



USN C4I Migration to a Service Oriented Architecture and Common Computing Environment

PMW-120/Distributed Common Ground System - Navy

March 7, 2007 CAPT Rock Madsen PMW-120 DCGS-N 703-988-8302 dmadsen@dcgsn.org





- Early in DCGS-N development recognized need for COP for C2 and ISR
- Highlighted USN C4I system issues:
 - Information sharing constraints
 - Stovepiped PORs
 - Cost

1

- Multiple support infrastructures (training, refresh and upgrades)
- Overlap of requirements
- Hardware footprint
- Bandwidth constraints

Lack of Agility and Responsiveness







ISNS Increment I+ and Compose 3.5 Integrates Core Hardware Infrastructure, Application Re-Aggregation TBD



25-65 Racks	Hardware Racks	6-10 Racks
12-36 Sailors	SYS ADMIN	6-18 Sailors

CANES 5 Year Vision

















- Issue: Gov't Integration Agent
 - <u>Mitigation</u> Compete Enterprise Integrator role
- Issue: System Integration Complexity
 - Mitigation Total system approach to business logic, mission threads, data and information management, COI integration, and information presentation to user – Who is responsible?
- Issue: Test and Evaluation Complexity
 - Mitigation Requires new T&E Strategy & COTF Buy-in
- Issue: Resource Allocation Rules
 - Mitigation Prioritize functions and capabilities recovery
- Issue: Integrated Logistic Support
 - <u>Mitigation</u> Develop new operator and maintenance strategy





- Requires organizational change and leadership commitment
- Leveraging and aligning efforts
 - Significant opportunity but increases external risk and dependencies
- Cost avoidance needs to be reinvested
- Infrastructure and application reduction and rationalization
 - Follow PEO IWS ARCI model for Submarines
- Governance process for introducing new services or hardware into Afloat environment
 - Leverage lessons learned from NMCI and FAMs
- Timing and transition of programs into common environment
 - Need to avoid all or nothing approach
- Lack of documentation, training and CONOPs
 - Leverage and work with Industry partners





- Collaborate on afloat (ashore) SOA way forward
 - Quantify key items/actions to promote
 - Synchronize the artifacts to share/leverage
 - SOA governance
 - Leverage previous and on-going efforts
 - DDG-1000 TSCE, NMCI, ARCI
 - Lowest TOC the goal (reduced O&S \$\$& manpower)
- We all agree SOA is good
 - Must distill the essential details
- The Devil is in the details...









Migration Strategy for SOA/CCE



MIGRATE TO SOA

- Targeting application complete (CGS)
- Non-segmented I3 application (Analyst Workstation/Joint Targeting Toolbox)
 - Working with JDISS Program Office
- SHARP Display System (SDS) candidate FY10/11
- IPL/IESS Cohost FY10/11
- Gale Lite (ELINT) client candidate FY10/11
- Navy DCGS-N multi-node enterprise development underway
 - Existing modeling tools and engineering may extend to C4 domain

MIGRATE TO CCE

- CGS and I3 applications (AWS/JTT) hosted on CCE in FY09
- IPL and NGA products
 - Working with NGA for non-hardware specific application
 - Likely will not migrate until full CANES in FY11
- Providing PMW-160 multi-function workstations requirements
 - Stereo workstations will likely still be hardware specific buys
- If CIP required onboard that too will be hardware specific in the interim until NGA fields alternative solutions or migrates to a software-based CIP

- Need Sponsor help with CIP P.O.

Notes: Requires CARRIERS and Large Deck AMPHIBS be among first for ISNS Inc 1 installation Accurate cost savings estimate cannot be projected until we have a final Tier 2 configuration





PMW-120/DCGS-N Transition Overview



- DCGS-N 1.1 (Tier 1)
 - Implemented DIB and enterprise
 - SOA migration over time reduces cost and risk
 - Common Geospatial Service
 (CGS) developed with SOA in mind
 - Some applications may not easily convert to a SOA environment



- DCGS-N Tier 2*
 - Reduce risk with ISNS Early Adopters and EDMs in FY09
 - Implement in CANES environment



DCGS-N maps well to CANES SOA architecture



Accelerated Migration Timeline FY 08/09 Early Adopter "Quick Wins"

