ROYAL CANADIAN NAVY MARINE ROYALE CANADIENNE

The RCN's Capital Equipment Priorities & Projects

NAC Ottawa – Speaker's Evening

Cmdre Christopher Robinson
Director General Naval Force Development

1 June 2020

The fine print

Disclaimer:

Any possible effects of COVID-19 are not discussed in this update.

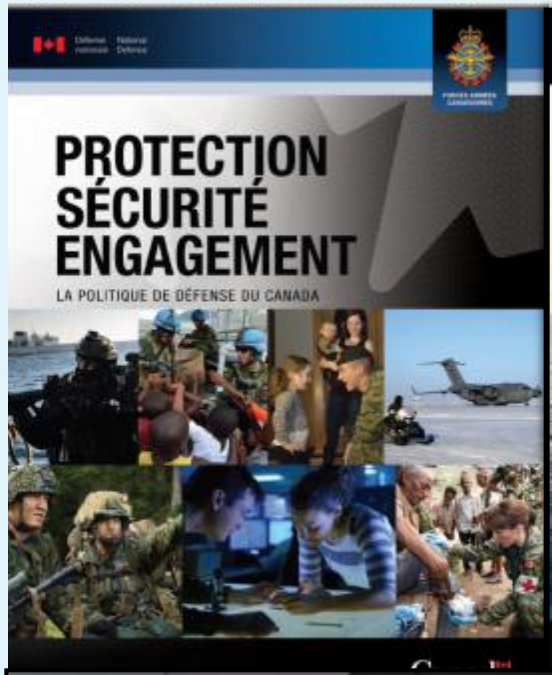
A fix on the chart

- The RCN is undertaking an unprecedented peace time naval fleet recapitalization, while simultaneously preparing for the expansion of missions through the new and enduring sphere of operations on our third ocean.
- These recapitalization efforts and preparations for the new Arctic missions are set against a background of intense existing fleet activity on our other two oceans and overseas. These include persistent single ship international deployments, global engagement in Africa, Europe, and South America, operations in South-East Asia, Theatre ASW, EEZ patrol, and work with our OGDs.

Strong, Secure, Engaged: Canada's Defence Policy

- "Canada requires a Navy that is organized and sized to project power responsively and effectively far from Canada's shores".
- "Acquire new or enhanced naval intelligence, surveillance, and reconnaissance systems, upgraded armament, and additional systems for current and future platforms allowing for more effective offensive and defensive naval capabilities."
- "To succeed in an unpredictable and complex security environment, Defence will:
  - Act as a responsible, value-added partner with NORAD, NATO, and Five-Eyes partners;
  - Field advanced capabilities to keep pace with allies and maintain an advantage over potential adversaries;"

Our Priorities



The future of warfare extends beyond the platforms

Sailors

- Sailors are the capability not the equipment
- Modernization of occupations
  - More cross-functional skills
  - Reviewing to put the right sailors in the right place for the next 50 years
- Broadening Training Regimes
  - Place/time of choosing
  - Adapted to how modern generations learn
- Enabling with tech, focused on the cognitive
- Being an employer of choice

We will continue to invest in our sailors – they are the answer to the unknown future.

Future Fleet

- Decisive combat power at sea and support during land operations
- Counter-piracy, counter terrorism, interdiction and embargo ops
- Delivery of humanitarian aid, search & rescue, sovereignty enforcement
- Underway Support to Task Groups
- Contribute to humanitarian assistance, emergency response, and disaster relief
- Support OGD
- Intelligence Teams

We have invested in Naval Warfare, Joint Capabilities, and Inter-Agency Collaboration.

Enterprise/Institution

- RCN Innovation
- Digital Navy
  - Security
  - Data
  - AI
  - Cloud
- Analytics/BI
  - Business Line Efficiencies
  - Preserve resources for new growth

We are pivoting our institution towards investing in Digitization and Innovation.

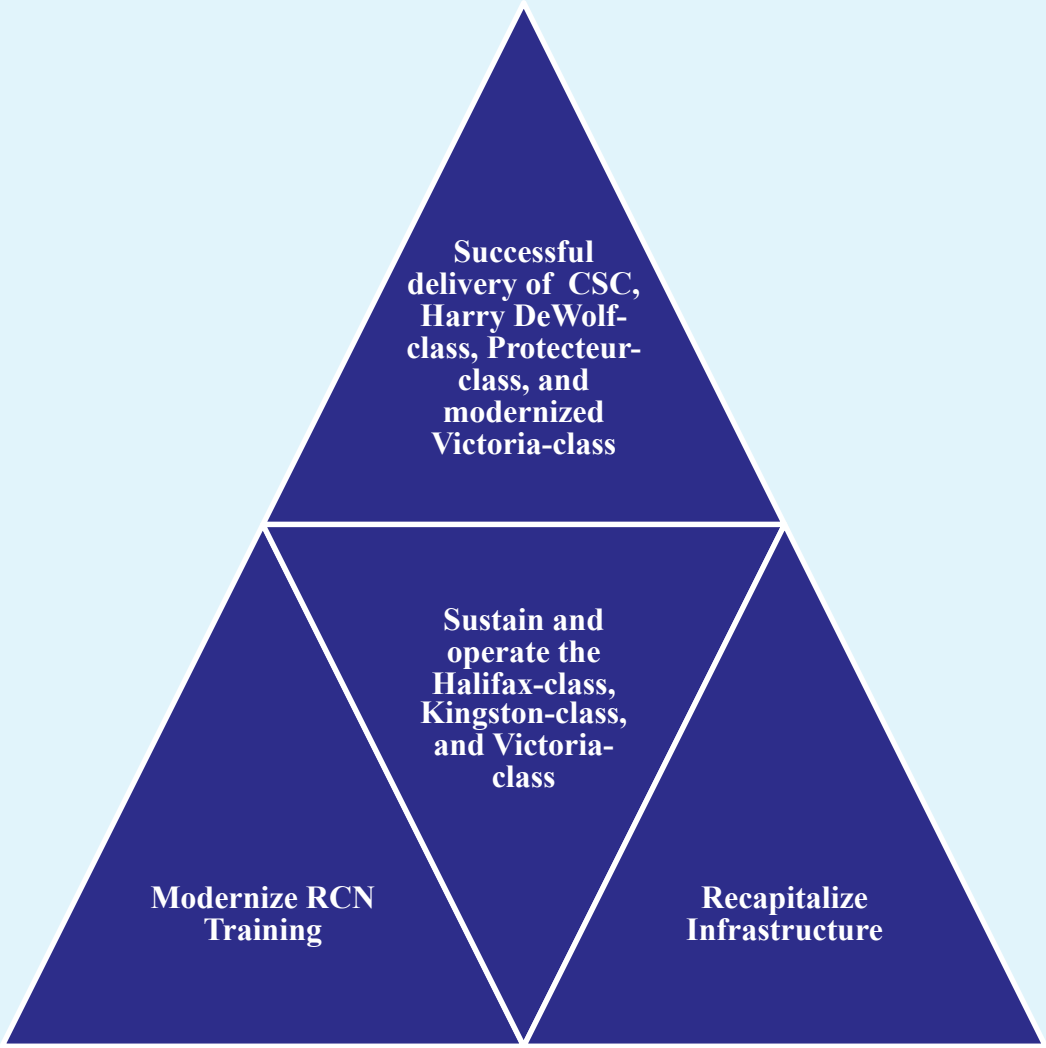
Joint is in the RCN DNA

- The RCN is structured around the ability to deploy and sustain a Naval Task Group, highly interoperable with allies, contributing meaningfully to joint action ashore, and the sustainment of joint operations from sea.
- In this vein, we work with:
  - Our CAF/DND partners on fundamental joint enablers including space, cyber, and Intelligence, Surveillance, and Reconnaissance functions;
  - The RCAF on the connection between the future RCN Fleet and its aircraft; and
  - The Canadian Army and Canadian Special Forces Command on how the RCN can best support their forces in achieving success ashore.

Bridging to the future fleet

Bridging to the future fleet

Bridging to the future fleet



So what are we doing at DGNFD?

The RCN Capital Equipment Portfolio

- Total Demand: >$70B
  - 26 major projects
  - >25 minor projects
- Projects In Definition or Implementation
  - 25 projects (>$65B)
- Projects in Options Analysis
  - 1 project (>$1B)
- Projects in Identification
  - 6 projects (>$1B)
- Minor Projects
  - >$40M

Challenges (Future Work)

- Key challenges from a naval perspective:
  - Integrated torpedo defence
  - Training system modernization
  - Continental defence
  - Interoperability with forces ashore, allies, and partners;
    - Shared multi-domain awareness; and
    - Communications in denied, degraded, intermittent, or limited (DDIL) environments.
  - Small vessel replacements (Dive tenders, reserve training)
  - Containerized systems

FD is a Team Sport…

FD is a Team Sport…

NAVAL ASSOCIATION OF CANADA
ASSOCIATION NAVALE DU CANADA

CADSI · AICDS
Canadian Association of Defence and Security Industries
Association des industries canadiennes de défense et de sécurité

Innovation, Science and Economic Development Canada
Innovation, Sciences et Développement économique Canada

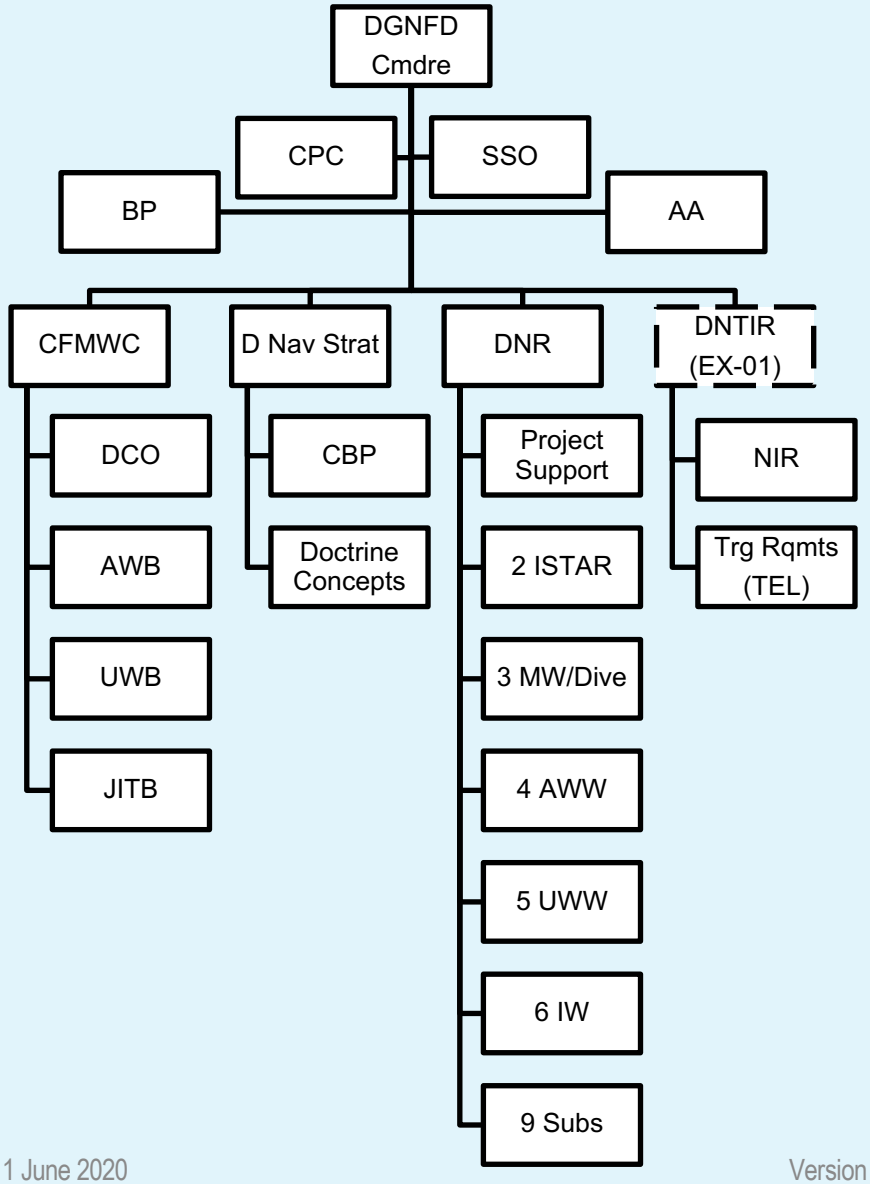
Public Services and Procurement Canada
Services publics et Approvisionnement Canada

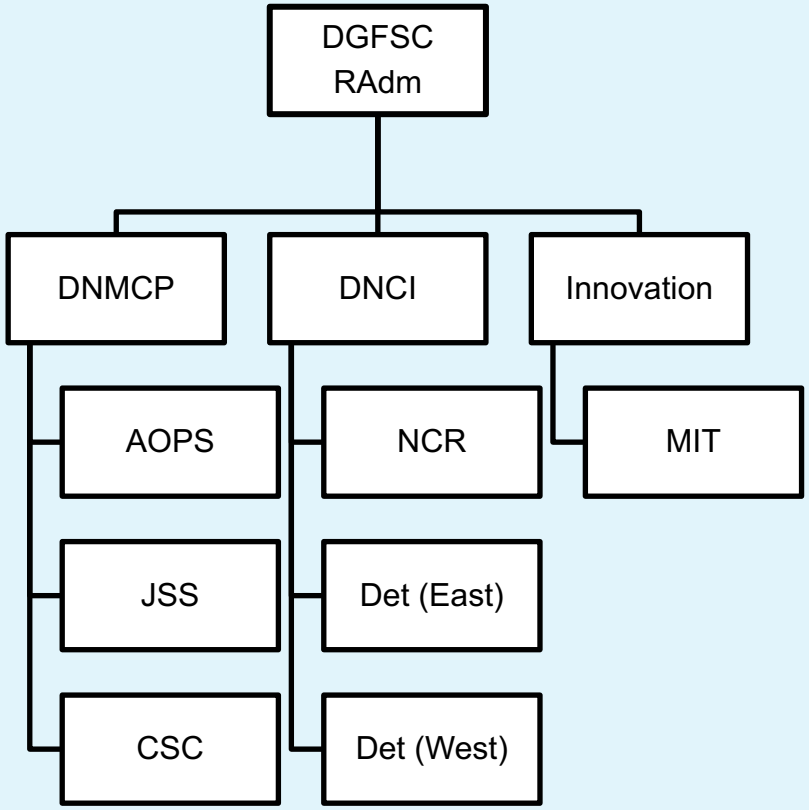
VCDS - VCEMD

TARATI VERO TARATI

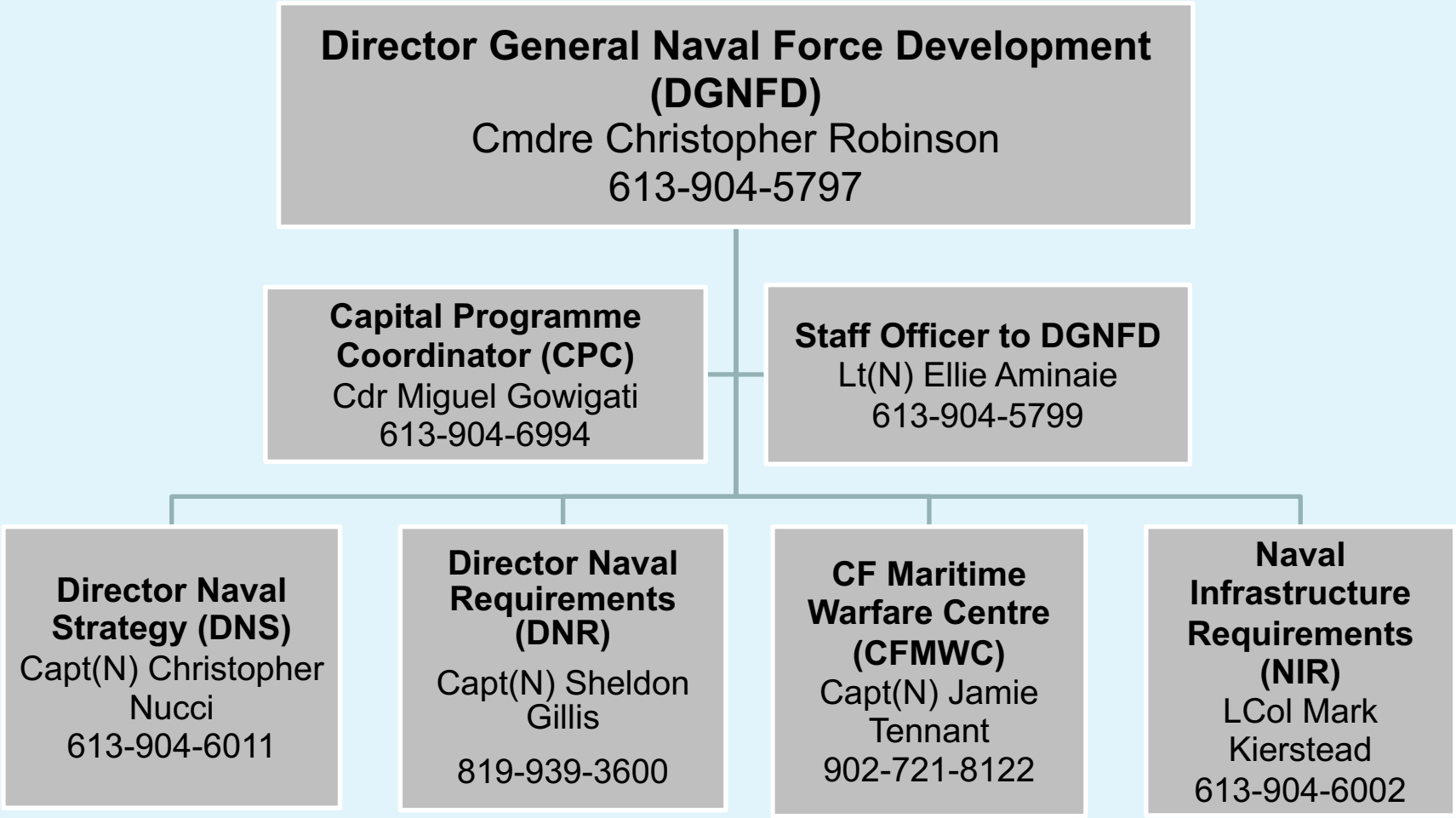
MATERIEL

RCN Force Development Organization





DGNFD Organization (now)



DGNFD Organization (after the summer)

Director General Naval Force Development (DGNFD)
Cmdre Christopher Robinson
613-904-5797

Capital Programme Coordinator (CPC)
Cdr Miguel Gowigati
613-904-6994

Staff Officer to DGNFD
Lt(N) Ellie Aminaie
613-904-5799

Director Naval Strategy (DNS)
Capt(N) Christopher Nucci
613-904-6011

Director Naval Requirements (DNR)
Capt(N) Sheldon Gillis
819-939-3600

CF Maritime Warfare Centre (CFMWC)
Capt(N) Al Fry
902-721-8122

Naval Infrastructure Requirements (NIR)
LCol Mark Kierstead
613-904-6002

CF Maritime Warfare Centre

Lines of Operation (What We do…)

1. Support to Fleet Operations
   - Maritime Tactical Authority / CMS330 & EW Doctrine development
2. Support to Force Development
   - Warfare and System subject matter expertise, M&S support
3. RCN Modelling & Simulation Centre of Excellence
4. RCN Lessons Learned Technical Authority

Lines of Effort (How We Do It…)

1. Operational Test & Evaluation (OT&E)
2. EW - ES/EA Reprogramming (NEWC)
3. Operational Analysis (OA)
4. War Gaming
5. Concept Development & Experimentation (CD&E)
6. Modern Information Technology (IT)
7. Operational Research Support (DRDC CORA)
8. Modelling & Simulation (M&S) (underpins all efforts)

The Warfighting Battlespaces

Above Water Battlespace

Underwater Battlespace and Information Warfare

Joint Innovation & Technology Battlespace

Director of Naval Strategy

Directorate of Naval Requirements

Capital Program Coordinator
Cdr Miguel Gowigati
613-904-6994

DNR
Captain (N) Sheldon Gillis
819-939-3600

Capability

Unmanned Systems & C4ISR

DNR 2
Cdr Chris Taitt
819-939-3949

DNR 3
Cdr Niall Hanratty 819-939-3946

Platform Requirements, & Maritime Operational Enablers

DNR 3
Cdr Jerome Phaneuf
819-939-3895

DNR 4
Cdr Drew Graham
819-939-3986

Above Water Warfare

DNR 4
Cdr Drew Graham
819-939-3986

DNR 9
Cdr Martin Byrne
819-939-3976

Under Water Warfare

DNR 5
Cdr Chris DeVita
819-939-3969

Communications and Information Systems

DNR 6
Cdr Lee Atkinson
819-939-3973

Naval Training Systems

DNR 8
Cdr Chris Sherban
819-939-3995

Ship Class

Kingston Class & Auxiliaries

Halifax Class

Submarine Requirements

We are everything from undergarments to missile systems … and everything in between.

DNR's Priorities

- Victoria-class Modernization
- STORM
- RCN ISTAR

Areas of Interest – Not funded but requiring exploration

- Containerised Solutions
  - Sonar
  - Unmanned Systems
  - Harbour Security
  - Accommodation
  - Humanitarian Relief
  - What else?
- Underwater Battle space Awareness
  - Integrated Torpedo Defense
  - Data Fusion
- Information System Infrastructure
  - Big Data
  - Support advance processing needs
- Ranges, Diving, and Auxiliaries
- Equipment in support of Arctic Operations

AOPS: Up to 6 TEU per ship.

JSS: Up to 60 TEU per ship.

DNR 2- C2ISTAR & Unmanned Systems

LAST YEAR SUCCESSES:

- RCN ISTAR UAS entered Definition phase January 2019
- Maritime Multi-Domain Control System prototype Development Contract was awarded and accepted by Team Cohort

FUTURE OPPORTUNITIES:

- Improved ability to control multiple Unmanned System and contribute to a combined recognized picture.
- Develop capabilities to defend against Unmanned System.
- Incorporate Unmanned Systems in Anti-Ship Missile Defence and Underwater Warfare.
- Introduction of UUV for the RCN to support ISR, mine detection and avoidance, under-ice surveillance, and battlespace preparation /characterization, including for the Victoria-Class

CAPITAL PROJECTS:

- Royal Canadian Navy Intelligence, Surveillance, Target Acquisition and Reconnaissance Unmanned Aircraft System (RCN ISTAR)
- Global Command and Control System – Maritime (GCCS-M)
- Interdepartmental Maritime Integrated Command, Control, and Communication (IMIC3)

DNR 3 –Naval Platforms

LAST YEAR SUCCESSES:

- NLT contract awarded Apr 2019
- MRB contract awarded May 2020
- Completed issue of new ballistic plates and vests to HMC Ships
- Naval Enhanced Combat Uniform conducting trial of new uniforms with over 400 personnel

FUTURE OPPORTUNITIES:

- Containerization of capabilities - to have organic effect not restricted to specific platforms; and
- Reviewing naval auxiliary fleet for modernization
- Reviewing naval ranges for modernization.

CAPITAL PROJECTS:

- Naval Large Tug (NLT)
- Multi-Role Boat (MRB)
- Remote Mine-hunting & Disposal System (RMDS)
- MCDV Integrated Position Keeping System
- MCDV Degaussing
- Naval Improved Clothing & Equipment (NICE)

DNR 4 – Above Water Warfare Requirements

LAST YEAR SUCCESSES:

- MASS OCR and OMNITRAP Extended Range
- Naval Remote Weapons System IOC
  - First install on HMCS *Fredericton*
- MASS 3rd Launcher Implementation
  - Four ships to be completed by 2023
- Surface Off-board Passive Decoy
  - Sea Acceptance Trial completed
  - 3 of 6 units fitted
- Naval Off-board Anti-Missile Decoy
  - Implementation I2020
- NATO completed ESSM Block II Testing

FUTURE OPPORTUNITIES:

- High Energy Lasers
- Naval Laser Beam Rider
- ESSM Block II Integration
- Counter Unnamed Arial Vehicle
- Future EW Decoys
- NATO Smart Defence Initiative
  - Reusable Active Off-board Decoy

CAPITAL PROJECTS:

- Naval Electronic Warfare System – Sub Surface (NEWS-SS)
- STRONGBOW
- Point Defence Missile System Upgrade (PDMSU)
- Naval Remote Weapon System (NRWS)

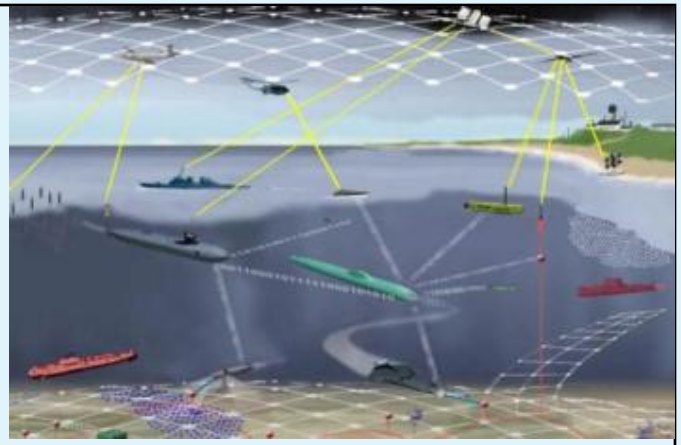
DNR 5 – Underwater Warfare

LAST YEAR SUCCESSES:

- Underwater Warfare Suite Upgrade (UWSU) achieved Preliminary Design Review (PDR) with contractor
- UWSU early software iterations evaluated by RCN operators
- Mk 54 conversion kits ordered under the Lightweight Torpedo Upgrade (LWTU) project

FUTURE OPPORTUNITIES:

- Data Management
  - Organic source fusion
  - Off-board / offshore source fusion
  - Display of 3D environment
- Automation / Decision Aid
  - Oceanographic predictive modeling
  - Automated detection, classification, tracking
  - Disposition and engagement support tools



CAPITAL PROJECTS:

- Underwater Warfare Suite Upgrade (UWSU)
- Lightweight Torpedo Upgrade (LWTU)
- Integrated Torpedo Defence

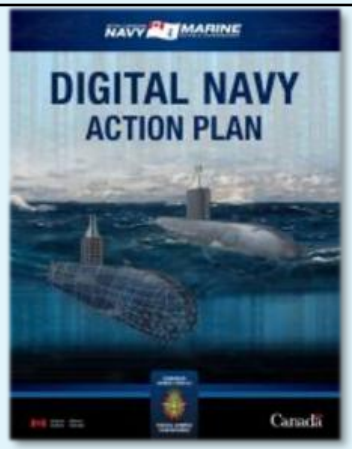
DNR 6 – Communications, Information Systems, Cyber

LAST YEAR SUCCESSES:

- Demonstration of the Virtual Bridge Assistant
  - Results passed to Innovation and Digital Navy teams
- Demonstration of the Mixed Reality Remote Assistant Support
- Internet Support to Sailors at Sea (IS2S) @ Sea expenditure authority for global access solution

FUTURE OPPORTUNITIES:

- Liaison through Digital Navy initiatives
- Updating current NavIS
- Improve onboard compute and storage capabilities
- Investigate Hyper Converged Networks
- Internet Support to Sailors at Sea (IS2S) @ Sea
- Enhanced Cyber Defence



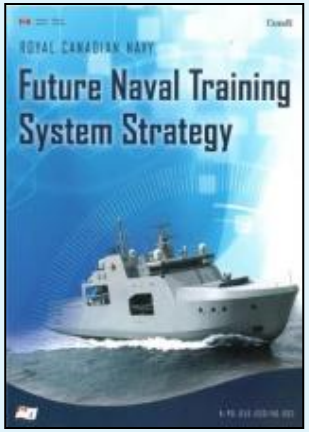
CAPITAL PROJECTS:

- Sub Net Relay (SNR)
- Maritime Satellite Communications Upgrade (MSCU)

DNR 8 – Naval Training Systems

LAST YEAR SUCCESSES:

- Continued to improve the RCN's Distributed Mission Training (DMT) capability
- Connected to SEAWOLF simulator, started process to connect to more Navy and Air Force and Army simulators
- Established a connection to the Operational Tactical Data Link network, and sent LINK tracks though IP/SATCOM to ships at sea.
- Participated in a large virtual international exercise with US and other allies
- Conducted a Virtual TGEX with multiple East and West Coast ships simultaneously.



FUTURE OPPORTUNITIES:

- Address the full spectrum from IT&E to CT.
- Will deliver the trainers and technology enabled learning systems to enable training for all ranks
- Training will be facilitated by the use of distributed learning, individual trainers, Multiple-Use Reconfigurable Trainers (MRT) and Technology enabled classrooms
- The ability to be networked with other training facilities within the RCN and CAF
- Allow the Naval Reserves to access the same training (as appropriate) as their Reg Force peers.
- Working with NPTG to mesh Future Naval Training System Strategy with procurement requirements

CAPITAL PROJECTS:

- The System of Training and Operational Readiness Management (STORM)

DNR 9 – Submarines

LAST YEAR SUCCESSES:

- New BQQ-10 Bow sonar installation commenced for COR and completed for VIC and WSR, only CHI remains with the legacy Bow 2040 Sonar
- Engineering conversion of WSR and CCS-876 software install complete to support first of class firing of new Mk48 7AT heavyweight torpedo this fall at AUTEC
- Victoria-Class Modernization continues work in Options Analysis Phase, with planned transition to Definition Phase in 2020

FUTURE OPPORTUNITIES:

- Victoria-Class Modernization – Positioned to contribute meaningfully to Joint Operations ashore
- Ensure the survivability of the Victoria-class against an evolving threat in an increasingly complex and changing battle space
- Improve the habitability and deployment conditions aboard the Victoria-class
- Victoria-class Modernization 24 sub-projects include:
    - Digital periscopes
    - New Flank Array Sonar
    - New Torpedo Counter Measure Launcher
    - Submarine Launched UAV

CAPITAL PROJECTS:

- Bow Sonar System Upgrade (BSSU)
- Heavyweight Torpedo Upgrade (HWTU)
- Victoria-class Modernization (VCM)

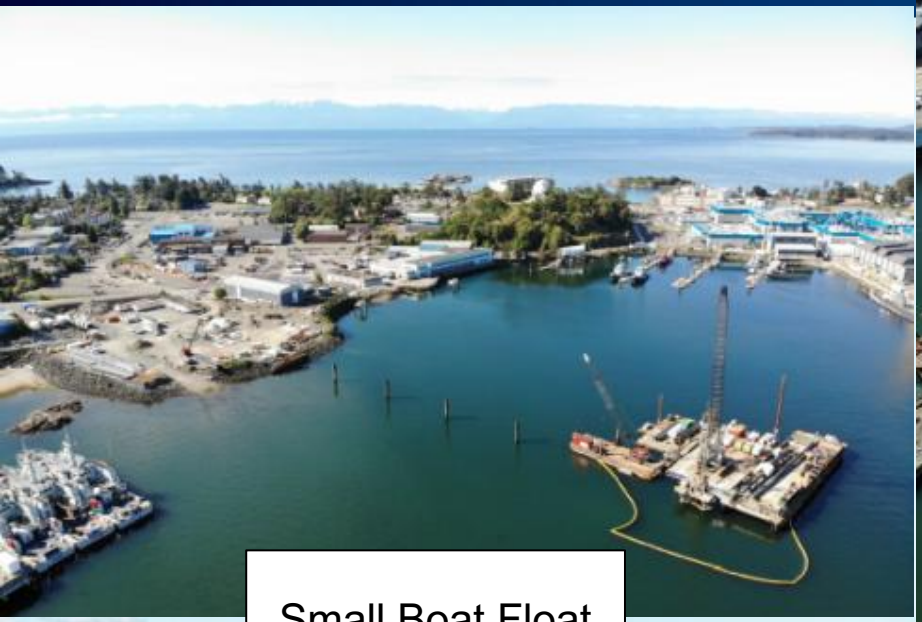
Want more information on Navy Projects?

Defence Capability Blueprint

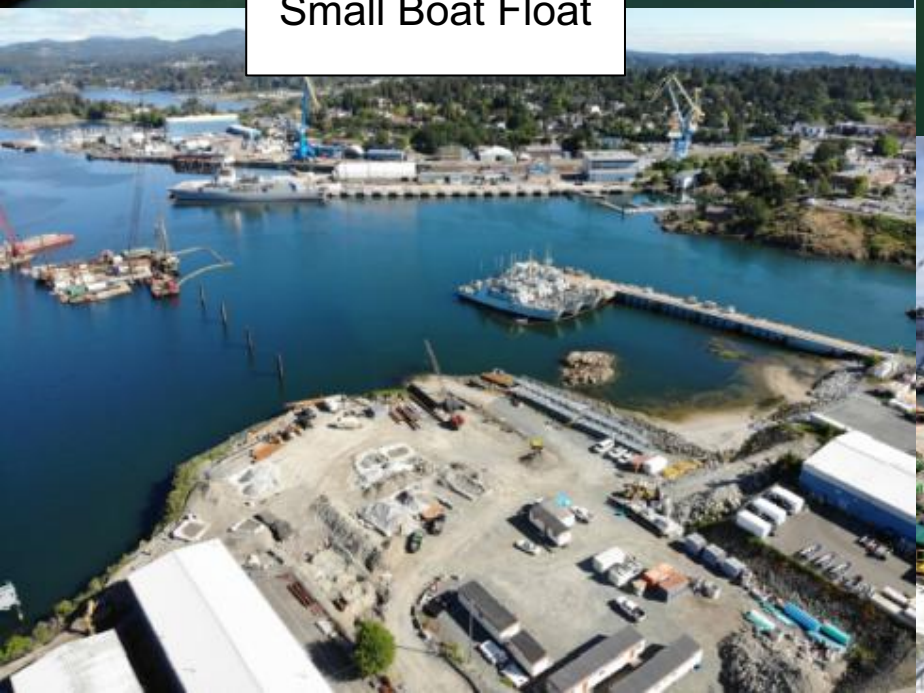
- Arctic and Offshore Patrol Ship
- Canadian Surface Combatant
- Global Command and Control System – Maritime (GCCS-M) Upgrade to Version 4.x
- Heavyweight Torpedo Upgrade
- Interdepartmental Maritime Integrated Command, Control, and Communication (IMIC3) Project
- Joint Support Ship
- Lightweight Torpedo Upgrade
- Maritime Costal Defence Vessel (MCDV) Degaussing
- Maritime Satellite Communication Upgrade
- Multi Role Boat
- Naval Electronic Warfare System – Sub Surface
- Naval Improved Clothing and Equipment
- Naval Large Tug
- Point Defence Missile System Upgrade
- Remote Mine hunting and Disposal System
- RCN Intelligence, Surveillance, Target Acquisition and Reconnaissance Unmanned Aircraft System
- STRONGBOW
- Subnet Relay
- Underwater Warfare Suite Upgrade (UWSU)
- Victoria-Class Modernization (VCM)
- Victoria-Class Submarines Bow Sonar System Upgrade

http://dgpaapp.forces.gc.ca/en/defence-capabilities-blueprint/project-sponsor.asp?id=13

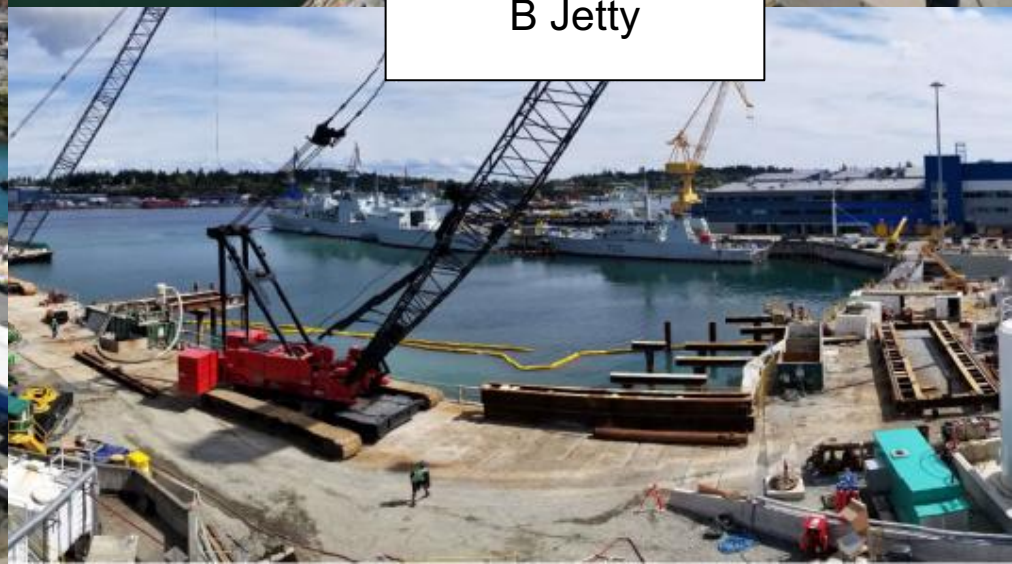
Naval Infrastructure Update - West



Small Boat Float



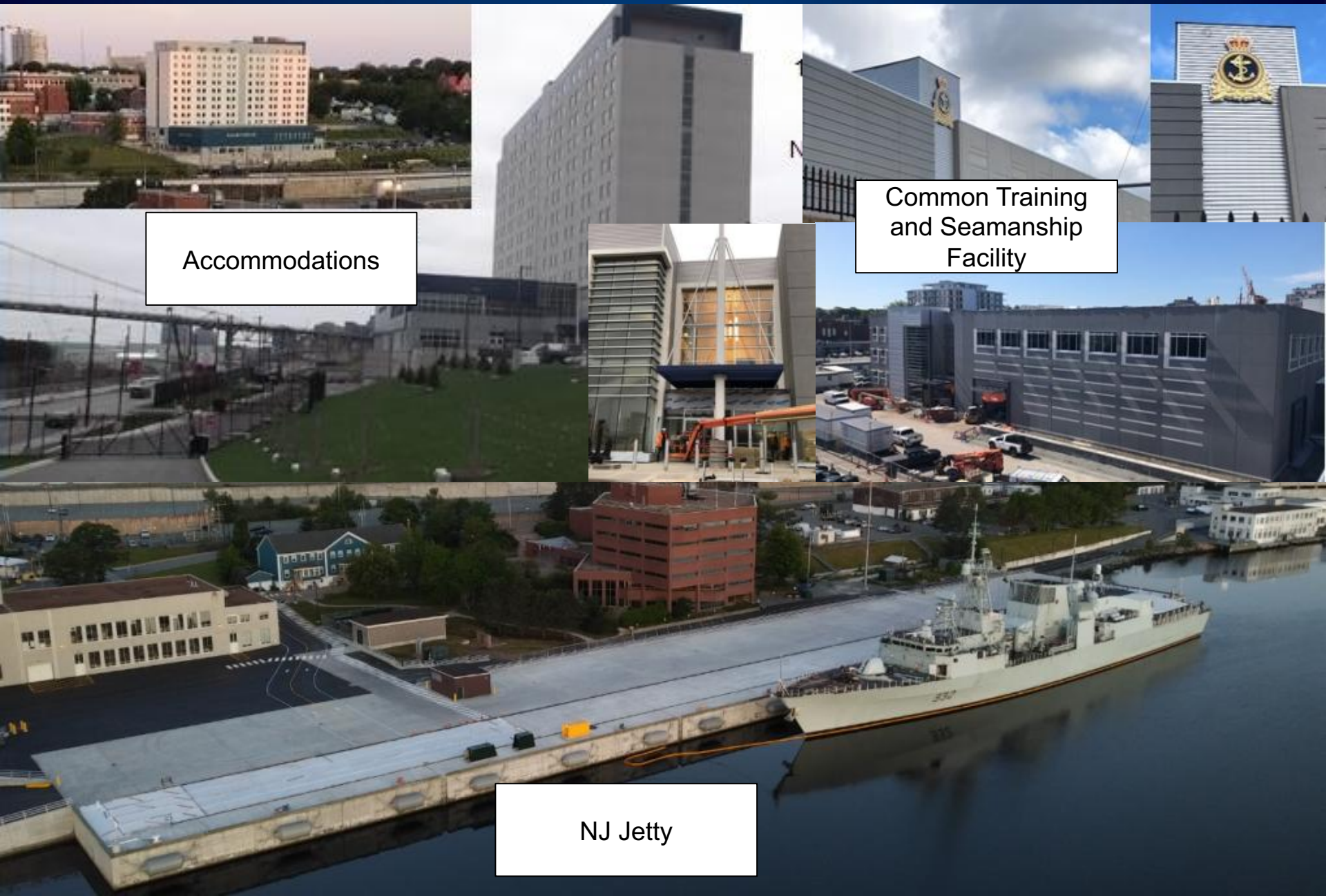
B Jetty



Naval Infrastructure Update - North

Nanisivik

Naval Infrastructure Update - East



thank you
danke
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ngiyabonga
teşekkür ederim
gracias
спасибо
dank je
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go raibh maith agat
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