



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

**Battlespace Awareness and Information
Operations Program Office (PMW 120)**

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Susie Hartzog
Deputy Program Manager
619-524-7820
Susie.hartzog@navy.mil**

Statement A: Approved for public release, distribution is unlimited (19 AUGUST 2014)

***Information Dominance
Anytime, Anywhere...***



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PMW 120 Provides Information Dominance Capabilities



Focus

Meeting our commitment to the Fleet through Acquisition Professionalism and Proactive Sustainment of our systems from cradle to grave



Mission

Deliver intelligence, meteorological, oceanographic and information operations data, products and services that provide Information Dominance for naval warfighters

PMW 120 delivers...

- Net-ready intelligence, meteorological, oceanographic, and information operations products and services
- The ability to seize and control the information domain high ground
- A decisive competitive advantage across the range of Navy missions

PMW 120 is the only program office that exclusively fields Information Dominance capabilities



About PMW 120

Government Workforce - 66

- Military: 14
- PEO Civilians: 25
- SPAWAR embedded employees: 27

FY14 Total Obligation Authority - \$290.036M

- Research & Development: \$59.190M
- Other Procurement: \$160.462M
- Operations & Maintenance: \$55.158M
- Shipbuilding and Conversion: \$15.226M

Programs and Projects - 26 (active)

- 1 ACAT IAC
- 1 Pre-MAIS
- 4 ACAT III
- 3 ACAT IV
- 4 AAP
- 5 Pre-Acq
- 8 Projects

PMW 120 Focus...

- **Acquisition Professionalism**
 - Get the basics right: requirements specification, systems engineering, contracting, cost estimating
 - Simplify local challenges into executable steps
- **Proactive Sustainment (Data Driven Leadership)**
 - Systems are operational – prove it!
 - Systems are secure – prove it!
 - Sailors can operate the systems – lead them!

Deliver agreed capabilities, that work, for least total ownership costs.



PMW 120 Portfolio

Intelligence, Surveillance and Reconnaissance (ISR)

- ✂ DCGS-N Increment 1 (ACAT IAC)
- ✂ DCGS-N Increment 2 (Pre-MAIS)
- ✂ AIS (ACAT IVT)
- ✂ ICOP (Pre-Acq)
- ✂ JSIPS-N (Project)
- ✂ MDA Fielded (Project)
- ✂ MIBS (CTT/JTT) (Project)



Information Operations (IO)

- ✂ SSEE Increment E (ACAT III)
- ✂ SSEE Increment F (ACAT III)
- ✂ SSEE Modifications (ACAT III)
- ✂ SSEE Increment G (Project)
- ✂ CCOP (3 AAPs, Project)

Meteorology and Oceanography (METOC)

- | | |
|------------------------------|-------------------------|
| ✂ NITES-Next (ACAT III) | ✂ HWDDC (AAP) |
| ✂ METMF(R) NEXGEN (ACAT IVT) | ✂ FMC (Project) |
| ✂ LBS UUV (ACAT IVM) | ✂ METOC Space (Project) |
| ✂ TESS/NITES (ACAT IVT) | ✂ TOC/USW (Project) |

Enhancing battlespace and global maritime domain awareness to support warfighting forces and other users of national interest



The Information Environment: IO Capabilities



Ship's Signal Exploitation Equipment (SSEE) Increment G

- ✘ Exploitation equipment that is scalable to platform, reconfigurable to mission, modular (plug and play), and dynamically reprogrammable to support new threats/capabilities.
- ✘ The Next Generation system will be integrated with Shipboard Combat Systems and it will improve automation, operability, intuitiveness in tasking, collection, processing, exploitation, and dissemination

Ship's Signal Exploitation Equipment (SSEE) Increment F

- ✘ Provides a standardized IO weapon system across multiple maritime platforms based upon a common core capability



Sailor providing routine maintenance to the AS-4623 IO Antenna

Ship's Signal Exploitation Equipment (SSEE) Modifications

- ✘ Consists of Graywing and Paragon frequency capability enhancements to address objective requirements set forth in SSEE Inc F CPD and PACFLT Urgent Operational Needs



SSEE Mods Maintainer performing system check

Ship's Signal Exploitation Equipment (SSEE) Increment E

- ✘ Highly sensitive automated electronic support measure (ESM) system that provides automatic signal acquisition, direction finding, and target geo-location capability for multiple class platforms



Sailors learning the SSEE Inc E ESM system

Cryptological Carry-on Program (CCOP)

- ✘ Exploitation equipment capable of processing various Signals of Interest, providing geo-location data, and ingesting off-board intelligence data
- ✘ Low-cost solutions that address dynamic advancements in commercial and foreign military telecommunications systems



The Physical Environment: METOC Capabilities



Future Meteorology and Oceanography Capabilities (FMC)

- ✦ Develops software for delivery to the NAVO and FNMOCC production centers to support the CNMOCC reach-back operational concept
- ✦ Develops tools, techniques, and technologies to assess METOC data and products to improve effectiveness of warfighter decisions

METOC Space Systems (METOC Space)

- ✦ Exploits environmental satellite sensor data
- ✦ Development of the data assimilation techniques and applications



Enhancing Navy Oceanographic/ Atmospheric modeling capability

Hazardous Weather Detection and Display Capability (HWDDC)

- ✦ HWDDC extracts data from the SPS-48 radar to generate weather situational awareness products.



Display Weather Returns

Littoral Battlespace Sensing – Unmanned Undersea Vehicle (LBS UUV)

- ✦ **Gliders** provide long endurance sensing of ocean thermal and optical data critical to weapon and sensor performance planning and execution
- ✦ Autonomous Undersea Vehicles collect high resolution bathymetric and bottom imagery for use in weapon and sensor performance planning and execution and safety of navigation




Persistent autonomous oceanographic data collection

Tactical Oceanography Capabilities for Undersea Warfare (TOC/USW)

- ✦ Research efforts support the Navy's ASW and MIW activities
- ✦ Technology transitions into ASW and MIW Tactical Decision Aids and into NAVOCEANO and OCEANOPSCOM operations

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

- ✦ Software-centric, Information Technology (IT) Streamlining program, provides capabilities to process, store, and analyze METOC data and products
- ✦ Assesses the impact of present and forecasted METOC conditions



Enhanced geospatial visualization and manipulation capabilities

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

- ✦ Provides the Marine Corps with a persistent capability to characterize the current and future battlespace environment to support mission planning and execution



Mobile, fully integrated, FORCEnet compliant USMC tactical support system

Tactical Environmental Support System/Naval Integrated Tactical Environmental System (TESS/NITES)

- ✦ Provides Operational and Tactical METOC support capabilities to USN/USMC units afloat/ashore
- ✦ Enables critical battlespace awareness and characterization of the environment



Mobile Operational/ Tactical METOC System



The Threat Environment: ISR Capabilities

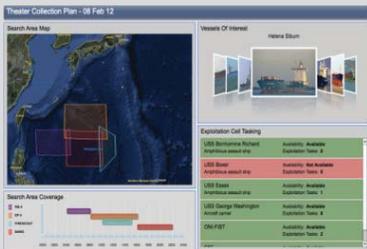


Distributed Common Ground System – Navy (DCGS-N) Increment 2

- Improving target quality intelligence by delivering advanced analytic capabilities and automated workflows both afloat and at ashore enterprise nodes



Identifying Maritime Patterns of Life (Big Data)



Providing Automated Workflows and Analytics

Intelligence Carry On Program (ICOP)

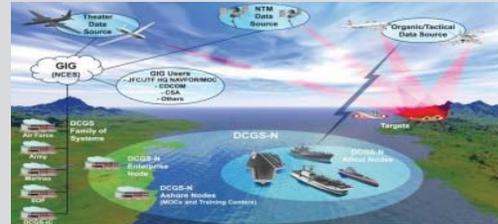
- Responds to multiple Fleet requirements (C5F/C3F UONs)
- Delivers a suite of Multi-INT, analytical capabilities, and extends the ISR Enterprise/ DCGS FoS to Unit Level Platforms
- Supports FMV receive, process, exploit, and disseminate capabilities



Robust portable Intel system

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

- Block 1** provides enhanced precision target geo-positioning, point mensuration, and imagery dissemination
- Block 2** builds on Block 1 and provides enhanced IMINT, Collection Management tools, and additional storage in support of TCPED



Enhancing warfighter's Common Operational Picture

Automatic Identification System (AIS)

- Collects commercial vessel AIS data to improve situational awareness and safety of navigation
- Supports Safety at Sea / Navigation, Maritime Interdiction Operations (MIO), Overseas Contingency Operations (OCO), and Homeland Defense mission areas



Improved Vessel Tracking

Joint Tactical Terminal – Maritime (JTT-M)

- Provides Navy surface platforms with the capability to receive, exchange, and process Over-the-Air, Near-Real-time, time-critical intelligence and targeting information carried over the Integrated Broadcast Service (IBS)
- Filters, translates, and distributes critical tactical information to multiple shipboard Tactical Data Processors (TDPs)



JTT-SR is integrated into AN/USQ-151

Maritime Domain Awareness (MDA)/Dynamic Enterprise Integration Platform (DEIP)

- Provides enhanced vessel tracking, improved fusion of vessel, people, company, cargo data and anomaly detection and alerting



Vessel Tracking and Anomaly Detection



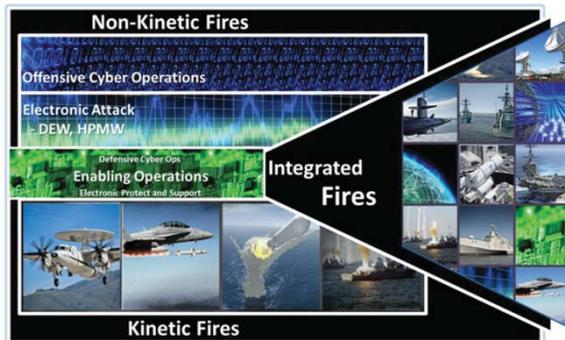
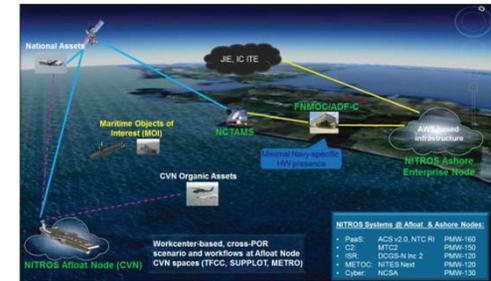
Where we're going

Integrated Information Dominance



NITROS

- PEO C4I FY16 afloat cloud prototype
- Demonstrate mission applications to cloud architecture and workcenter-based workflows
- Reduce risk and exercising collaboration across the enterprise
- Standards-based user interface



Integrated Fires

- Integrate kinetic and non-kinetic fires
 - High Side Fusion (HSF)
 - Combat Systems Integration (CSI)
 - Battle Management Aids (BMA)

SSEE Inc G/Distributed Operations

- Build on Inc F capabilities
- Provide increased frequency range
- Address new SOIs
- Provide distributed operations/remoting
- Transition to App Store concept
- Define a smaller hardware footprint



Industry Collaboration Areas

Where We Need Your Help



- **Enhanced Data Discovery and Access**
 - Real Time Fusion of Historical and Real Time Sensor Data with Pattern Recognition
 - Storing, Accessing and Archiving Large Data Sets
 - Analysis of Distributed Data Across Multiple Clouds
- **Advanced Analytics and Tools**
 - All Source Predictive Analysis and Pattern Recognition
- **Advanced Data Display and Visualization**
 - Automated Target Recognition From FMV
 - FMV Annotation and Search
- **Cyber Capabilities**
- **Remoting and Distributed Operations**
 - Optimize Spectrum Utilization
 - Electromagnetic Interference (EMI) Mitigation
 - Countering Emerging Signals
 - Modeling and Simulation
 - Multifunction Antennas
- **Workflow Analysis (within IO and between IO and ISR and METOC)**
- **Automatic Trip Wires for System Readiness**
- **In-situ Environmental Sensing Capabilities**
 - Automated Characterization of the Atmosphere Temperature, Relative Humidity, and Barometric Pressure
 - Organic Capability to Measure Evaporative Duct
 - Modeling of Biological Impact on Sonar Performance
 - Accurate Atmospheric Acoustics and EM/EO from Boundary Layers
 - Visibility Prediction



**We Deliver
C4I Capabilities
to the
Warfighter**

Visit us at www.peoc4i.navy.mil