Program Executive Office
Command, Control, Communications, Computers, and Intelligence (PEO C4I)

PMW 120 Overview

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Deliver threat-based C4I and space capabilities to enable the fleet to compete, deter and win – tonight

Battlespace Awareness and Information Operations

VISION

Provide our warfighters, the Intelligence, Environmental Awareness, Targeting, and Counter-Targeting advantage that deters our adversaries from initiating the kinetic conflict and postures us to win if ultimately necessary

Constantly deliver assured intelligence, meteorology, oceanography, and information operations data, products, and services that quickly advance Information Warfare capabilities to the Fleet for non-kinetic and kinetic effects

MISSION

IO | Information Operations

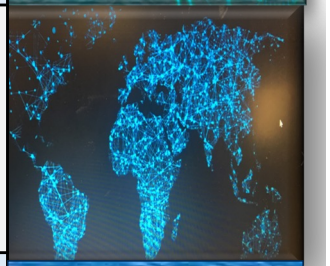
ISR | Intelligence, Surveillance, & Reconnaissance

CI/METOC | Capability Integration / Meteorology & Oceanography

Compete, Deter, and Win - Tonight

PMW 120 Battlespace Awareness and Information Operations

Deliver assured intelligence, meteorology, oceanography, and information operations data, products, and services that provide Information Warfare capabilities to the Fleet.

Information Operation (IO)	Provide timely, relevant, and integrated National and Tactical Radio Frequency signals intelligence information and services enabling EMW and Electronic Attack to protect Fleet forces ***CCOP, Classic Reach, ICADS, Spectral, SSEE, Horizon***	
Intelligence, Surveillance, and Reconnaissance (ISR)	Inform EMW by supporting data sharing and connecting Naval operational sensors and platforms to Naval, Joint, and Intelligence Community Enterprises ***AIS, DCGS-N, ICOP, MDA, and MIBS/JTT, RSCD***	
Capability Integration / Meteorology and Oceanography (CI/METOC)	Measure, sense, assess, and exploit the current and predicted states of the physical environment to produce relevant operational information for informing EMW and the strategic Triad's SSBNs ***HWDDC, LBS-UUV, METMF (R) NEXGEN, NITES-Next, TET, RTSO***	
Integrated Fires (IF) and Family of Systems (FoS)	IF capabilities integrate real-time Counter C5ISR and Targeting (C-C5ISR-T) and intelligence into combat and weapons systems and FoS integration enables more effective over the horizon targeting (OTH-T) for kinetic and non-kinetic warfare	

PMW 120 Objectives

Our ultimate goal is to Prevent the Kinetic Conflict

STRATEGIC OBJECTIVE

We provide our warfighters the substantial advantages in Intelligence, Targeting, Counter-Targeting, and Environmental Intelligence that deters our adversaries from initiating the kinetic conflict they know they cannot win. We prevent competition from turning into conflict.

OPERATIONAL OBJECTIVE

We deliver the tactical and operational intelligence advantages required to win the kinetic and non-kinetic fight, should conflict occur. We enable the kill chain by delivering capability at the speed of relevance to pace the threat.

Observe | Orient | Decide | Act

Enable The Kill Chain

Every battle is won or lost before it is ever fought

PMW 120 Strategic Evolution

Provide our warfighters, the Intelligence, Environmental Awareness, Targeting, and Counter-Targeting that deters our adversaries from initiating the kinetic conflict and postures us to win the kinetic and non-kinetic fight if ultimately necessary

- Every battle is won or lost before it is ever fought -

Stakeholders Identify and Prioritize Capability Requirements

OPNAV • PACFLT • USFF • NAVIFOR • Numbered Fleets • SYSCOMs / PEOs • IC • Intl Partners

Mission Requirements Necessitate Integrated Capabilities → **C-C5ISR-T** **OTH-T** → **Future Capability**

ISR
*(**9** Acq Programs/Projects)*

DCGS-N (2) MIBS JTT *TET*
ICOP (2) MDA
AIS RSCD

IO
*(**12** Acq Programs/Projects)*

SSEE E/F ICADS (2) RTSO
SSEE Mods CCOP (3) *Horizon*
Spectral Classic Reach

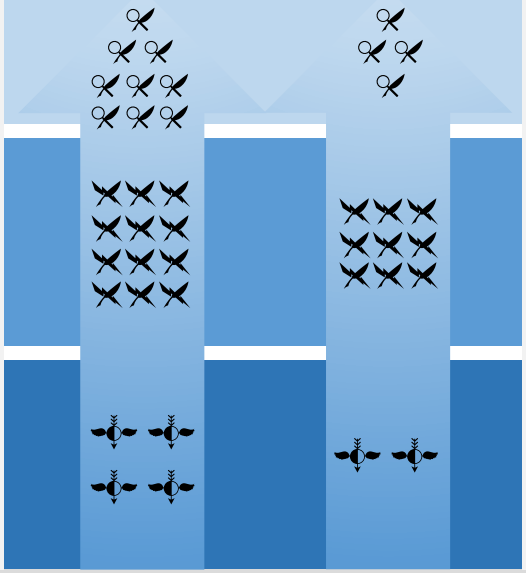
METOC
*(**7** Acq Programs/Projects)*

NITES-Next LBS UUV SASC
POPS & OIS METMF SMT
HWDDC METMF(R)

Key Drivers

- **CNO Priorities**
- **Threat Environment**
- **Fleet Demand**

Horizontal and Vertical Integration to achieve Family of Systems (FoS)

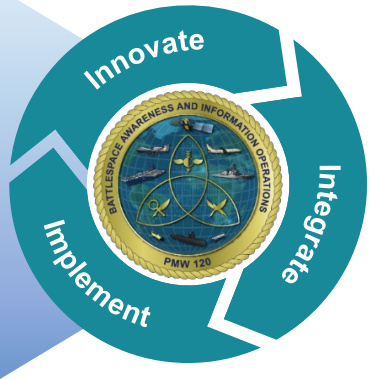


Key Enablers

- **Diverse & Agile Acquisition**
- **DevSecOps**
- **Experimentation & Modular Delivery**

Holistic IW Suite
Adaptive // Agile // Anticipatory

- **ISR FoS as Landing Platforms**
- **IO FoS as Hosting Environment**
- **METOC as a Service**



Current State:
- Requirements driving stove-piped systems
- Systems not designed to actively share data
- Initial integration in progress towards FoS

Challenges:
- Complex and Coupled Interdependencies
- Integration of Fielded and New Systems
- Change Resistant Infrastructure
- Evolving Threat Environment

Future:
- Kill Chain driving broader Requirements
- Integrated Products & Capabilities - FoS
- Continuous Innovation and Modernization
- Diverse Acquisition Approaches

The Way Forward

Adapt Operations
Business Practices and Policies

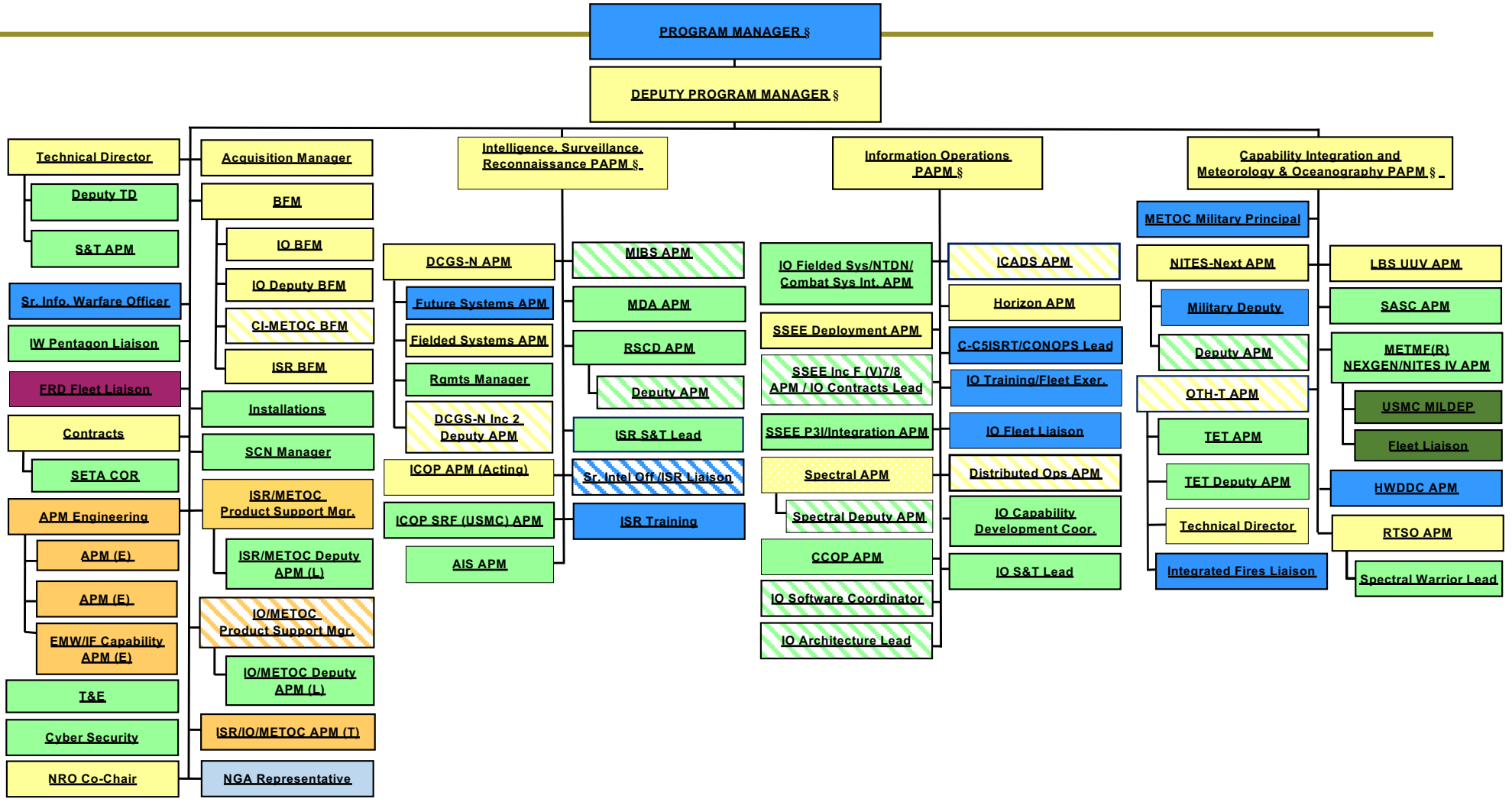
Collaborate with Fleet
Demonstrations, Exercises, Constant User Engagement

Integrate Capability Portfolios
Mature FoS Model

Invest in Future Technologies
S&T/FFRDC and Industry Partnerships/Govt & Market Research

Capability Integration Across the Fleet is an Imperative to Deter and Ultimately Win the Fight

Battlespace Awareness & Information Operations Program Office
PMW 120 Organizational Chart



Key

ECH II – PEO CIV	ECH II – NAVWAR HQ	ECH III – NIWC CIV	ECH II – PEO MIL	ECH II – NAVWAR HQ MIL
Vacant	Other Gov't	§ Supervisor	USMC	

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Accelerated delivery of required capability that is affordable, integrated and interoperable

IO Capabilities

Spectral

- Next generation Information Warfare weapons system enhances signals exploitation capabilities
- Detects, classifies, and tracks Signals of Interest (SOI) beyond current requirements to improve automation, operability, and intuitiveness in TCPED process
- Scalable, mission-configurable, modular (plug & play), remotable; supports new threats/ capabilities
- Enables cross-system data sharing to support EMW/IF

Ship's Signal Exploitation Equipment (SSEE) Modifications

- Enhances SSEE Increment F capabilities to detect and track radio signals
- Advanced antennas increase frequency coverage to improve threat signal acquisition

Cryptologic Carry On Program (CCOP)

- Prosecutes SOI to deliver real-time situational awareness of key threats and geo-location on high-priority targets
- Quick-reaction capability addresses advancements in foreign military comms and ISR systems; provides non-permanent capability to platforms not equipped with permanent IO warfare systems, or augments permanent equipment
- Ingests and correlates off-board and organic intelligence data; disseminates multi-intelligence products to provide valuable, actionable intelligence

Real Time Spectrum Operations (RTSO)

- Senses, controls, and plans the use of electromagnetic spectrum
- Notify operators of spectrum issues
- Develops tools and processes to avoid or mitigate electromagnetic interference.

SSEE Increment F

- Broadens signals intelligence collection
- Standardized IO weapon system across multiple maritime platforms based upon a common core capability: responds to emerging threats, promotes flexible asset tasking, supports cross-training personnel
- Small footprint variant enables mission-specific configuration and rapid deployment of new technology

Sailor provides routine maintenance to the AS-4623 IO Antenna

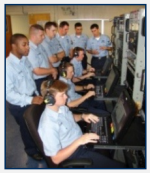
Classic Reach

- Virtualized capability enables distributed multi-intelligence operations for the Warfighter
- Provides the Navy with an integrated, distributed net-centric grid framework
- Remote operations allow ashore support to rapidly provide threat I&W

SSEE Increment E

- Highly-sensitive electronic support measure (ESM) system that provides automated signal acquisition, direction finding, and target ID and geolocation
- Delivers threat indications and warnings (I&W) for ship/strike groups; feeds data to National consumers
- Last Increment E system in Fleet retires in 2022

Sailors learn the SSEE Inc E ESM system



Integrated Communications and Data System (ICADS)

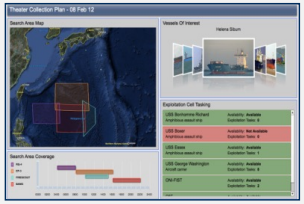
- Backup communications and data system addressing need for robust Command and Control in a Denied or Degraded Environment.
- High-throughput backup/contingency communications and data links for High Value Units.

ISR Capabilities

Distributed Common Ground System – Navy (DCGS-N) Increment 2

- Robust cross-domain data fusion with automated analytics and workflows improve threat detection
- Bridges Naval operational sensors with IC/Joint/Naval Enterprises
- Expedites the Tasking, Collections, Processing, Exploitation, and Dissemination (TCPED) process

Maritime Patterns of Life (Big Data)



Automated Workflows and Analytics

Intelligence Carry On Program (ICOP)

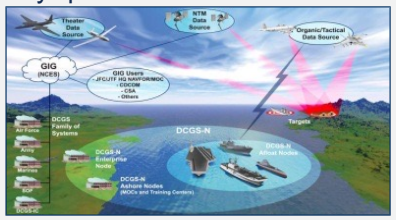
- Extends ISR Enterprise and DCGS-N FoS capabilities to unit-level forces and the Joint IC
- Portable workstation receives, processes, exploits, and disseminates multi-intelligence data from airborne and organic sensors; integrates a 3-D ISR picture of the battlespace
- Provides data to Joint IC without burdening limited bandwidth information systems
- Responds to multiple Fleet requirements (C5F/C3F UONs)

Robust, portable intelligence system

Enhances Warfighter's Common Operational Picture

Distributed Common Ground System – Navy (DCGS-N) Increment 1

- Consolidates geospatial, human, imagery, & signals intelligence analytical tools and broader FoS intelligence products into a single, integrated display
- Web-enabled common intelligence picture facilitates analysis and exploitation
- The Analyst Workshop is a full-service framework that enables rapid, comprehensive intelligence support across full-spectrum military operations



Joint Tactical Terminal – Maritime (JTT-M)

- Provides surface platforms with over-the-air, near-real-time lethal threat intelligence
- Integrated broadcast terminals transmit National & theater data, enabling units to collect intelligence, specifically indications and warnings of high-priority events
- Ship commanders have accurate and timely situational awareness

JTT-SR integrated into AN/USQ-151

Maritime Domain Awareness (MDA)

- Provides the National All Source Fused Track Service (NAFTS), The authoritative national maritime track picture
- NAFTS is the first step in the Over-The-Horizon Targeting (OTHT) workflow
- Comprises multiple capabilities in multiple information domains for government, and foreign partner information sharing

Automatic Identification System (AIS)

- Collects and fuses open source data broadcast from commercial shipping vessels with ISR data
- Supports navigation safety and maritime security
- Provides over-the-horizon views

Improved Vessel Tracking

Remote Sensing Capability Development (RSCD)

- Provides enhanced remote sensing capability to discriminate oceanographic phenomenon from the natural environment
- Automated tools for tasking, analysis and dissemination of data
- Leverages sensor investments from Intelligence Community

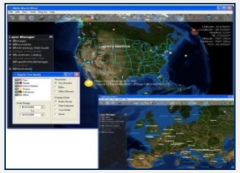
CI/METOC Capabilities

Real Time Spectrum Operations (RTSO)

- Provides a Battle Management Aid improving the user's awareness of the electromagnetic spectrum
- Integrates with capabilities across PMW 120 mission areas

Naval Integrated Tactical Environmental System-Next Generation (NITES-Next)

- Fuses environmental data to determine the effect on a platform's weapons systems ability to conduct missions
- Tools and tactical decision aids that on-site meteorologists use to develop forecasts and predict impact to electromagnetic-spectrum propagation
- Executes agile software development to ensure flexibility in meeting emergent requirements and addressing Fleet user priorities



Marine Corps Meteorological Mobile Facility (Replacement) Next Generation (METMF(R) NEXGEN)

- HWMMV-mounted mobile weather station helps Warfighters navigate dynamic battlefield conditions
- Collects, processes, and transmits METOC data

Littoral Battlespace Sensing– Unmanned Undersea Vehicle (LBS-UUV)

- Enables undersea dominance in support of anti-submarine warfare, mine countermeasures, special operations
- **LBS-Glider** senses ocean and thermal light transmission properties critical to weapon and sensor performance, planning, execution
- **LBS-Autonomous Undersea Vehicle** collects bathymetric & bottom imagery to provide battlespace awareness of the undersea environment

Hazardous Weather Detection and Display Capability (HWDDC)

- Extracts and converts data from surveillance radars to generate weather situational awareness and help the Fleet find the optimal conditions to conduct missions
- Off-boards data to FMNOC to influence regional weather prediction models & enhance real-time analysis

Tactical Edge Targeting (TET)

- Delivers systems and architectures that provide Navy and Joint Warfighters with real-time target quality data at the tactical edge.