National Defence
National Defence Headquarters
Ottawa, Ontario
K1A 0K2

Défense nationale
Quartier général de la Défense nationale
Ottawa, (Ontario)
K1A 0K2

1150-1 (MARP ACOS NEM – RDIMS #4307888)

8 June 2016

Distribution List

FLEET MAINTENANCE FACILITIES
STRATEGIC CAPABILITIES STATEMENT

References: A. Fleet Maintenance Facility Strategic Capabilities & Role, 13 December 2013 (MARPAC RDIMS #331707)
B. 21st Naval Materiel Steering Group held 25 September 2014 - Record of Decision (LSTL RDIMS #3756383)
C. MARP ACOS NEM presentation at Naval Materiel Management System Management Board held 04 June 2015 (MARL RDIMS #469067)
D. KPMG Third Party Review of the Thrust G Assessment, Definition Contract Task #18-1, Final Report dated 23 February 2016
E. NEM Management Board recommendations of FMF strategic capabilities for AOPS and JSS in-service support model, 02 July 2015 (MARL RDIMS #468728)
F. AJISS 2nd level support, record of discussions between DCRCN, DGMEPM and DGMPD(Sea), 02 November 2015
G. Records of Discussion, Naval Strategic Management Boards (NSMB) held 17 June 2014, 10 December 2014 and 03 March 2015

1. Over the past two years, a key activity of the Naval Engineering and Maintenance Strategic Initiative (NEMSI) was to define a strategy and create a supporting decision model that will yield aligned NEM capability, capacity and competencies to ensure current Fleet readiness requirements as well as future Fleet needs are met. Building on Reference A, the NEMSI Thrust G conducted a risk-based assessment of the Fleet Maintenance Facility (FMF) outputs, such that each output by system was assessed against criteria related to 3 RCN risk areas; operational effect, program control, and assured NEM response. This assessment has informed a NEM strategic capability decision model and the entire approach was presented to existing RCN governance forums for endorsement (Refs B and C). Additionally, the entire methodology was subjected to a third party validation which concluded (Ref D) that the approach and methodology was well structured, clear, objective, and fit-for-purpose.

2. Based on the review and third party endorsement of the methodology, the NEM capability decision model and supporting risk assessment data, will provide the RCN with a sound and repeatable process to validate present and future fleet capability needs. In particular, part of this work defined four models outlined at Annex A which provide a

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range of risk-based options and a foundation for sound In-Service support decisions relative to various platform types, systems and equipment. Options are varied commensurate with the associated risks and tolerance and could become, under the right conditions, properly incentivized and structured public/private partnerships across many of the Engineering and Maintenance functions to effectively balance risks benefits, capabilities, and the performance of both partners. As detailed at Annex B, recommended strategic capability models are identified at the Class and System Group level based on the risk assessment methodology but variation within class and within system groups should also be considered where benefits of a specific support arrangement may outweigh costs and/or risks introduced or increased by the arrangement. These considerations should include input from all stakeholders, and should be documented and monitored as exceptions in order to avoid duplicating or gapping FMF strategic capabilities. In practice, this process has already been used (Refs E and F) to provide in-service support maintenance recommendations to the Arctic and Offshore Patrol Ship (AOPS) and Joint Support Ship (JSS) projects.

3. The purpose of this letter is to articulate full support and endorsement of the NEMSI Thrust G analysis, designate the FMFs as the Royal Canadian Navy's strategic assets responsible for the planning and co-ordination of all 2nd and 3rd level activities performed in the Dockyards, to recognize the FMFs as a strategic NEM service provider, and to direct the FMFs to retain the strategic capabilities captured within the enclosed annexes. More specifically, Annex A provides four strategic capability models that describe different NEM support levels that require FMF support in order to balance RCN flexibility requirements with those of industry partners. Annex B further specifies the strategic capability models indicated for each Class and their super-systems. Lastly, Annex C provides further details with respect to NEM outputs in order to articulate partnering boundaries for hybrid in-service engineering and maintenance execution while Annex D identifies in greater detail the full list of NEM outputs that can be delivered by the FMFs.

4. Through the implementation of this approach, the RCN and MEPM have set the conditions for success by assuring:

a. Effective delivery and continuity of second level support while leveraging MEPM In-Service Support Contract (ISSC) partnerships to gain efficiencies in lower risk and higher benefit activities;

b. That the RCN remains capable of Mission preparation and sustainment, Force Generation and Naval Materiel Assurance of all Units in custody;

c. That the RCN remains capable of deploying the full NEM expertise, whether through in-house capability or contracted support, to deployed units;

d. Optimized and coordinated scheduling of both NEM and ISSC maintenance activities;

e. Continued evolution of the RCN's In-Service Support (ISS) model, including the near-term implementation of a hybrid model under AJISS; and

f. That the RCN has contingencies in place to deal effectively with possible industry availability and contractual risks for the life of all of its assets.

5. Please do not hesitate to contact Captain(N) C.S. Earl, MARPAC Assistant Chief of Staff Naval Engineering Maintenance and NEMSI Project Leader, should you require additional information.

J.A.S. Page
Commodore
Director General
Maritime Equipment program Management
(819) 994-8718

M.F.R. Lloyd
Rear Admiral
Deputy Commander
Royal Canadian Navy
(613) 945-0612

Annexes:

Annex A – FMF Strategic Capability Models Description
Annex B – Required FMF Strategic Capabilities (by super-system for all Classes)
Annex C – Naval Engineering and Maintenance Output / Capability Matrix
Annex D – Fleet Maintenance Facilities: Available Services

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FMF STRATEGIC CAPABILITY MODELS DESCRIPTION

	D Model *(DND primary)*	DC Model *(DND with Contractor support)*	CD Model *(Contractor – DND hybrid)*	C Model *(Contractor primary)*
FMF Strategic Capability and Capacity	The FMF will be the primary second level service provider and contingency third level service provider. Maintain all engineering and maintenance competencies and capacities to meet second level demand (outputs and capability components) and the ability to effectively react to contingency third level requirements. Capacity will be load levelled across second and third levels for greater efficiency and to maintain third level proficiencies.	The FMF will remain positioned to be the primary second level service provider for the super system group with OEM lifecycle management support and OEM / FMF partnering at second level when so contracted. OEM involvement in System level ILS (leveraging economies of scale) and field service technical support and advice at system level (leveraging OEM experience across multiple Navies) will augment but not displace FMF equipment level expertise. Capacity will be load levelled across second and third levels for greater efficiency and to maintain third level proficiencies.	A contractor will be the primary second and third level service provider at the super system or class level. The FMF will maintain the necessary competencies and capacities to provide oversight and support to primary service providers and retain the plant, equipment and unique skillets required to ensure continuity of support at both second and third levels (Dockside, Process, and Functional capabilities) In order to create efficiencies and prevent duplication in retaining these capabilities, the FMF will support the contractor by providing dockside, process and certain functional support activities at homeport and when it makes sense to do so while ships are deployed.	A contractor is completely responsible for in service support and the FMF will provide dockside support to the contractor only. The FMF will maintain plans and arrangements to ensure continuity of support for critical equipment within the super system group but will not maintain any physical capability or expertise to specifically provide the support.

Table 1: High level description of the FMF Strategic capability and capacity for each sourcing model

	D Model	DC Model	CD Model	C Model
Second Level (Homeport and Deployed Support)	Retain / Enhance All System Engineering and Maintenance Expertise Retain / Enhance All NEM Support Facilities, Plant, Equipment and Skillsets In-House Capacity managed to meet total 2nd level demand, with possible use of NEM contracted resources to address short-term peak demands	Retain All System Engineering and Maintenance Expertise Retain / Enhance All NEM Support Facilities, Plant, Equipment and Skillsets (Supporting In-house or Contractor System Experts) In-House Capacity managed against contractor contributions to meet total 2nd level demand	Retain System Engineering and Maintenance Expertise for critical equipment within the super system group and for DND Oversight functions for all equipment Retain Unique NEM Support Facilities, Plant, Equipment and Skillsets (Supporting Contractors) In-House Capacity managed for "System Level" efficiencies	Retain Broad System Engineering and Maintenance Expertise to retain basic capability Retain Unique NEM Support Facilities, Plant, Equipment and Skillsets (Supporting Contractor) In-House Capacity managed to support contractors.
Third Level – Contractor Facilities	Contractor by Default	Contractor by Default	Contractor by Default	Contractor by Default
Third Level Contingency and Strategic Positioning - Naval Facilities	Retain All System Engineering and Maintenance Expertise Retain all NEM Support Facilities, Plant, Equipment and Skillsets to conduct 3rd level work In house in as Necessary In-House Capacity managed to address industry shortfalls and address strategic 3rd level requirements (IE Engineering Change on Critical Systems)	Retain All System Engineering and Maintenance Expertise Retain critical NEM Support Facilities, Plant, Equipment and Skillsets to conduct 3rd level work In house in as Necessary In-House Capacity managed to address industry shortfalls and address strategic 3rd level requirements (IE Engineering Change on Critical Systems)	Retain All System Engineering and Maintenance Expertise Retain critical NEM Support Facilities, Plant, Equipment and Skillsets to conduct 3rd level work In house in as Necessary In-House Capacity managed to address industry shortfalls	Be prepared to acquire Engineering and Maintenance Expertise if it becomes necessary Retain Unique NEM Support Facilities, Plant and Equipment to conduct 3rd level work In house in as necessary and practical No In-House Capacity to be retained

Table 2: Detailed description of the FMF Strategic capability and capacity by maintenance level

REQUIRED FMF STRATEGIC CAPABILITIES (BY SUPER-SYSTEM FOR ALL CLASSES)

VICTORIA CLASS SUBMARINES	FMF Strategic Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	D
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	D
C-03 SURFACE & AIR WEAPONS SYSTEM	N/A
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D
C-05 UNDERWATER COMBAT SYSTEM	D
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	D
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	D
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	D
M-09 DAMAGE CONTROL SYSTEM	D
M-10 DOMESTIC SYSTEMS	D
M-11 DECK & HULL EQUIPMENT GROUP	D
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	D
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	D
M-14 HULL SYSTEMS	D
M-15 MAIN PROPULSION SYSTEM	D
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	D
M-17 MARINE ENGINEERING AUX EQUIP GROUP	D
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	N/A
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	N/A
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	D
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	D

Note: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

IROQUOIS CLASS DESTROYERS	FMF Strategic Model (In – Service)	FMF Strategic Model (Awaiting disposal)
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	DC	C
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	D	C
C-03 SURFACE & AIR WEAPONS SYSTEM	D	D
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D	DC
C-05 UNDERWATER COMBAT SYSTEM	D	C
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	D	C
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	D	C
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	D	DC
M-09 DAMAGE CONTROL SYSTEM	DC	C
M-10 DOMESTIC SYSTEMS	DC	C
M-11 DECK & HULL EQUIPMENT GROUP	DC	C
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	DC	C
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	DC	C
M-14 HULL SYSTEMS	D	C
M-15 MAIN PROPULSION SYSTEM	DC	C
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	D	C
M-17 MARINE ENGINEERING AUX EQUIP GROUP	DC	C
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	DC	C
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	DC	C
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	D	C

Note: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

HALIFAX CLASS FRIGATES	FMF Strategic Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	DC
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	D
C-03 SURFACE & AIR WEAPONS SYSTEM	D
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D
C-05 UNDERWATER COMBAT SYSTEM	D
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	D
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	D
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	D
M-09 DAMAGE CONTROL SYSTEM	DC
M-10 DOMESTIC SYSTEMS	DC
M-11 DECK & HULL EQUIPMENT GROUP	DC
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	DC
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	DC
M-14 HULL SYSTEMS	D
M-15 MAIN PROPULSION SYSTEM	DC
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	D
M-17 MARINE ENGINEERING AUX EQUIP GROUP	DC
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	DC
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	DC
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	D

Note: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

QUEENSTON CLASS AUXILIARY VESSEL	Recommended FMF Strategic Model	Agreed Support Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	CD	Hybrid *(except crypto excluded)*
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	DC	
C-03 SURFACE & AIR WEAPONS SYSTEM	D	Hybrid
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D	Hybrid
C-05 UNDERWATER COMBAT SYSTEM	D	Hybrid
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	DC	Hybrid
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	DC	Hybrid
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	DC	Hybrid
M-09 DAMAGE CONTROL SYSTEM	CD	Hybrid
M-10 DOMESTIC SYSTEMS	C	Hybrid
M-11 DECK & HULL EQUIPMENT GROUP	CD	Hybrid
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	CD	Hybrid
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	CD	Hybrid
M-14 HULL SYSTEMS	DC	Hybrid
M-15 MAIN PROPULSION SYSTEM	CD	Hybrid
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	DC	Hybrid
M-17 MARINE ENGINEERING AUX EQUIP GROUP	C	Hybrid
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	CD	Hybrid
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	C	Hybrid
M-21 REPLENISHMENT-AT-SEA SYSTEMS	CD	Hybrid
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	DC	Hybrid

Note 1: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

Note 2: Hybrid defined as Primary/Secondary maintenance Service providers and ISSC/FMF capacities may vary by super-system. Initial list to be recommended by industry.

HARRY DEWOLF ARCTIC AND OFFSHORE PATROL SHIP	Recommended FMF Strategic Model	Agreed Support Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	CD	Hybrid *(except crypto excluded)*
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	DC	
C-03 SURFACE & AIR WEAPONS SYSTEM	D	Hybrid
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D	Hybrid
C-05 UNDERWATER COMBAT SYSTEM	D	Hybrid
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	DC	Hybrid
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	DC	Hybrid
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	DC	Hybrid
M-09 DAMAGE CONTROL SYSTEM	CD	Hybrid
M-10 DOMESTIC SYSTEMS	C	Hybrid
M-11 DECK & HULL EQUIPMENT GROUP	CD	Hybrid
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	CD	Hybrid
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	CD	Hybrid
M-14 HULL SYSTEMS	DC	Hybrid
M-15 MAIN PROPULSION SYSTEM	CD	Hybrid
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	DC	Hybrid
M-17 MARINE ENGINEERING AUX EQUIP GROUP	C	Hybrid
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	CD	Hybrid
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	C	Hybrid
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	DC	Hybrid

Note 1: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

Note 2: Hybrid defined as Primary/Secondary maintenance Service providers and ISSC/FMF capacities may vary by super-system. Initial list to be recommended by industry.

KINGSTON CLASS	FMF Strategic Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	CD
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	DC
C-03 SURFACE & AIR WEAPONS SYSTEM	D
C-04 COMMAND & CONTROL EQUIPMENT GROUP	D
C-05 UNDERWATER COMBAT SYSTEM	N/A
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	DC
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	N/A
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	DC
M-09 DAMAGE CONTROL SYSTEM	CD
M-10 DOMESTIC SYSTEMS	C
M-11 DECK & HULL EQUIPMENT GROUP	CD
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	CD
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	CD
M-14 HULL SYSTEMS	DC
M-15 MAIN PROPULSION SYSTEM	CD
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	DC
M-17 MARINE ENGINEERING AUX EQUIP GROUP	C
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	N/A
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	C
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	DC

Note: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

AUXILIARIES and YARDCRAFT	FMF Strategic Model
C-01 INTERIOR COMMUNICATIONS & ALARM SIGNAL	C
C-02 NAVAL EXTERNAL COMMUNICATIONS SYSTEM	C
C-03 SURFACE & AIR WEAPONS SYSTEM	N/A
C-04 COMMAND & CONTROL EQUIPMENT GROUP	N/A
C-05 UNDERWATER COMBAT SYSTEM	N/A
C-06 NAVIGATION SYSTEM EQUIPMENT GROUP	C
C-07 ELECTRONIC WARFARE EQUIPMENT GROUP	N/A
C-08 NAVAL INFORMATION SYSTEMS (NAVIS)	N/A
M-09 DAMAGE CONTROL SYSTEM	C
M-10 DOMESTIC SYSTEMS	C
M-11 DECK & HULL EQUIPMENT GROUP	C
M-12 MAIN REFRIGERATION AND HVAC SYSTEMS	C
M-13 SECONDARY ELEC POWER GENERTN & DIST SYS	C
M-14 HULL SYSTEMS	C
M-15 MAIN PROPULSION SYSTEM	C
M-16 PRIMARY ELEC POWER GENERATION & DIST SYS	C
M-17 MARINE ENGINEERING AUX EQUIP GROUP	C
M-18 AIRCRAFT SUPPORT EQUIPMENT GROUP	N/A
M-19 WORKSHOP EQUIPMENT, MACHINE & HAND TOOLS	N/A
M-21 REPLENISHMENT-AT-SEA SYSTEMS	N/A
M-23 SUB ESCAPE & RESCUE, LIFE SAVING SUPPORT	N/A
M-24 MACHINERY CONTROL & SURVEILLANCE SYSTEMS	C

Note: The FMFs will retain capability to provide NEM support in all super system groups. However capacity will be managed as per the above table to meet the capability - capacity requirements outlined in the respective models described in Tables 1 and 2 of Annex A.

NAVAL ENGINEERING AND MAINTENANCE OUTPUT / CAPABILITY MATRIX

		Naval Engineering and Maintenance Capabilities				
		Dockside Support	Process Support	Functional Support	System Technical Experts - Production	System Technical Experts - Engineering
Second Level Output	Preventative Maintenance (Deferred Ship PM or RF PM)			X	X	X
	Corrective Maintenance (Investigate / Advise: including Ship assistance			X	X	X
	Corrective Maintenance – Repair / Replace (Include Mobile Repair)	X	X	X	X	X
	Mission Fit Design		X	X	X	X
	Mission Fit Install (and initial ILS Support)	X	X	X	X	X
	Inspections and Tests	X	X	X	X	X
	In Service Trials Programs	X	X	X	X	X
	Range Services			X	X	X
	Certifications	X	X	X	X	X
	DEA Oversight / Designated or Delegated Technical Authorities				X	X
	Direct Support to Technical Authorities (Advice)				X	X
	Direct Support to Operational Authorities (Advice)				X	X

		Naval Engineering and Maintenance Capabilities				
		Dockside Support	Process Support	Functional Support	System Technical Experts - Production	System Technical Experts - Engineering
Third Level Output	Engineering Change; Design		X	X	X	X
	Engineering Change: Installation	X	X	X	X	X
	New System Introduction / Initialization			X	X	X
	Class Safety Inspections (e.g. ANEP 77)			X	X	X
	Free Flow Repair and Overhaul – Spares Test and Manufacturing		X	X	X	X
	System Level Repair and Overhaul – Complete System Components	X	X	X	X	X
	System Decommission and Disposal	X	X	X	X	X
	Platform Repair and Overhaul / Modernization - (EDWP/Refit)	X	X	X	X	X

Naval Engineering and Maintenance Capability Component Definitions:

Dockside Support: Dockside services include provision of connection of shore support (Air, Steam Power) and support services such as provided by riggers, crane operators and scaffolding erectors. These services are available to support FMF, Contractor and Ship Staff engineering and maintenance work.

Process Support: Trades and workshops which provide "trade certified" support to system and platform engineering and maintenance work. Specific system or subsystem knowledge is not required but all work must be completed according to DND standards and specifications. Knowledge and experience unique to Naval ships and practices often make these skillsets unique to Naval Engineering and Maintenance.

Functional Support: Functional specialists perform work on many systems (both Combat and / or Marine Systems) but only on certain functions which are common across many systems. (i.e. hydraulics, cooling, electrical, controls, ranges, and inspectors). Many of these specialties are Naval Systems and Navy Trade specific.

System Technical Experts (STE) – Production: Personnel trained and experienced on specific systems or system groups. This includes expertise and experience with integration and fit at the class level. Production STE's are primarily trained, equipped and utilized in and System Maintenance and Repair and Mission Fit / Engineering Change Installation.

System Technical Experts (STE) – Engineering: Personnel trained and experienced on specific Combat, Platform or Marine systems or system groups. This includes expertise and experience with integration and interference at the class level. Engineering STE's are primarily trained for and utilized in Engineering Change Design, development of repair specifications, System Engineering and Trials.

FLEET MAINTENANCE FACILITIES: AVAILABLE SERVICES

Dockside Support:

D1	Scaffolding and Weather Protection on Ships / Submarines Upper decks
D2	Shore Facilities Connection: Power, Water, Steam, Breathing Air to ships and submarines
D3	Crane Operations - Dockside to and From ship or submarine
D4	Material Handling: Movement of Heavy Articles: Around Dockyard; to / from and onboard ships and submarines (Includes Pre Staging)
D5	Complex Lifting / positioning and Lifting Arrangement Set up and Appliance Testing
D6	Synchrolift / Dry-dock Operations and Support
D-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems

Process Support:

S1	Manufacturing (Support to All classes / all systems and equipment)
S1A	Manufacturing - Steel Fabrication and Finishing
S1B	Manufacturing - Sheet Metal Fabrication and Finishing
S1C	Manufacturing - Tools, Components, Parts, Fasteners, Piping and Jigs
S1D	Laser Additive / Machining - Components, Parts, Fasteners,
S1D	Manufacturing - Foundry / Oven / Heat Treatment
S2	Fabrication and Installation: Ship board Mounts, Hull Inserts, Brackets and Fixtures
S3	Cleaning and (Re)finishing / (Re)surfacing (All Materials)
S3A	Hull and Decking Including Equipment and Fixtures
S3B	Free Flow Equipment's and Components
S4	Pipe works and coatings. Manufacture - Inspect - Remove - Replace - Install
S5	Opening and closing shipping routes
S6	Asbestos Abatement / Lead Abatement
S7	Engraving and Signage (Damage Control)

S8	Warehousing and Storage
S9	Material Support - Procurement / CFSS
S10	Opening and Closing Shipping Routes
S-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems eg: LAM, Water Table, Plasma etc

Functional Support:

F1	System / Equipment Connection to Ship Main / Support Systems - Equipment Connection, Disconnection and Temporary Isolation - Tests and Trials
F2	Interference Item Removal, Re-installation and Testing
F3	System / Equipment - Component Testing, Inspection and / or Repair and Trials including NDT and DI
F3A	Ammunition Storage and Handling Inspection
F4	Ships cabling, Connectorization and Testing
F5	Heavy Electrical Shored Based Services- Load Bank Testing and Battery Care
F6	Hull Survey and Repair (Temporary and Permanent)
F7	Electronic System Test Bed Arrangements and Support Services
F8	Test Equipment Calibration and Repair
F9	Sensor / EW / COMM System Ranging and Testing
F10	Ship Signatures: Infra-Red - Heat, RCS - Radar Cross Section, Acoustic, Magnetic, System Electromagnetic (EW Threat)
F11	Ship Degaussing
F12	Citadel Testing and Reconciliation
F-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems

System Technical Expertise – Production

P1	System and Equipment Diagnostics & Inspection: Shipboard
P2	System and Equipment Diagnostics & Inspection: Bench / Shop
P3	System and Equipment Removal / Repair / Installation

P3A	System and Equipment Removal, Inspection and Forwarding to CFSS
P3B	System and Equipment Repair and Overhaul (NICP)
P3C	System and Equipment Receipt from CFSS and Pre-Installation Testing
P3D	System and Equipment Repair by Repacement
P3E	System and Equipment Repair in Place
P3F	System and Equipment Installation
P3G	System and Equipment Set To Work
P4	Directed Planned Maintenance
P5	Ship and System Disposal
P-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems

System Technical Expertise – Engineering

E1	Systems Engineering & Performance Analysis
E1A	Combat, Marine and Hull Systems Integration
E1B	Combat and Marine System Introduction
E1C	Combat, Marine and Hull Systems Performance Studies
E1D	At Sea Data Collection and Analysis
E1E	Technical Investigations
E1F	Automated Test Systems Engineering
E1G	Ship Stability, Buoyancy and Strength
E1G	Ship Inspections and Surveys
E2	Engineering & Design
E2A	Engineering Changes
E2B	Repair Specifications and Instructions
E2C	Engineering Deviations and Waivers
E3	Alignment & Calibration
E3A	Weapon System Mechanical Alignment
E3B	Weapon System Electronic Alignment
E4	Test, Trials & Certification

E4A	Conduct of Physical, Functional and Sea Trials
E4B	Conduct of Condition Based Assessments
E4C	Produce / Amend Test and Trials procedures
E4D	Weapons Certification
E4E	Ship Safety Certification
E5	Produce and Control Technical Drawings and Specifications
E6	Designated Engineering Authority: Second and Third Level Oversight
E7	Engineering Advice and Distant Support
E8	Engineering Advice to Naval Authorities
E-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems

Corporate:

C1	Safety and Environmental Protection Services
C1A	HAZMAT Storage and Handling (Including Spill Response)
C1B	Gas Free Certification
C1C	RADHAZ Testing and Lock out Services
C1D	Fire Sentry Services
C3	IT / DRMIS Support
C4	Industrial Engineering and Plant Maintenance (Dockside Facilities)
C5	Waterfront Project Management - HMC Dockyards and Deployed
C6	Security: Physical, EMSEC, ITSEC, ITAR and CTAT
C-SPTATE	The FMF has the Special Facilities, Plant, Tools and Test Equipment required to fully support D, DC and CD Systems