideas:

- Program Governance and management;
- Stakeholder engagement and support;
- Metrology expertise to DND/CAF;
- Lifecycle Materiel Management (LCMM) function for Test Measurement and Diagnostic Equipment (TMDE);
- Test Equipment Maintenance Management Information System (TEMMIS) / Defence Resource Management Information System (DRMIS);
- Participation in international programmes (e.g. NATO) and metrology bodies; and
- Primary Standards Laboratory.

Respondents are asked to provide comments, remarks, and advice concerning the following:

1. Canada intends to include performance incentives related to the contract. What performance metrics would align with the work performed in future contracts for the DND/CAF Calibration Programme and how would they be measured and/or incentivized? How should performance be managed?
2. What other Key Performance Indicators (KPIs) should be measured and incentivized in future contracts for the DND/CAF Calibration Programme?
3. DND is in the process of establishing a governance and management structure for the Calibration Programme and contracted scope. As a partner in the enterprise sustainment solution, what factors should DND consider in the development of an oversight and management structure for a future contract for calibration and repairs services?
4. What are your firm's current and planned capabilities with respect to calibration and repair of TDME, including accreditations and ISO 17025 certification, and customers/sectors served?
5. How does your firm propose that the following areas identified in Annex A be addressed? Provide a description of the proposed solution and include any assumptions made, foreseen integration or implementation issues, and indicative costs:
  - Commercial calibration services?
  - In-situ calibrations?
  - Subcontract management?
  - Repairs to TMDE?
  - Obsolescence management?
  - Calibrations for legacy/unique functions?
  - Management Information System integration?
  - Managed services?
  - Training and personnel development?
6. For the additional issues and gaps identified, what factors must be considered and how would your company address the following:
  - Balancing risks for Subcontracts & Repairs?



- Performance Management?
  - National Procurement (NP) forecasting/funding?
  - Supply Chain Risk Management?
  - Force Generation and Deployment Support?
  - Turnaround Time throughout the system?
  - Accreditation and Audits?
  - Logistics, coordination and transportation / pick up.
7. Propose solutions for all or part of the following. Provide a description of the model and include any assumptions made, foreseen integration or implementation issues, and indicative costs:
- A DND-wide calibration service delivery model that would best support DND's requirements per Annexes A and C, acknowledging that the locations, roles and responsibilities of existing elements would be subject to change in order to optimize the solution. Models could include embedded support, Government-Owned Contractor Operated (GOCO) facilities, managed services, or possibly a completely commercially-delivered solution.
  - DND's transition from Test Equipment Maintenance Management Information System (TEMMIS) to Defence Resource Management Information System (DRMIS) is discussed in Annexes A and C. DRMIS is not, however, expected to replace the full functionality of TEMMIS, which in part currently includes the major functions of managing recalls, work orders, shipping, certificates and calibration history. DND anticipates the need for a Calibration Programme-specific management information system to control data and manage information within the Calibration Programme: to address calibration-specific issues; to meet new requirements based on ISO 17025; to manage future performance-based contracts; and to perform analytics to improve program performance. How does your firm currently control and manage information related to calibration services with your clients, including performance management, distribution of test reports/calibration certificates and other business processes related to the client? What management information system would your firm recommend to meet the unique requirements of the Calibration Programme? How would your firm propose that such a management information solution be developed and implemented for shared use?
  - Conduct all in-situ calibrations across Canada (see Annex D).

- Any other aspect of the Enterprise Sustainment Solution for its development, implementation and/or delivery.
8. How can each of the requirements identified in Annex A for Performance, Value for Money, Flexibility and Economic Benefits be met and leveraged?
- DND is particularly interested in finding ways to mitigate risks associated with the “Plan B” requirement (Requirement F2) in Annex A, Section 1.6.2 Desired Alignment to the Four Sustainment Principles (i.e. the need to maintain control over critical elements of the sustainment solution). Canada wishes to minimize the risk of experiencing gaps in critical services and ensure that the sustainment solution will be suitably adaptable to respond to emerging and sometimes very urgent operational requirements of the CAF.
9. Does your firm currently have a Designated Organization Security (DOS) clearance granted by PWGSC's Canadian Industrial Security Directorate?
- If not, would your firm be interested in obtaining one in order to be able to provide Calibration and Repairs of Test Measurement and Diagnostic Equipment (TMDE) Services to the Government of Canada?
  - As per the Security Requirements in Section 4 of the main document, the Contractor/Offeror must hold a valid Facility Security Clearance at the level of **SECRET** and its personnel requiring access to PROTECTED/CLASSIFIED information, assets or sensitive work site(s) must EACH hold a valid personnel security screening at the level of **SECRET** as required, granted or approved by CISD/PWGSC. Does this security requirement impede the opportunity to bid? If yes, please refer to Section 4.2 to initiate the security clearance process by requesting sponsorship from the Contracting Authority.
10. Do you have any other concerns or comments that you would like to address for this RFI?

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## **ANNEX C – ENTERPRISE SUSTAINMENT SOLUTION (SCOPE DIAGRAM)**

### **DND/CAF CALIBRATION PROGRAMME ENTERPRISE SUSTAINMENT SOLUTION (SCOPE DIAGRAM)**



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## Abbreviations

AMS	Air Maintenance Squadron
ATESS	Aerospace and Telecommunications Engineering Support Squadron
CA	Canadian Army
CAF	Canadian Armed Forces
CANSOFCOM	Canadian Special Operations Force Command
DGAEPM	Director General Air Engineering Program Management
DGLEPM	Director General Land Engineering Program Management
DGMEPM	Director General Maritime Engineering Program Management
DGMPD(A&L)	Director General Major Project Delivery (Air & Land)
DGMPD(S)	Director General Major Project Delivery (Sea)
DND	Department of National Defence
EMT	Equipment Management Team
FMF	Fleet Maintenance Facility
GPTE	General Purpose Test Equipment
Health Svcs	Health Services
ISS	In-service Support
LCMM	Lifecycle Materiel Manager
Mob	Mobile
MIS	Management Information System
NATO	North Atlantic Treaty Organization
NCSLI	National Conference of Standards Laboratories (NCSL) International
NP	National Procurement
OEM	Original Equipment Manufacturer
QMS	Quality Management System
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
SBCA	Sustainment Business Case Analysis
TEMMIS	Test Equipment Maintenance Management Information System
TMDE	Test, Measurement and Diagnostic Equipment
WSM	Weapon System Manager

## **ANNEX D – IN-SITU CALIBRATIONS**

### **DND/CAF CALIBRATION PROGRAMME IN SITU CALIBRATIONS**

**(CALIBRATIONS-IN SITU-1APR16-31MAR18.XLSX)**

The file “Calibrations-In situ-1Apr16-31Mar18.xlsx” contains all in-situ calibrations performed by the calibration centres between 1 April 16 and 31 March 2018.

The file contains one data table (sheet): “InSituCals-1Apr16to31Mar18”.

## **ANNEX E – TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE)**

### **DND/CAF CALIBRATION PROGRAMME TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE)**

(CALIBRATIONS-ALL-1APR16TO31MAR18.XLSX)

The attached file contains all calibrations performed by the calibration centres between 1 April 2016 and 31 March 2018, less those conducted in situ (i.e. Annex D).

The attached file is divided into two main data tables (sheets):

- “AllCals1Apr16to31Mar17” contains all calibration conducted in fiscal year 2016/2017; and
- “NewInstruments1Apr17to31Mar18” contains only new instruments introduced between 1 April 2017 and 31 March 2018.