



Arctic and Offshore Patrol Vessel (AOPV)



Summer
2018

◆ **AOPS 3:**
Keel Laying

Fall
2018

◆ **AOPS 1:**
Launch & Naming
Ceremony

◆ **AOPS 2:**
Megablocks 1 & 2
to land level

◆ **AOPS 4:**
Steel-cut

Winter
2018

◆ **AOPS 2:**
Megablock 3 to
land level

Spring
2019

◆ **AOPS 2:**
Launch and
Naming
Ceremony

Summer
2019

◆ **AOPS 1:**
Sea Trials and
Delivery to RCN

AJISS contract awarded summer 2017



Joint Support Ship (JSS)

Scope:

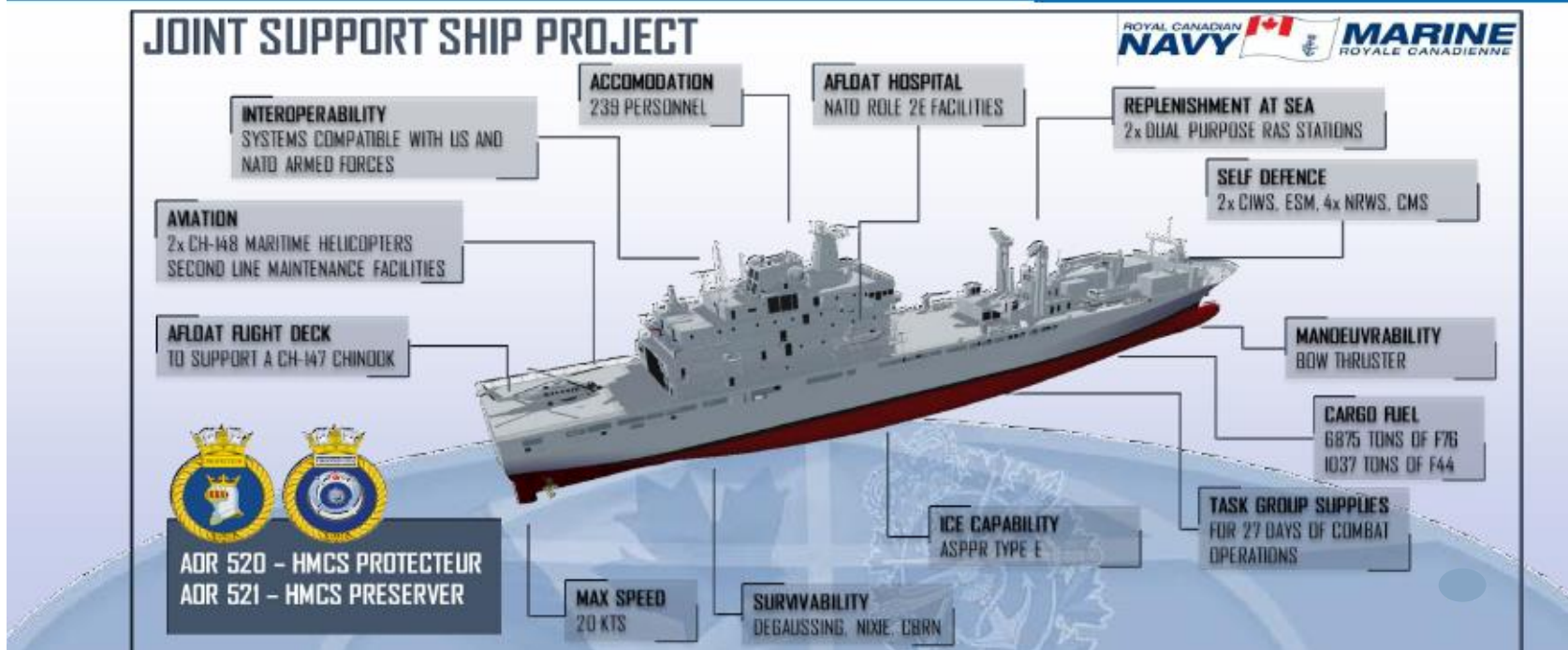
(2) Two Joint Support Ships providing a cost effective 30+ year life span and robust deployability including:

- Combat Management System with associated sensors, and link capabilities;
- Complete military communication systems
- Helicopter mission planning and organic aircraft weapons handling
- Damage stability and recoverability capability
- CBRN citadel
- Degaussing
- Dual redundant propulsion

Schedule:

2018 Start of Production
2022 JSS1 delivery
2023 JSS2 delivery

* Schedule is dependent on progress of the CCG projects in the NSS Non-Combat Package





Canadian Surface Combatant (CSC)

SSE Announcement

- Estimated cost
\$56-60 Billion

Construction Start

- Early 2020s

First Ship Delivery

- Mid 2020s

Scope

Confirmed in Strong, Secure, Engaged

Build **15 ships** to recapitalize the Canadian Armed Forces surface combatant fleet

Replaces the warfare capabilities residing with the HALIFAX (HAL) Class ships and recently retired IROQUOIS (IRO) Class ships

Includes the necessary Integrated Logistics Support, trainers, training and infrastructure

Naval Large Tug Project (NLT)



DELIVERABLE:

- 4 new large tugs to replace 5 *Glen*-class tugs and 2 fire boats.
- The new tugs will provide sufficient large tug capability to the Queen's Harbour Masters in Halifax and Esquimalt to support naval operations over the next 25 years.
- Requirements;
 - Perform a combination of in-harbour and coast/offshore work
 - Able to perform a *Protecteur*-class Cold Move
 - Migrate afloat harbour fire protection into large tugs.

REQUIREMENT CONSIDERATIONS:

- Commercial design and construction
- Highly manoeuvrable
- At least 2 propulsion systems and enough Bollard Pull to enable 2 tugs to cold move a Joint Support Ship in 25 kts wind and 2 kts current
- Clutter free upper decks
- Commercial bridge configuration with standard bridge control console
- Fire-Fighting Capability 1 (FiFi1)
- Accommodation for 6 crew
- Designed for at least 25 years of operations

SSE - PROJECT STATUS:

In Definition

Next Milestone: RFP Release

Funding: To be released in Defence Investment Plan 2018



CONTACT INFORMATION:

- NLT Project Director
- Lt(N) Byrne Schneider
- DNR 3-3
- Byrne.Schneider@forces.gc.ca
- 819-939-3962



Multi-Role Boat (MRB)



DELIVERABLE:

- Replace the *Halifax*-class frigates' Rigid-hull Inflatable Boat (RHIB) and davit system with a new RHIB and multi-function launch and recovery system (LARS). The LARS' enhanced capability will support launch/recovery of fully manned MRB as well the existing Sea Rescue RHIB, cargo and miscellaneous stores handling and future demands including possible USV/UUV.
- Each frigate system will include:
 - Port and Starboard articulating crane system
 - Two 9.3m twin-engine, ISR equipped, 12-person shock mitigating seating RHIB.

REQUIREMENT CONSIDERATIONS:

- RHIB operating independently in all conditions of visibility/weather both inside and outside of frigate's visual and radar horizons.
- Integrated sensors and communications to pass information (e.g. position/radar & EO/IR video) to other platforms
- LARS shall be able to launch and recover fully crewed and loaded RHIB (Minimum Safe Working Load of 7,030 kg)
- Multi-functional; conduct current boat/materiel tasks of the existing davit and torpedo handling crane, and support anticipated future requirements (UUV/USV, launch and recovery of other Federal Government boats / RIBs)

SSE - PROJECT STATUS:

In Definition

Next Milestone: RFP Release

Funding: To be released in Defence Investment Plan 2018



CONTACT INFORMATION:

- MRB Project Director
- Mr. Mark De Smedt
- DNR 3-7
- Mark.DeSmedt@forces.gc.ca
- 819-939-3966



Remote Minehunting and Disposal System (RMDS)



DELIVERABLE:

- A modular, stand-off Naval Mine Countermeasures (NMCM) capability, designed to provide the full spectrum of Naval Mine Hunting operations and contribute to underwater domain awareness;
- The RMDS project intends to leverage proven Commercial off of the Shelf (COTS) unmanned systems and Autonomous Underwater Vehicle (AUV) technology;
- RMDS payloads will contain modular sub-systems that are portable and deployable;

REQUIREMENT CONSIDERATIONS:

- Two Complete RMDS Payloads, including:
- AUV Sub-system,
 - 2 (min) small, “man portable” AUVs (12-45 kg), and
 - 2 (min) light weight, AUVs (<300 kg);
 - Mine Disposal Sub-system.
 - 10 Explosive Mine Disposal Vehicles (EMDV);
 - 2 (min) training and/or inspection variants;
 - mine disposal control console; and
 - portable storage magazine for up to five EMDVs;
 - Transportable Command Centre (TCC). 20’ ISO shelter container for the conduct of deployed RMDS operations

PROJECT STATUS:

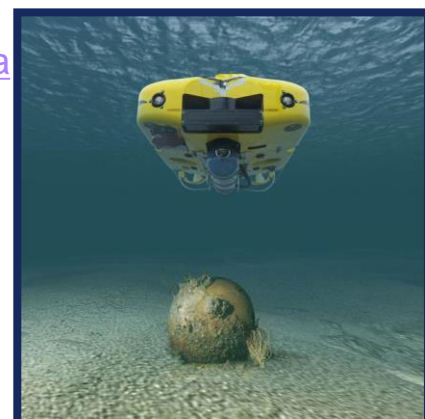
In Definition

Next Milestone: Industry Engagement

Funding: To be released in Defence Investment Plan 2018

CONTACT INFORMATION:

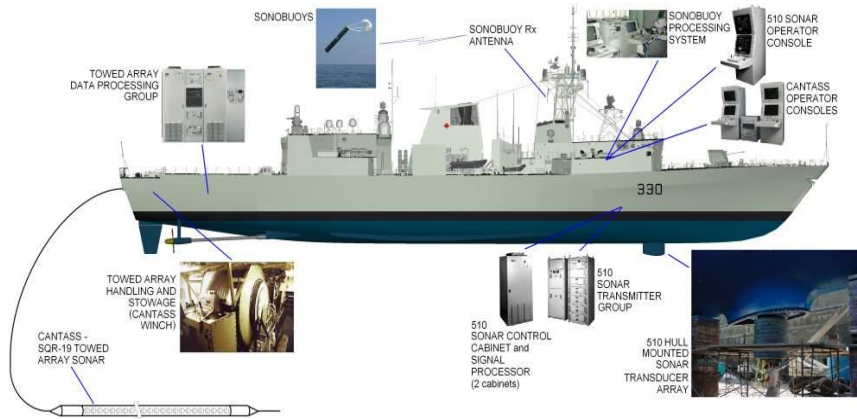
- RMDS Project Director
- LCdr Mark Dittrich
- DNR 3-2
- Mark.Dittrich@forces.gc.ca
- 819-939-3960



Underwater Warfare System Upgrade (UWSU)



DELIVERABLE:



REQUIREMENT CONSIDERATIONS:

- Fully integrated shipboard underwater sensor suite
- Modular design using commercial components and accepted open standards
- Minimize physical changes to the ship's structure

PROJECT STATUS:

In Definition: RFP Complete

Next Milestone: Implementation

Funding: Total Project Value - \$100M - \$249M

CONTACT INFORMATION:

- UWSU Project Director
- LCdr Félix Rancourt
- DNR 5-3
- felix.rancourt@forces.gc.ca
- 819-939-3985

Naval Inshore Support Vessel (NISV)



DELIVERABLE:

- The aim of this project is to provide 6 to 8 common Naval Inshore Support Vessel (NISV) to the RCN:
 - platform to ensure Fleet Diving Units conduct diving operations and maintain readiness of capabilities;
 - vessel suitable for training Naval reservists in small vessel operations; and
 - may provide range support.

REQUIREMENT CONSIDERATIONS:

- Equipped to receive containerized capabilities. Aim 4 ISO 20's or equivalent ISO breakdown on the same continuous work deck. Space to operate the systems on deck. Containerized capabilities are not part of the project;
- Centerline through deck opening on the work deck for dive stage;
- The vessels will accommodate at least 24 personnel for minimum 5 days;
- NMT 30 meters at the water line; and
- NMT 350 Tonnes.

PROJECT STATUS:

In Identification

Next Milestone: Options Analysis

Funding: Total Project Value - \$100-\$249M

CONTACT INFORMATION:

- NISV Project Director
- LCdr P. Fournier
- DNR 3-5
- Patrick.fournier@forces.gc.ca
- 819-939-3965

Naval Security Team Force Protection Boat (NST – FPB)



DELIVERABLE:

- To develop a Force Protection boat (FPB) capable of rapid deployment by land, sea or air to support waterside security and Force Protection capability. This FPB will support the Naval Security Team (NST) for on-water security.

REQUIREMENT CONSIDERATIONS:

- Transportable by truck, trailer, container or aircraft
- Support sustained operations in all weather conditions
- Integrated navigation, communications, and radar
- Crew of 2-4 personnel

PROJECT STATUS:

In Identification

Next Milestone: Options Analysis

Funding: Total Project Value - \$5M-\$20M

CONTACT INFORMATION:

- NST FPB Project Director
- LCdr Mark Dittrich
- DNR 3-2
- mark.dittrich@forces.gc.ca
- 819-939-3960

Outboard Engine Dive Boat (OEDB)



DELIVERABLE:

- RHIBs which are more suitable for CAF diving operations.
- The aim of this project is replace the current PC RHIB in use.
- Ability to support common diver tasks
- Facilitate the nature of the operations

REQUIREMENT CONSIDERATIONS:

- 8 greater than 9 M RHIB with cuddy wheelhouse
- Diver doors
- 2 x 275 hp counter rotating outboard engines (provided)
- Spare parts
- Manuals
- Tie down rail systems
- Space to work Aft
- Winch/liftmore
- Potentially able to operate some tow systems
- At least 2 trailers

PROJECT STATUS:

In Definition

Next milestone RFP

Funding - Minor Project under \$5M

CONTACT INFORMATION:

- OEDB Project Director
- LCdr P. Fournier
- DNR 3-5
- Patrick.fournier@forces.gc.ca
- 819-939-3965



DELIVERABLE:

- Deliver four (4) robust, low maintenance, low draft, steel barges to Canadian Forces Base (CFB) Esquimalt, Port Operations and Emergency Services Branch (POESB).

REQUIREMENT CONSIDERATIONS:

- Primary roles of 400 Series Barge:
 - Anchor Removal and Ranging
 - Installation of towed arrays
 - Cargo and equipment transport while under tow by a tug
 - Ship-side work, tests, trials and general maintenance
 - Meet all relevant labour and safety codes

PROJECT STATUS:

At RFP

Next milestone: Contract Award

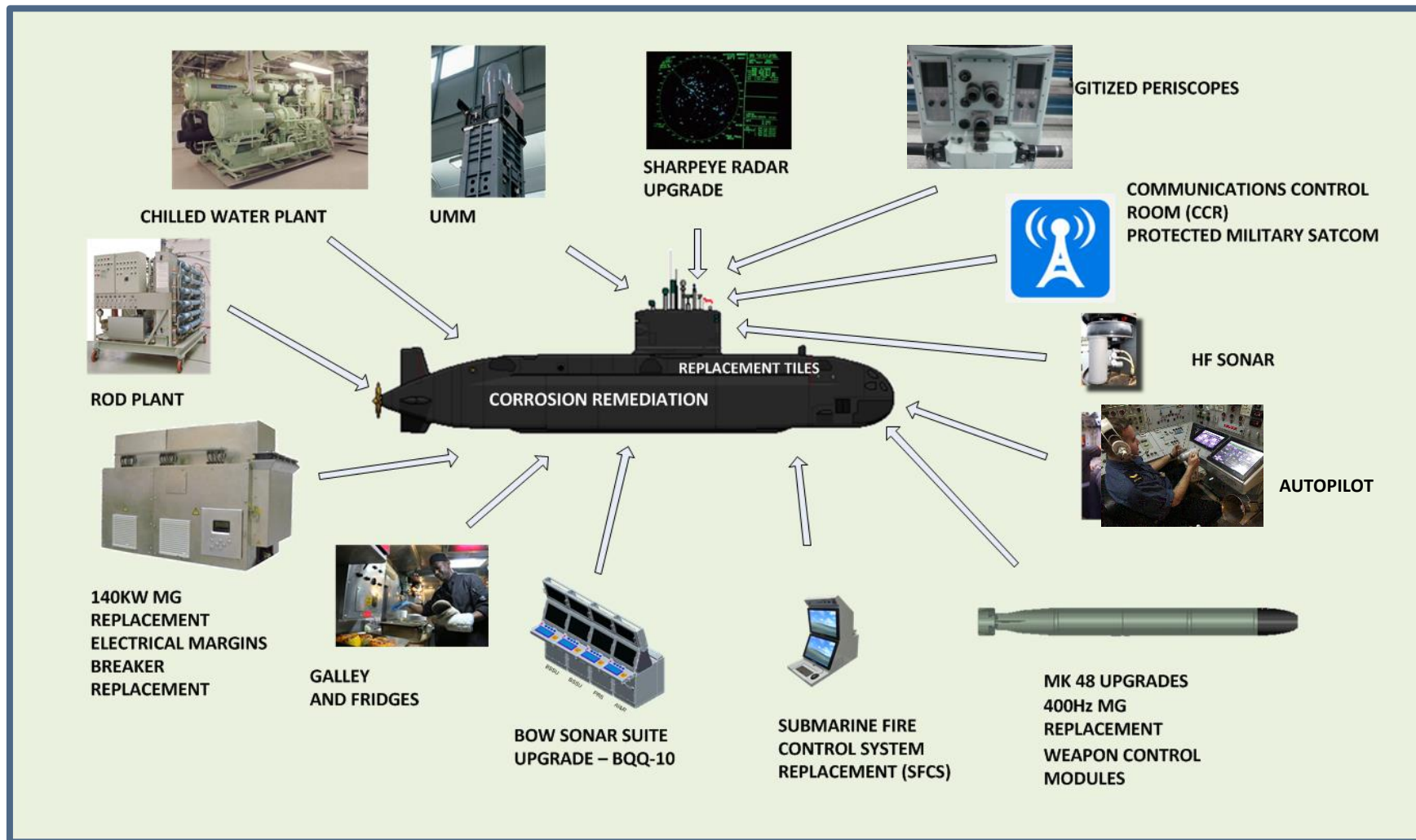
Funding - Minor Project under \$5M

CONTACT INFORMATION:

- Project Director
- Lt(N) George Szabo
- DNR 3-3
- George.Szabo@forces.gc.ca
- 819-939-3968



Victoria Class Current Sustainment and Upgrade Program



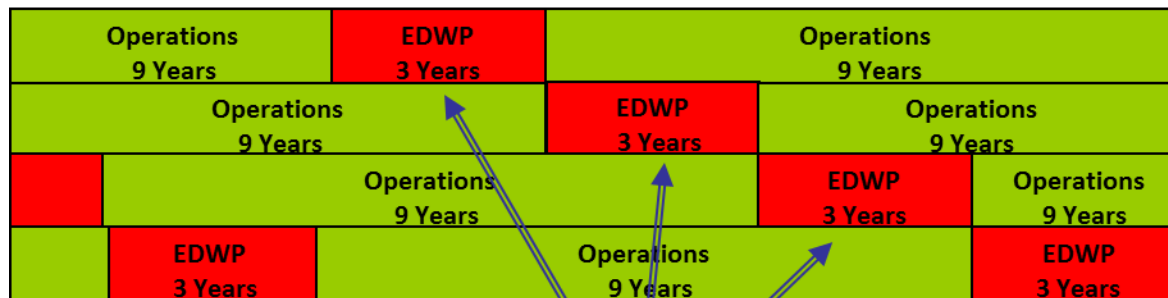


Victoria Class Modernization Program

- Program currently in **Options Analysis phase**, RCN lead
- Implementation will be managed within submarine sustainment program
 - To be **integrated into Class Plan** – no extra time out of service;
 - Will be procured as **discrete elements** (may be grouped) – MEPM to manage integration;
 - To be completed in concert with ongoing sustainment program.



Victoria Class Submarine 9+3 Op Cycle



Main Capability Insertion Periods

Requirement to Balance Capability Insertion and Operational Tempo



Halifax Class Frigates

- **Halifax-class Modernization (HCM) Program**
 - Largely focused on sensor and command management system updates
 - Full Operational Capability Achieved – January 2018
 - Finalizing remaining activities in order to effect a project close out
- **Status of the Class** - Average platform age of 22 years – Current Focus:
 - Establishing long term, performance based support contracts to end of life
 - Addressing obsolescent equipment not replaced during HCM
 - Managing age related Hull and Superstructure Corrective Maintenance
- **Equipment replacement projects:**
 - Diesel Generators and Chillers
 - Naval Remote Weapon Station
 - Underwater Warfare Suite Upgrades
 - SG-180 Antennas
 - Electronic Support Measures and Electronic Countermeasure equipment
 - Multi-Role Boat



- **In-Service Support Contracts:**
 - *Halifax-class* Combat System Support
 - *Halifax-class* Design Agent
 - Navigation Systems
 - LM 2500 ISS
 - RAMSES, CIWS
 - Work Period Contracts



Halifax Class Frigates

Challenges

- High Operational Tempo - RCN's Major Surface Combatant until CSC
- 3rd Level Hull and Superstructure Maintenance Growth
- Establishment of needed ISS arrangements for newly introduced equipment
- System Security Engineering - Cyber
- Keeping pace with technological change
 - COTS based systems
 - Rapid capability introduction

Innovation

- Improved coatings and surface treatments to reduce corrosion
- Longer life – lower energy consumption internal lighting (Energy Efficiency)
- Bio-Fuel compatibility (Fuel Economy)
- Non-invasive hull, deck and superstructure survey techniques
- Employment of Naval Material Regulation and Class Society Organizations
- Application of Performance Based Support approaches for Naval Warships



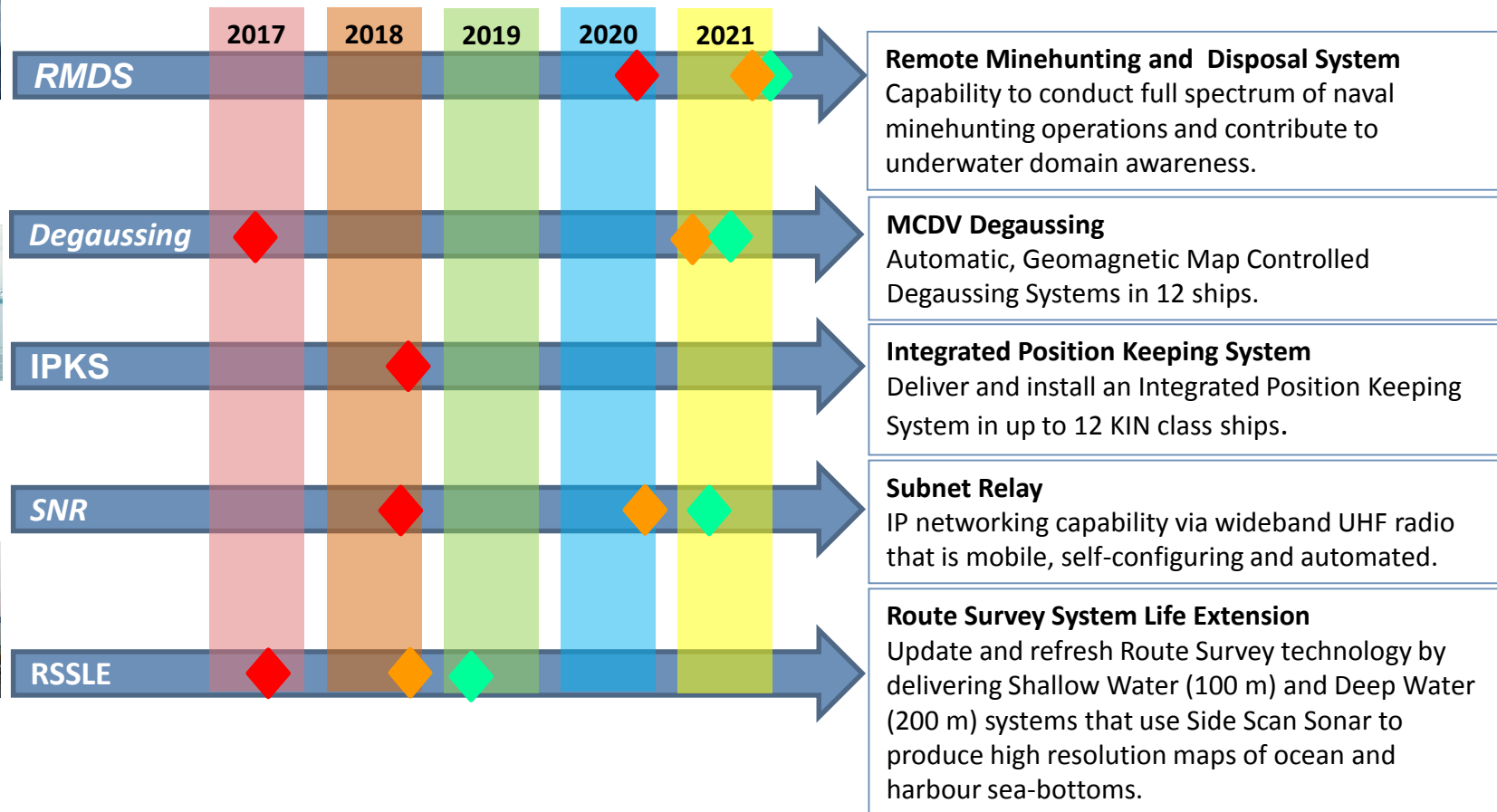
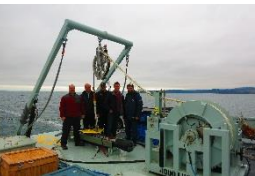


Kingston Class

- Maintaining Class readiness at full capability
- Development of reasonable life sustainment strategy, and renewal of ISSC is a priority

Target Milestone Dates

- ◆ IOC
- ◆ FOC
- ◆ Project Closeout





Minor Warship and Auxiliary Vessel Upcoming Docking Work Periods

- HMCS Goose Bay (MCDV - East): 18 Apr – 10 Oct 2018
- HMCS Brandon (MCDV – West): 1 May – 31 Aug 2018
- Glenbrook (AUX – East): 1 Jul – 23 Sep 2018
- Albatross (AUX – West): 17 Jul – 18 Sep 2018
- Stikine (AUX – West): 12 Sep 2018 – 30 Jan 2019
- Moose (ORCA – West): 1 Oct – 30 Nov 2018
- Parksville (AUX – West): Early 2019



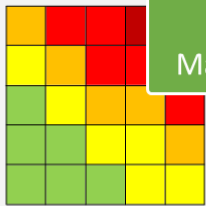
Naval Materiel Assurance

NMA Change Program



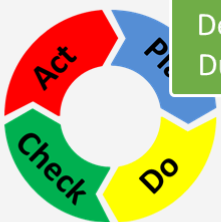
Assured Materiel State

Confidence in known materiel state, verified against NMA standards



Managed Materiel Risks

Single, common process to identify, assess, and manage materiel risks



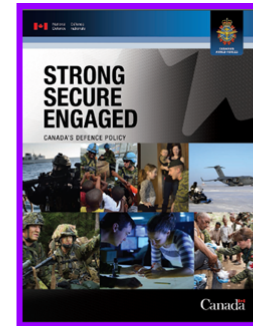
Demonstrable Due Diligence

Rigorous system to demonstrate self-regulation

Defending Canada and protecting Canadians

Improved Materiel Readiness

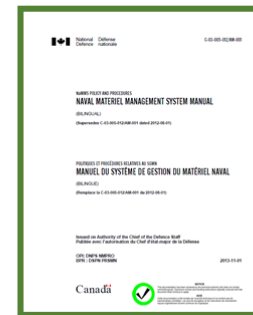
Safe, Environmentally Compliant, Fit for Purpose



The Government has no higher obligation than the safety and security of the Canadian people



Preparing combat-ready naval forces that support Canadian interests at home and abroad



Fit for service, safe, and comply with applicable legislation, regulations and standards



Cyber in RCN Platforms

SSE Initiative 87: Establish a new program to protect critical military networks and equipment from cyber-attack.

ADM(Materiel) Cyber Mission Assurance Program

Platform Protection Program

Systems Security Engineering Discipline

Supply Chain Risk Management

How can industry help the Cyber Mission Assurance Program?

Innovation

Understanding and securing the supply chain

Relational Contracting

Own Security Engineering Teams



Cyber Resilient Products



More on Innovation

- Unmanned Vehicles/Systems
- Equipment Health Monitoring <-> Enterprise System
- Green Technologies (waste disposal)
- Energy Efficiency
- Wi-Fi at Sea
- Monitoring of onboard environmental conditions
- Structural Condition Monitoring System
- Corrosion Management
- Artificial Intelligence
- ...more.



Mari-Tech 2018

Defence Procurement Outlook

Thank You