Future Combat Systems Open Architecture (IWS 7.0)
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Future Combat Systems
Open Architecture (IWS 7)

**PEO-IWS Vision**
Deliver enterprise solutions for Naval warfare systems that operate seamlessly and effectively within the Fleet and Joint Force

**PEO-IWS 7.0**
Field capabilities that optimize the Navy Enterprise's total systems performance while minimizing total ownership costs

- Enterprise Open Architecture Policy
- Naval Integrated Fire Control-Counter Air (NIFC-CA)
- Enterprise Information Assurance
- Training Systems
- Enterprise Emerging Technologies
- Future Combat Systems

Distribution Statement A: Approved for Public Release: Distribution is Unlimited
Enterprise Open Architecture (OA)

- Naval Enterprise OA Policy
- Open Business Environment
  - Enable businesses to compete, regardless of size or incumbency
  - SHARE III information sharing portal
- Tools
  - OA Contract Guidebook for Program Managers
  - Business Cases Assessment Guide
  - OA Assessment Tool
- Education
  - DAU Continuous Learning Modules
  - Data Rights Brochure
  - Better Buying Power support
Enterprise Information Assurance (IA)

• IA is critical to National Security
  □ Cyber Commands focused on combat system IA implementation

• Platform Information Technology (PIT) IA policy and process
  □ Implement holistic approach to combat system security
    – Simplify, streamline, and standardize IA across all programs
    – IA is a design characteristic of system architecture
  □ Establish defense-in-depth reference architecture
    – Ensure complementary security features implemented across the ships network architecture, systems, applications, and hosts
  □ Conduct Risk assessments of the aggregated sub-network

• Include IA in contract language
  □ Delineate IA design experience
  □ Include IA implementation approach
Enterprise Emerging Technologies

• Facilitate Small Business Innovation Research (SBIR)
  - Annual Navy Opportunity Forum
• Coordinate with Office of Naval Research (ONR)
  - Rapid Technology Transition (RTT)
  - Technology Insertion Program for Savings (TIPS)
  - Future Naval Capabilities
  - Rapid Innovation Fund (RIF)
• Support the development of the Technology Master Plan
• Support Annual Naval Joint Capability Technology Demonstration (JCTD)
NIFC-CA From The Sea (FTS) Pillars

NIFC-CA FTS

- E-2D
- JLENS
- CEC
- Aegis
- SM-6

NIFC-CA SEI&T
- Capture pillar requirements and performance and demonstrate SoS capability
Enterprise Training Systems

• Goal: Combat System training capability that allows “Train where you Fight, Train like you Fight” on tactical systems simulating real world environments & threats

• Approach: Coordinated evolutionary Combat System upgrades in all baselines
  - Aegis
  - SSDS

• End State: Integrated training capability as an integral part of combat system hardware & software

Build it in, not bolt it on
Focus Areas

• Reliability Improvements
  - Mitigate obsolescence and improve system training stability
  - Gathering reliability data on systems in training. This data will be used to prioritize system reliability changes for upcoming baselines.

• Simplicity Improvements:
  - Streamlining training procedures
  - Gathering fleet feedback in order to understand ship and system specific challenges when putting system into training

• Functionality:
  - Coordinating PEO IWS training capabilities to meet emerging combat system capabilities
  - Rapid development of critical infrastructure to meet the needs of mandated Information Assurance (IA) controls

• Fidelity Improvements:
  - Designing embedded training systems with common networks and common databases

Drive Training Capabilities toward equivalency to Tactical Capabilities
CVN-78 Embedded Combat Systems Interface Diagram

Other Elements

BFTT

Gateway

Weapon Sim Correlation

O/S Weapon fly-out
Training Track Correlation

CTA Replacement
Multi-Ship Distributed Training Capability

New Configuration
Mode 5

Update Sim/Stim for DBR Weapon Fly-out Data

NAVSSIM

NAV SIM -R

NAVSIM Rehost
SIM NAV Server O/S IFF / Emissions Reduction in H/W

DCM Rehost
XML Translations Eliminated Hardware

Not Integrated

Network Firewall

TCSS

TCSS IBDV Replacement
NCTE Compliant Exercise Coord

Weapon Editor
Database Updates

NAVSSI

WSN-7

SEWIP BLK 2

SSDS RADC

Sim/Stim & Weapon

SSDS Radar Video Distribution

DSPL

UPX-29

DBR

CTA-R

SSDS SIM/STIM & Weapon

SEWIP BLK 2

Link11

Link16

CIWS

CDLMS

SEWIP BLK 2

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**Goal:** Design out training unique hardware
Training Systems Roadmap

Current

ACS/BMD/SSDS Integration
Controlled Aircraft (MH60/AIC) (PLA)
IBS-T / Navigation Training Integration
LINK Enhancement to CS Training
TTWCS / HWS Training Integration
Common SG&C (PLA)
Common Data Bases (PLA)
Anti-Torpedo Defense System Training

Future

Alignment with emerging CS architecture
Integrated CS training
Training Elements Interface Integration
CS Training Usability Improvements

ACS/BMD/SSDS Integration
NIFC-CA Training Capability
CEC/DDS Multi-Ship In-Port Distribution
SQQ-89A(V)15 ACB 13 Integration
STM/TS Integration (PLA)
SEWIP Blk 2 Training Capability
EW Training Improvements
CV-TSC Training Capability

Common SG&C (PLA)
Data Collector (PLA Service)
Data Bases (PLA Services)
Combat Control (CS PLA Service)
Reliability Analysis

Gap Analysis/Prototype
Database Updates
Scripter Analysis
Virtualization Definition
HSI / Usability Analysis

Developing / Aligning to an Integrated Combat Systems Training Capability

HSI / Usability Analysis
Data Base Enhancement
Gap Analysis/Prototype

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How Do We Buy Better?

• Smarter Contracting
  - Multi-System procurement
    - Realize Economic Order Quantity savings when delivered to a single CS baseline.
  - Eliminate, where possible, warehousing requirements
  - Increase business participation through competition

• Product Line Architecture (PLA) Modules
Summary

• Enterprise Focused
  - OA
  - IA
  - Training Systems

• Training System Programs
  - Complex Connections
  - Training Equates to Tactical
Question & Answer Period