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

PMW 750 Carrier and Air Integration Program Office Briefing to NDIA
PMW 750’s Mission

Deliver integrated, joint, and coalition-interoperable C4I capabilities for our Navy’s aircraft carriers, force-level amphibious ships, command ships, and aircraft.

PMW 750 provides Platform C4I integration support to the Surface Warfare & Naval Aviation Enterprises
PEO C4I Organizational Structure

CNO
Chief of Naval Operations

SPAWAR HQ
RADM Christian “Boris” Becker
Executive Director
Mr. Pat Sullivan

CNO
Chief of Naval Operations

ASN(RDA)
Assistant Secretary of the Navy (Research, Development & Acquisition)

PEO C4I
RDML Carl Chebi
EXECUTIVE DIRECTOR
Mr. John Pope

Chief of Staff – CAPT Steve Werner
Executive Assistant – Gary Galloway
DPEO Acquisition Management – John Metzger
DPEO Manpower & Budget – Lisa Ramsey
DPEO Plans & Strategy – Suzanne Arney
DPEO Platform Integration & Modernization – John Isaacsen (Acting)
DPEO Technical Direction and Program Integration – Bob Parker

Battlespace Awareness & Information Operations PMW 120
CAPT Mark Kempf
Sal Ledgesma

Information Assurance & Cyber Security
PMW 130
Rob Diaz
John Armantrout

Command and Control
PMW 150
CAPT Allan Walters
Mark Compton

Tactical Networks
PMW 160
CAPT Kurt Rothenhaus
Bill Farmer

Communications & GPS Navigation
PMW/A 170
CAPT Mark Glover
Dan Brothers

International C4I Integration PMW 740
Sean Moone
Simb Smith

Carrier and Air
Integration PMW 750
CAPT Andy Gibbons
CAPT Robert Cassol

Ship Integration
PMW 760
CAPT Ken Ebert
David Rodriguez

Undersea Integration
PMW 770
CAPT Mike Boone
Mark Mukanos

Shore & Expeditionary
Integration PMW 790
CAPT Kyle Turco
Steve Bullard

Updated 1 September 2017
PMW 750 Strategic Goals

**ICE**
Institute Definable, Repeatable, and Sustainable C4I-Baseline Integration and Interoperability for C4I-Baseline platform integration

**Force Level Modernization**
Drive ship C4I Integration left in a sustainable and repeatable manner, driving out cost and complexity

**Force Level New Construction**
Deliver fully operational “State of the Fleet” C4I System of Systems while reducing delivery costs to the sponsor and total operating cost to the Navy

**TacMobile**
Enable Commander Patrol Reconnaissance Group (CPRG) Vision 2025

**Air/Sea Integration**
Full integration with NAVAIR and PEO C4I as a critical PMW for accomplishing integrated capability strategic initiatives
**Background:** Current C4I POR deliveries are semi-coordinated with the C4I-baseline integration left to the Naval Planning Yards (PY) who possess no expertise in C4I design. This delegation of responsibility comes at a HUGE COST in Change Orders.

**ICE allows PEO C4I to leverage best of SCN processes for Navy modernization**
ICE Process

- A 5-step process including temporal and event-based actions
- 100, 700-Club, and the FRD offer Should Cost opportunities
- Aggregated Should Cost opportunities savings of up to $67M for NMP ships (FY20-26)

ICE's success is based on early enterprise coordination
Force Level New Construction Strategic Goal

Delivery of fully operational “State of the Fleet” C4I System of Systems while reducing costs to the sponsor and reducing Total Operating Cost for the Navy

Background: Deliver systems “Just in Time” to Shipbuilding & Conversion, Navy (SCN) platforms that are not at risk to be removed during the first post delivery availability
PMW 750 SCN Integration Efforts

• Baseline Management
  - Manage over $100M of funding and schedules for all C4I/SPAWAR systems per platform
  - Use Cost Plus Fixed-Fee (CPFF) and Firm-Fixed-Price (FFP) contracts

• Systems Design and Integration
  - Design and develop C4I engineering drawing packages housed in 150+ racks and using 3,100+ drops per platform
  - Manage inter-systems interfaces (i.e. Functional Interface Drawings (FID))
  - Develop and assess Engineering Change Proposals

• Radio Communication Systems (RCS), Distributed Systems (DS), and Ship’s Signal Exploitation Space (SSES) Production, Integration, and Test Facilities
  - Integrate and test radio communication System of Systems (SoS)
  - Design, build, and integrate 55+ racks of C4I and ancillary equipment
  - Develop platform test procedures

• Manage shipboard C4I installation and tests
• Expanded responsibilities with CVN 73 that now include overall Zone Integration and C4I MQ-25A modifications

PMW 750 Delivers all C4I for new construction CVNs and LHAs
PMW 750 SCN Loading

- PMW 750 leads design, production, test, shipboard installation, and post-delivery support to integrate over 150 racks across 30+ systems.

- Each hull is a “rollover” from previous hull of same Ship Class:
  - Changes are limited to obsolescence and End of Life issues.

Knowledge sharing across platforms reduces cost and ensures System-of-Systems success through all Phases.
Force Level Modernization
Strategic Goal

Drive ship C4I Integration left in a sustainable and repeatable manner, driving out cost and complexity

Background: Fleet wants our C4I systems to come to them fully integrated, easy to use and easy to maintain
Fleet Engagement

- LHA/LHD Class Desk
- PMS 407 Liaison & LCC Class Desk
- Senior USMC Liaison
- Special Operations Forces Liaison
- SOT Director
- Carrier Class Desk
- PEO C4I Liaison to PEO Carriers
Platform Modernization process initiatives are improving interoperability, driving costs down, and helping speed to capability.
Why We Find Issues - Examples

- Installation Mis-Alignment/Not Coordinated
  - SOVTs occur at various times during availability, executed by different organizations
- No integrated testing without SOT
  - Newly installed systems have the potential to break carefully tuned network configurations
- SOVT completion does not equal operational capability
  - SOT uncovers discrepancies in design, integration, documentation (IRDs, TDPs, and SIDs) and ultimately SOVT
- Lack of authoritative documentation and training for the Fleet

Return on Investment is significant, but hard to quantify - Provides fixes earlier & documents known-good C4I suite
• PMW 750 team understands the overall requirements (big “R”) and helps program offices resolve readiness and integration issues and gaps (little “r”).
  - F-35 Post-flight mission data to DCGS-N (JPO, PMW 120, PMW 130, PMW 160, E2C Lab)
  - F-35 ALIS integration and performance on Navy SATCOM networks (JPO, E2C Lab, PMW 160, FRD 100)
  - MQ-4C Logistic Management System integration with Navy networks (PMA-262, PMW 150, PMW 790, PMW 160)
  - E-2D COTS Airborne router integration with ADNS (PMA-231, PMW 160, SSC PAC)
  - MQ-25A Advanced Networking Tactical System (ANTS) development (PMA-268, PMW 160, SSC PAC)
  - P-8A Unclassified Video Dissemination for HLD missions (PMA-290, PMW 130, PMW 120)

• Funding by Program Offices for A/SI support varies greatly:
  - JPO/Joint Strike Fighter = $0.15M/year
  - PMA-231/E-2D Hawkeye = $1-3M/year
  - PMA-262/MQ-4C Triton = $3M+/year
  - PMA-268/MQ-25A Stingray = $11M+/year

*Fleet Visibility & Focus ≠ Resource Commitment*

*Early NAVAIR investment reduces seams issues*
Opportunity
Airborne WAN PoR Establishment

- ADNS is the Navy Tactical WAN serving as the entryway into the DoDIN
- No PoR form factor to support Air Platforms – results in multiple solutions from NAVAIR
  - Airborne platform PMAs have requirements and have funded independent solutions
    - Over $60M investing in uncoordinated Airborne solution
  - Unique solutions and products with separate life cycle management efforts
  - Asynchronous Cybersecurity approaches

We anticipate ADNS airborne resolution within POM20
Opportunity
Centralized FMV Integration

- Demand and Requirement for reliable and streaming/networked FMV increasing
- Uncoordinated efforts and no PoR for Enterprise FMV results in multiple solutions
  - Independently funded and duplication of efforts with no clarity on standards
  - Unique solutions and products with no sustainment or training plan
  - Non-networked and asynchronous Cybersecurity approaches
- Classic integration “seams” issue between multiple PoRs (and Operational vs Intelligence requirements) adversely impacting Fleet

## Today in the Fleet
- Tacmobile FMV Demo System for P-8A HLD mission
- USMC focus on F-35B FMV Capabilities
- P-3 FMV via INMARSAT
- Triton FMV E2C lab events
- RQ-21 Blackjack

## Near Future
- NTCDL CONOPS Study

## Strategic Goal
- Integrated and centralized C4I architecture that streamlines FMV afloat and ashore for Integrated Fires

### # Implementation | Closure Criteria
---|---
1 | Stand-Up Airborne FMV COI | Enterprise Strategy and Governance structure for Navy FMV developed
2 | Employ Kill Chain approach to resource FMV capabilities | OPNAV N2/N6 and N98 resourcing aligned across platforms and systems
3 | Define and standardize Navy FMV afloat and ashore architecture | FMV platforms / systems to use standards and defined architecture as defined by Airborne FMV COI

Recent DoD Guidance on expedited delivery of unclas FMV adding criticality
TacMobile Strategic Goal

Enable CPRG Vision 2025
RDML Wheeler: “Be Professional, Be Agile, Be Lethal”

- MDA: PEO C4I
- ACAT III Weapons System
  - Mission Planning, Mission Execution, Post-Mission Analysis
- TacMobile enables P-8A, Advanced Airborne Sensor (AAS) and MQ-4C Triton schedules (ACAT I PORs)
  - TacMobile Increment 2.1.x is fielding today
  - TacMobile Increment 3.x is pre-MS C (Q1FY21)
- TacMobile is Tactical Operations Centers (TOCs), Mobile Tactical Operations Centers (MTOCs) and Fly Away Kits (FAKs)

TacMobile provides critical Mission Cycle tools for MPRF Weapons Systems
TacMobile Roadmap
Shaping TacMobile to CPRG Vision 2025

Before TacMobile Increment 1
- 1970 First TSC (TOC) at NAS Keflavik
- 1978 TSC (TOC) project transfers from NAVAIR to NAVELEX
- 1986 OP-05 (N2/6) and OP-094 (N98) MOU for Joint Funding of ASWOC (TOC)
- 1991 OP-05 (N2/6) and OP-094 (N98) MOU for Joint Funding of MOCC (MTOC)

Without TacMobile, P-8A cannot fly its mission
TacMobile

Interdependencies

Internal:
- PMW 120 (METOC, DCGS-N DIB*, CLASSIC REACH*)
- PMW 130 (HBSS, PKI, Crypto, CDS*)
- PMW 150 (GCCS-M, ADSI, TADIL)
- PMW 160 (ADNS, WSUS, COMPOSE, CENTRIXS-M)
- PMW 170 (HF, UHF, SHF, GBS, NTCDL*)
- PMW 790 (RRK, NOC/Teleport)

External:
- DISA (HBSS Server, ACAS Server, UVDS*)
- PMA-290 (P-3C & P-8A aircraft software/interfaces, MINOTAUR*)
- PMA-262 (Triton UAS)
- PMA-264 (Air ASW Sensors, ASPECT)
- PMA-281 (P-8A Mission Planning Component, JMPS)
- PEO IWS5 (USW-DSS)
- AST Program Office (Advanced Airborne Sensor)
- AUS Co-Op
- UK/Nor/NZ*/South Korea*/Saudi Arabia* FMS

*Potential/Future

TacMobile is an Integration Program of 24 Sub-Systems
We Rely on a Wide Variety of Skills from Industry

• **Program Support:**
  - Program Managers, Lead Engineers, Lead Logisticians, System Administrators, System Security Engineers, Integrated Master Schedulers, Requirements Managers
  - Information Assurance SMEs and Security Classification Guide Developers

• **Software Developers for:**
  - SOA, C+, Java, TacMASS, MARS, Acoustic Signal Processing
  - Unix/Linux/Windows

• **Engineering and Logistics:**
  - Software Integrators, Testing and Evaluation Engineers, Logisticians
  - Help Desk Support, Configuration Managers, Training Specialists, Shipping Specialists, Technical Writers
  - Drafter/CAD Operators

• **Production and SMEs:**
  - Production Managers, Electronics Technicians, P-3C/P-8A Interface SMEs
  - Hardware Engineers, Technical Analysts, Production Engineers
  - ISEA support, Software Loading and Configuration SMEs
  - Facilities Electricians, Architecture & Planning, CPD Developers
## TacMobile
### Current Primary Contract

**Contract Scope**

| Engineering Support Services: Technical services, equipment procurement, system integration, assembly, testing, studies and analysis, installation, training, maintenance and support, configuration management, quality assurance (QA), material control, program management, and logistics products and services in support of life cycle management responsibilities |
|---|---|---|---|---|
| **Type** | **Prime** | **$ Ceiling** | **Expiration** |
| CPFF/FFP | Tapestry Solutions | $76M | 2020 |

- Two-plus years out, we are already preparing for the follow-on contract:
  - Procurement Planning Strategy Meeting
  - Acquisition Plan
  - Acquisition Strategy
# PMW 750 Contracts

<table>
<thead>
<tr>
<th>Contract Scope</th>
<th>Type</th>
<th>Prime</th>
<th>$ Ceiling</th>
<th>Exp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Professional Support Services:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Advanced Planning</strong>: Production planning, conducting risk analyses, tracking/reporting program status, and managing actions and improving workflow related to processes to enable efficient surface ship, submarine, and shore platform production installation engineering and integration</td>
<td></td>
<td>Seaport-e</td>
<td>Forward Slope</td>
<td>$23M</td>
</tr>
<tr>
<td><strong>Financial Support</strong>: Business Financial Competency Support</td>
<td></td>
<td>Seaport-e</td>
<td>BAH</td>
<td>$45M</td>
</tr>
<tr>
<td><strong>SCN Integration (CTII)</strong>: Design, integration, engineering, procurement, fabrication, incidental purchase of supplies and equipment, assembly, test, inspection, delivery, and limited installation of integrated C4I capabilities aboard new construction (including RCOH) ships. PMW 750 Platforms: CVN, LHA and PMW 760 Platforms: LPD, T-AGM 25, T-AKE, JHSV</td>
<td></td>
<td>CPFF FFP</td>
<td>SRC</td>
<td>$114M</td>
</tr>
</tbody>
</table>

Note: * Numerous PEO C4I PMWs
Areas of Possible Industry Involvement
Our Top Five

1. We anticipate more built-in dependencies across programs
   - One program *can’t* do it all so leverage capabilities already available
   - *OLD THINK:* Program-centric Solutions

2. Inter-Program Integration is getting more complex
   - C4I baseline deliveries require increased collaboration from Design to Delivery
   - This collaborative spirit includes everyone! Government, Fleet, and Industry
   - *NEWER THINK:* Program Partnership Solutions/Agreed-Upon Interface Specs

3. As Government improves its partnerships, we become affordable
   - We cannot afford to procure and sustain multiple, duplicative solutions …
   - *NEWER THINK:* From ship-centric to Strike Group-centric

4. Cybersecurity is here to stay and is Growing
   - Looking beyond Program-centric, ship-centric, Strike Group-centric to…
   - *FUTURE THINK:* ENTERPRISE SOLUTIONS

5. Accelerate Capability Delivery to the Warfighter
   - “A good plan, violently executed now, is better than a perfect plan next week.” – GEN George S. Patton
   - “I wanna go fast!” – Ricky Bobby from Talladega Nights, The Ballad of Ricky Bobby
We Deliver Information Warfare Capabilities to the Fleet.

Visit us at www.peoc4i.navy.mil