



ANNEX B

Statement of Work

Naval Remote Weapon Station System

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1. SCOPE

1.1 Purpose

- 1.1.1 This Statement of Work (SOW) defines the Work to be completed by the Contractor to:
- a. Design, build, deliver, install, Set-To-Work (STW), and Acceptance test Naval Remote Weapon Station (NRWS) Systems in Halifax (HFX) Class ships;
 - b. Design, build, deliver, install, STW, and Acceptance test NRWS in training facilities;
 - c. Acceptance test via Factory Acceptance Test (FAT), and deliver to Canada NRWS Systems in Queenston Class ships;
 - d. Provide Initial Cadre Training (ICT) and Initial Provisioning (IP); and
 - e. Provide all associated deliverables including documents, materiel, and services specified by this SOW.

1.2 Background

- 1.2.1 The Canada First Defence Strategy emphasizes that Canada needs “...core capabilities and flexibility required to successfully address both conventional and asymmetric threats, including terrorism, insurgencies, and cyber-attacks.”¹
- 1.2.2 Recent national deployments have demonstrated that the Royal Canadian Navy (RCN) is operating in higher threat littoral areas more frequently, and events have proven that the littoral threat can exist in Canada’s own harbours and coastlines. The RCN uses a layered defence methodology, and the current manually operated, unstabilized, 0.50 Calibre Heavy Machine Gun is used for force protection, warning fire, boarding party protection, and for the primary defence against short range littoral threats. Deficiencies currently exist with this inner layer of defence regarding threat engageability, crew protection, communications, and effectiveness.
- 1.2.3 To address these deficiencies, the RCN will invest in a NRWS System to provide a short range point defence, and limited area defence capability within the layered defence concept used in the RCN.

¹ Canada First Defence Strategy - http://www.forces.gc.ca/assets/FORCES_Internet/docs/en/about/CFDS-SDCD-eng.pdf

1.3 Terminology

1.3.1 The following definitions shall apply to this SOW:

- a. Acceptance: Written approval by Canada of the Contractor's Objective Evidence (OE) that a deliverable is compliant with this SOW.
- b. Authorization: Written approval by Canada for the Contractor to proceed based upon plans proposed by the Contractor. Authorization does not imply Acceptance of any Contractor plans, and the Contractor remains responsible for demonstrating compliance with all aspects of the SOW.
- c. Computer Software Configuration Item (CSCI): NRWS software and its respective modules which are under Configuration Management with respect to the Functional and Product Baselines.
- d. Controlled Material: Materials designated as Controlled Materials by Health Canada.
- e. Design Change: Any change to the physical design of hardware or to the function of software.
- f. Factory Acceptance Test (FAT): Testing and evaluation of the NRWS System at the Contractor's facility to demonstrate compliance with the SOW and TSOR.
- g. First Article: The first NRWS System configuration variant for each of HFX Class, and Queenston to undergo production.
- h. Functional Baseline: That deliverable documentation which is necessary to define the functional properties of each First Article NRWS System configuration variant in accordance with the SOW, and how functional properties will be verified. The Functional Baseline is defined following the System Requirement Review.
- i. Functional Audit: Verification and acceptance by Canada that all acceptance test and evaluation results, up to and including FAT, demonstrate compliance of each First Article NRWS System configuration variant with the Functional Baseline.
- j. Government Furnished Resources (GFR): Any resource furnished by Canada under the Contract.
- k. Harbour Acceptance Test (HAT): Testing and evaluation of each NRWS System that demonstrates compliance with this SOW, when installed in ships alongside and shore facilities.

- l. Hardware Configuration Item (HWCI): NRWS System hardware and its respective sub-assemblies and components which are under Configuration Management with respect to the Functional and Product Baselines.
- m. Level 1 Maintenance: In-service maintenance that is to be conducted on the NRWS System by ship staff employed in the respective ships using only shipboard tools, level 1 spares, and equipment.
- n. Level 2 Maintenance: In-service maintenance that is to be conducted on the NRWS System by DND staff employed in Canada's shore based support organizations using tools, level 2 spares and equipment available at shore based facilities.
- o. NRWS System: The NRWS System consists of four remotely operated NRWS mounts, sensor suites, and NRWS operator consoles integrated together.
- p. Objective Evidence (OE): Factual, repeatable, and documented evidence of NRWS System compliance with the SOW that can be demonstrated to Canada.
- q. Physical Configuration Audit (PCA): The process whereby Canada determines that each First Article NRWS System configuration variant is compliant with its corresponding Product Configuration Documentation and acceptance of proposed HWCIs and CSCIs and their corresponding Product Baselines.
- r. Product Baseline: That deliverable Product Configuration Documentation which has been accepted via the PCA, and that will be the reference for all Configuration Management processes applied to each HWCI and CSCI.
- s. Product Configuration Documentation: That deliverable documentation required to define the functional, physical, and interface properties of each NRWS System configuration variant, and its associated HWCI, and CSCI in accordance with the SOW. Product Configuration Documentation includes, at a minimum the System Design Description of CDRL NRWS-SE-004, the Interface Design Document of CDRL NRWS-SE-005, and the Technical Data Package of CDRL NRWS-TD-002.
- t. Qualification: Factual, repeatable, and documented OE that the design and function of each Configuration Item and CSCI which has been fully integrated into each First Article NRWS System configuration variant, are compliant with SOW requirements.
- u. Qualification Review: The process whereby Canada determines that each First Article NRWS System configuration variant is compliant with the SOW.

- v. Recurring Article: The second and all subsequent articles of a NRWS System configuration variant to undergo production.
- w. Sea Acceptance Test (SAT): Testing and evaluation of each installed NRWS System conducted at sea in order to demonstrate compliance with this SOW.
- x. Set-to-Work (STW): All activities that the Contractor must undertake following installation of each NRWS System to verify correct installation, initialize the system, verify correct function of the system, and to ensure that each NRWS System is at a state of technical readiness for subsequent Acceptance Testing.
- y. System Engineering: Multi-discipline engineering that focuses on design and management over the NRWS System life cycle, involving issues of concern to Canada such as reliability, logistics, evaluation measurements, work-processes, optimization methods, and risk management.

1.4 Acronyms

1.4.1 The following acronyms shall apply to this SOW:

Acronyms	
ATI	Acceptance Test Index
CDR	Critical Design Review
CDRL	Contract Data Requirement List
CFFSE	Canadian Forces Fleet School Esquimalt
CFNES	Canadian Forces Naval Engineering School
CM	Configuration Management
CI	Configuration Item
CSCI	Computer Software Configuration Item
ECGP	Engineering Change Guidance Package
FAT	Factory Acceptance Test
FSR	Field Service Representative
HAT	Harbour Acceptance Test
HWCI	Hardware Configuration Items
ICT	Initial Cadre Training
ILS	Integrated Logistic Support
IMS	Integrated Master Schedule
IP	Initial Provisioning
ISS	In Service Support
LSA	Logistic Support Analysis
LLTIP	Long Lead Time Initial Provisioning
NRWS	Naval Remote Weapon Station
OE	Objective Evidence
PCA	Physical Configuration Audit

Acronyms	
PDR	Preliminary Design Review
PM	Project Manager
PMP	Project Management Plan
RCN	Royal Canadian Navy
SAT	Sea Acceptance Test
SDE	Shared Data Environment
SE	System Engineering
SOW	Statement of Work
SRR	System Requirements Review
STW	Set to Work
TEMP	Test and Evaluation Master Plan
TDP	Technical Data Package
TRR	Test Readiness Review
TSOR	Technical Statement of Requirements

2. APPLICABLE DOCUMENTS

- 2.1 The following documents are applicable to and shall form part of this SOW:
- a. D-01-002-007/SG-006, Requirements for the Selection of Configuration Items;
 - b. C-03-010-000/MM-001, Canadian Naval Shipboard Techniques for Electromagnetic Compatibility; and
 - c. C-03-010-000/AG-002, EMSEC Design, Installation and Maintenance Guidelines for Naval Ships.
- 2.2 In the event of a conflict between this SOW and an applicable document, this SOW shall take precedence to the extent necessary to resolve such conflict.
- 2.3 The latest approved revision of the documents listed in paragraph 2.1 shall apply unless otherwise specified.

3. PROJECT MANAGEMENT

3.1 Project Manager

- 3.1.1 The Contractor shall implement and maintain a team, headed by a single Project Manager (PM), to carry out the Work required in this SOW.
- 3.1.2 The PM shall be the main point of contact with Canada.

3.2 Project Management Plans

- 3.2.1 The Contractor shall prepare, deliver and maintain a Project Management Plan (PMP) in accordance with Contract Data Requirements List (CDRL) NRWS-PM-001 for Authorization by Canada.
- 3.2.2 The Contractor shall prepare, deliver and maintain an Integrated Master Schedule (IMS) in accordance with CDRL NRWS-PM-002 for Authorization by Canada.

3.3 Scope and Schedule Management

- 3.3.1 The Contractor shall implement the scope of the Work specified in this SOW in accordance with the project management processes of the PMP and IMS Authorized by Canada.
- 3.3.2 The Contractor shall implement all Authorized in scope unforeseen Work to this SOW in accordance with any corresponding schedule and plan changes Authorized by Canada.
- 3.3.3 The Contractor shall supply all resources required to implement the scope of the Work specified in this SOW, except for Government Furnished Resources (GFR) as detailed in this SOW.
- 3.3.4 The Contractor shall manage all resources required to perform the Work.
- 3.3.5 The Contractor shall prepare, deliver and maintain all project deliverables in accordance with:
 - a. The CDRL and associated Data Item Descriptions (DID); and
 - b. Hardware and software deliverables in accordance with the Technical Statement Of Requirements (TSOR).

- 3.3.6 The Contractor shall complete the Event Prerequisite(s) for each event described in Table 1, of this SOW, prior to the event.
- 3.3.7 The Contractor shall use the IMS as a baseline against which project progress shall be controlled and measured, and against which project changes shall be evaluated.
- 3.3.8 The Contractor shall address the following schedule requirements for HFX NRWS Systems in project planning:
- a. Plan long-term schedules for installation and STW as applicable to ships listed in Table 2, of this SOW;
 - b. Plan long-term schedules to accommodate First Article NRWS System installation and STW;
 - c. Plan long-term schedules for subsequent shipboard installations and STW assuming that they will be uniformly distributed throughout the year as indicated by Table 2, of this SOW;
 - d. Consult Canada on the second Monday of April of each year until contract completion, to acquire an updated schedule for proposed ship availability;
 - e. Plan and execute all Contractor activities in ships to accommodate a minimum of three months notice from Canada regarding the final availability dates for each ships;
 - f. Plan and execute all Contractor activities in ships to accommodate a minimum of three months notice from Canada, for the substitution of any ship listed in Table 2, of this SOW, with any other ship in the same region; and
 - g. Plan and execute all Contractor activities in RCN ships in conjunction with existing ship programs.
- 3.3.9 The Contractor shall address the following schedule requirements for Queenston Class NRWS Systems in project planning:
- a. Plan long-term schedules for delivery in accordance with Table 2, of this SOW;
 - b. Consult Canada on the second Monday of April of each year until contract completion to acquire an updated schedule for proposed Queenston Class availability; and
 - c. Deliver each Queenston Class NRWS System no sooner than 60 business days in advance of and no later than 40 business days prior to the

installation dates specified by Canada on the second Monday of April of each year.

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
Contract Kick-Off Meeting	30 business days after Contract award	Project Management Plan (PMP) and subsidiary plans complete	Paragraphs 3.2.1, 3.7.1.6.a
		Integrated Master Schedule (IMS) complete	Paragraph 3.2.2
		System Engineering Management Plan complete	Paragraph 4.1.2
		Configuration Management (CM) Plan complete	Paragraph 4.7.1.1
		Integrated Logistic Support (ILS) Plan complete	Paragraph 5.2.1.1
System Requirements Review	30 business days after Contract award	Draft System Specification delivered to Canada	Paragraph 4.2.2
Preliminary Design Review (PDR)	120 business days after Contract award	System Specification Authorization by Canada	Paragraph 4.2.5
		System Requirements Review (SRR) Minutes Authorized by Canada	Paragraph 4.2.5
		Draft PDR Documentation Package delivered to Canada	Paragraph 4.3.1.2
Commencement of Final System Design	In accordance with Commencement of Final System Design Event Prerequisites	PDR Minutes Authorization by Canada	Paragraph 4.3.1.5
		Final PDR Documentation Package Authorization by Canada	Paragraph 4.3.1.5

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
Critical Design Review (CDR)	In accordance with CDR Event Prerequisites	Draft CDR Documentation Package delivered to Canada	Paragraph 4.3.2.2
Integrated Logistic Support (ILS) Conference	In accordance with ILS Event Prerequisites	CDR Minutes Authorization by Canada	Paragraph 4.3.2.5
		Final CDR Documentation Package Authorization by Canada	Paragraph 4.3.2.5
		Draft ILS Conference Documentation Package delivered to Canada	Paragraph 5.2.3.2
First Article Production	In accordance with First Article Production Event Prerequisites	ILS Conference Minutes Authorization by Canada	Paragraph 5.2.3.6
		IP Conference Documentation Package Authorization by Canada	Paragraph 5.3.3.6
IP Conference	In accordance with IP Conference Event Prerequisites	ILS Conference Minutes Authorization by Canada	Paragraph 5.2.3.6
		ILS Conference Documentation Package Authorization by Canada	Paragraph 5.2.3.6
FAT Test Readiness Review (TRR)	In accordance with FAT TRR Event Prerequisite	Following First Article Production	Paragraph 4.6.5.1
First Article Factory Acceptance Test (FAT)	In accordance with First Article FAT Event Prerequisites	20 business days notice for First Article FAT delivered to Canada	Paragraph 4.6.6.1
		Authorization of FAT TRR Minutes by Canada	Paragraph 4.6.5.5

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
		All Product Configuration Documentation updates for the First Article delivered to Canada	Paragraphs 4.6.5.4.g, 4.7.4.6
Functional Audit	In accordance with Functional Audit Event Prerequisite	All test reports up to and including First Article FAT Test Report Accepted by Canada	Paragraphs 4.7.3.2, 4.7.3.3
Physical Configuration Audit (PCA)	In accordance with PCA Event Prerequisite	All deviations identified in the Functional Audit corrected and results Accepted by Canada	Paragraphs 4.7.3.2, 4.7.3.3
First Article Training Facility Installation	In accordance with First Article Training Facility Installation Event Prerequisites	All corrections of deviations identified in the Functional Audit and PCA Accepted by Canada	Paragraph 4.7.3.8
		Acceptance of translated equipment labels and safety labels	Paragraphs 4.4.7, 4.4.8.b
		Authorization of the Safety Compliance Assessment	Paragraph 4.4.8.a
		Completion of the Training Facility ECGP	Paragraph 4.8.3.1
First Article Ship Installation	In accordance with First Article Ship Installation Event Prerequisites	All corrections of deviations identified in the Functional Audit and PCA Accepted by Canada	Paragraph 4.7.3.8
		Acceptance of translated equipment labels and safety labels	Paragraphs 4.4.7, 4.4.8.b
		Authorization of the Safety Compliance Assessment	Paragraph 4.4.8.a

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
		Authorization of the particularized HFX Class EC Specification	Paragraph 4.8.1.8
Conduct Initial Cadre Training (ICT)	In accordance with ICT Event Prerequisites	Training Development Program Report Authorized by Canada	Paragraphs 5.2.3.2.b, 5.4.7, 5.5.1
		Computer Based Trainer, Level 1 spares for First Article Training Facility, including long lead items received by Canada	Paragraphs 5.3.1.1, 5.3.1.2, 5.7
Harbour Acceptance Test (HAT) TRR	In accordance with HAT TRR Event Prerequisite	Following Ship Installation	Paragraph 4.6.5.2
First Article HAT	In accordance with First Article HAT Event Prerequisites	Each First Article NRWS System configuration variant required for HAT has been STW and results reported to Canada	Paragraph 4.5.3.1
		ICT sessions completed	Paragraph 5.5.8
		Authorization of First Article HAT TRR Minutes by Canada	Paragraph 4.6.5.5
		Level 1 spares for each ship, including long lead items, received by Canada	Paragraphs 5.3.1.1, 5.3.1.2
Sea Acceptance Test (SAT) TRR	In accordance with SAT TRR Event Prerequisite	Following First Article HAT	Paragraph 4.6.5.3
First Article Sea Acceptance Test (SAT)	In accordance with First Article SAT Event Prerequisites	First Article HAT Test Report for each First Article NRWS System configuration variant Accepted by Canada	Paragraphs 4.6.7.3

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
		Authorization of First Article SAT TRR Minutes by Canada	Paragraph 4.6.5.5
First Article Qualification Review	In accordance with First Article Qualification Review Event Prerequisite	All test reports and audits up to and including First Article SAT Test Report for each First Article NRWS System configuration variant Accepted by Canada	Paragraphs 4.6.1.1, 4.6.7.1, 4.6.7.4, 4.6.8.2
Technical Data Package (TDP) Delivery	In accordance with TDP Delivery Event Prerequisite	Authorization of First Article Qualification Review minutes	Paragraph 4.8.2.3
Final In-Service Manuals Delivery	In accordance with Final In-Service Manuals Delivery Event Prerequisite	Authorization of First Article Qualification Review minutes	Paragraph 4.8.2.3
Recurring Production	In accordance with Recurring Production Event Prerequisite	Acceptance of First Article Qualification Review minutes by Canada	Paragraphs 4.6.8.2, 4.6.8.4, 4.6.8.5
Recurring Article NRWS System Installation	In accordance with Recurring Article NRWS System Installation Event Prerequisites	Recurring FAT Reports Accepted by Canada	Paragraphs 4.6.7.5
		Ship Availability	Table 2
Recurring Article Acceptance	In accordance with Recurring Article Acceptance Event Prerequisites	Level 1 spares, including long lead items, received by Canada prior to each recurring article STW	Paragraphs 4.6.7.5, 5.3.1.1, 5.3.1.2
		Each Recurring Article NRWS System configuration variant required for HAT has been successfully STW and results reported to Canada	Paragraph 4.5.3.1

Table 1: Key Events and Prerequisites			
Event	Event Date	Event Prerequisite(s)	SOW Reference
		Recurring HAT and SAT Test Reports Accepted by Canada	Paragraphs 4.6.7.5, 4.6.7.6
Contract Completion Meeting	20 business days prior to Contract Completion	In accordance with Event Date	Paragraph 3.7.1.6.d

Table 2: Implementation Schedule							
HFX Class ship for Installation	Location	2017	2018	2019	2020	2021	2022
HMCS ST JOHN'S	Halifax, NS			X			
HMCS HALIFAX	Halifax, NS						X
HMCS CHARLOTTETOWN	Halifax, NS			X			
HMCS FREDERICTON	Halifax, NS		X				
HMCS VILLE DE QUEBEC	Halifax, NS				X		
HMCS MONTREAL	Halifax, NS		X				
HMCS TORONTO	Halifax, NS					X	
HMCS OTTAWA	Esquimalt, BC				X		
HMCS WINNIPEG	Esquimalt, BC		X				
HMCS REGINA	Esquimalt, BC					X	
HMCS CALGARY	Esquimalt, BC						X
HMCS VANCOUVER	Esquimalt, BC			X			
Queenston Class Ship for Delivery							
HMCS QUEENSTON	Vancouver, BC		X				
HMCS CHATEAUGUAY	Vancouver, BC			X			
Training Facilities NRWS for Installation							
CFFSE	Esquimalt, BC	X					
CFNES	Halifax, NS	X					
Computer Based Trainers for Delivery							
CFFSE	Esquimalt, BC	X					
CFNES	Halifax, NS	X					

3.4 Quality Management

- 3.4.1 The Contractor shall implement a Quality Management Program in accordance with the PMP of CDRL NRWS-PM-001 for the Work specified in this SOW.

3.5 Risk Management

- 3.5.1 The Contractor shall implement a Risk Management Program in accordance with the PMP of CDRL NRWS-PM-001 for all Work specified in this SOW.
- 3.5.2 The Contractor shall report risks in accordance with the Project Progress Reports CDRL NRWS-PM-003.

3.6 Documentation Deliverables

3.6.1 Shared Data Environment

- 3.6.1.1 The Contractor shall implement a web-based Shared Data Environment (SDE) that will enable:
- a. Only personnel Authorized by Canada to access the SDE;
 - b. Canada and the Contractor to store, exchange and share information;
 - c. Canada and the Contractor to render documents as read-only, and to edit documents via password protection;
 - d. Canada and the Contractor to amend and add comments to deliverable documentation via password protection;
 - e. Canada and the Contractor to track all amendments and comments to deliverables, including the identification of individual editor or commenters; and
 - f. All data in the SDE to be maintained in accordance with Section 4.7.
- 3.6.1.2 The Contractor shall deliver all documentation to Canada on the SDE in Microsoft Office 2010 or Adobe Portable Document Format.
- 3.6.1.3 The Contractor shall accommodate the periods required for Canada to review all documentation deliverables, in accordance with the CDRL. Canada will issue comments for amendment, or Authorization, or Acceptance as specified by this SOW no later than the next business day following the expiration of applicable review period. Should Canada be unable to return comments as indicated, Canada will advise the Contractor accordingly.

- 3.6.1.4 The Contractor shall amend deliverable documents in accordance with comments received from Canada, and re-submit within 10 business days unless stated otherwise in this SOW and the CDRL.

3.6.2 Progress Reports

- 3.6.2.1 The Contractor shall prepare and deliver Project Progress Reports in accordance with CDRL NRWS-PM-003 10 business days prior to each Project Review Meeting specified Paragraph 3.7.1.6.b.

3.7 Meetings and Meeting Documents

3.7.1 Meetings

- 3.7.1.1 The Contractor shall convene and co-chair all meetings required by this SOW at locations agreed to by the parties with Canada.
- 3.7.1.2 The Contractor shall provide notice of at least 20 business days for the proposed date for all meetings specified in this SOW, for approval by Canada.
- 3.7.1.3 The Contractor shall prepare and deliver all deliverable documentation packages required for meetings in accordance with Section 3.7 of this SOW and the CDRL.
- 3.7.1.4 The Contractor shall include all meetings required by this SOW, and delivery of their associated deliverable documentation packages, in the IMS.
- 3.7.1.5 The Contractor shall ensure that all required data, facilities, and personnel, including the individual(s) having required approval authority regarding meeting topics, are available for each meeting.
- 3.7.1.6 The Contractor shall convene and co-chair the following Project Management meetings with Canada, in accordance with the Event Prerequisites of Table 1, of this SOW:
- a. Contract Kick-Off Meeting - Within 30 business days of Contract award, at the Contractor's facility, to identify any amendments required to the PMP and associated plans of Paragraphs 3.2.1, 3.2.2, 3.4.1, 3.5.1, 4.1.2, 4.6.2.1, 4.7.1.1, and 5.2.1.1;
 - b. Project Review Meetings – Monthly, via virtual presence, and semi-annually at the Contractor's facility to present and discuss the topics itemized in CDRL NRWS-PM-003 until full compliance of the NRWS System is demonstrated via the First Article Qualification Review, then quarterly via virtual presence to project closure;
 - c. Technical Review Meetings – As required, to present and discuss the topics itemized in CDRL NRWS-PM-003; and

- d. Contract Completion Meeting - At least 20 business days, at Canada's facility, prior to proposed Contract Completion, to identify the deliverables that have been Accepted by Canada, to plan for the Acceptance of all outstanding Work in progress, and to identify all actions required to formally close the Contract.

3.7.1.7 The Contractor shall convene and co-chair the following System Engineering and ILS meetings with Canada at the Contractor's facility, in accordance with the Event Prerequisites of Table 1, of this SOW:

- a. System Requirements Review (SRR), convened at the Contractor's facility – In accordance with paragraph 4.2.1;
- b. Preliminary Design Review (PDR), convened at the Contractor's facility – In accordance with paragraph 4.3.1.1;
- c. Critical Design Review (CDR), convened at the Contractor's facility – In accordance with paragraph 4.3.2.1;
- d. Test Readiness Reviews (TRR), convened at a mutually agreed location– In accordance with paragraph 4.6.5.1, 4.6.5.2, and 4.6.5.3;
- e. Functional Audit, convened at Canada's facility – In accordance with paragraphs 4.7.3.1, 4.7.3.2 and 4.7.3.3;
- f. Physical Configuration Audit (PCA), convened at Canada's facility – In accordance with paragraphs 4.7.3.1, 4.7.3.2, and 4.7.3.3;
- g. Qualification Review, convened at Canada's facility - In accordance with paragraph 4.6.8.1;
- h. Integrated Logistic Support (ILS) Conference, convened at the Contractor's facility – In accordance with paragraph 5.2.3.1;
- i. Long Lead Time Item Provisioning (LLTIP) Conference, convened at a mutually agreed location – In accordance with paragraph 5.3.2.1; and
- j. Initial Provisioning (IP) Conference, convened at the Contractor's facility – In accordance with paragraph 5.3.3.1.

3.7.2 **Agenda**

3.7.2.1 The Contractor shall prepare and deliver draft Meeting Agenda in accordance with CDRL NRWS-PM-004 for approval by Canada at least 10 business days prior to all meetings specified in this SOW.

3.7.2.2 The Contractor shall incorporate the agenda items requested by Canada in the meeting agenda.

3.7.2.3 The Contractor shall deliver approved Meeting Agenda(s) to all attendees at least 5 business days prior to the scheduled meeting date.

3.7.3 Minutes

3.7.3.1 The Contractor shall prepare and deliver draft Meeting Minutes in accordance with CDRL NRWS-PM-005 for Authorization by Canada within 5 business days following the completion of the meeting.

3.7.3.2 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft Meeting Minutes

3.7.3.3 The Contractor shall prepare and deliver the final Meeting Minutes for Authorization by Canada.

3.7.3.4 The Contractor shall deliver Authorized Meeting Minutes to all attendees within 10 business days following the completion of the meeting.

3.7.3.5 The Contractor shall execute all action items assigned to the Contractor in Authorized Meeting Minutes, unless a contract amendment is required.

4. SYSTEM ENGINEERING

4.1 General

- 4.1.1 The Contractor shall designate a single Engineering Manager within its organization who will be responsible to the PM for engineering functions related to the NRWS System.
- 4.1.2 The Contractor shall prepare and deliver a System Engineering Management Plan in accordance with CDRL NRWS-SE-001.
- 4.1.3 The Contractor shall conduct system engineering in accordance with the System Engineering Management Plan and the requirements of this SOW.
- 4.1.4 The Contractor shall conduct system engineering to ensure that all proper approvals for International Traffic in Arms Regulations are obtained for the NRWS System and all associated deliverables.
- 4.1.5 The Contractor shall conduct system engineering in order to provide an NRWS System which meets all requirements contained in the TSOR.

4.2 Requirement Management

- 4.2.1 The Contractor shall convene one SRR with Canada to coincide with the Contract Kick-Off meeting, in order to ensure that each TSOR requirement has been clarified and reconciled to a common understanding between the Contractor and Canada, so that the Contractor can generate the Functional Baseline.
- 4.2.2 The Contractor shall prepare and deliver a draft System Specification for discussion at the SRR, in accordance with CDRL NRWS-SE-002 to specifically define the Contractor's interpretation and organization of each TSOR requirement for management during the subsequent design and Acceptance processes.
- 4.2.3 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft System Specification.
- 4.2.4 The Contractor shall prepare and deliver a final System Specification in accordance with CDRL NRWS-SE-002 that will become the Functional Baseline when Authorized by Canada.
- 4.2.5 The Contractor shall design the NRWS System following Authorization of the System Specification and SRR Minutes by Canada, and in accordance with all other Event Prerequisites of Table 1, of this SOW.
- 4.2.6 The Contractor shall prepare and deliver a Verification Cross Reference Matrix in accordance with CDRL NRWS-SE-003, that shall identify for each

requirement in the TSOR what verification method(s) will be used by the Contractor to verify compliance of the NRWS System and all associated deliverable material, documents, and services within the TSOR.

4.3 Design Reviews

4.3.1 Preliminary Design Review

- 4.3.1.1 The Contractor shall convene a PDR with Canada to explain and validate the design of the proposed NRWS System with respect to this SOW and TSOR.
- 4.3.1.2 The Contractor shall prepare and deliver the following draft PDR Documentation Package:
 - a. System Specification in accordance with CDRL NRWS-SE-002;
 - b. Verification Cross Reference Matrix in accordance with CDRL NRWS-SE-003;
 - c. System Design Document in accordance with CDRL NRWS-SE-004;
 - d. Interface Design Document in accordance with CDRL NRWS-SE-005;
 - e. Safety Control Plan in accordance with CDRL NRWS-SE-006;
 - f. Controlled Material Report if applicable, in accordance with CDRL NRWS-SE-007;
 - g. Test and Evaluation Master Plan (TEMP) in accordance with CDRL NRWS-SE-009;
 - h. Acceptance Test Index (ATI) in accordance with CDRL NRWS-SE-010;
and
 - i. Request for GFR in accordance with CDRL NRWS-PM-006.
- 4.3.1.3 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft PDR Documentation Package.
- 4.3.1.4 The Contractor shall prepare and deliver a final PDR Documentation Package for Authorization by Canada.
- 4.3.1.5 The Contractor shall customize and develop the NRWS System, following Authorization of the final PDR Documentation Package and PDR Minutes by Canada, and in accordance with all other Event Prerequisites of Table 1, of this SOW.

4.3.2 **Critical Design Review**

- 4.3.2.1 The Contractor shall convene and co-chair a CDR with Canada to explain and validate the design of the proposed NRWS System with respect to this SOW and TSOR.
- 4.3.2.2 The Contractor shall prepare and deliver the following draft CDR Documentation Package:
 - a. Verification Cross Reference Matrix in accordance with CDRL NRWS-SE-003;
 - b. System Design Document in accordance with CDRL NRWS-SE-004;
 - c. Interface Design Document in accordance with CDRL NRWS-SE-005;
 - d. Controlled Material Report if applicable, in accordance with CDRL NRWS-SE-007;
 - e. Safety Compliance Assessment for the NRWS in accordance with CDRL NRWS-SE-008;
 - f. TEMP in accordance with CDRL NRWS-SE-009;
 - g. ATI in accordance with CDRL NRWS-SE-010;
 - h. Amendments to the Request for GFR in accordance with CDRL NRWS-PM-006;
 - i. ECGP in accordance with CDRL NRWS-TD-001;
 - j. Technical Data Package (TDP) in accordance with CDRL NRWS-TD-002; and
 - k. Equipment Labelling Package in accordance with CDRL NRWS-CM-002.
- 4.3.2.3 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft CDR Documentation Package.
- 4.3.2.4 The Contractor shall prepare and deliver a final CDR Documentation Package for Authorization by Canada.
- 4.3.2.5 The Contractor shall perform ILS activities following Authorization of the final CDR Documentation Package and CDR Minutes by Canada, and in accordance with all other Event Prerequisites of Table 1, of this SOW.

4.4 Safety Management

- 4.4.1 The Contractor shall prepare, deliver, and maintain a Safety Control Plan in accordance with CDRL NRWS-SE-006.
- 4.4.2 The Contractor shall prepare, deliver, and maintain a Controlled Material Report to Canada in accordance with CDRL NRWS-SE-007 if Controlled Materials are used in the NRWS System.
- 4.4.3 The Contractor shall not use Controlled Materials in the NRWS System and associated deliverables without Authorization of the Controlled Material Report by Canada.
- 4.4.4 The Contractor shall evaluate all aspects of NRWS System safety in accordance with the Safety Control Plan to identify and resolve all safety hazards until installation of the final NRWS System.
- 4.4.5 The Contractor shall incorporate the safety requirements for Canadian shipyards, DND dockyards, and corresponding shore facilities in accordance with the Safety Control Plan where Work will be conducted until conclusion of the HAT for the final NRWS System.
- 4.4.6 The Contractor shall prepare, deliver, and maintain a Safety Compliance Assessment in accordance with CDRL NRWS-SE-008, for Authorization by Canada.
- 4.4.7 The Contractor shall prepare, deliver, and maintain NRWS System equipment safety labels for each hazard identified in the Safety Control Plan in accordance with CDRL NRWS-CM-002 for Authorization by Canada.
- 4.4.8 The Contractor shall not install NRWS System equipment without:
 - a. Authorization of the Safety Compliance Assessment by Canada; and
 - b. Authorization of equipment safety labels by Canada.

4.5 Delivery, Installation, and STW

- 4.5.1 **NRWS System Delivery**
 - 4.5.1.1 The Contractor shall deliver each NRWS System to the locations specified in Table 2, of this SOW, in accordance with the IMS.
 - 4.5.1.2 The Contractor shall store each HFX Class NRWS System until each component is installed.

4.5.2 HFX Class NRWS System Installation

4.5.2.1 This paragraph has been intentionally left blank.

4.5.2.2 The Contractor shall install each NRWS System in each ship listed in Table 2, of this SOW, in accordance with the Authorized NRWS System HFX Class Engineering Change (EC) Specification generated from ECGP of CDRL NRWS-TD-001.

4.5.3 HFX Class NRWS System STW

4.5.3.1 The Contractor shall conduct all STW activities as specified in the NRWS System HFX Class EC Specification upon completion of each ship installation in order to verify that each NRWS System has been installed correctly, is functioning correctly, and is at a state of technical readiness for HAT.

4.5.3.2 The Contractor shall conduct all NRWS System installation and STW activities in accordance with the safety requirements of the Safety Control Plan of CDRL NRWS-SE-006 and Safety Compliance Assessment of CDRL NRWS-SE-008.

4.5.4 Training Facilities NRWS Delivery, Installation and STW

4.5.4.1 The Contractor shall conduct all installation and STW activities for the Canadian Forces Fleet School Esquimalt (CFFSE) NRWS installation in accordance with the safety requirements of the Safety Control Plan of CDRL NRWS-SE-006 and Safety Compliance Assessment of CDRL NRWS-SE-008.

4.5.4.2 The Contractor shall prepare and deliver to Canada an Acceptance Test Report in accordance with CDRL NRWS-SE-012 to report the results of STW conducted at CFFSE.

4.5.4.3 The Contractor shall conduct all installation and STW activities for the CFNES NRWS installation in accordance with the safety requirements of the Safety Control Plan of CDRL NRWS-SE-006 and Safety Compliance Assessment of CDRL NRWS-SE-008.

4.5.4.4 The Contractor shall prepare and deliver to Canada an Acceptance Test Report in accordance with CDRL NRWS-SE-012 to report the results of STW conducted at CFNES.

4.5.4.5 The Contractor shall deliver each NRWS to the locations specified in Table 2, of this SOW, in accordance with the IMS.

4.6 Acceptance Process

4.6.1 System Acceptance

- 4.6.1.1 The Contractor shall provide Objective Evidence (OE) of NRWS System and associated deliverable compliance with all requirements of this SOW for Acceptance by Canada via the Acceptance Program in accordance with CDRL NRWS-SE-009.

4.6.2 Test and Evaluation Master Plan

- 4.6.2.1 The Contractor shall prepare, deliver, and maintain a TEMP in accordance with CDRL NRWS-SE-009 for Authorization by Canada, to define the entire process by which compliance of the proposed NRWS System and associated deliverables will be demonstrated with respect to this SOW.
- 4.6.2.2 The Contractor shall conduct the tests and evaluations in accordance with the TEMP Authorized by Canada.

4.6.3 Acceptance Test Index

- 4.6.3.1 The Contractor shall prepare, deliver, and maintain an itemized list of each NRWS System tests addressed by the TEMP in an ATI in accordance with CDRL NRWS-SE-010, for Authorization by Canada.

4.6.4 Acceptance Test Procedures

- 4.6.4.1 The Contractor shall prepare, deliver, and maintain Acceptance Test Procedures (ATP) in accordance with CDRL NRWS-SE-011, to define the specific requirements for each test itemized in the ATI, for Authorization by Canada.

4.6.5 Test Readiness Reviews

- 4.6.5.1 The Contractor shall convene a First Article FAT Test Readiness Review (TRR) with Canada at a mutually agreed location:
 - a. Following initial First Article Production; and
 - b. Prior to First Article FAT.
- 4.6.5.2 The Contractor shall convene a First Article HAT TRR with Canada at a mutually agreed location:
 - a. Following First Article NRWS System STW; and
 - b. Prior to First Article HAT.

- 4.6.5.3 The Contractor shall convene a First Article SAT TRR with Canada at a mutually agreed location:
- a. Upon Acceptance of HAT results by Canada, otherwise, only upon Acceptance of the First Article HAT Test Report by Canada; and
 - b. Prior to First Article SAT.
- 4.6.5.4 The Contractor shall demonstrate the following to Canada at each TRR:
- a. Required resources have been retained and scheduled for the applicable First Article FAT, HAT, and SAT,
 - b. All Event Prerequisites required by Table 1 of this SOW for the applicable First Article FAT, HAT, and SAT have been met;
 - c. A review of past testing conducted on the test article, and any known problems;
 - d. All comments from Canada concerning the applicable ATPs have been resolved to the satisfaction of Canada, so as to enable final Authorization of the procedures;
 - e. All conditions, constraints, and procedures necessary for Canada to formally witness the FAT and HAT;
 - f. All conditions, constraints, and procedures necessary for Canada to conduct, and the Contractor to formally witness, the SAT;
 - g. Test articles are compliant with Product and Functional Baselines, including verification of all Authorized configuration changes;
 - h. All NRWS System components to be involved in the test have been STW, and are at a state of technical readiness that enables demonstration of the required compliance; and
 - i. Any other issues that impact the test.
- 4.6.5.5 The Contractor shall commence FAT, HAT, and SAT only upon Authorization of TRR results by Canada, or upon Authorization of TRR Minutes by Canada in which resolution of each TRR observation is documented.
- 4.6.6 **Acceptance Testing**
- 4.6.6.1 The Contractor shall provide at least 20 business days notice to Canada of:
- a. The dates for all Acceptance testing, audits and reviews in accordance with the Event Prerequisites of Table 1, of this SOW; and

- b. The dates for First Article FAT, HAT and SAT.
- 4.6.6.2 The Contractor shall conduct Acceptance Testing in accordance with the:
 - a. Current versions of the TEMP, ATI, and ATPs; and
 - b. The outcome of the FAT, HAT, and SAT TRRs.
- 4.6.6.3 The Contractor shall permit Canada or its representatives to witness all NRWS System Acceptance tests, and shall fully support Canada as required in this role at each Acceptance test.
- 4.6.6.4 The Contractor shall formally witness all SATs conducted by Canada.
- 4.6.6.5 The Contractor shall demonstrate to Canada during each Acceptance Test, the OE of System compliance with all requirements of this SOW that are applicable to the test.
- 4.6.6.6 The Contractor shall re-conduct and permit Canada to witness all Acceptance Testing as required to demonstrate that all changes Authorized in accordance with Section 4.7 are compliant with this SOW.
- 4.6.7 **Acceptance Test Reports**
 - 4.6.7.1 The Contractor shall prepare and deliver an Acceptance Test Report for each Acceptance Test, in accordance with CDRL NRWS-SE-012 to define all OE of SOW and TSOR compliance obtained during the test.
 - 4.6.7.2 The Contractor shall obtain Acceptance of the First Article FAT Test Report, and meet all other Event Prerequisites of Table 1, of this SOW, prior to the commencement of the Functional Audit.
 - 4.6.7.3 The Contractor shall obtain Acceptance of the First Article HAT Test Report, and meet all other Event Prerequisites of Table 1, of this SOW, prior to the commencement of the First Article SAT.
 - 4.6.7.4 The Contractor shall obtain Acceptance of the First Article SAT Test Reports, and meet all other Event Prerequisites of Table 1, of this SOW, prior to the commencement of the Qualification Review.
 - 4.6.7.5 The Contractor shall obtain Acceptance of the Recurring Article FAT Test Report, and meet all other Event Prerequisites of Table 1, of this SOW, prior to the commencement of the Recurring Article HAT.
 - 4.6.7.6 The Contractor shall obtain Acceptance of the Recurring Article HAT Test Report, and meet all other Event Prerequisites of Table 1, of this SOW, prior to the commencement of the Recurring Article SAT.

- 4.6.7.7 The Contractor shall obtain Acceptance of the Recurring Article SAT Test Report, and meet all other Event Prerequisites of Table 1, of this SOW.
- 4.6.7.8 The Contractor shall identify all Acceptance Test results that are non-compliant in the Test Reports.
- 4.6.7.9 The Contractor shall rectify all non-compliance identified in the Test Reports and:
 - a. Conduct all re-testing required to demonstrate full compliance with this SOW and TSOR;
 - b. Permit Canada to witness all re-testing; and
 - c. Re-submit Test Reports in accordance with the process specified in Section 4.6.7.

4.6.8 **Qualification Review**

- 4.6.8.1 The Contractor shall convene an NRWS System Qualification Review with Canada following Acceptance of the SAT Test Report for each HFX Class and Queenston Class First Article NRWS System configuration variant.
- 4.6.8.2 The Contractor shall demonstrate to Canada during the Qualification Reviews that all Acceptance tests, evaluation results, and related OE up to and including SAT, verify compliance of each First Article NRWS System configuration variant with the requirements of this SOW.
- 4.6.8.3 The Contractor shall provide all documentation requested by Canada to conduct the Qualification Review.
- 4.6.8.4 The Contractor shall correct all deviations specified by Canada following the Qualification Review.
- 4.6.8.5 The Contractor shall progress to Recurring Production of the NRWS System configuration variant following Acceptance by Canada of the Qualification Review Minutes that address those NRWS System configuration variants.

4.7 **Configuration Management**

4.7.1 **General**

- 4.7.1.1 The Contractor shall prepare, deliver for Acceptance and maintain a Configuration Management (CM) Plan in accordance with CDRL NRWS-CM-001.

- 4.7.1.2 The Contractor shall implement the CM Process to manage the configuration of the NRWS System and associated deliverables in accordance with the Authorized CM Plan.
- 4.7.2 **Configuration Identification**
- 4.7.2.1 The Contractor shall identify NRWS System Configuration Items (CI) in accordance with D-01-002-007/SG-006.
- 4.7.2.2 The Contractor shall prepare and deliver Product Configuration Documentation in accordance with CDRL NRWS-TD-002 in order to describe the necessary physical and functional characteristics of each CI and any verification needed to demonstrate the CI's performance.
- 4.7.2.3 The Contractor shall prepare and deliver the Equipment Labelling Package in accordance with CDRL NRWS-CM-002 for Authorization by Canada.
- 4.7.2.4 The Contractor shall use the standard configuration nomenclature in the Product Configuration Documentation and the Equipment Labelling Package to identify each NRWS System HWCI and CSCI in accordance with D-01-002-007/SG-006.
- 4.7.2.5 The Contractor shall maintain the Product Configuration Documentation in accordance with CDRL NRWS-TD-002.
- 4.7.2.6 The Contractor shall maintain the Equipment Labelling Package in accordance with CDRL NRWS-CM-002.
- 4.7.3 **Configuration Audits**
- 4.7.3.1 The Contractor shall support Canada in conducting Functional Audit and PCA following Acceptance of the FAT Test Reports for each First Article NRWS System configuration variant.
- 4.7.3.2 The Contractor shall provide all documentation requested by Canada to conduct the Functional Audit and the PCA.
- 4.7.3.3 The Contractor shall support Canada as required in conducting Functional Audit and subsequent PCA to verify that all Acceptance test and evaluation results, up to and including FAT, demonstrate compliance of the current Authorized configuration of each First Article NRWS System variant with the Functional Baseline.
- 4.7.3.4 The Contractor shall correct all functional deviations specified by Canada following the Functional Audit that exist between the function of NRWS System First Articles and the Functional Baseline.

- 4.7.3.5 The Contractor shall support Canada as required in conducting PCAs to verify that:
- a. Each currently Authorized First Article NRWS System HWCI and CSCI complies with the latest Product Configuration Documentation; and
 - b. Provisioned items are of the correct configuration, are supportable, and available.
- 4.7.3.6 The Contractor shall correct all functional and physical deviations, specified by Canada following the PCA.
- 4.7.3.7 The Contractor shall use the Product Configuration Documentation Accepted by Canada as the Product Baseline.
- 4.7.3.8 The Contractor shall proceed to installation of First Articles only upon Acceptance of Functional and Product Baselines and completion of all other Event Prerequisites of Table 1, of this SOW.
- 4.7.3.9 The Contractor shall maintain the configuration of the Functional and Product Baselines and the corresponding NRWS System HWCI and CSCIs in accordance with the processes as identified in Section 4.7.4.
- 4.7.4 **Configuration Control**
- 4.7.4.1 The Contractor shall report to Canada all changes that may be required from the NRWS System Functional and Product Baselines via Project Progress Reports in accordance with CDRL NRWS-PM-003.
- 4.7.4.2 The Contractor shall obtain Authorization from Canada prior to issuing a Design Change Package in accordance with CDRL NRWS-CM-003, in order to define any required NRWS System configuration changes and to amend the NRWS System Functional and Product Baselines.
- 4.7.4.3 The Contractor shall prepare and deliver a Design Change Package to Canada in order to define any required NRWS System configuration change and to amend the NRWS System Functional and Product Baselines as previously Authorized by Canada.
- 4.7.4.4 The Contractor shall implement all changes to NRWS System Functional and Product Baselines, CIs and all associated deliverables as defined in Design Change Packages upon Authorization by Canada.
- 4.7.4.5 The Contractor shall re-conduct applicable Acceptance Testing per Section 4.6.6, and submit to all Configuration Audits per Section 4.7.3, as necessary to verify that all Design Changes have been implemented in accordance with this SOW.

- 4.7.4.6 The Contractor shall amend all deliverable documentation specified by this SOW to reflect the implementation of each Design Change Package, and resubmit this documentation to Canada for Authorization.

4.8 Technical Documentation

4.8.1 Engineering Change Guidance Package

- 4.8.1.1 The Contractor shall prepare and deliver an ECGP in accordance with CDRL NRWS-TD-001 to assist in defining all changes required to HFX Class ships to accommodate the NRWS System.
- 4.8.1.2 The Contractor shall prepare the ECGP based on the Hull and Cabling information outlined in the Installation Guidance Package found in Annex B, Appendix 4.
- 4.8.1.3 The Contractor shall amend the ECGP to reflect comments provided by Canada.
- 4.8.1.4 The Contractor shall maintain the ECGP to reflect all other NRWS System changes Authorized by Canada in accordance with Section 4.7.
- 4.8.1.5 The Contractor shall provide Canada with the latest version of the ECGP prior to conducting the on-site survey of each HFX Class ship. Canada will provide the Contractor with the NRWS System HFX Class EC Specification.
- 4.8.1.6 The Contractor shall review the NRWS System HFX Class EC Specification.
- 4.8.1.7 The Contractor shall conduct an on-site survey of each HFX Class ship using the NRWS System HFX Class EC Specification.
- 4.8.1.8 If configuration deviations are identified during the on-site survey that will impact the NRWS System installation, the Contractor shall particularize the NRWS System HFX Class EC Specification, for the surveyed HFX Class ship and deliver it to Canada for Authorization.

4.8.2 Technical Data Package

- 4.8.2.1 The Contractor shall prepare and deliver the TDP in accordance with CDRL NRWS-TD-002 for Authorization by Canada.
- 4.8.2.2 The Contractor shall amend the TDP to reflect comments provided by Canada and resubmit the TDP for Authorization by Canada.
- 4.8.2.3 The Contractor shall amend the TDP upon Acceptance by Canada of the First Article NRWS System Qualification Review Minutes.

- 4.8.2.4 The Contractor shall amend the TDP with each of its component documents incorporating Controlled Goods labels as provided by Canada in accordance with Paragraph 4.9.1.d.
- 4.8.2.5 The Contractor shall maintain the TDP to reflect all NRWS System changes Authorized by Canada in accordance with Section 4.7.
- 4.8.3 **Training Facility Engineering Change Guidance Package**
- 4.8.3.1 The Contractor shall prepare and deliver an ECGP in accordance with CDRL NRWS-TD-001 to assist Canada in defining all changes required to Training Facility to accommodate the NRWS.
- 4.8.3.2 The Contractor shall maintain the ECGP to reflect all NRWS changes Authorized by Canada in accordance with Section 4.7.

4.9 Government Furnished Resources

- 4.9.1 The Contractor shall request the following GFR in accordance with CDRL NRWS-PM-006 to assist in meeting the requirements of this SOW, and Canada will provide this GFR at no cost within 20 business days, subject to the operational requirements of Canada:
 - a. National Defence Index of Documentation (NDID) numbers for in-service manuals;
 - b. In-Service TDP drawing numbers;
 - c. In-Service TDP drawing title block data;
 - d. In-Service Manual and TDP Controlled Goods identification;
 - e. Equipment Identification Plate and Label nomenclature including cable nomenclature;
 - f. Connection points to existing ship's services; and
 - g. Any other GFR that will be necessary to deliver the NRWS System and associated deliverables in accordance with this SOW.

- 4.9.2 The Contractor shall provide all resources required to deliver the NRWS System and associated deliverables in accordance with this SOW, except for the provision of GFR Authorized by Canada.
- 4.9.3 The Contractor shall coordinate all resources required to provide the NRWS System and associated deliverables in accordance with this SOW, except for the operation of RCN ships that are required for NRWS System testing.

5. INTEGRATED LOGISTIC SUPPORT

5.1 General

- 5.1.1 The Contractor shall designate an ILS Manager within its organization who will be responsible to the PM for all ILS functions related to the NRWS System.
- 5.1.2 The Contractor shall undertake all ILS that may be required to implement and maintain each NRWS System and its associated deliverables until final Acceptance of each NRWS System deliverable by Canada.

5.2 Integrated Logistic Support Planning

5.2.1 Logistic Support Planning

- 5.2.1.1 The Contractor shall prepare and deliver an ILS Plan in accordance with CDRL NRWS-ILS-001 to define how the ILS requirements of this SOW will be addressed for Authorization by Canada.

5.2.2 Logistic Support Analysis

- 5.2.2.1 The Contractor shall conduct a Logistic Support Analysis (LSA) on the NRWS System in accordance with the ILS Plan.
- 5.2.2.2 The Contractor shall report the LSA results in accordance with the CDRL NRWS-ILS-002.
- 5.2.2.3 The Contractor shall use the results of the LSA to determine required spares in accordance with CDRL NRWS-ILS-005.
- 5.2.2.4 The Contractor shall use the results of the LSA and CDRL NRWS-ILS-005 to conduct IP in accordance with Section 5.3.
- 5.2.2.5 The Contractor shall use the results of the LSA to create and deliver an In Service Support (ISS) Plan in accordance with CDRL NRWS-ILS-004 using the expected operational life of the NRWS System.
- 5.2.2.6 The Contractor shall use the results of the LSA to prepare CDRL NRWS-TD-002, NRWS-TD-003, and NRWS-TD-004.

5.2.3 ILS Conference

- 5.2.3.1 The Contractor shall convene an NRWS ILS Conference with Canada in order to explain and validate the proposed NRWS ILS process with respect to this SOW and the ILSP.
- 5.2.3.2 The Contractor shall prepare and deliver a draft ILS Conference Documentation Package for Authorization by Canada, consisting of at least the following documents:
 - a. LSA in accordance with CDRL NRWS-ILS-002;
 - b. Training Development Program Report in accordance with CDRL NRWS-ILS-003;
 - c. Installation and Set-to-Work Manual in accordance with CDRL NRWS-TD-003;
 - d. System User Manual in accordance with CDRL NRWS-TD-004;
 - e. Illustrated Parts Breakdown in accordance with CDRL NRWS-TD-005;
 - f. Maintenance Manual in accordance with CDRL NRWS-TD-006; and
 - g. ISS Plan in accordance with CDRL NRWS-ILS-004.
- 5.2.3.3 The Contractor shall define the proposed NRWS ILS processes at the ILS Conference in accordance with the ILS Conference Documentation Package.
- 5.2.3.4 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft ILS Conference Documentation Package.
- 5.2.3.5 The Contractor shall prepare and deliver a final ILS Conference Documentation Package for Authorization by Canada.
- 5.2.3.6 The Contractor shall complete the production of First Article NRWS System configuration variants following Authorization of the ILS Conference Minutes and ILS Conference Documentation Package by Canada, and in accordance with all other Event Prerequisites of Table 1, of this SOW.

5.3 Initial Provisioning

5.3.1 Sparing

- 5.3.1.1 The Contractor shall provide quantities of initial Level 1 and 2 spares as follows:

- a. To support each NRWS System that will be implemented in the units itemized in Table 2, of this SOW; and
 - b. To support each in-service NRWS System for the first two (2) years of operation.
- 5.3.1.2 The Contractor shall deliver each set of Level 1 spares and Special Tools and Test Equipment prior to each NRWS System STW.
- 5.3.1.3 The Contractor shall deliver all Level 2 spares and Special Tools and Test Equipment prior to First Article SAT.
- 5.3.2 **Long Lead Time Initial Provisioning Conference**
- 5.3.2.1 The Contractor shall convene a Long Lead Time Initial Provisioning (LLTIP) Conference with Canada in order to explain & validate the proposed LLTIP process and associated materiel with respect to this SOW and the ILSP.
- 5.3.2.2 The Contractor shall convene the LLTIP Conference at a time that will enable delivery of required Long Lead Time spares in accordance with Paragraph 5.3.1.1.
- 5.3.2.3 The Contractor shall prepare and deliver a draft LLTIP Conference Documentation Package for Authorization by Canada consisting of at least the information specified in CDRL NRWS-ILS-005.
- 5.3.2.4 The Contractor shall define the proposed LLTIP processes and each materiel item at the LLTIP Conference in accordance with the LLTIP Conference Documentation Package of Paragraph 5.3.2.3.
- 5.3.2.5 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft LLTIP Conference Documentation Package.
- 5.3.2.6 The Contractor shall prepare and deliver a final LLTIP Conference Documentation Package for Authorization by Canada.
- 5.3.2.7 The Contractor shall progress to provisioning each LLTIP material item Authorized by Canada, following Authorization of the LLTIP Conference Minutes and LLTIP Conference Documentation Package, and in accordance with all other Event Prerequisites of Table 1, of this SOW.
- 5.3.3 **Initial Provisioning Conference**
- 5.3.3.1 The Contractor shall convene an IP Conference with Canada in order to explain and validate the proposed IP process and associated materiel with respect to this SOW and the ILS Plan.

- 5.3.3.2 The Contractor shall prepare and deliver a draft IP Conference Documentation Package for Authorization by Canada, consisting of at least the information specified in CDRL NRWS-ILS-005.
- 5.3.3.3 The Contractor shall define the proposed NRWS IP processes and each materiel item at the IP Conference in accordance with the IP Conference Documentation Package of Paragraph 5.3.3.2.
- 5.3.3.4 The Contractor shall incorporate all observations made by Canada, and mutually agreed with the Contractor, in the draft IP Conference Documentation Package.
- 5.3.3.5 The Contractor shall prepare and deliver a final IP Conference Documentation Package for Authorization by Canada.
- 5.3.3.6 The Contractor shall progress to provisioning each IP material item Authorized by Canada, following Authorization of the IP Conference Minutes and IP Conference Documentation Package, and in accordance with all other Event Prerequisites of Table 1, of this SOW.
- 5.3.4 **Initial Provisioning Documentation**
- 5.3.4.1 The Contractor shall provide the final Provisioning Documentation in accordance with CDRL NRWS-ILS-005 for each item Authorized for provisioning by Canada.

5.4 Training Development Program

- 5.4.1 The Contractor shall create a Training Development Program that addresses each of the requirements specified in this SOW and is consistent with the Canadian Forces Individual Training and Education System principles.
- 5.4.2 The Contractor shall consult Canada for information on occupations, positions, training and work environments that will be affected by the acquisition of the NRWS System.
- 5.4.3 The Contractor shall create a Task List for operators and maintainers, identifying operator and maintenance tasks for system, sub-system, and integrated system.
- 5.4.4 The Contractor shall identify Performance Objectives for each Task List created.
- 5.4.5 The Contractor shall create Enabling Objectives to address the new skills and knowledge required for the Training Development Program.
- 5.4.6 The Contractor shall create a summary of the recommended training materials, aids, and equipment required for the Training Development Program.
- 5.4.7 The Contractor shall prepare and deliver a Training Development Program Report in accordance with CDRL NRWS-ILS-003.

5.5 Initial Cadre Training

- 5.5.1 The Contractor shall prepare and deliver an NRWS System Operator ICT Package in accordance with CDRL NRWS-ILS-006 based upon the Authorized Training Development Program Report.
- 5.5.2 The Contractor shall prepare and deliver a NRWS System Maintainer ICT Package in accordance with CDRL NRWS-ILS-006 based upon the Authorized Training Development Program Report.
- 5.5.3 The Contractor shall structure Operator and Maintainer training around the conventional, classroom, instructor-led format, with provision for "hands-on" time with a NRWS to exercise the required Operator and Maintainer skills.
- 5.5.4 The Contractor shall conduct Operator ICT, based upon the Authorized ICT package, for a minimum of 10 to a maximum of 15 students, at locations designated by Canada.
- 5.5.5 The Contractor shall conduct Maintainer ICT, based upon the Authorized ICT package, for a minimum of 10 to a maximum of 15 students, at locations designated by Canada.

5.5.6 The Contractor shall provide the following to support the conduct of Operator ICT:

- a. Instructors that are experienced in teaching NRWS Operation;
- b. Instructional support equipment as required;
- c. Personnel capable of maintaining and repairing the instructional support equipment in order to minimize any interruption to training; and
- d. A copy of all required student documentation specified in the Authorized Operator and Maintainer ICT Packages of CDRL NRWS-ILS-006, for each student.

5.5.7 The Contractor shall provide the following to support the conduct of Maintainer ICT:

- a. Instructors that are experienced in teaching NRWS Level 1 and Level 2 Maintenance;
- b. Instructional support equipment, tools and test equipment;
- c. Maintenance supplies and spare parts applicable to Level 1 and 2 Maintenance instructional activities;
- d. Personnel capable of maintaining and repairing the instructional support equipment in order to minimize any interruption to training; and
- e. A copy of all required student documentation specified in the Authorized Maintainer ICT Package of CDRL NRWS-ILS-006 for each student.

5.5.8 The Contractor shall complete all sessions of ICT prior to commencement of First Article NRWS System HAT.

5.6 Manuals

5.6.1 The Contractor shall prepare, and deliver the following manuals:

- a. Installation and Set-To-Work Manual in accordance with CDRL NRWS-TD-003;
- b. System User Manual in accordance with CDRL NRWS-TD-004;
- c. Illustrated Parts Breakdown in accordance with CDRL NRWS-TD-005; and
- d. Maintenance Manual in accordance with CDRL NRWS-TD-006.

- 5.6.2 The Contractor shall amend the manuals to reflect and incorporate comments provided by Canada.
- 5.6.3 The Contractor shall amend the manuals, upon Authorization of the Qualification Review Minutes, with each of its component documents incorporating Controlled Goods identification for each manual.
- 5.6.4 The Contractor shall maintain the manuals to reflect all NRWS System changes Authorized by Canada in accordance with Section 4.7.

5.7 Computer Based Trainers

- 5.7.1 The Contractor shall supply Computer Based Trainers to train the NRWS Operators on how to use the NRWS System.
- 5.7.2 The Contractor shall meet all requirements contained in the Computer Based Trainer Specification found in Annex B, Appendix 5.
- 5.7.3 The Contractor shall deliver Computer Based Trainers to CFFSE.
- 5.7.4 The Contractor shall deliver Computer Based Trainers to CFNES.