



Naval Open Architecture

AIR



C4I



SPACE



SUBS



SURFACE



MARINES



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To execute this strategy, we must change how we build systems - the adoption of Open Architecture is critical to our Navy

Naval Open Architecture is the confluence of business and technical practices yielding modular, interoperable systems that adhere to open standards with published interfaces. OA delivers increased warfighting capabilities in a shorter time at reduced cost.

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



Our focus has been on addressing 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."
2. 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
- Software Process Improvement Initiative
- Publish interfaces
- Isolate proprietary components
- Use widely adopted standards
- Modularize systems
- Reuse software products
- Build interoperable applications
- OA Training
- Outreach - Symposias & Industry Days
- Research



Implementing *Open Architecture* yields many benefits

Reduction in Time to Field

- Decreased development and acquisition cycle times to field new warfighting capabilities
- Faster integration of open standards based systems

Increased Performance

- Improved operator performance thru delivery of cutting edge technologies and increased bandwidth capabilities from spiral developments and technology insertions

Improved Interoperability

- Use of common services (e.g. common time reference)
- Use of common warfighting applications (e.g. track mgr)
- Use of published interfaces to standardize collaboration

More Competition

- Modular architectures enable competition at the component level
- Sharing data rights allows third parties to compete

Cost Avoidance

- Cost avoidance from software reuse and use of commodity COTS products at optimum prices
- Reduced training and streamlined lifecycle support



Implementing OA requires the commitment and participation of all stakeholders across the Naval Enterprise



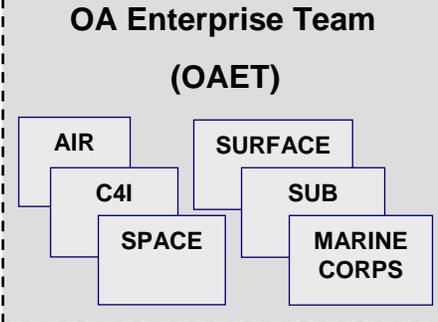
Chief of Naval Operations



Assistant Secretary of Navy (Research, Development & Acquisition)



- Provide Naval requirements and POM/PR guidance to acquisition community
- Identify requirements for rapid, cost-effective, interoperable warfighting improvements with the objectives of supporting OA



- Identify architectures unique to domains and implement a process to ensure OA compliance

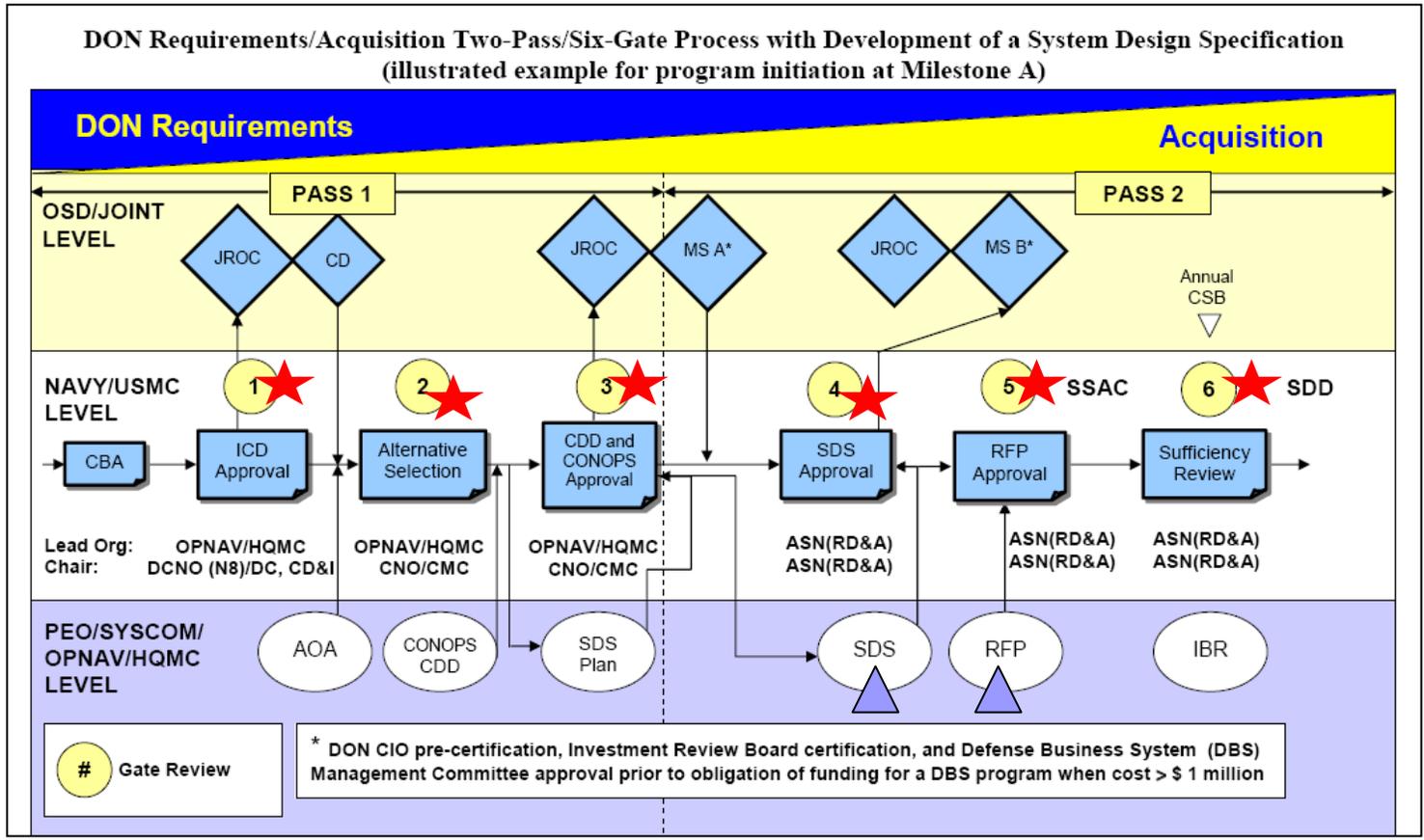
- Provide technical, financial management and contracting support to PEOs
- Establish OA technical processes
- Monitor and assess compliance with OA standards and processes

- Lead the enterprise to OA implementation
- Oversee the development and implementation of the processes, business strategies, and technical solutions for implementing OA
- Provide OA Systems Engineering Leadership to PEOs, Warfare Centers, Industry, etc.



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

★ OA Checkpoints
▲ OA Guidance



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.



A key part of OA is the proper exercise of the Navy's Intellectual Property Rights ...

- A key aspect to implementing OA is for the Government to **exercise** the intellectual property rights (IPR) it acquires
- Under the Federal Acquisition Regulations (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS):
 - The Government gets **Unlimited Rights** in both Technical Data (TD) and Computer Software (CS) for noncommercial items **developed exclusively at the Government's expense**.
 - For noncommercial items developed with **mixed funding**, the Government gets **Government Purpose Rights (GPR)** in TD and CS.
- If a contractor asserts more restrictive rights over a system/component's IP and the Government fails to challenge such an assertion by exercising its rights, the contractor obtains the asserted rights
- It is imperative that the Government assert and exercise the IPR it acquires because it may lose the right to challenge after a period of time

