



# Naval Open Architecture *Overview on the Enterprise Initiative*



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distribution is unlimited.*

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**Open Architecture**  
**PEO IWS 7.0B**



# Today's presentation provides an overview on the Navy's OA Enterprise initiative and required changes to implement OA

## Overview on the OA Initiative

- Challenges facing Navy Leadership
- Establishment of the OA Enterprise Team (OAET)
- The OA Strategy
- The OA Transformation Roadmap
- OA Measures to Gauge Success
- Benefits of OA



## Navy leadership is under continued pressure to control the rising costs of weapon systems and platforms...

*“Among the greatest risks we face is the spiraling cost of procurement for modern military systems, and shipbuilding is no exception. Shipbuilding cost increases have grown beyond our ability to control as compared to decades prior.”*

— Former CNO, ADM Clark, Statement Before the Senate Armed Services Committee, 10 February 2005

*“The Committee is concerned over the affordability of the Navy’s future shipbuilding program. The Committee encourages the Navy to redouble its efforts to lower costs for ship classes on the drawing boards, to provide a more affordable plan for the future.”*

- Report of the Committee on the DOD Appropriations Bill, 2006, 10 June 2005

*“Cost increases incurred while developing new weapon systems mean DOD cannot produce as many of those weapons as intended nor can it be relied on to deliver to the warfighter when promised. We must either make tough decisions now to increase the chances for programs to be executable within fiscal realities or brace ourselves for more draconian decisions later driven by those fiscal realities.”*

- DOD Acquisition Outcomes, A Case for Change, Statement of Katherine V. Schinasi, Managing Acquisition and Sourcing Management, GAO, 15 Nov 2005

## ...and meet the needs of the warfighter



## In July 2005, incoming Chief of Naval Operations, ADM Mullen vowed to continue transforming the Navy



*"In almost every conceivable way, we are not the same Navy we were five years ago. We don't think the same; we don't plan the same; we don't operate the same or fight the same.*

***By adapting to new technology and new ways of doing business, the Navy is now more capable, more ready, more effective and more efficient. The only constant in our future is change...change will demand hard work and the willingness to adapt.***

*We must continue to sharpen the blade that is naval warfare, both at sea and ashore. Though we are clearly more ready today than we have ever been, we have much work yet to do and effort yet to expend to be ready for tomorrow. We must be able to transform ourselves and our thinking quickly in response to an ever-changing, ever-challenging and ever-more-joint environment. Much is riding on that ability."*

*– Chief of Naval Operations, ADM Mullen, July 2005*

Source: [http://www.defenselink.mil/news/Jul2005/20050722\\_2192.html](http://www.defenselink.mil/news/Jul2005/20050722_2192.html), "Leaders Encourage New CNO to Continue Navy's Transformation," by Donna Miles



**Implementation of open architecture across the Navy, is and will remain, a key tenet of transformation...**

***NAVAL OPEN ARCHITECTURE***

***A multi-faceted strategy providing a framework for developing joint interoperable systems that adapt and exploit open-system design principles and architectures***

***NAVAL OA CORE PRINCIPLES***

***Modular design and design disclosure***

***Reusable application software***

***Interoperable joint warfighting applications and secure information exchange***

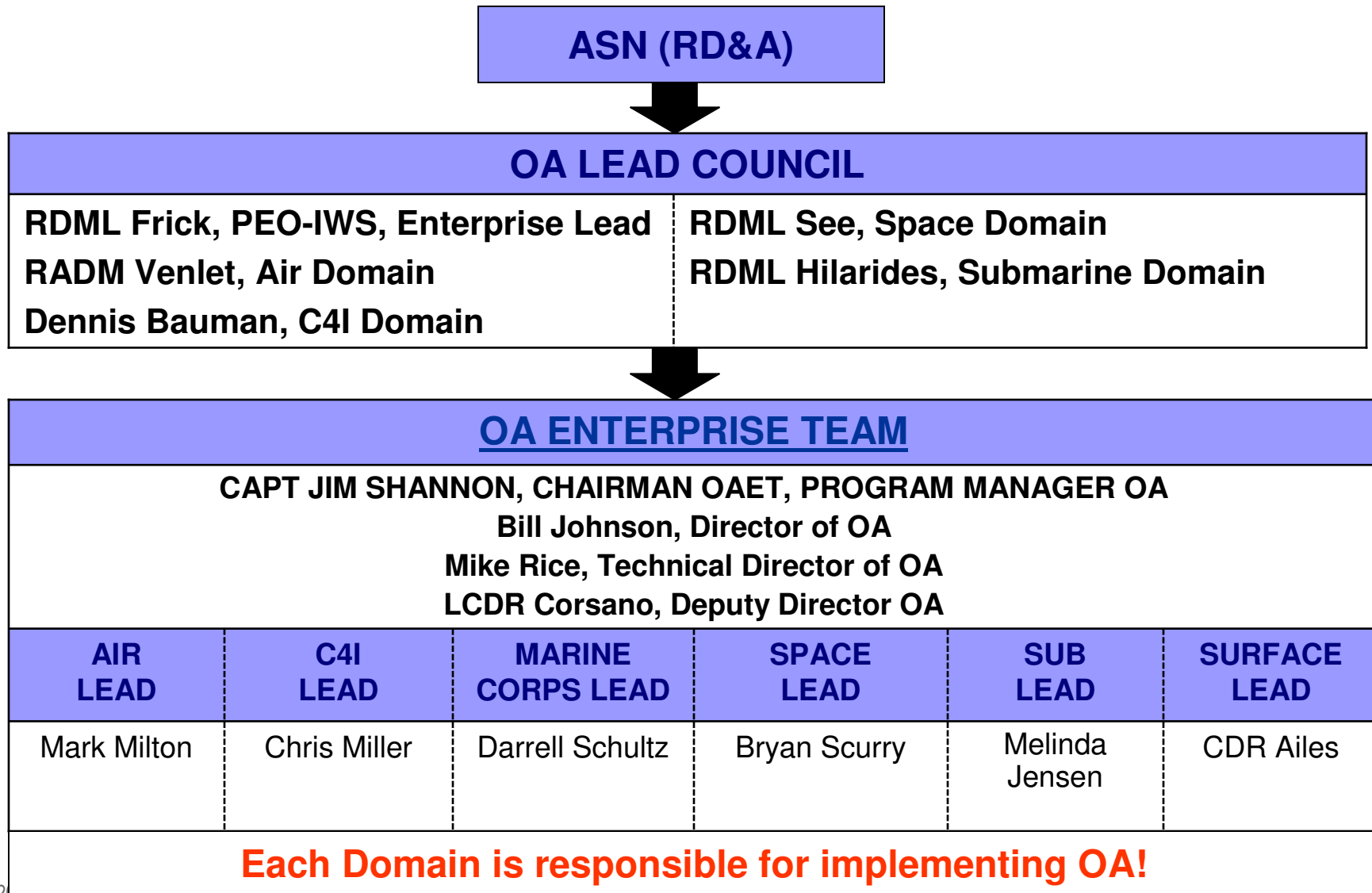
***Life cycle affordability***

***Encouraging competition and collaboration***

**...that will help drive costs down while increasing capabilities**



**In August 2004, leadership established the Naval Open Architecture Enterprise Team to drive the overall OA strategy**





## In developing the OA strategy, it is important to understand where we are today...

### Today's Environment:

#### ■ Business

- Continuously challenged with budgetary decisions
- Inflexible acquisition strategies that “lock the Navy in”
- Limited competition that impede innovation
- Procure systems that are not affordable in production and modernization
- Procure systems for similar capabilities across the enterprise
- Limited software reuse across programs or domains
- Limited access and sharing of data across programs or domains
- Few enterprise processes to foster integration among programs and domains

#### ■ Technical

- Incompatible systems that are not interoperable
- Monolithic or closed systems that are not rapidly or economically upgradeable
- Closed systems that cannot leverage advances in technology
- Special use code and system modules that cannot be reused across the Navy



## ...and where we want to go – Our Future State

### Future State Environment:

#### ■ Business

- Enterprise-wide plans based on cost/capability analysis of programs that address capability, affordability and stabilization
- Flexible acquisition strategies and contracts that enable the Navy to reuse software, easily upgrade systems and share data among the enterprise
- Streamlined investments in similar capabilities
- Increased competition to foster innovation and leverage tech refreshes
- Established enterprise processes and governance to foster integration

#### ■ Technical

- Layered and modular open architectures that address portability, maintainability, interoperability, upgradeability and long-term supportability
- Modular, open designs consisting of components that are self-contained elements with well-defined interfaces
- Maximum use of commercial standards and commodity COTS products
- Continuously conform with Information Assurance (IA) requirements and monitor technology developments for IA improvements

**The driving energy for OA is competition!**



# Our OA Roadmap is our plan for reaching our end-state

## OA Transformation Roadmap

### 1. OA ENTERPRISE COORDINATION

OA Enterprise Coordination is the overarching structure needed to manage the program, keep activities aligned, and ensure specific projects stay on schedule

### 2. CHANGE MANAGEMENT / COMMUNICATIONS

Change Management / Communications involves the culture adoption of OA principles and practices through stakeholder management, communications, and training

### 3. OA PROGRAM MATURITY DEVELOPMENT

ASSESS

PLAN

TEST

Program Maturity Development involves the process of baselining the OA maturity of systems and family of systems and determining plans of action

### 4. OA INFRASTRUCTURE IMPLEMENTATION

BUSINESS

TECHNICAL

OA Infrastructure Implementation entails the changes needed to institutionalize OA principles and practices across the enterprise



# Component 1 involves coordinating the transformation across the Naval Enterprise and with other services

## 1. OA ENTERPRISE COORDINATION

FY 06 ACTIVITIES

### 1.1 Execute OA Strategy

- Execute ASN (RD&A) OA vision
- Execute OPNAV OA requirements
- Execute OA EXCOMM Action Items
- Build FY06 Master Integrated Plan

### 1.2 Support ASN (RD&A) / OA Lead Council

- Support OA EXCOMM Meetings
- Submit Monthly OA Metrics/ Reports

### 1.3 Manage OA Enterprise Team (OAET)

- Conduct OAET Monthly Meetings
- Conduct Quarterly Program Reviews
- Manage OAET Integrated Workplan
- Manage FY 06 OA Budget
- Manage OAET Risk Plan

### 1.4 Coordinate OA Initiative with FORCEnet

- Attend FORCEnet EXCOMM Meetings
- Participate in C4I Virtual Syscom
- Align tasks, where applicable

### 1.5 Coordinate Naval OA Initiative with Other Services

- Coordinate with OSD, OSJTF
- Coordinate with Marine Corps
- Coordinate with Army
- Coordinate with Air Force



## Component 2 includes managing change and communications with our stakeholders

### 2. CHANGE MANAGEMENT / COMMUNICATIONS

#### FY06 ACTIVITIES

#### 2.1 Manage OAET Stakeholder Plan

- Update Stakeholder Plan
- Conduct Assessments
- Develop Mitigating Action Plans
- Execute Action Plans

#### 2.2 Manage Ongoing Communications

- OA Briefs
- OA Precepts
- [OA Quick Successes](#)
- [Acc.dau.mil/oa website](http://Acc.dau.mil/oa)
- Correspondence
- Communications Plan

#### 2.3 Manage Ongoing Outreach Efforts

- [OA Industry Days](#)
- [OA Symposiums](#)
- OA Road Shows
- Conferences
- Industry Consortiums

#### 2.4 Execute OA Enterprise [Education and Training Master Plan](#)

- Develop / field curricula for NPS & DAU
- Develop Continuous Learning modules / Workforce Awareness programs



# Component 3 entails assessing the openness of programs, updating programs of record, and testing alternatives



**FY 06 ACTIVITIES**

3.1 Maintain analytical tools to assess programs

3.2 [Conduct OA Program Assessments](#)

3.3 Adjudicate Results of OA Assessments

3.4 Determine Business and Technical Alternatives

3.5 Identify Enterprise Components for Re-Use

3.6 Prepare POM Issue Papers and/or Business Case (s)

- Costs / Benefits
- Risk Assessment

3.7 Update Program of Record

- Adjust funding to support plan

3.8 [Test OA Technical Alternatives](#) for Risk Reduction

- Feasibility Testing
- Developmental Testing



# Component 4 requires changing the business and technical landscape to support the implementation of OA

## 4. OA INFRASTRUCTURE IMPLEMENTATION

### BUSINESS

### TECHNICAL

#### BUSINESS

- 4.1 Assess prime integrator vs. end-to-end developer roles
- 4.2 Develop [enterprise OA contract language](#)
- 4.3 Establish process for conducting data rights requirements analysis
- 4.4 Develop framework for OA contract incentives
- 4.5 Develop OA Award fee criteria



#### TECHNICAL

- 4.6 Develop [OA Enterprise Component Library](#)
  - Inventory existing repositories
  - Develop ConOps and CM processes
  - Define data structures and technical detail
  - Identify OA Artifacts
  - Build, deploy and populate repository and toolset
- 4.7 [Align Domain standards](#)
- 4.8 Align standards to DISR



## Successful implementation of OA requires sound performance measures to monitor and gauge success

ILLUSTRATIVE PERFORMANCE MEASURES	
OA Metric	■ OA metric illustrating a program's current state of openness
Time to Field	■ Decreased time to field new warfighting capabilities to the fleet
Cost Avoidance	■ Cost avoidance from software re-use and use of COTS
Baseline Reduction	■ Reduction of warfare system baselines
Streamlined Investments	■ Streamlined investments for similar capabilities, system upgrades, test and evaluation



# Implementation of OA will yield many benefits to the Navy as demonstrated by the ASW community

	Benefits to the Fleet and Other Organizations
<b>Performance</b>	<ul style="list-style-type: none"><li>■ Continuous competition yields best of breed applications</li><li>■ Focus on warfighter priorities</li></ul>
<b>Schedule</b>	<ul style="list-style-type: none"><li>■ System integration of OA-compliant software happens quickly</li><li>■ Rapid update deliveries driven by use operational cycles</li></ul>
<b>Cost Avoidance Mechanisms</b>	<ul style="list-style-type: none"><li>■ Software – Develop once, use often, upgrade as required</li><li>■ Hardware – Use high-volume COTS products at optimum price points</li><li>■ Training systems use same tactical applications and COTS hardware</li></ul>
<b>Design for Maintenance-Free Operating Periods</b>	<ul style="list-style-type: none"><li>■ Install adequate processing power to support “fail-over” without maintenance</li><li>■ Schedule replacement with improved COTS vice maintaining old hardware</li><li>■ Reduce maintenance training required</li><li>■ Consolidate Development and Operational Testing for reused applications</li></ul>
<b>Risk Reduction</b>	<ul style="list-style-type: none"><li>■ Field new applications only when mature</li><li>■ Do not force the last ounce of performance</li><li>■ Deploy less (but still better than existing) performance or wait until next update</li></ul>



**In summary, OA will continue to be a key enabler in meeting the three priorities laid out by the CNO for FY06...**

## U.S. NAVY MISSION

*Combat-ready naval forces capable of winning wars, deterring aggression, preserving freedom of the seas, and promoting peace and security.*

**Sustain combat readiness**

SEA POWER 21  
FLEET RESPONSE PLAN

**Build a fleet for the future**

SHIPBUILDING PLAN  
ASHORE VISION  
AVIATION ROADMAP

**Develop 21st century leaders**

SEA WARRIOR  
STRATEGY FOR OUR PEOPLE  
DIVERSITY

**OPEN ARCHITECTURE**

**...and several related objectives**



CNO Guidance for 2006

*Meeting the Challenge of a New Era*

### I. Introduction

We are a nation and a Navy at war. Whether providing sovereign deck space from which to launch strikes in Afghanistan, continuing to support ground operations in Iraq, patrolling the seas to interdict terrorists, or shaping the maritime domain through swift humanitarian action in Indonesia and on our own Gulf Coast, we are contributing to joint and combined operations in ways no one could have imagined a few short years ago.

We live on the cusp of a new era. It is an era plagued by uncertainty and change and unrestricted warfare, an era of shifting global threats and challenging new opportunities. It is an era that calls for new skill sets, deeper partnerships, mutual understanding and -- with the great majority of international commerce still moving on

### 2006 Key Objectives

1. Win the war on terror and stay ready to meet other operational requirements;
2. Determine and deliver on the Navy's future force structure requirements;
3. Drive to execution Sea Warrior and other ongoing manpower and personnel transformational efforts;
4. With the USMC, increase the value of naval contributions to the Joint Force;
5. Develop closer working relationships with the USCG and other governmental and non-governmental organizations;
6. Apply effects-based thinking across the Navy; and
7. Become leaders of change and innovation.





# The Open Architecture Enterprise Team Points of Contact

ENTERPRISE		
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# Naval OA requirements and program responsibilities are derived from three primary sources

## 5 August 2004 OA Policy Statement

**THE ASSISTANT SECRETARY OF THE NAVY**  
Research Development and Acquisition  
1000 Navy Pentagon  
Washington DC 20350-1000  
AUG 05 2004

MEMORANDUM FOR DISTRIBUTION

SUBJ: Naval Open Architecture Scope and Responsibilities

Encl: (1) Open Architecture

The purpose of this memorandum is to provide direction necessary to implement the Strategy. This strategy includes architectures and execution. The "Acquisition program" approach that optimizes modular, open systems architecture consistent with the approach implemented in the past.

In light of the need for all war fighting Open Architecture foundation of a single Architecture and continuous progress to date and during the second modification to this Architecture will be unique requirements.

Effective in directing the Navy's PEO IWS. The representatives, who processes, business requirements in addressing overarching OA across property issues, cost. The acquisition strategy applicable procedures, in addition, the Enterprise strategy. The process with which standards and soft

ASN RD&A OA Policy

## OA EXCOMM Action Items

**THE ASSISTANT SECRETARY OF THE NAVY**  
Research Development and Acquisition  
1000 Navy Pentagon  
Washington DC 20350-1000  
MAY 15 2005

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Summary of OA EXCOMM Meeting of February 22, 2005

On Tuesday, February 22, 2005, I hosted a Committee Meeting (EXCOMM) at SPAW. The intent of this meeting was to review the status across the Naval Enterprise and to review the progress of the OA program.

There were four major goals identified:

- Update the status of the OA Initiative
- Outline a coordinated strategy for OA
- Approve requested decisions necessary for OA
- Provide insight into current status and selected functional Domains.

The OA EXCOMM focused on current principles of system design and acquisition systems that is more affordable, agile, and (1). Key points made include:

- The Navy must transition to OA to enable a supportable Fleet, but do not develop an Enterprise framework must ensure applications and functional selection of programs to be opened Cross-Domain and Cross-Enterprise
- The Navy's organizational structure Systems Commands and PEOs shall cooperate.
- Contract business models for program determine if they foster that transition
- There is an enterprise-wide need for non-tactical IT, aligns Industry between C4I and combat systems, each other. I intend to engage the establish an enterprise-wide IT governance
- FORCEnet and OA must map into Enterprise
- The Enterprise will present a coordinated

**DEPARTMENT OF THE NAVY**  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
2066 NAVY PENTAGON  
WASHINGTON, DC 20350-2066

IN REPLY REFER TO:  
9010  
Ser: N6N7/ 50916276  
23 Dec 05

From: Deputy Chief of Naval Operations (Warfare Requirements and Programs) (N6/N7)

Subj: REQUIREMENT FOR OPEN ARCHITECTURE (OA) IMPLEMENTATION

Ref: (a) ASN(RDA) Memorandum on Naval Open Architecture Scope and Responsibilities dated 05 August 04

Encl: (1) OA Enterprise Team

1. **Purpose.** This letter establishes the requirement to implement Open Architecture (OA) principles across the Navy Enterprise. To deliver timely, affordable, interoperable warfighting capability to the fleet, made sustainable by the flexible integration of emerging capabilities, we must incorporate OA processes and business practices now.

2. **Background.** Warfare systems include hardware, software and people. Human factors, (i.e. such as training, education and doctrine) factor heavily in warfighting effectiveness. Naval OA transformation must match the rapid evolution in commercial and military technology. Not only must we shorten the kill chain across the family of systems; we must also shorten the time and cost it takes to deliver capability improvements. Our current process takes nearly a decade, costs hundreds of millions of dollars and delivers products that are commercially obsolete and have only incremental improvements in warfighting capability. That is not good enough, and must change in POM08. Acquisition processes and business practices must transition now in order to support POM 08 and implement agile changes that support rapidly evolving requirements.

OA Principles include:

a. Modular design and design disclosure to permit evolutionary design, technology insertion, competitive innovation, and alternative competitive approaches from multiple qualified sources.

OA EXCOMM Action Items

## 23 December 2005 OPNAV Requirements

OPNAV Requirements

NAVAL OA Responsibilities and Requirements to execute against the strategy





# OA Special Interest Area - <https://acc.dau.mil/oa>

Acquisition Community Connection  
Where the AT&I Workforce Meets to Share Knowledge

Defense Acquisition University

Home | DAU Resources | Contact Us | Site Map | Help Search

EXPLORER ACC HOME

acc > special interest areas > naval enterprise open architecture >

Naval Enterprise Open Architecture

What's New  
General Information  
Policy & Guidance  
Perspectives  
Meetings & Events  
FAQs  
Related Sites  
Tools

TOOLS  
Search Conversations

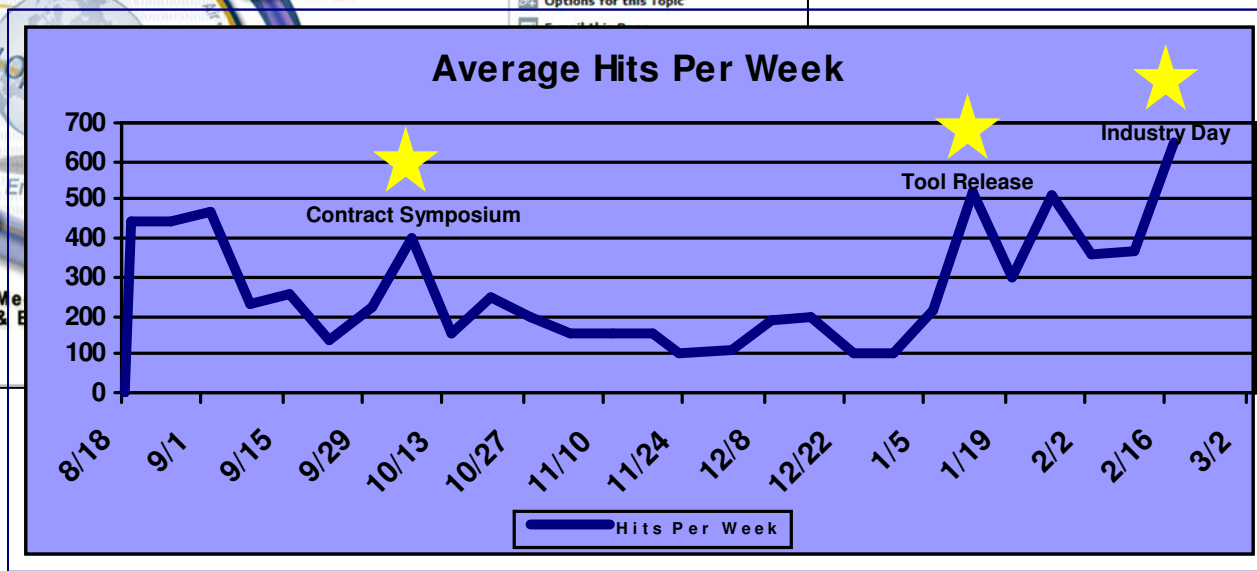
YOU ARE GUEST (READ) EST

LOGIN

Username  
Password Limited access is available for CoPs & SIAs without login  
LOGIN  
Join

PARTICIPATE  
Options for this Topic

What's New  
General Information  
Policy & Guidance  
Perspectives



Monthly average hits ~ 1500

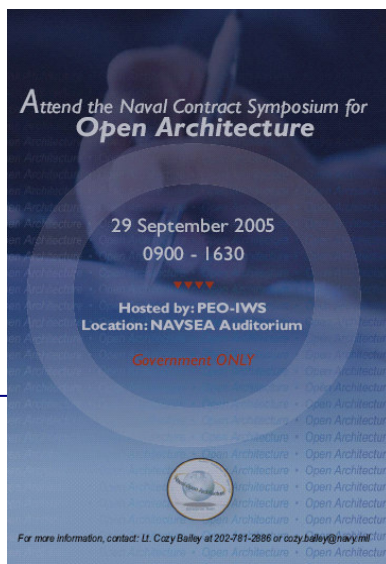




## Symposiums and Industry Day Events

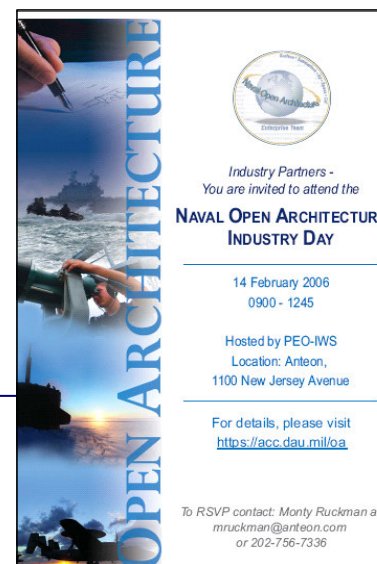
### Naval OA Contract Symposium

- Held 29 September 05
- All day government event
- Focus: Contracting in OA
- 15 Speakers
- 125 Participants
- 60% response rate on survey



### Naval OA Industry Day

- Held 14 February 06
- Half day industry event
- Focus: Business Principles of OA
- 8 Speakers
- 280 Participants
- 69% response rate on survey





# Education and Training Master Plan



## NPS / AFIT/ Civilian Universities

### Postgraduate Education

- High Impact
- Long time horizon
- Develops leaders of tomorrow
- Technical competencies
- Some business competency
- In-depth education in technical or business disciplines leading to a graduate degree
- Formal classroom training, either on campus or distance learning

### DAWIA Certification Training

- High Impact
- Long Time Horizon
- Qualification training for the Acquisition Workforce
- Principally business competencies
- Some technical competencies
- Broad training covering a variety of topics leading to career field certifications in specific disciplines
- Formal classroom training either on campus or distance learning

## DAU

### NAVY

#### Continuous Learning

- Medium Impact
- Short to medium time horizon
- Business or technical competencies
- Focused course work on specific topics
- Symposia and professional society meetings
- Instructor or web delivery

#### Knowledge Sharing

- Medium to high impact
- Short time horizon
- Task based
- Web based
- Learning modules or best practices

#### Workforce Awareness

- Low Impact
- Short time horizon
- Business orientation
- Briefings and general orientation
- Instructor or web delivery

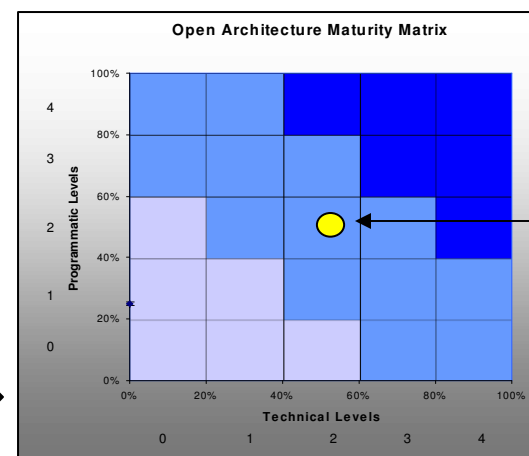




# OA program assessments are underway to better understand how open our programs are today

## Background

- EXCOMM II and EXCOMM IV tasked Program Managers to conduct program assessments to determine how open programs are today
- The OA Model and Tool were developed to support this action
- An assessment will produce an OA Metric and give managers a better understanding what they can do to increase the openness of their program



OA Metric

## OA Assessment Report

Naval Open Architecture Assessment Tool  
Assessment Score Summary

Program Name: \_\_\_\_\_  
Unit of Assessment: \_\_\_\_\_  
Acquisition Milestone: \_\_\_\_\_  
Next Review Date: 110-1900

Area or Section	Section	Total Questions Applicable	Total Questions Not Applicable	Max Score	Achieved	Normalized
A	Open System Approach	2	0	8	2	25.0%
B	Open Architecture	2	0	8	2	25.0%
C	Open Modular Design	3	0	12	3	25.0%
D	Interface Design and Management	4	0	16	4	25.0%
E	Treatment of Proprietary Elements	4	0	16	4	25.0%
F	Open Release Practices	4	0	16	4	25.0%
G	Open Release Rights	3	0	12	3	25.0%
H	Technical Interactions	4	0	16	4	25.0%
I	Commercial Standards	3	0	4	1	25.0%
J	Compliance	4	0	16	4	25.0%
<b>Combined Programmatic Rating</b>		<b>30</b>	<b>0</b>	<b>100</b>	<b>25</b>	<b>25.0%</b>
K	Design Test: Interoperability	6	0	24	0	0.0%
L	Design Test: Maintainability	2	0	8	0	0.0%
M	Design Test: Extensibility	2	0	12	0	0.0%
N	Design Test: Comprehensibility	2	0	8	0	0.0%
O	Design Test: Reconfigurability	4	0	16	0	0.0%
P	General Design Tests	1	0	4	0	0.0%
<b>Combined Technical Rating</b>		<b>18</b>	<b>0</b>	<b>76</b>	<b>0</b>	<b>0.0%</b>
Total Qualitative Rating		Implementation Not Applicable				

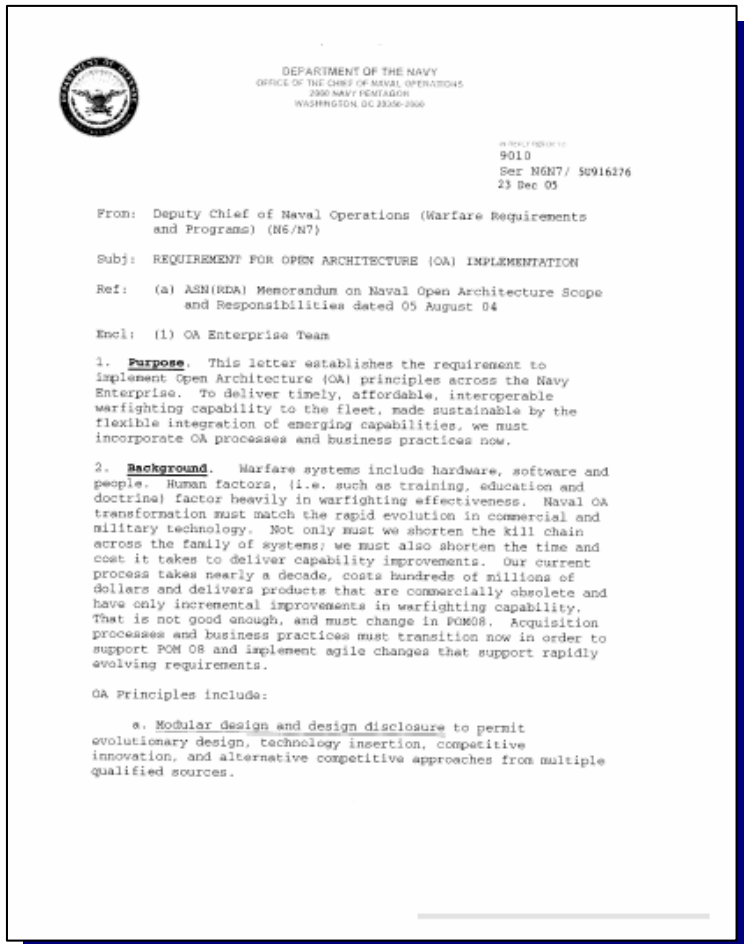
Quick start / About OAAT / Feedback / Assessment Information / **Technical Questions** / Programmatic Questions / Total





# OA experimentation efforts

## 23 December 05 OA Experimentation Requirement

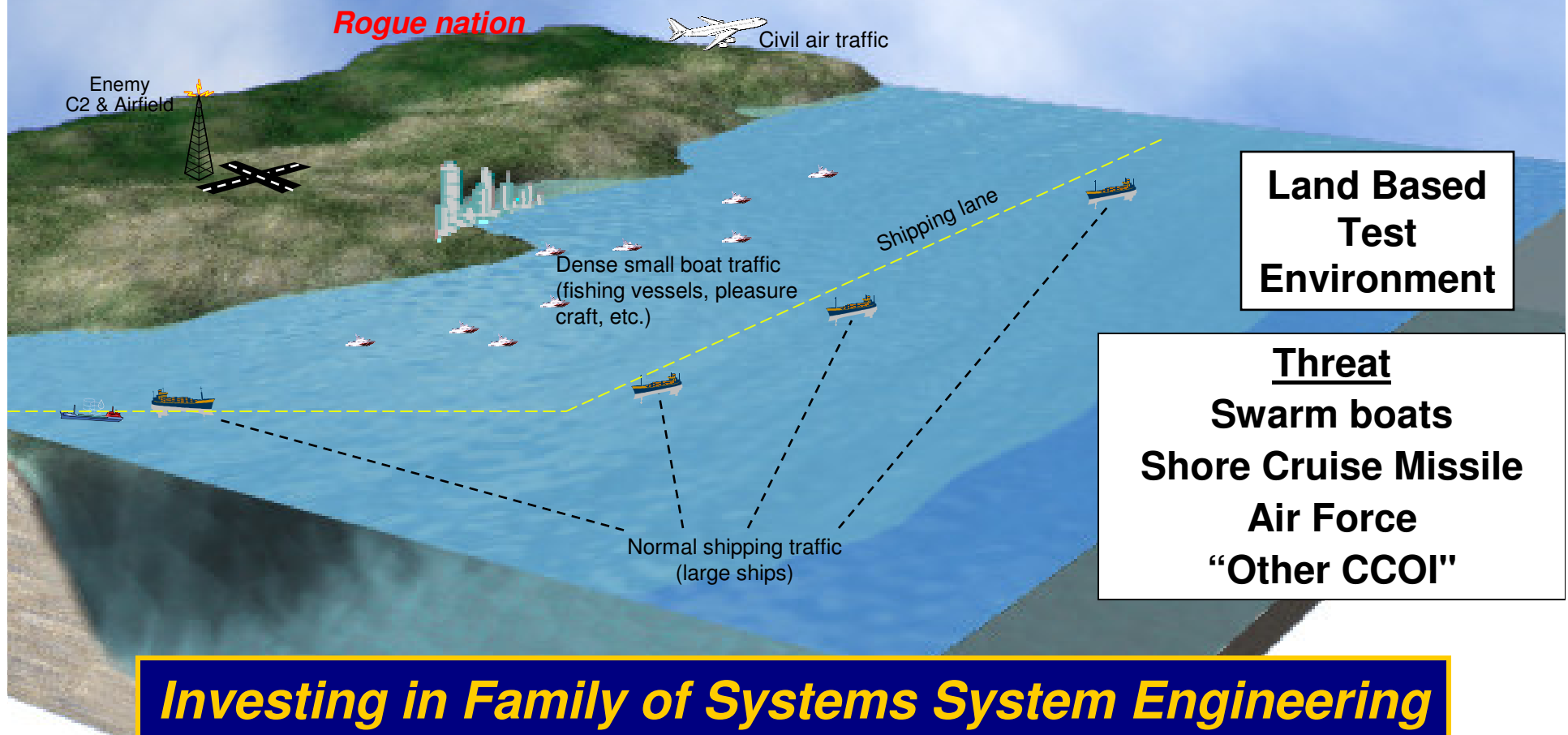


- **OA Experimentation Vision**
  - Develop rapid fielding and more affordable Warfighting capabilities
  - The path to FORCEnet demands seamless integration
    - Reducing the risk of delivering non-Interoperable products
  
- **Experimentation Success Criteria**
  - Coordinate end-to-end force level system engineering experiments
    - Interoperability, Open Architecture
  - Leverage existing open/collaborative engineering environments
    - Across systems and domains
  - Foster team work
  - Prototype new business and engineering processes

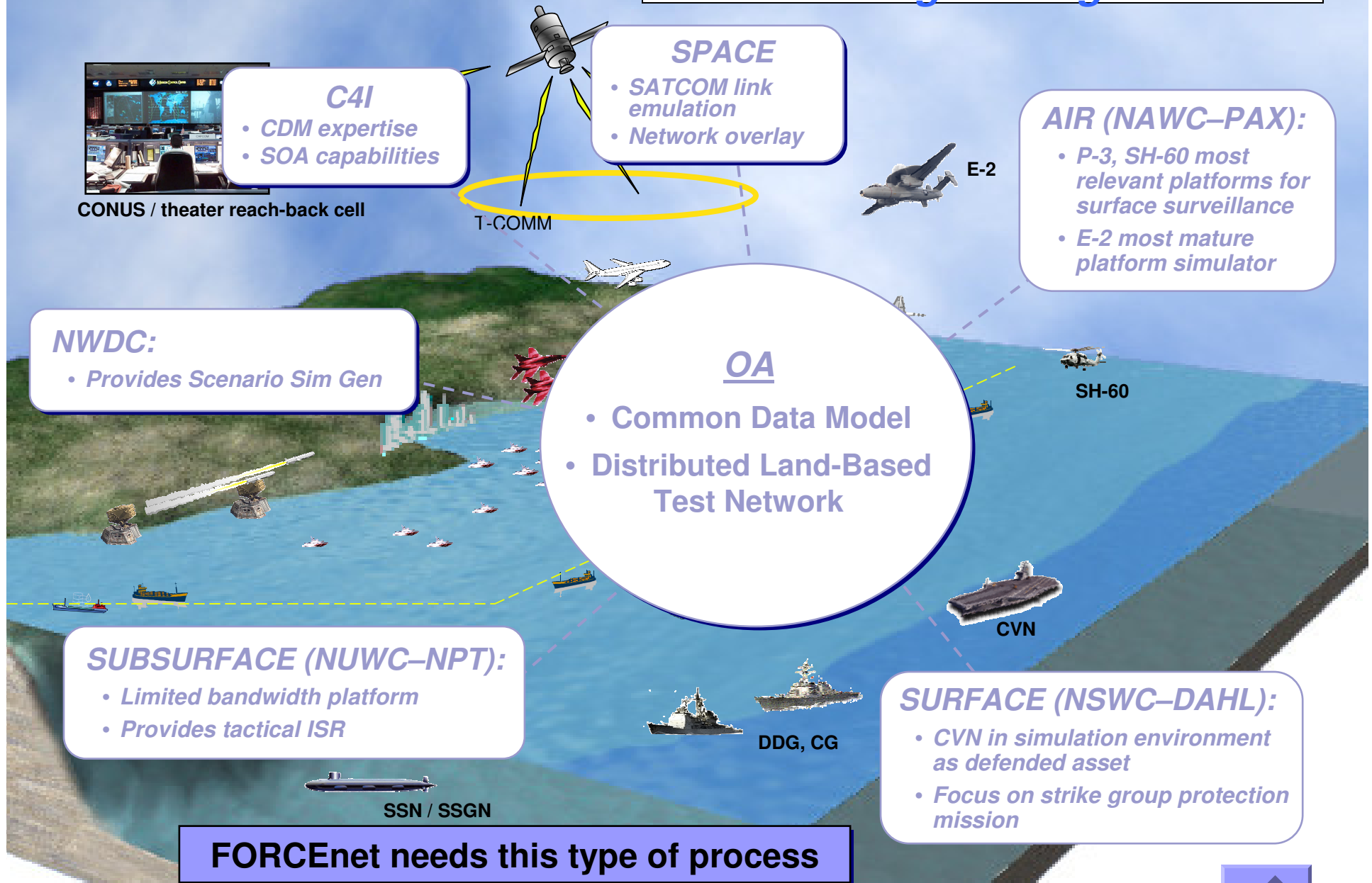
The following slides provide a test overview

## ENVIRONMENT

- Littoral waters off the coast of a rogue nation that has tried to purchase sensitive material and has severed diplomatic ties to the U.S.
- High background of normal commercial maritime and air traffic



# Family of Systems System Engineering





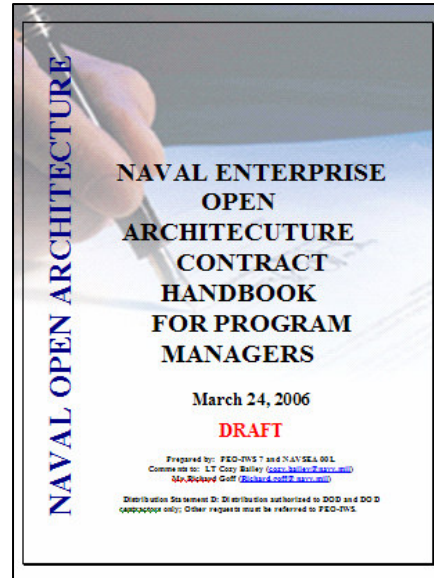
# We have completed an initial OA Contract Handbook and accompanying implementation plan ...

## Tasking

*The Enterprise Team shall define an OA Acquisition strategy and develop guidance....The accompany guidance will then be utilized in future OA procurements tailored as necessary to incorporate domain specific requirements.*

- Naval OA Policy Statement 05, Aug 2004

## Draft Handbook



## Implementation Plan

- Build Awareness and Obtain Leadership Sponsorship
- Issue OA Contract Guidebook V 1.0
- Conduct Training on OA Guidebook
- Conduct Pilot in NAVSEA Contracts
- Institute Feedback Mechanisms "Build-Test-Build"
- Conduct Progress Evaluations

Communicate

***“ Until contracts include OA language, incentives, and award fees under the new paradigm, things will not change” - Quote from Industry Day participant***

**... per ASN RD&A tasking to utilize guidance in procurements**





# Enterprise Component Library

The screenshot shows the NASA Earth Science Data System Software Reuse Working Group website. At the top, there is a NASA logo and the text 'GODDARD SPACE FLIGHT CENTER'. Below this is a banner for 'Earth Science Data System Software Reuse Working Group' with a diagram of data flow and reuse. The main content area is titled 'Reusable Assets' and contains several links and descriptions for various software tools and resources. A large blue diagonal banner with the text 'ILLUSTRATIVE EXAMPLE' is overlaid on the main content area.

navigation

- Home
- Reusable Assets
- Resources
- Open Source
- Funding Opportunities

news

- Suggest a Reusable Asset Repository (2005-09-28)
- More...

upcoming events

- AGU Fall Meeting 2005 (San Francisco, California, 2005-12-05)
- MSDN Software Reuse Practices (Webcast) (2005-12-31)

Reusable Assets

Up one level

This section contains reusable assets for the Earth science community.

[Suggest a Link](#)

[Computational Infrastructure for Geodynamics](#)  
CIG is working under a Cooperative Agreement with the National Science Foundation to develop, support, and disseminate open source software for the computational geophysics and related fields.

[Earth Observing System Clearinghouse](#)  
The ECHO Client Reuse page is a resource to enable the sharing of source code between ECHO client developers.

[Global Change Master Directory](#)  
NASA's GCMD enables users to locate and obtain access to Earth Science data sets and services relevant to the global change and Earth science research.

[NASA Open Source](#)  
Several NASA centers also release software using the NASA Open Source Agreement.

**Goal:** Establish the Enterprise Asset Repository to store the reusable components per EXCOMM action and OPNAV requirement

**Focus:**

- What should the configuration management processes be to modify or update a reusable component?
- What artifacts should be stored in the repository?
- What technology and tools are needed to develop and build the asset repository?
- Should the repository be virtual or physical?
- How will the repository link to domain repositories?





# Navy Technical Standards Alignment

**Air**



Program A  
Program B  
Program C  
Program D

**Surface**



Program A  
Program B  
Program C  
Program D  
Program E

**Submarine**



Program A  
Program B  
Program C  
Program D

**C4I / Space**



Program A  
Program B  
Program C  
Program D  
Program E  
Program F  
Program G

(Common Standards Profiles)

## Navy Standards Working Group

DoD Standards (DISR)

Commercial Computing Industry Standards

(OMG) (POSIX) (IEEE) (W3C) (OASIS) (IETF)

GIG & Net Centric Standards

