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## **Annex 2**

# **CONCEPT OF SUPPORT For The *Halifax-class Work Period Contracts***

**Department of National Defence**

**30 September 2016**

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# **CONCEPT OF SUPPORT**

## **For The**

### ***Halifax-class Work Period Contracts***

## **1.0 GENERAL**

### **1.1 Purpose**

The purpose of the Concept of Support (CoS) is to provide an overview of the intended role and support services that the *Halifax-class Work Period Contract(s)* will provide to the Class Program Manager (CPM) within the Maritime Equipment Program Management (MEPM) organization. This document will serve as means to communicate and inform all stakeholders, which include the Department of National Defence (DND), Public Services and Procurement Canada (PSPC), Innovation, Science and Economic Development Canada (ISED), and the maritime Defence Industry, of the intended support arrangements for sustaining the *Halifax-class* work periods.

The contents of this document leverages the extensive experience that the MEPM team has with maintaining and sustaining major surface combatants, including the current contracted support arrangements. However, the document is also influenced by the requirement to improve the efficiency and effectiveness of platform and equipment support arrangements which is mandated as part of DND's Defence Renewal (DR) program.

The CoS presents the principle activities of the intended support services so that Canada can have meaningful engagements with the Defence Industry leading to a successful Request for Proposal (RFP) and resulting contract(s). It should be noted, that the signing and endorsement of this document does not infer the direction that the support contract will take, rather it infers a starting point from which the *Halifax-class* CPM will communicate with all stakeholders.

### **1.2 Document Outline**

The CoS is divided into two parts:

1. The first part addresses general preamble, background, support program objectives, assumptions and constraints and an overview of the contracting approach; and
2. The second part of the document outlines the support services, providing a series of narratives and summary tables to define the functional activities, the division of roles, responsibilities, and service requirements.

### **1.3 References, Terms and Acronyms, and Definitions**

All references noted in this document can be found at Annex A. Abbreviations and Acronyms, and selected Definitions can be found at Annex B and Annex C respectfully.

## **2.0 BACKGROUND**

The Royal Canadian Navy (RCN) currently operates twelve (12) *Halifax-class* Frigates which are assigned to both the East and West Coasts. Seven ships are assigned to Maritime Forces Atlantic and five ships are assigned to Maritime Forces Pacific. The

*Halifax*-class maintenance concept is divided into three levels: Level 1 conducted by Ship Staff (SS), Level 2 by Fleet Maintenance Facility (FMF) and Level 3 provided by FMF or Industry Contractors.

Routine ship maintenance work periods during the operational cycle are called Short Work Periods (SWPs) and address Level 1 and Level 2 maintenance (preventive maintenance work). More extensive maintenance periods, that are beyond the capacity and capability of the ship and formation resources, are the responsibility of the CPM which is Directorate Maritime Equipment Program Management (Major Surface Combatant) (DMEPM (MSC)) under Level 3 work activities. Major Level 3 work is commercially contracted and conducted during Docking Work Periods (DWP) and Engineering Change Work Periods (ECWP). Some Level 3 activities are conducted by FMF, where special tools and/or skill sets are required. The *Halifax*-class maintenance cycle is 60 months from the start of DWP to the start of the next DWP. Each ship must have 12 weeks of SWPs per year and one Engineering Change Work Period (ECWP) in the maintenance cycle.

The *Halifax*-class is currently completing a Mid-Life Refit (MLR) to update/upgrade some of the Platform and most of the Combat Systems. The *Halifax*-class Modernization/Frigate Life Extension (HCM/FELEX) Project was created to manage the total scope of the Engineering Changes (EC) and Maintenance/Sustainment work during the timeframe leading up to and including the completing of the MLRs. A long term relationship was created between Canada and Industry through the Multi-Ship Contracts (MSC-East and MSC-West) to implement the total scope.

The MLRs were bundled with Level 3 work periods to a single contractor on each coast under the Multi-Ship Contracts (MSCs). The multi-year, multi-phase MSCs will be ending in 2018. The RCN intends to operate the *Halifax*-class until their predicted end-of-life, currently estimated for 2032/2036 time period. The predicted end-of-life may be shortened or extended based on operational requirements and the delivery of the new Canadian Surface Combatant (CSC) Class.

In order to ensure the Class remains operationally viable through to the end of its life, a continued relationship between Canada and Industry is required to most effectively and efficiently support the RCN and the CPM Maintenance Program. This relationship will be established through the *Halifax*-class Work Period Contracts (WPC).

To effectively support the ships on both coasts, there will be two separate support arrangements: Work Period Contracts – East, and West (individually WPC-E & WPC-W) for implementing platform maintenance/sustainment work and Engineering Changes (ECs). Ships, and their associated work periods, may be repositioned between coasts to meet operational and maintenance demand requirements.

Hereinafter, work periods are defined as one of; Docking Work Periods (DWP); Short Work Periods (SWP) or Engineering Change Work Periods (ECWPs).

## **2.1 Halifax-class In-Service Support Contracting**

In recent years, defence strategic initiatives have been initiated to minimize inefficiency, streamline business processes and maximize operational results. A key DND initiative is the Defence Renewal (DR) Sustainment Initiative. DND must evolve Naval In-Service Support (ISS) in order to respond to significant constraints and to prepare for the fleet of the future. In doing so, DND must consider and align numerous ongoing initiatives to address a number of existing deficiencies and leverage the experiences of peer organizations to enable optimum support to the operational program. In support of these

initiatives and desired outcomes, the CPM will ensure that the delivery of maintenance and the approach to the ISS contracting best aligns with Government of Canada priorities and DND initiatives for the *Halifax*-within Director General Maritime Equipment Program Management (DGMEPM).

Prior to HCM/FELEX, distinct contracts for individual ship work periods had been executed, requiring significant contracting capital (human and financial). This arrangement precluded the best use of lessons observed and economies of scale from one work period to the next. Similar to the MSC, WPC procurement strategy will provide a long term commitment for multiple work periods based on demonstrated performance and create relationships between Canada and its In-Service Support (ISS) Contractors for continual improvement. Canada intends to consult with industry to determine optimal division of responsibility for the delivery of services identified under the WPC Work Statements. To this end, a common Statement of Objective (SOO) will be included in new *Halifax*-class related contracts. The SOO provides vision statements for all stakeholders (both industry and Canada) in order to aid with decision making. In addition, common statements will be included in each new *Halifax*-class contract that will promote the cooperation between various *Halifax*-class contractors at the working level. Also, the introduction of the mechanism for formal discussion between contractors on wider issues, such as program schedule and program risk, will be conducted through an integrated team.

### **3.0 OBJECTIVES AND PERFORMANCE EXPECTATION**

#### **3.1 Overall Vision**

This CoS provides stakeholders with a consolidated view of how the *Halifax*-class will be sustained and outlines the areas of responsibility for concerned stakeholders. It describes the responsibilities and activities that Canada and Industry will provide during the *Halifax*-class work periods. This CoS will outline the significant supportability services and responsibilities that need to be established to ensure timely, responsive, comprehensive and cost-effective support for the *Halifax*-class. The WPC-E and WPC-W Contractors; hereinafter referred to as CONTRACTOR for WPC-W and WPC-E as separate entities, will provide production services for: maintenance / sustainment work; and EC implementation work. WPC will align where possible with evolving ISS concepts for the Navy.

In broad terms, the CONTRACTOR will work collaboratively with the CPM to align the following major WPC components with the evolving strategic initiatives:

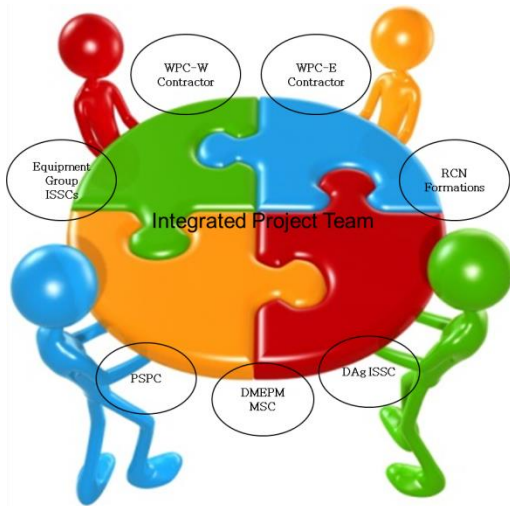
- a. Program Management;
- b. Technical Schedule Management; and
- c. Service Delivery.

Section 6 describes the inter-related activities and responsibilities of these major components.

The *Halifax*-class maintenance concept will continue to divide maintenance services into three levels: First (1<sup>st</sup>) and Second (2<sup>nd</sup>) Level support will be the responsibility of RCN ships staff and Fleet Maintenance Facilities (FMFs), and Third (3<sup>rd</sup>) Level support will be provided by the CONTRACTOR and some by FMF. However, the CONTRACTOR must have the capacity and capability to augment RCN Level One and Two support when

requested, and conversely, RCN may assist the CONTRACTOR to conduct Level Three support.

The CONTRACTOR and all key stakeholders including the *Halifax*-class Design Agent and *Halifax*-class support contractors and Canada will participate in a Canada Industry Integrated Project Team (CI-IPT) as illustrated in Figure 1 below and explained in section 5.2. The CI-IPT will focus on integrating their schedules and management plans with a goal to achieve a successful maintenance program through cooperative risk identification and mitigation.



**Figure 1 Canada Industry Integrated Project Team (CI-IPT)**

The CONTRACTOR is, as part of Value Engineering, continuously improve the WPC program to achieve resource optimization for maintaining the Design Intent (DI) of the supported systems. As an example: Lessons learned from the work conducted will be shared between CONTRACTOR (WPC-E & WPC-W), *Halifax*-class Design Agent (DAg), and other ISS contractors to enable future work to be conducted in a more efficient manner.

The CONTRACTOR are intended to work with the DAg and ISS Industry by linking production and engineering services. The diagram in Annex C represents the *Halifax*-class ISS organization and highlights the required communication across the various ISS functions. During the service life of the Class, the support services of WPC may change; services may be added or removed in order to gain efficiencies. Work Statements will be included to promote the establishment of a working relationship and levels of responsibility between the CONTRACTOR, DAg, and ISS contractors.

### **3.2 WPC Goals & Objectives**

In general, the overall goal of the WPC is to provide efficient and effective support of the *Halifax*-class while minimizing overall costs and achieving RCN Readiness requirements; the SOO further expands the discussion on the overall goal. The work periods will be implemented by establishing a performance-based contract with an emphasis on meeting performance objectives. DND support agencies on both coasts, including DGMEPM, FMF, RCN Formations and Ships will also have responsibilities that complement the WPC.

The WPC may evolve over the duration of the contract. The CONTRACTOR will be motivated and incentivized to achieve and continuously improve upon the outcomes of the work periods. The aim of these continuously improvement incentives is to ensure that Canada will realize significant benefits through contained overall support costs and increased operational availability and reliability.

The WPC will include a long term participatory approach in the management of the contracts to meet the operational requirements of the RCN through the use of a Canada Industry Integrated Project Team (CI-IPT). The CI-IPT will provide a forum for the exchange of information among all *Halifax*-class stakeholders. A relational contracting approach will require all stakeholders to work collaboratively and resolve conflict at the lowest level.

To meet the overall WPC Goals and Objectives as stated in the SOO, this CoS has the following specific objectives:

- a. To describe the support principles and contract management structure for the WPC;
- b. To identify the support work elements and detail the responsibility for the activities performed by Canada and Industry; and
- c. To align the WPC with Defence Renewal (DR) and Naval In-Service Support requirements.

#### **4.0 ASSUMPTIONS AND CONSTRAINTS**

The following assumptions and constraints were noted in developing the WPC CoS:

- a. *Halifax*-class Ships have a design service life of 20 years following the completion of the *Halifax*-class Modernization (HCM) Program;
- b. There will continue to be DND infrastructure and facilities on both coasts (Halifax and Esquimalt) to support the ships during their service life (1<sup>st</sup> and 2<sup>nd</sup> level maintenance work);
- c. The CONTRACTOR and supporting sub-contractors are able to obtain any required security clearances to deliver assigned work;
- d. The CONTRACTOR are able to obtain and maintain the required export licenses including International Traffic in Arm Regulations (ITAR) to deliver the assigned Support Services;
- e. The Controlled Goods Program (CGP) requirements, regulated through Public Services & Procurement Canada (PSPC), will be met;
- f. The CONTRACTOR agrees to and meets the Terms and Conditions imposed on the contract by PSPC;
- g. A *Halifax*-class Ship will have an operational cycle of approximately 60 months between Docking Work Periods (DWP) and a DWP is planned to be 21 weeks;
- h. A *Halifax*-class Ship is planned to have up to 10 weeks of ECWPs per operational cycle;
- i. ECWPs and work augmentation that support FMF or SS must be conducted at the ship's home port (Halifax and Esquimalt);

- j. A *Halifax*-class Ship is intended to have no more than 12 weeks of Short Work Periods (SWPs) per year;
- k. The WPC will operate within the context of the Naval Material Management System (NaMMS) Manual (CFTO C-03-005-012/AM-001);
- l. The CONTRACTOR will continue to work with the DA and other ISS contractors to deliver integrated support;
- m. As part of Naval Material Assurance (NMA), the Recognized Organizations (ROs) established by DND will be afforded necessary access to the ships and the performance data of WPC;
- n. RCN ships must be able to transit year round to and from the shipyard; and
- o. The WPC must be performed in Canada. Specifically:
  - The sourcing strategy related to this procurement will be limited to suppliers within the Areas of Origin in accordance with Shipbuilding, Repair Refit, and Modernization Policy.<sup>1</sup>
  - National Security Exception (NSE) is invoked to ensure both operational readiness and availability of the fleet, as well as the safeguarding of Canada's national security interests.

## **5.0 CONTRACT STRUCTURE**

### **5.1 Contracting Principles**

DND and the Canadian Armed Forces (CAF) are committed to supporting national objectives, obtaining optimum value for money, and obtaining support services that meet or exceed operational requirements.

The WPC will include a performance based framework that will be initially validated, and then implemented for the life of the contracts. A key component of the performance measurement framework will be a Continuous Improvement Program that will leverage incentives to encourage and reward innovation and improved efficiencies. WPC performance outcomes will have a bearing on the award of contract extensions/options.

The division of responsibility between DND and the CONTRACTOR will be established to ensure that overall Design Authority, System Authority, and Functional Authority responsibility for the *Halifax*-class resides with DND, and that the assigned CONTRACTOR responsibilities and delegated authorities for execution of Work Period Management and Service Delivery are clearly defined within the contracts. As the WPC program evolves, this initial division of responsibility may need to change.

A significant component of DND's procurement approach is the development of a strong relationship between DND and its support contractors.

### **5.2 Canada Industry – Integrated Project Team**

The DMEPM (MSC) - CPM CoS for the *Halifax*-class includes the *Halifax*-class contractors (including Work Period Contractor(s), System Authority contractors and

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<sup>1</sup> CANADA. PSPS Supply Manual, Ch. 3.170.10. Internet. <https://buyandsell.gc.ca/policy-and-guidelines/Supply-Manual>; Accessed 24 May 2016.



design agents) working together in a Canada-Industry Integrated Project Team. The vision of the CI-IPT is to achieve the goals of value for money, flexibility and priority.

To that end, each *Halifax*-class contractor is mandated, through contractual documentation, to participate with the CI-IPT in order to conduct work on the *Halifax*-class. The CONTRACTOR will be encouraged to make suggestions on work effort in a cooperative manner with other contractors, such that any task based collaboration is approved by DND to work together.

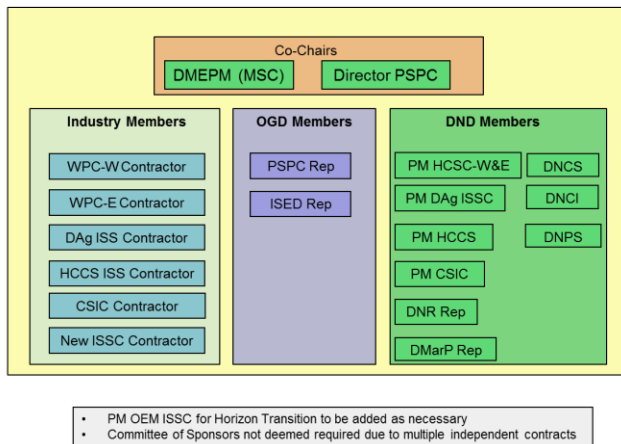
A Relationship Charter Agreement will be developed cooperatively with the contractors to ensure all stakeholders work collaboratively to resolve conflicts at the lowest level.

Working groups may be established to focus on specific issues related to the performance of work. Findings and recommendations from the working groups will be provided to the CI-IPT as required. The CI-IPT primary focus, therefore, is integrating the contractor’s schedules into one integrated schedule with agreed upon milestones in order to achieve risk identification and mitigation between Canada and all contractors. For example, one of the mitigating strategies will be to have the CONTRACTOR, the Class Design Agent and System Authority ISS Contractors work together during the early stages of Engineering Change Development.

At the centre of this collaborative work will be the Integrated Schedule (IS), primarily based upon the contractors’ Annual Operating Plan (AOP) with the aim of de-conflicting schedule milestones in the IS. The IS shall be owned by the lead organization during the work period, for example, the CONTRACTOR will own the schedule for work periods conducted at CONTTACTOR facility and the FMF will own the IS during the FMF-Lead work period in the Navy Dockyard. The CONTRACTORS will use their internal schedule and management plans to achieve a successful maintenance program through cooperative risk identification and mitigation

A representative organization of the CI-IPT is shown in Figure 2 below. As the relationships grow, further amendment to the agreements may be required.

**Canada Industry – Integrated Project Teams**  
*Halifax-Class Materiel Availability Governance*



**Figure 2: Halifax-class CI-IPT Materiel Availability Governance.**

**5.3 WPC Management**

The WPC will be administered by PSPC. The Contract Technical Authority (TA) and Procurement Authority (PA) will reside within the MEPM division at DND. All support

services provided by the CONTRACTOR will be co-ordinated and executed through the WPC.

The WPC will include the requirement to establish appropriate channels of communication between the CONTRACTOR, Formations, Original Equipment Manufacturer (OEM) contractors, *Halifax-class* Design Agent, *Halifax-class* ISS Contractors and DMEPM (MSC) and PSPC that will ensure the exchange of information to execute efficient service delivery within authorized boundaries.

This WPC will foster a collaborative relationship with industry at all levels. Stability, commitment and a strong contractual relationship are critical to a successful outcome. Given the specialized skill set and infrastructure needed to achieve successful work periods, a long-term commitment to industry is necessary to allow for an investment in infrastructure, process development, and human resource skills. In return, the CONTRACTOR is expected to achieve the required performance outcomes.

The WPC will be divided between Core and Emergent Work. Emergent Work will only be carried out upon authorization from Canada, using the 626 task authorization process.

## 6.0 WORK COMPONENTS

This section of the CoS provides a description of the work components and responsibilities for both Canada and Industry.

### 6.1 WPC Program Management

The WPC will be managed using resources from both Canada and the CONTRACTOR within an integrated program management team. The WPC will also be synchronized with RCN and *Halifax-class* related activities, and managed within established DND business plans and budgets.

Program Management is used when describing the management of the *Halifax-class*. The Program Management of WPC is defined as all activities to manage, coordinate and integrate the multi-year maintenance and EC implementation work periods for the *Halifax-class*.

Ship level Project Management is defined as all activities to support individual work periods. The project team will manage the day to day work and provide input to the Program Management activities.

Table 1 outlines the expected division of responsibilities for activities related to WPC Program planning and management.

**Table 1 – Responsibility Matrix – WPC Planning & Management Responsibilities**

Management Component	Canada Responsibilities	CONTRACTOR Responsibilities
WPC Management	Act as Procurement Authority  Act as Contract Technical Authority  Complete Contract Assessment/Amendment	Deliver Contract Requirements

<b>Management Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Program Management	<p>Manage Maintenance Program</p> <p>Manage DND Business Plans WPC Inputs</p> <p>Act as WPC Technical Authority</p>	<p>Manage WPC work</p> <p>Provide Input to DND WPC Program Managers</p> <p>Provide Input to the Technical Authority</p>
Annual Operating Plan (AOP)	Review and Approve	Prepare, submit and revise the AOP
Reporting	<p>Review Progress/Issues</p> <p>Provide Feedback</p>	<p>Report Progress and Issues</p> <p>Recommend Resolution</p>
Surge Management	<p>Adjust to Requirements</p> <p>Inform CONTRACTOR and approve execution of Contractor's Surge Plan</p>	Plan throughout and Execute as requested.
Communications and Relationship Management	<p>Define <i>Halifax</i>-class CPM Governance and Management Structure to communicate, coordinate, and reconcile concerns (CI IPT)</p> <p>Establish Program Review Framework</p> <p>Chair the Canada Industry Integrated Project Team (CI-IPT)</p>	<p>Participate and contribute to the <i>Halifax</i>-class CI-IPT</p> <p>Develop and align communications and relationship management plans in consideration of <i>Halifax</i>-class Governance Structure</p> <p>Report Program Risks, Requirements, and Improvements</p> <p>Develop relationship with DND stakeholders (including other ISS contractors, RCN/DND units) to ensure <i>Halifax</i>-class program objectives are met</p>
Ship Level Project Management	<p>Establish objectives and required outcomes</p> <p>Review Issues/Recommendations</p> <p>Review Plans</p>	<p>Conduct Ship Level Project Management</p> <p>Develop Ship Level Project Plans</p> <p>Report Issues/Recommend Resolutions</p> <p>Coordinate, monitor and report on planned work, and assess and report the impact of variances to the plan</p>
Core and Emergent/Arising work	Define and Approve work	Identify and Submit work estimate

<b>Management Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Quality Management (QM)	Validate Contractor QM program	Implement/Execute QM System
Security & Safety / Environmental Management	Governmental Accountability  Oversight of Processes and Requirements	Plan and Execute Activities  Provide Processes

The division of program management between Canada and the CONTRACTOR will be such that DND performs Design Intent oversight, while the CONTRACTOR manages the day to day activities for the work periods and provides agreed inputs for DND program management activities.

The Contract Authority is PSPC, with DND acting as the Technical and Procurement Authorities. The CONTRACTOR will be responsible for the delivery of contract requirements. Canada will define and approve Core and Emergent work. The CONTRACTOR will participate in identifying Core or Emergent work.

A key aspect of the management process will be the Annual Operating Plan (AOP) which will outline the work expected to be undertaken and completed over each year of the Contract. The CONTRACTOR will develop a process for creating the AOP which includes Canada's input at key decision points. The AOP generated by the CONTRACTOR will need to take into consideration previous years' trends and future requirements; it must provide at least a 3 year outlook. Canada will approve the final AOP. Throughout the year the CONTRACTOR will report progress and issues against activity plans and the overall AOP. Canada will review progress, issue reports and provide feedback to the CONTRACTOR.

The CONTRACTOR will need to adapt to any significant changes in RCN activities related to operations. Canada will advise of any surge requirements that will need contractor support. The CONTRACTOR will plan for surge work as Core Work and will execute as Emergent Work to meet DND requirements.

Each work period will be managed as an individual ship level project. Canada will review issues/recommendations and approve plans. The CONTRACTOR will prepare and deliver a ship level Project Management Plan (PMP) for each work period. The CONTRACTOR will report any scheduling and implementation issues and provide recommended resolutions for consideration. The CONTRACTOR will monitor and report on planned work, and assess and report the impact of variances to the plan

The CONTRACTOR will implement and maintain a Quality Management System (QMS) compliant with ISO 9001. The CONTRACTOR will conduct QM activities in accordance with its Quality Plan (ISO 9005). The CONTRACTOR must flow-down the QMS to all sub-contractors and vendors. DND will provide oversight for the Contractors' QMS and Quality Plans. DND will validate the Quality Management Program (processes and products) using Quality Assurance Representatives (QAR).

The CONTRACTOR must plan and monitor the integration of sub-contractor work into the overall work period schedule. The CONTRACTOR will prepare activity plans and submit them to Canada. The CONTRACTOR will report progress against the plan and identify issues for review.

The CONTRACTOR must operate in a safe, secure, and environmentally compliant environment. WPC activities will be subject to safety, security, and environmental

management. The CONTRACTOR must follow regulatory regimes as defined in the WPC and provide compliant processes.

Canada is committed to an integrated and cooperative approach to maintain/sustain the *Halifax-class*. To achieve this goal, all stakeholders involved in the maintenance/sustainment of the Class will be required to collaborate. The CONTRACTOR will develop communication plans and relationships with *Halifax-class* Design Agent, OEMs, FMF and *Halifax-class* ISS Contractors.

### **6.1.1 WPC Performance Management**

The WPC will be performance managed and assessed against agreed upon objectives. The goals of WPC performance management are to provide timely, actionable, situational awareness of performance to:

- a. Address variances and risks in a defined time frame;
- b. Capitalize on opportunities; and
- c. Support continuous improvement.

Table 2 outlines the expected division of responsibilities for activities related to WPC performance management.

**Table 2 – Responsibility Matrix – WPC Performance Management Responsibilities**

<b>Management Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Performance Management-Contract	Define Performance Framework  Assess Performance	Provide input to the Performance Framework; and Report Performance  Recommend Key Performance Indicators (KPI) Adjustment
Performance Management – General	Assess Overall WPC Performance  Approve Performance Measures  Measure/Manage DND Internal Performance  Measure/Manage Integrated ISS Program Performance	Measure & Report Performance  Recommend Performance Measure Adjustments  Measure/Manage Internal Performance  Implement changes to address performance shortfalls

Canada will define the Performance Management Framework to be applied, and adjust it as necessary with input from the CONTRACTOR. The CONTRACTOR will report performance and provide recommendations on the KPIs to be used for assessment.

Canada will review and approve the Performance measures to be applied for WPC monitoring and assessment. Canada will measure and manage WPC performance as well as the resultant overall joint ISS performance. The CONTRACTOR will report performance and provide recommendations on the performance measures to be used

for monitoring and assessment. The CONTRACTOR will manage, measure, and report internal performance to meet WPC requirements.

### **6.1.2 Risk Management**

Risk Management includes the ongoing identification and assessment of risks, the development, execution, and monitoring of agreed risk response plans. The goal of risk management is to support the achievement of WPC Program goals through the active surveillance for potential problems and the timely implementations of mitigation strategies so that risks are reduced as low as reasonably practicable.

Table 3 outlines the expected division of responsibilities for activities related to WPC Program risk management.

**Table 3 – Responsibility Matrix – WPC Program Risk Management Responsibilities**

<b>Management Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Risk and Issue Management	Participate in Risk/Issue resolution forums	Maintain and submit a risk and issue register  Identify risks/issues to the DND program  Propose plans to mitigate risks/issues  Participate in Risk/Issue resolution forums
Technical Problem Management	Report Problems  Participate in Problem resolution forums  Review Progress	Provide a Technical Problem Management System (TPMS)  Track, investigate and recommend solution  Participate in Problem resolution forums  Report Progress

The CONTRACTOR will establish a Risk and Issues register to track and report any program or project risks. The CONTRACTOR will propose options and develop action plans to mitigate any items that may present a risk to the CPM program. DND and the CONTRACTOR will participate in Risk and Issues resolution forums to implement risk mitigation actions as may be required.

The CONTRACTOR will establish, maintain and use a TPMS to track and report any problems and provide resolution status. DND will identify technical problems to the CONTRACTOR for investigation and seek recommendations. DND will monitor progress of problems within the CONTRACTOR' TPMS and participate in periodic reviews of technical problems.

### **6.2 WPC Technical Schedule Management**

The WPC Program must be managed within the activity program of the RCN. Technical Schedule Management aligns the maintenance and work period requirements with ship

availability. It includes the collaboration between the local (RCN coastal formations) materiel support program and the operational program of the RCN, supported by inputs from DND's Technical Authority and the CONTRACTOR.

Table 4 outlines the expected division of responsibilities for activities related to WPC Program technical schedule management.

**Table 4 – Responsibility Matrix – Technical Schedule Management Responsibilities**

<b>Management Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Operational Schedules	Define ship availability for maintenance through Class Program Plan	Plan work and viewings within ship availability  Identify/report schedule issues
Maintenance Work Period Schedules	Establish Work Period Plans and provide to stakeholders  Provide Project Milestone Event List (PMEL) for each work period plan	Provide input on content and timings of work periods  Execute work within approved work periods  Develop schedule for each work period  Develop an integrated schedule indicating all major work activities and milestones  Provide input to PMEL and integrate PMEL activities within each work period schedule
Unforeseen and Immediate Requirements	Identify and Prioritize Requirements	Provide input to schedule unforeseen and immediate requirements  Develop Plans  Execute Work per Approved Plans

Canada will forecast the operational schedules and related maintenance/work periods for ships and share this with the CONTRACTOR. DND will provide ship viewing opportunities to the CONTRACTOR and their sub-contractors. The CONTRACTOR will plan and execute work within ship availability windows, co-ordinate with other *Halifax*-class ISS Contractors, and identify any scheduling issues.

Canada and the CONTRACTOR will identify and prioritize unforeseen work requirements. The CONTRACTOR must provide inputs and agree to develop plans to address these requirements. The CONTRACTOR must execute work in accordance with approved plans.

### 6.3 Service Delivery

WPC support includes a variety of support services and the enabling resources for these services. This part of the CoS provides a detailed description of these services and the division of responsibilities between Canada and the CONTRACTOR.

#### 6.3.1 Engineering Support Services

WPC engineering support services will be delivered primarily by the Design Agent Contractor, however the CONTRACTOR will be requested to work collaboratively with the Design Agent to provide engineering support services to assist in the development of Engineering Change (EC) packages and to particularize ECs based upon the configuration of each ship.

DND's role in engineering includes an oversight role, and the linking of the CONTRACTOR's engineering support with DND internal engineering and life cycle management processes. Table 5 provides the division of responsibility for Engineering Support Services.

**Table 5 Responsibility Matrix – Engineering Support Services**

<b>Service Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
Engineering Investigation and Studies	Request Advice and Direct Investigations or Studies  Review/Approve Reports and Recommendations	Provide Production Engineering input to the development of ECs and repair specifications – best practice for implementation  Recommend/Conduct Engineering Investigations or Studies
Value Engineering	Review Value Engineering Proposals  Approve Recommendations	Define and Implement Value Engineering Processes  Recommend Value Engineering changes

The CONTRACTOR will provide Production Engineering input into the development of ECs to DND and its contracted Design Agent in order to recommend best practice for implementation. DND may require engineering advice from the CONTRACTOR or its sub-contractors. Upon request, the CONTRACTOR will provide Technical Investigation and Engineering Support (TIES) services. Canada will request engineering investigations and studies to be conducted by the CONTRACTOR, and will review/approve the results of such actions.

It is expected that value engineering processes will be used to continuously improve the WPC. Canada will review proposals for items of interest and approve recommendations. The CONTRACTOR will apply value engineering practices to improve the work period process and recommend value engineering improvements in order for Canada to gain efficiencies.



### 6.3.2 Docking Services

WPC Docking Services will be conducted for each DWP between Canada and the CONTRACTOR to transfer custody of each ship in a safe and efficient manner. The division of docking services responsibilities between Canada and the CONTRACTOR are summarized within Table 6 and are described further within this section.

**Table 6 Responsibility Matrix – Docking Services**

Service Component	Canada Responsibilities	CONTRACTOR Responsibilities
Ship Docking	<p>Approve Docking Plan</p> <p>Deliver Ship to CONTRACTORS facility – alongside jetty</p> <p>Provide oversight during Docking of ship</p>	<p>Provide Docking Plan</p> <p>Safely dock Ship in dry dock.</p>
Transfer Custody	<p>Transfer care and custody of the vessel to the Contractor at the beginning of the DWP</p> <p>Accept the transfer of care and custody of the vessel from the Contractor at the conclusion of the DWP</p>	<p>Accept the transfer of care and custody of the vessel from DND at the beginning of the DWP</p> <p>Transfer care and custody of the vessel to DND at the conclusion of the DWP</p>
Ship Undocking	<p>Approve undocking plan</p> <p>Provide oversight during undocking of ship</p>	<p>Provide undocking plan</p> <p>Safely undock ship from dry dock and bring alongside a jetty</p>

Canada will require access to the CONTRACTOR's infrastructure in order to safely deliver the ship for the DWP. Canada will conduct all necessary procedures to deliver the ship to the contractor facility alongside a jetty. The CONTRACTOR will provide access to dock infrastructure and be prepared to receive the ship alongside a jetty. The CONTRACTOR will safely dock the ships with Canada's oversight. The CONTRACTOR will provide diver services to check the ship's position in relation to the blocks during docking.

At the beginning and conclusion of each DWP, care and custody of the Ship (including safety, security and technical services) will be transferred between Canada and the CONTRACTOR.

The CONTRACTOR will safely undock the ships and bring it alongside a jetty at the conclusion of a DWP. Canada will require access to the CONTRACTOR's infrastructure in order to safely return the Ship to the RCN dockyard. DND will conduct all necessary procedures to move the Ship from the contractor facility following the conclusion of the DWP. The CONTRACTOR will provide access to its dock infrastructure while the ship is under the care and custody of the CONTRACTOR. The CONTRACTOR will provide tugs with pilots for docking and undocking of the vessels.

### 6.3.3 Production Support Services

Work period support services may be required for all three levels of maintenance. Support organizations within DND and the CONTRACTOR will provide Level Three maintenance services. The division of production support responsibilities between DND and the CONTRACTOR are summarized within Table 7 and is described further within this section. Maintenance will be conducted in accordance with approved Particularized Maintenance Repair Specifications (PMRS) and OEM approved manuals/bulletins passed through the CONTRACTOR. PMRS for each vessel will be produced from a set of Standard Ship Maintenance Repair Specifications (SSMRS) and some will be non-standard repair specifications.

**Table 7 Responsibility Matrix – Production Support Services**

<b>Service Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
General Production Services	Oversee Clean Ship Program	Implement Clean Ship Program
Level One Maintenance	Ship's Staff to Conduct Level One maintenance	Support to Ship's Staff As Requested
Level Two Maintenance	FMFs, OEMs, and other ISSCs to Conduct Assigned Tasks, primarily Level Two tasks	Assist FMFs, OEMs, and other ISSCs as requested  Conduct assigned tasks
Level Three Maintenance	Ship's Staff/FMFs Provide Assistance to Contractors to complete Level Three tasks	Conduct Level Three Maintenance
Additional Maintenance Support – Home Ports	Provide as requested support  FMFs conduct inspections and surveys	Provide as requested: Emergency Repair, On-Site inspections and surveys
Additional Maintenance Support – Deployed Ship	Provide as requested support  FMFs conduct inspections and surveys	Provide as requested: Mobile Repair Party
Implementation of ECs	Identify the ECs and implement minor ECs	Plan/execute approved ECs
Identify Arising Work	Submit arising work request  Approve Arising work requests	Submit Defect Advice Notice (DAN) for unknown work scope. Provide information in defined format for transfer to the Defence Resource Management Information System (DRMIS)
Maintenance for Disposal	Approve materiel identified for disposal	Conduct activities to properly Dispose of Materiel

Service Component	Canada Responsibilities	CONTRACTOR Responsibilities
Ship Re-activation	<p>DND will provide the necessary personnel and resources to verify the serviceability of Ship Systems</p> <p>Conduct Ship re-activation activity</p>	<p>Demonstrate that ship systems are ready for re-activation</p>

General Production services include the preparation for, the conduct, and clean up after maintenance tasks have been completed. DND will oversee the conduct of maintenance and the CONTRACTOR clean ship program. The CONTRACTOR must prepare and deliver a clean ship program that incorporates guidelines provided by DND.

Level One Maintenance Support includes less complex maintenance routines that are performed to sustain the ships. First level preventive & corrective maintenance will normally be conducted by RCN Ship Staff depending on their capabilities and capacity. DND's Second Line maintenance facilities (FMFs) may assist ship staff in completion of Level One tasks. The CONTRACTOR is required to have the capability and capacity to provide First level assistance if necessary and to conduct on-site inspections and surveys as requested.

Level Two Maintenance Support includes more complex maintenance activities performed on the ships. Second Level Preventive and Corrective Maintenance activities will be conducted by the RCN FMFs, with assistance from the CONTRACTOR, if requested. Therefore the CONTRACTOR is required to have the capability and capacity to provide Second level assistance to FMF, OEMs and other ISS Contractors. Such support will primarily be provided during ship maintenance/work periods on site in home ports.

Level Three Maintenance Support represents all in depth maintenance support services for the *Halifax*-class ships. The CONTRACTOR will conduct and manage Level Three Preventive and Corrective Maintenance and assigned Repair and Overhaul (R&O) activities. The CONTRACTOR will provide custody and control of Government Supplied Materiel (GSM) removed or awaiting installation as a result of Level Three maintenance. Upon request, the CONTRACTOR will assist in the procurement of GSM. FMFs may assist the CONTRACTOR in completion of Level Three maintenance.

The CONTRACTOR is to provide Mobile Repair Party Support to ships and FMF in home ports as requested.

Production support services will be required to implement ECs. Ship Staff & FMF may implement minor ECs and upgrades (e.g., installing a software patch); and may assist the CONTRACTOR in completion of more complex ECs. The CONTRACTOR must complete implementation of approved ECs during work periods.

During the work periods there may be unanticipated work that is required in order to implement the SSMRS, PMRS and ECs. DND will review and approve arising work. If applicable to the Class, DND will update drawings and specifications. The CONTRACTOR will identify unknown work scope by submitting a Defect Advice Notice (DAN).

Canada will identify items for disposal by the CONTRACTOR. The CONTRACTOR must dispose of materiel returned for disposal, including addressing any HAZMAT and Demilitarization requirements.

Following the completion of work periods, the CONTRACTOR will be required to demonstrate that ships are ready to be re-activated. Ship Staff, along with FMF assistance, will verify systems are ready to be re-activated and will re-activate them.

### **6.3.4 Materiel Management Services**

WPC materiel management services will be delivered using organizations within DND including ship stores staff, and home port Base Logistics (BLOG) organizations. These organizations are complemented by the CONTRACTOR's supply chain.

The division of materiel management responsibilities are summarized within Table 8 and it is described further within this section.

**Table 8 – Responsibility Matrix – Materiel Management Services**

<b>Service Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
DND Supply Chain	Provide DND Organic and Direct Supply Support  Provide GSM at handover point	In support of DND supply, procure identified materiel as Triggered and Handover Material to On Site Management Team (OSMT) / BLOG  Receive and manage GSM received from DND and OEM ISSCs through BLOG/OSMT
Materiel Ownership	Materiel that is Installed or Consumed  Support the CONTRACTOR in procuring long lead items for future work periods	Maintain care and custody of DND materiel Until Installed or Consumed  Procure the necessary materiel to support the WPC work periods as developed with DND
Materiel Warehousing	Warehouse In DND Supply (that Includes Ship Stores)	Warehouse in Contractors facility (that includes material removed from ships awaiting disposal)
Materiel Movement and Distribution	Move materiel to/from Designated Handover Points	Move materiel Within the Established Supply Chain to/from DND Handover Points
Materiel Disposal	Approve Disposal of Obsolete/Surplus items  Return Materiel to the Contractor for Disposal	Dispose of identified Items

The CONTRACTOR will procure materiel needed to support work periods. The CONTRACTOR will retain ownership of all Contractor Furnished Materiel (CFM) until it is either installed or consumed by the WPC.

The CONTRACTOR supply chain response will be triggered by demands raised by DND in the Defence Resource Management Information System (DRMIS) and/or as listed in specifications. The CONTRACTOR will procure and warehouse all CFM in support of the work periods. The CONTRACTOR may be tasked to procure additional materiel in support of DND supply chain. The CONTRACTOR will deliver materiel to, and return materiel from designated DND handover points.

The CONTRACTOR will procure optimal quantities of CFM to maximize cost savings and warehouse sufficient inventory to support each work period. Once installed or consumed materiel ownership transfers to DND.

The CONTRACTOR will warehouse and manage all GSM received from DND in support of the work periods. The CONTRACTOR may be required to warehouse GSM to support the DND supply chain. The CONTRACTOR must ensure that there is timely and accurate visibility of spares and asset inventory. The CONTRACTOR will maintain care and custody of GSM until it's installed or handed to DND.

DND will approve the disposal of surplus/obsolete items removed from *Halifax*-class ships due to EC implementations. The CONTRACTOR must dispose of items identified for disposal in accordance with regulatory requirements and warehouse items identified for disposal.

### **6.3.5 Information Management Services**

A collaborative Environment (CE) will be required for sharing/exchanging information between DND, PSPC, CONTRACTORS and ISS contractors. The support for CE will be resolved with a Canada/CONTRACTOR agreed arrangement for the duration of the WPC. The CONTRACTOR will be required to provide electronic correspondence, data, reports and packages that are compatible with the CE information system.

The division of information management support services are summarized within Table 9 and described further within this section.

**Table 9 – Responsibility Matrix – Information Management Support Services**

<b>Service Component</b>	<b>Canada Responsibilities</b>	<b>CONTRACTOR Responsibilities</b>
DRMIS	Record Transactions	Provide the necessary data to support the WPC program

Service Component	Canada Responsibilities	CONTRACTOR Responsibilities
Data Management and Information sharing	Work with the CONTRACTOR to establish a CE solution  Provide information via CE  Validate, Verify and Transform Data	Support an agreed CE environment with Canada  Manage Own/Sub-Contractor Data  Assist DND Data Management as Requested  Allow ease of transfer of data in accordance with defined business processes

DRMIS is the DND enterprise management information system. As such, it will be used by DND to hold WPC data and to report activities. DND will use DRMIS to record transactions in performance of their WPC support services. The CONTRACTOR will provide DND with DRMIS compatible records for all work period activities related to the WPC.

A CE will be used to facilitate communication and knowledge sharing between *Halifax*-class stakeholders. The CE will be subject to security regulations, and will respect intellectual property requirements. The control of movement of documents through the CE will be governed by DND publication requirements, as well processes developed between DND and related stakeholders.

The WPC information within both DND's and CONTRACTOR information systems will need to be managed to ensure completeness, accuracy, and availability. DND will validate and verify data for data management. The CONTRACTOR will manage data used in support of WPC, including data provided by OEMs and other sub-contractors.

### **6.3.6 Infrastructure Support Services**

The WPC Program includes a range of support resources that DND uses to perform its portions of the WPC Program. There will be infrastructure and facilities required to deliver the WPC Program. DND will manage infrastructure for its obligations within the WPC Program. The CONTRACTOR will be required to manage infrastructure necessary to meet their WPC obligations, including adequate office space for coastal DND teams and National Defence Headquarters (NDHQ) visitors.

## **7.0 CONCLUSION**

This document represents the overall WPC CoS to ensure that Canada can effectively and efficiently meet *Halifax*-class readiness requirements. The WPC will be in place to support ship-related work for multiple work periods. This CoS will form the basis for the development of the detailed work statement requirements. It will also be used to define the responsibilities of Canada within the overall WPC Program, identify links with the contracted Design Agent and other *Halifax*-class contractors, and serve as a mechanism to communicate with, and receive feedback from Industry.

## **LIST OF ANNEXES**

Annex A – References

Annex B – Abbreviations and Acronyms

Annex C – Definitions

Annex D – *Halifax-class* Work Periods Contracts Procurement Strategy

Annex E – *Halifax-class* ISS Functional Block Diagram

## **ANNEX A – REFERENCES**

- A. *Halifax-class Work Period Contract (WPC) – Statement of Objectives (SOO), Draft – 06 October 2016 (RDIMS#4414722)*



## **ANNEX B – ABBREVIATIONS AND ACRONYMS**

ADM (Mat)	Assistant Deputy Minister (Materiel)
AOP	Annual Operating Plans
BLOG	Base Logistics
CA	Contracting Authority
CAF	Canadian Armed Forces
CFM	Contractor Furnished Material
CFTO	Canadian Forces Technical Order
CGP	Controlled Goods Program
CI-IPT	Canada Industry Integrated Project Team
CM	Corrective Maintenance
CoS	Concept of Support
CPM	Class Program Manager
DA	Design Authority
DAG	Design Agent
DAN	Defect Advice Notice
DGMEPM	Director General Maritime Equipment Program Management
DMEPM (MSC)	Director Maritime Equipment Program Management (Major Surface Combatants)
DNCI	Director New Capability Insertion
DNCS	Director Naval Combat Systems
DND	Department of National Defence
DNPS	Director Naval Platform Systems
DNR	Director Naval Requirements
DRMIS	Defence Resource Management Information System
DWP	Docking Work Period
EC	Engineering Changes
ECWP	Engineering Change Work Period
EIE	Electronic Information Environment
EoL	End of Life

FDM	Fleet Data Management
ESI	Equipment Support Integrator
ESP	Equipment Support Provider
FMF	Fleet Maintenance Facility
FSR	Field Service Representative
GSM	Government Supplied Material
HCM	<i>Halifax-class</i> Modernization
HCISSCtg	<i>Halifax-class</i> In-Service Support Contracting
HMCS	Her Majesty's Canadian Ships
ISED	Innovation, Science and Economic Development
ISS	In-Service Support
ISSC	In-Service Support Contract
KPI	Key Performance Indicators
LCMM	Life Cycle Materiel Management
LSA	Logistics Support Analysis
LSAR	Logistics Support Analysis Record
MA&S	Materiel Acquisition & Support
MEPM	Maritime Equipment Programme Management (Division)
MRP	Mobile Repair Parties
NaMMS	Naval Materiel Management System
NDHQ	National Defence Headquarters
NETE	Naval Engineering Test Establishment
NMA	Naval Materiel Authority
NMRM	Naval Material Risk Management
OEM	Original Equipment Manufacturer
OPSKED	Operations Schedule
OSMT	On Site Management Team
PM	Preventive Maintenance
PSPC	Public Services & Procurement Canada
PMRS	Particularized Maintenance Repair Specifications

QAR	Quality Assurance Representative
QP	Quality Plan
QMS	Quality Management System
R&O	Repair and Overhaul
PA	Procurement Authority
RFP	Request for Proposal
RO	Recognized Organization
RCN	Royal Canadian Navy
SA	Systems Authority
SS	Ships Staff
SSMRS	Standard Ship Maintenance Repair Specifications
SWP	Short Work Period
TA	Technical Authority
TDP	Technical Data Package
TIES	Technical Investigation and Engineering Support
TPMS	Technical Problem Management System
WPC	Work Period Contracts

## ANNEX C – DEFINITIONS

The following table present the definitions for key terms used in the WPC CoS. Additional terms used that are not included in this Annex are defined as published in NaMMS.

### – WPC CoS – Definitions of Key Terms

Term	Definition
Class Program Manager (CPM)	Under the authority of DGMEPM, Class Program Manager (CPM) Directorates act as ship level maintenance and configuration managers for their respective Class. Class Programme Managers Directorates are accountable for addressing Class-level engineering, maintenance and supply support issues. They are responsible for the operation and control of Level three naval maintenance and the implementation of changes to configuration.
Core Work	Work within a contract that is predictable, quantifiable and performed on an ongoing basis or within specified time periods. It will be defined on an annual basis in the AOP. Core Work will form the basis for firm price payments based on progress.
Corrective Maintenance (CM)	Is reactive maintenance task carried out after the occurrence of a functional failure or detection of a fault, in order to restore the equipment or system to a state in which it can perform its required functions.
Design Agent	Any office responsible for the development of a design, or modification of an approved design. The Design Agent is also often responsible for preparing the engineering Technical Data Package (TDP) for a specific item. The Design Agent may exist at the Class, ship, and system or equipment level.
Design Authority	The authority vested in one individual, within DND, at Director level who is responsible for the establishment and maintenance of Design Intent. The Design Authority should have the professional competence and authority to specify design requirements, undertake design tasks, apply configuration management to designs and associated documentation, while continuously monitoring the effectiveness of those activities for a given material state. The Design Authority is also the Class Program manager. This will provide the Design Authority the necessary authority and accountability to maintain Design Intent and to enable fully informed decisions on Design Intent that consider programmatic requirements and constraints, e.g., operational, technical, and regulatory requirements; resources (cost); schedule; system integration impacts; and associated risks.
Design Intent	Specification of operation and maintenance of a ship as intended by its design. The Design Intent of a ship is the formal documentation of the body of knowledge that states the purpose and performance of the ship and how it is intended to be operated

Term	Definition
	and maintained to satisfy the stated purpose. The Design Intent will include the Statement of Requirements, Concept of Operations, Concept of Support, System Reference Document, Basis of Design, Basis of Certification, Technical Data Package, inclusive of drawings and technical publications, necessary to clearly define the operation and maintenance of the ship. The Design Intent is a living document that needs to be configuration managed through life and adoptive to approved changes.
Docking Work Period (DWP)	A level two or three maintenance period scheduled as required for the specific purpose of carrying out maintenance for which a ship must be docked.
Emergent Work	Work within a contract which is generally unplanned or unquantifiable, although of a known type. Emergent work will generally be task-based and usually subject to time and material based payments
Engineering Change	An alteration in the configuration of a Configuration Item. It can be an addition, a modification, or a removal, and can be permanent or temporary.
Engineering Change Work Period (ECWP)	A level two or three maintenance period scheduled as required for the specific purpose of implementing Engineering Changes by the contractor.
Formation	The immediate subordinate coastal commands and organizations of the RCN – Maritime Forces Pacific (MARPAAC) and Maritime Forces Atlantic (MARLANT)
Work Periods	Work periods required to maintain Class capabilities that require repair facility support including: SWP, ECWP, and DWP. Work periods may be conducted at either DND or Contractor facilities. SWPs and ECWPs will be manned with DND Personnel, whereas DWPs will not be manned and will require a dry dock facility.
In-Service Support (ISS)	<p>In-Service Support involves operating and maintaining the ship in accordance with the Design Intent. Deviations from design intent are risk managed. It includes the management and execution of planned maintenance functions and activities, as well as corrective maintenance and repair to return systems to specified serviceability levels.</p> <p>In-Service Support includes engineering management functions to verify that system performance, and system operation and maintenance direction, meet Design Intent objectives and, as necessary, make changes or continuous improvement. It also includes the controlled change of Design Intent to meet new operational, legislative or other requirements, and the management and conduct of the associated change to the ship and support solution.</p>

<b>Term</b>	<b>Definition</b>
Life Cycle Material Management	Life Cycle Materiel Management contains all the Life Cycle Materiel Management functions, as outlined in Materiel Acquisition & Support (MA&S) policy, to effectively manage ships, systems and equipment through life.
Levels of Maintenance	<p>Levels of Maintenance are used to identify the level of complexity and difficulty of the activities required to perform that maintenance. In this sense, levels of maintenance refer to the depth of maintenance required and by the associated skill sets, special tools and facilities, etc. necessary to accomplish the maintenance. The following are guidelines in attributing maintenance levels:</p> <ul style="list-style-type: none"> <li>a. Level One Maintenance – maintenance that can normally be performed by shipboard naval technicians with only shipboard tools, equipment and facilities;</li> <li>b. Level Two Maintenance – maintenance that can normally only be performed by a qualified Fleet Maintenance Facility (FMF), industry, or naval technician with tools and equipment only available at Formation (not shipboard) facilities; and</li> <li>c. Level Three Maintenance – maintenance that can be performed by industry or qualified FMF with specialized tools, skill sets, equipment, and facilities normally available only in industry.</li> </ul> <p>Level one and two primarily address preventative maintenance and servicing, fault diagnosis and corrective maintenance by replacement or restoration of parts, assemblies or components and is normally time limited. Level three repairs encompass more extensive maintenance activities such as replacement or restoration of parts, assemblies or components, rebuild and overhaul of equipment, mid-life improvements, life extension programs and lengthy activities that require specialized facilities to complete.</p>
Lines of Maintenance	<p>Lines of Maintenance are used to identify who is sponsoring and funding maintenance activities. The following provides guidance on the various maintenance lines and their definitions:</p> <ul style="list-style-type: none"> <li>a. First Line Maintenance – maintenance normally performed under the authority and sponsorship of the ship’s Engineering Heads of Department and performed by shipboard naval technicians;</li> <li>b. Second Line Maintenance – maintenance normally performed under the authority and sponsorship of the Formations and achieved through Formation allocated person-hours; and</li> <li>c. Third Line Maintenance – maintenance performed under the authority, sponsorship, and funding of DGMEPM.</li> </ul>

<b>Term</b>	<b>Definition</b>
Preventive Maintenance (PM)	Preventive Maintenance (PM) is any scheduled maintenance task carried out to reduce the likelihood of system failure or to confirm that the system is operating within specified performance limits.
Overhaul	Overhaul is the restoration of a piece of equipment to its original performance and near life expectancy. Overhaul typically includes the replacement of worn, damaged, or life expired parts and parts whose service life is about to expire, the incorporation of approved modifications, and the restoration of components as necessary. The depth of work will normally be to manufacturer's standards using replacement parts produced by the original manufacturer or equivalent quality.
Recognized Organization	A Recognized Organization is an organization that has been audited to demonstrate that it has the required processes and resources to execute a naval materiel regulatory function. These may include, but are not limited to, DNPS, DNCS, CPM Directorates (DMEPM (MSC), DMEPM (MWVA), and DMEPM(SM)), Engineering Departments in the Fleet Maintenance Facilities (FMFs) and onboard Her Majesty's Canadian Ships (HMCS) and submarines, Design Agents, Original Equipment Manufacturers (OEMs), Classification Societies, and suppliers to naval inventories.
Reliability	Reliability is the probability that an equipment or system will perform its required functions under stated conditions for a stated period of time. Reliability is essentially the measurement of the proportion (percentage) of a population of equipment or systems that are expected to remain functional over a given time interval.
Repair	Repair restores the functions of a piece of equipment to an acceptable condition by the renewal, replacement, or mending of worn or damaged part
Repair and Overhaul (R&O)	Repair and Overhaul (R&O) services are all those activities performed at DND in-house facilities, contractors' facilities or by Mobile Repair Parties (MRPs) to diagnose, inspect, modify, repair and overhaul, and test unserviceable assemblies, equipment, items and systems. R&O services include engineering services, publication and software maintenance, structural life integrity programs, configuration management and spares support.
Short Work Period (SWP)	An alongside maintenance period of at least three consecutive weeks in duration, scheduled about once a quarter during the operational phase as prescribed in the Maintenance Profile for each Class of ship and with second line Repair Facility assistance being available. The duration of a SWP may be extended as necessary to accommodate required work.
Supply Chain Management	Supply Chain Management includes the management of subordinate contractor interfaces for the delivery of goods and services to support in service support processes and activities.

<b>Term</b>	<b>Definition</b>
System Authority (SA)	The person charged with the safety of a ships system or equipment and its subsequent maintenance throughout the life cycle.
Technical Schedule	The annual plan that is developed from the Operational Schedule (Ship Availability) to optimize work period requirements. (e.g., maintenance, trials, certifications, capability insertion etc.).
Value Engineering (VE)	Value Engineering (VE) is an organized/systematic approach that analyzes the functions of systems, equipment, facilities, services, and supplies to ensure they achieve their essential functions at the lowest life-cycle cost consistent with required performance, reliability, quality, and safety. Typically the implementation of the VE process increases performance, reliability, quality, safety, durability, effectiveness, or other desirable characteristics. (US DoD)



## ANNEX D – HALIFAX-CLASS WORK PERIOD CONTRACTS PROCUREMENT STRATEGY

	Description
<b>A. Procurement Strategy</b>	
Procurement Requirement	Deliver services for the <i>Halifax</i> -class Work Periods and support to the maintenance program.
Procurement Solution	Multi-year contract for services and goods.
Extent of Competition	Competitive
Impact of Trade Agreements	National Security Exception is invoked to ensure both operational readiness and availability of the fleet, as well as the safeguarding to Canada's national security interests.  Canadian Shipbuilding Policy applies with respect to Repair and Maintenance of vessels in Canada, subject to Operational Requirements
Method of Procurement	Request for Proposal (RFP) for 2 contracts – (1) one for the east coast and (1) one for the west coast.  Contract Tenure: <ul style="list-style-type: none"> <li>• Initial Contract Length – 4 years</li> <li>• Rolling Wave Concept will be applied for optional years – Decision based on Contractor's performance; occur annually starting at end of initial contract</li> </ul>
Desirable Characteristics	<ul style="list-style-type: none"> <li>• Long Term for multiple work periods</li> <li>• Team Approach (Relational)</li> <li>• Industrial and Technological Benefits (ITB), including Value Proposition (VP) applies</li> <li>• Performance Managed and Outcome Focused</li> <li>• Flexible</li> <li>• Provide best value to Canada</li> </ul>
Subcontracting	<ul style="list-style-type: none"> <li>• It is understood that the CONTRACTOR will deliver parts of the work through subcontracts</li> <li>• Canada's default position for subcontracting is competition</li> <li>• If competition is not possible, a business case is required for approval by Canada that will demonstrate fair and reasonable pricing and best value.</li> </ul>
Authorities	Project Manager (PM) - Anantjit Komal MSC 4-3 819-939-3163 Procurement Authority (PA) - Gisele Russell D Mar P 3-2-2 819-939-3666 Contracting Authority (CA) - Sharon Saslove PSPC 819-939-3233

# ANNEX E – HALIFAX-CLASS ISS FUNCTIONAL BLOCK DIAGRAM

