



Naval Open Architecture

NDIA 2008 Undersea Warfare Conference

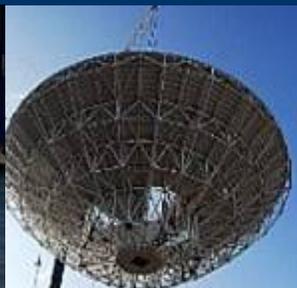
AIR



C4I



SPACE



SUBS



SURFACE



MARINES



10 September 2008

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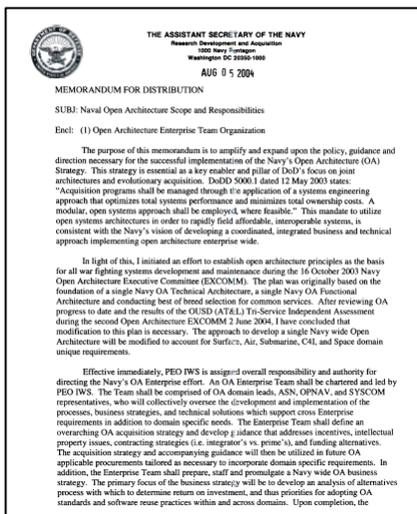
Today's Agenda

- Naval Open Architecture (OA) Recap
- Building in OA Compliance Checkpoints
- Data Rights
- Key Takeaways



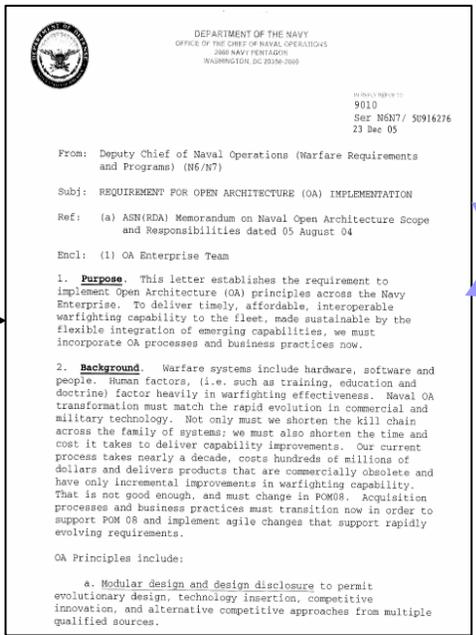
The mandate to adopt Open Architecture (OA) principles has been in existence since August 2004

1 Aug 2004 ASN RDA mandates open architecture



Naval OA Policy

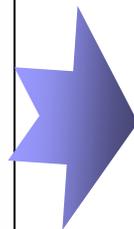
2 Dec 2005 OPNAV issues OA Requirements letter



Naval OA Requirements

Naval Open Architecture (OA) is the confluence of business and technical practices yielding modular, interoperable systems that adhere to open standards with published interfaces.

- 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





The focus is on business, technical, and cultural changes

OA GOALS

1. Change the Naval processes and **business** practices to “utilize open systems architectures in order to rapidly field affordable, interoperable systems.”

Provide OA **Technical Systems Engineering** leadership to field common, interoperable capabilities more rapidly at reduced costs

3. Change the Naval and Marine Corps **Cultures** to Institutionalize OA Principles

OA PRACTICES

Disclose design artifacts

Negotiate appropriate data rights

Foster enterprise collaboration

Institute Peer Reviews of solutions

Develop new open business models

Change contracts / increase competition

Modularize systems

Isolate proprietary components

Publish interfaces

Use widely adopted standards

Reuse software products

Build interoperable applications

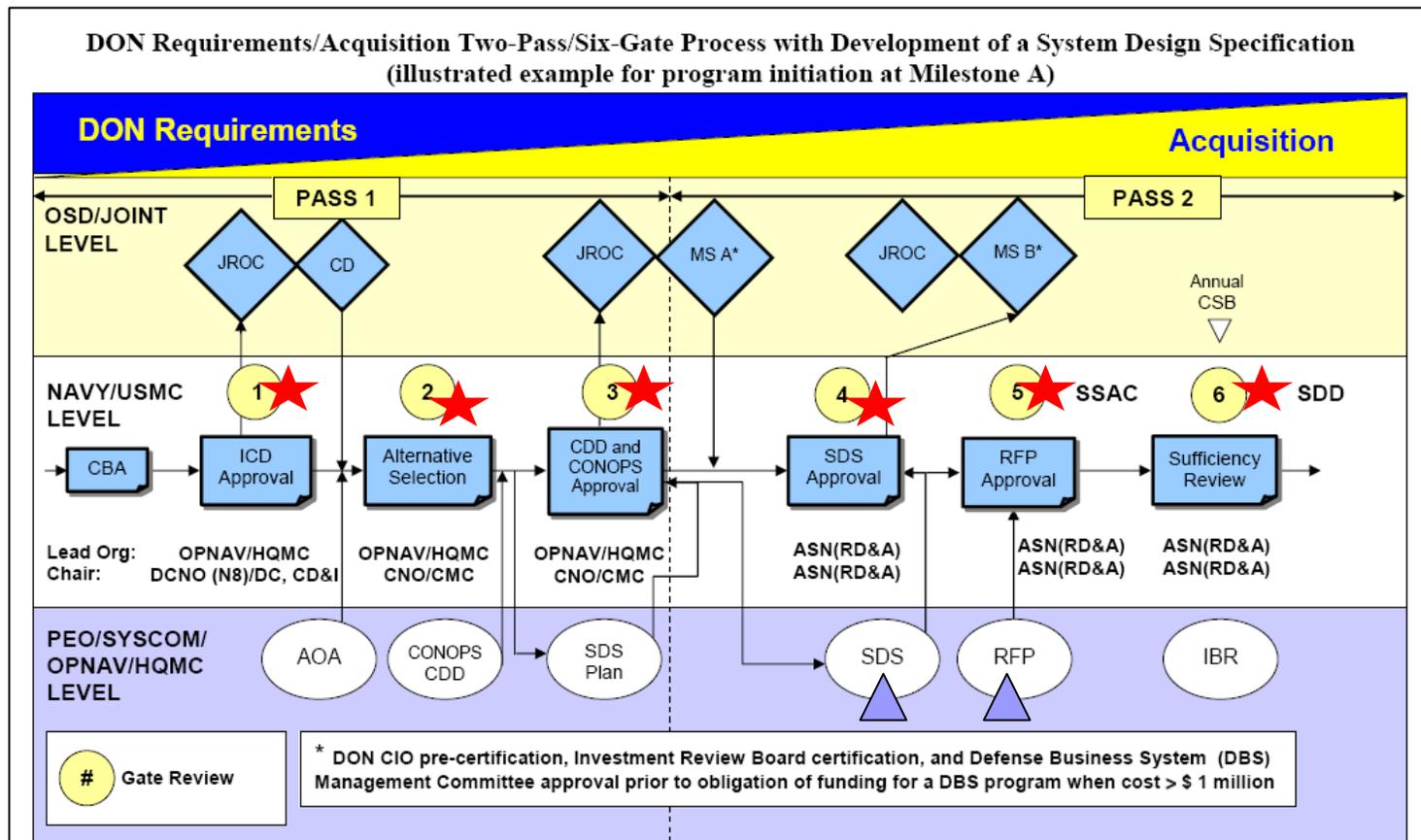
OA Training

Outreach - Symposias & Industry Days

Research



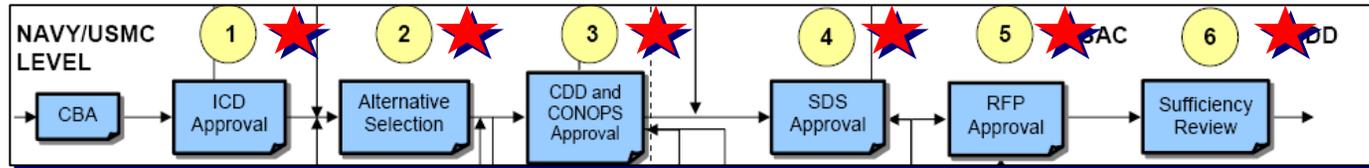
OA checkpoints are being built into the Department of Navy's Six Gate Review Process to ensure compliance



SECNAV introduced the six-gate, two-pass process to more effectively integrate the Naval requirements and acquisition decision processes. This process improves visibility and insight into the development, establishment and execution of programs.



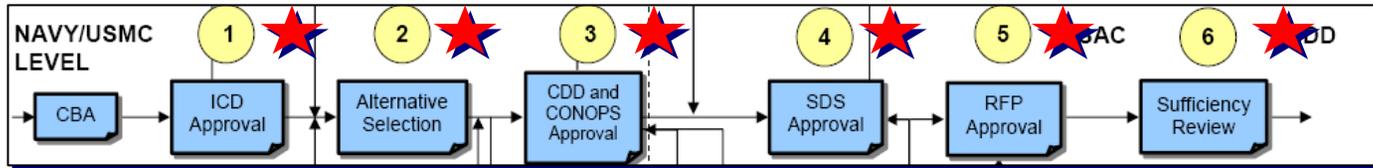
Example Questions



- Gate 1 - Does the AoA guidance require investigation of **potential reuse** opportunities or opportunities for component and data co-development from other programs' or Services' capabilities?
- Gate 2 - Does the proposed Capability Development Document (CDD) / Concept of Operations (CONOPS) guidance stress **interoperability, modularity, maintainability, and affordability** as key performance parameters?
- Gate 3 - Does the SDS development guidance address how modularity and the use of **open, published, and government-controlled interfaces** will be employed?



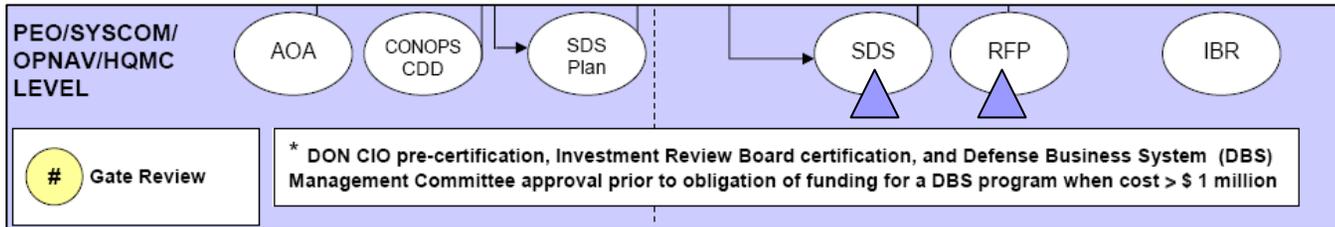
Example Questions (continued)



- Gate 4 - Have **widely accepted standards** been called out for use in application design?
- Gate 5 - Has a **peer review process** been established to provide for independent evaluation of alternative components and selection of best of breed components for the system?
- Gate 6 - Have the **appropriate data rights** been obtained with each application?

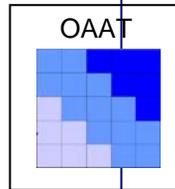


OA guidance and checkpoints have been built into the System Design Specification and Request for Proposal



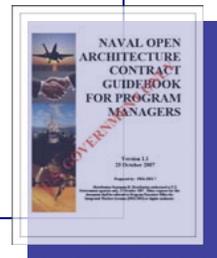
Example of OA criteria in SDS

- “Evaluation of the openness of the system should be conducted using the Naval Open Architecture Assessment Tool found at <https://acc.dau.mil/oa>”
- “Identify how Naval Open Systems Architecture Principles will be incorporated into the design.”



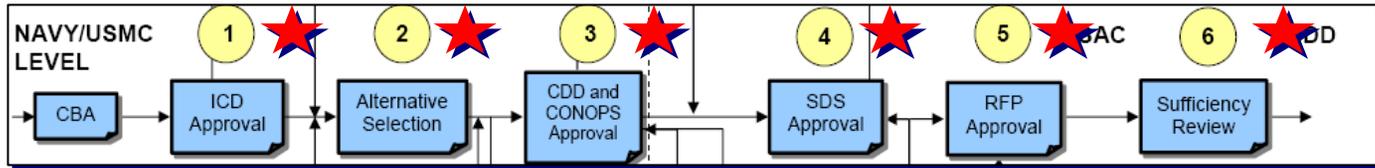
Example of OA criteria in RFP

- The contractor shall consider use of COTS/NDI and open standards to enhance the systems’ life-cycle supportability by implementing performance-based logistics arrangements to sustain components through their lifecycle.





Data rights continue to be play an important role as we transition to more open systems and open business practices



- Gate 3 - Are the functional components of the system well defined with clearly specified functions and interfaces and does the Government possess at least Government Purpose Rights to these?
- Gate 5 - Does the documentation specify that everything the government pays to develop will be provided to the Government at no additional cost, including all the developmental artifacts and with Government Purpose Rights?
- Gate 6 - Have the appropriate data rights been obtained with each application (normally Government Purpose Rights)?
- Gate 6 - Is the Program Manager using the data rights and products delivered under the contract to leverage competition into all remaining phases of the program?



Key Takeaways

- DoN continues its adoption of OA principles across the enterprise
 - New start programs are easy to target
 - Legacy programs are challenging

- Compliance checkpoints are being implemented in several processes
 - Six Gate Review Process
 - Program of Probability Success
 - System Design Specification
 - Request for Proposal

- Near-term Enterprise focus areas
 - Mission architecture alignment (C4I / IWS)
 - Reuse governance
 - Strategy refinement