



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

Consolidated Afloat Networks and Enterprise Services (CANES)

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Statement A: Approved for public release, distribution is unlimited (5 FEBRUARY 2014)

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





What is CANES?

- The Navy's next generation tactical afloat network
 - Consolidates five legacy networks into a single integrated network
 - Inherent capability to defend and secure the network
 - Based on commercial off the shelf HW & SW and open architecture,
 - Gov't owned data rights
 - Serves as the cyber platform for over 200 applications and connected systems
- Value of CANES
 - Strengthens cyber security posture
 - Network standardization reduces variation and increases interoperability
 - Technology refresh cycle provides the fleet with current technology to pace the cyber threat
 - CANES drives down total ownership costs through consolidation and lifecycle competition
- Installations
 - Complete on 2 DDGs
 - Ongoing on 8 DDGs, 2 CVNs 1 LSD and 1 LHDS



CANES CVN production unit at Northrop Grumman's production facility in Huntsville, AL



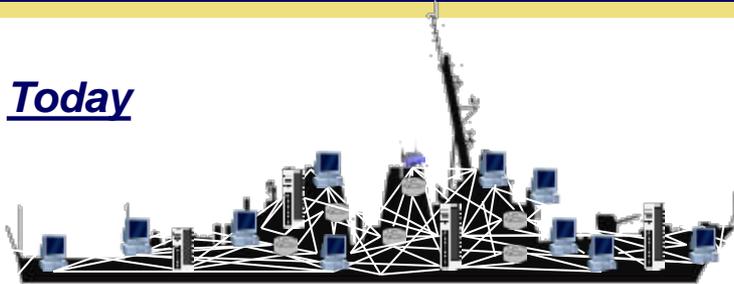
CANES production Unit at Network Integration Engineering Facility (NIEF) at SSC Pacific



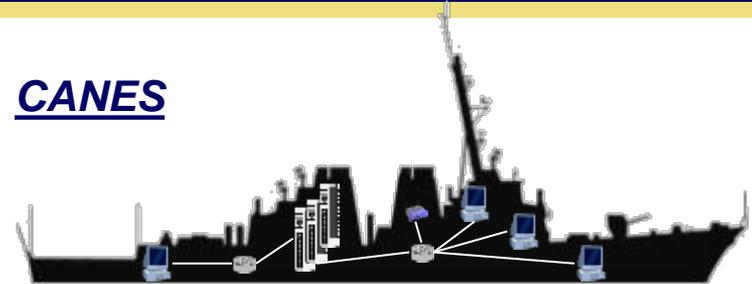
Consolidated Afloat Network Enterprise Services (CANES)



Today



CANES



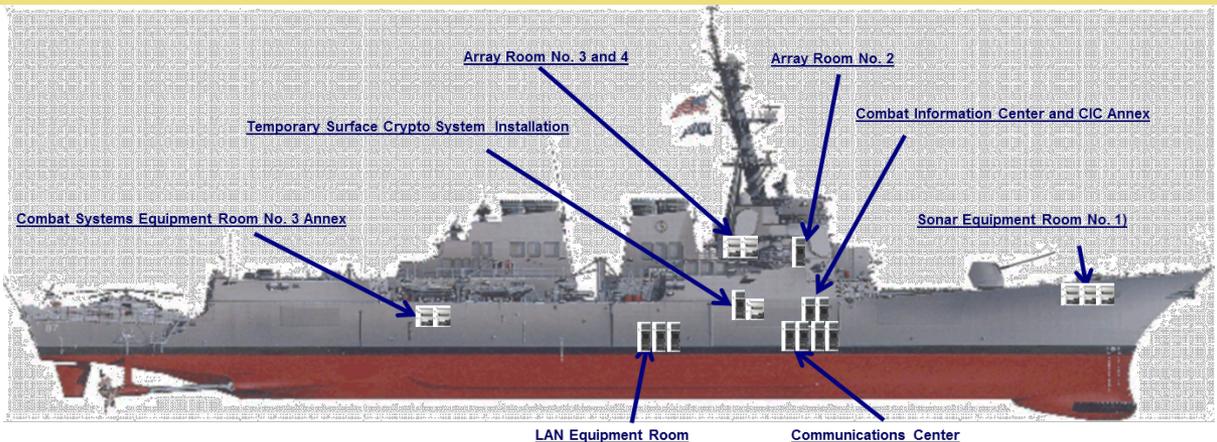
- **CANES is the Navy's Afloat IT execution strategy**
 - Transforms the network into a platform enabling significant operational capabilities
 - Replaces operationally ineffective and unaffordable networks
 - Aligns multiple programs, capabilities, requirements and resources into single PoR
- **CANES replaces five existing shipboard network systems**

The diagram shows a large blue arrow pointing right, labeled 'CANES'. Below it is a smaller green arrow pointing right, labeled 'ADNS'. To the left of the 'CANES' arrow are five rectangular boxes representing existing systems: 'SCI Networks' (blue), 'ISNS' (black), 'SubLAN' (blue), 'CENTRIXS-M' (green), and 'VIXS' (grey).
- **CANES provides extensive network capabilities**
 - Data, transport, voice and video services, systems management, cyber security
 - Enables insertion of next generation of C2 and ISR capabilities

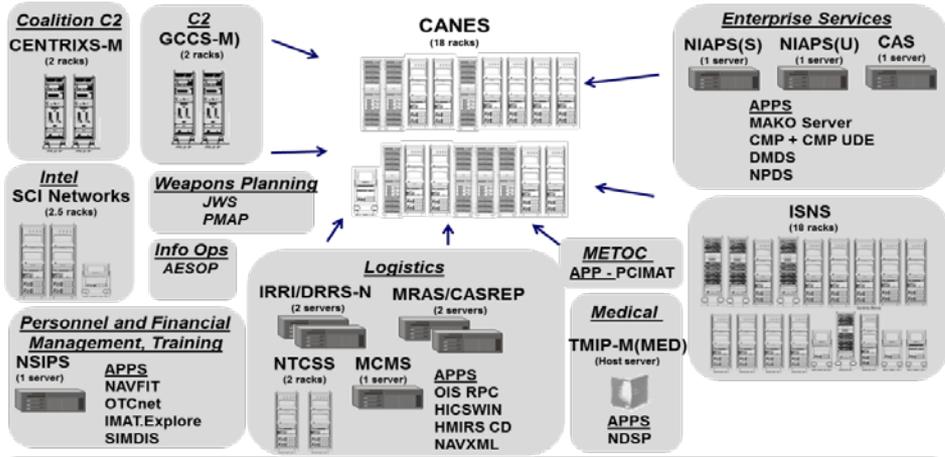
Afloat networks have lost agility, security, maintainability and interoperability



Consolidated Afloat Network Enterprise Services (CANES)

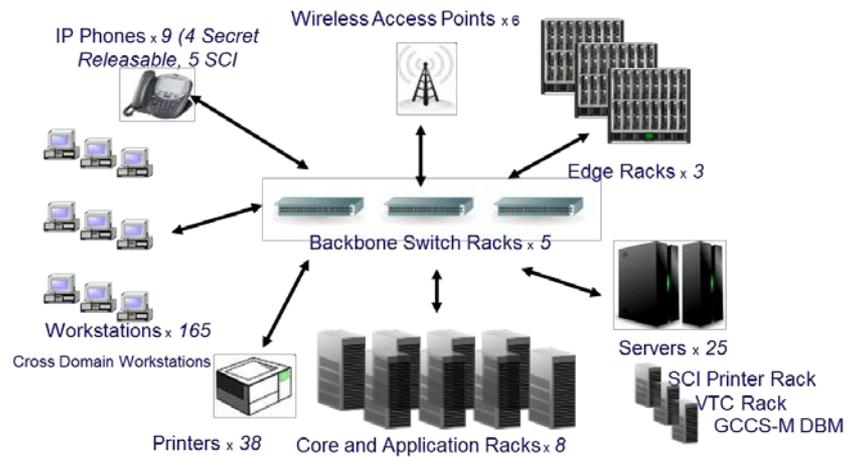


CANES Consolidation



CANES Connects to, Interfaces with or provides network services to Aegis, Tomahawk, CDLMS, NAVMACS, SSEE-E and SSEE-F, Navy Cash, JMPS, GBS, AIS, CCOP (Genser and SCI), ICOP, ICAS, NITES, ORTSTARS, SEWIP, VideoScout

CANES Components



DDG represents a baseline for open, scalable design shared by all platforms



CANES Acquisition Strategy



- CANES strategy maximizes competition throughout program lifecycle
 - Competitive procurement for Engineering & Manufacturing Development (EMD)
 - Down-select for Limited Deployment (LD)
 - Full & Open competition for Production
 - Indefinite Delivery Indefinite Quantity (IDIQ) Multiple Award Contract (MAC)
- CANES specifications promote further competition
 - Vendor neutral specification “commoditizes” major COTS components
 - Leads to comparable costs enabling teams to select the best product for the system
 - Open, modular and scalable design



Value of Competition

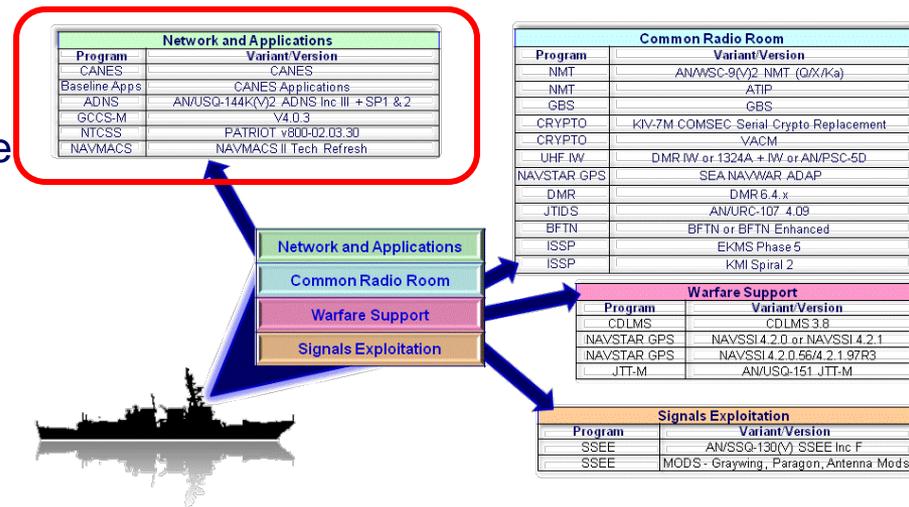
- Competition enabled FOC acceleration by 3 years from FY2023 to FY2020 within program budget
- Additional \$230M savings over the FYDP directly attributed to result of down-select competition
 - \$118M returned to Navy for FYDP reinvestment
 - \$112M savings retained within POR to field high risk orphan platforms
- Continued competition planned for production
 - Re-compete at 4-year hardware baseline refresh window
 - Eliminate single vendor lock-in

The value of competition is being realized



Variance Reduction

- Developed to reduce Total Ownership Cost and C4I variance in the fleet
 - Four C4I Capability Build segments
 - Networks/Applications
 - Common Radio Room
 - Warfare Support
 - Signals Exploitation
 - Two-year update cycle
- Disparate C4I platform configurations negatively impact:
 - Interoperability
 - Operational Effectiveness
 - Cyber security / Information Assurance
 - Training
 - Logistic Support
- Fielding C4I Capability Builds requires a coordinated resource plan with input from the fleet



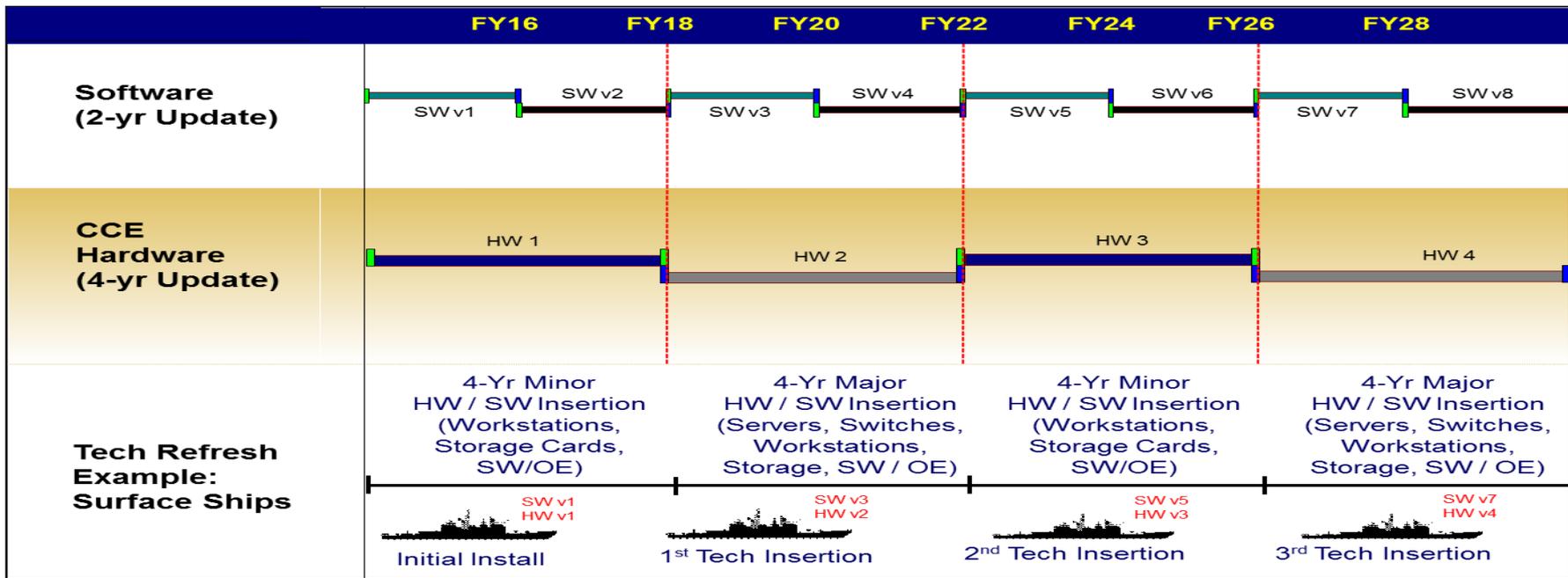
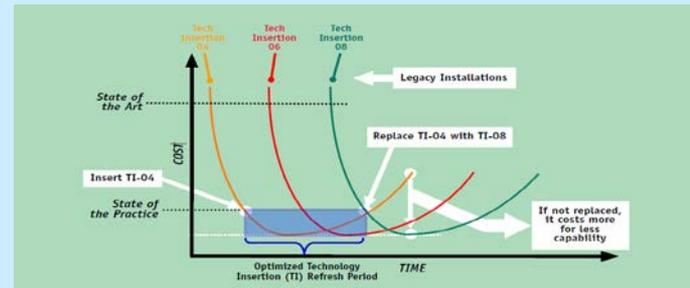
CANES and Application Builds drive Variance Reduction



CANES Technology Insertion Strategy



- CANES technology insertion strategy considered ARCI model to optimize technology insertion period
- CANES programmed to execute 2 year SW / 4 year HW development cycle with 4 year minor / 8 year major insertion cycle to reduce obsolescence

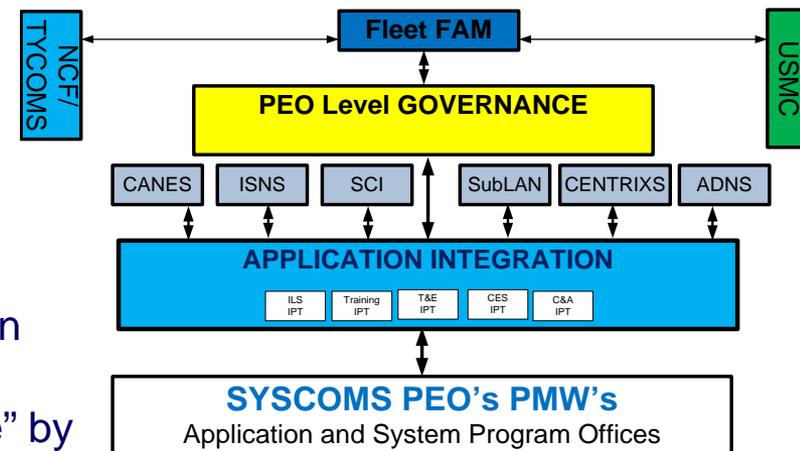


CANES technology insertion strategy paces the cyber threat at optimal cost



Application Integration Overview

- External Governance - Fleet Functional Area Manager (FAM)
 - Led by CPF/FCC/USFFC
 - USFFC N6 facilitates
 - Maintains the Baseline Allowance Control List (BAC)
 - Lists Fleet required applications by platform type
 - Lists only those applications that are appropriately resourced/sponsored
 - Reduces similar/redundant applications and versions
 - Monitors and enforces shipboard configuration management via the Fleet Applications Solutions Team (FAST)
- Application Integration (AI) – The Network Interoperability Certification Process for PMW 160 Tactical Networks
 - Processes only those applications/systems on BAC
 - Engineers and tests system of systems solution (network & applications)
 - Approves final integrated “Application Baseline” by platform type and network variant



PMW 160 serves as Fleet Functional Area Manager (FAM) Technical Agent



CANES



- What is CANES?
 - A business strategy that implements “Enterprise” IT Afloat
 - Consolidation reduces SWAP and variance while streamlining logistics
 - DDG represents a baseline for open, scalable design shared by all platforms
- Benefit for the Navy
 - CANES drives down TOC through lifecycle competition and consolidation
 - CANES regains and maintains IA posture
 - CANES technology insertion paces the cyber threat at optimal cost
 - CANES and C4I Builds decrease cost while increasing mission effectiveness
- Installation Scope and Optimization
 - Prioritization and Integration within CNO availabilities are keys to success
 - Reducing install lengths to fit targeted availability windows

CANES puts warfighting first, operates forward and is ready



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Information Dominance
Capabilities to the
Warfighter**

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