



# ***NPS Acquisition Research Symposium***

## ***Implementing an Open Systems Approach in Weapon System Acquisitions***



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## The spiraling cost of our weapon systems...



*“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

*“There is a vast difference between DOD’s budgeting plans and the reality of the cost of systems. Performance, if it is defined as the capability that actually reaches the warfighter, often falls short, as cost increases result in few quantities of produced systems and schedule slips.”* - GAO Report

**...threatens our military today**



## *What could we do if our systems were modular...*



*...and affordable to acquire and maintain*



**Could we accommodate  
changing technology  
and requirements?**



**Could we provide  
interoperable capabilities  
to our warfighters?**



**Could we build a better force for tomorrow?**



## ***What could we do if our **contracts** were flexible***



Could we **increase competition** to reduce costs and foster innovation?

Could we **share components** across our services?

***...and secured the appropriate data rights***



## ***How will we get there?***

### **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***

***Implementation of **Open Architecture** is our path forward!***



## Why is OA essential to building a better force for today?

### **Cost Avoidance**

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

### **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 through delivery of cutting edge technologies and increased bandwidth 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

### **Reduction in Risk**

- Use of proven reusable components
- Minimized risk of delivering non-interoperable products by testing early and often in the developmental cycle



## How will we change?



### Naval OA Vision

*We must transform our organization and culture and align our resources to adopt and institutionalize open architecture principles and processes throughout the Naval community in order to deliver more warfighting capabilities to counter current and future threats*

#### **Align**

- Align Requirements and Acquisition Communities
  - Align Domains across the Enterprise and with Joint Services
  - Align Industry and Academia Partners
- ...to OA Vision*

#### **Share**

- Share products and assets across the enterprise
- Share knowledge and ideas through communities of interest
- Provide easy access to products through government data rights

#### **Collaborate**

- Reduce risk thru end-to-end collaborative experimentation
- Harmonize standards and guidance
- Reduce T&E expenses through common modular designs and standard interfaces



## Changing the way we contract for weapon systems is an important first step we must address to implement OA

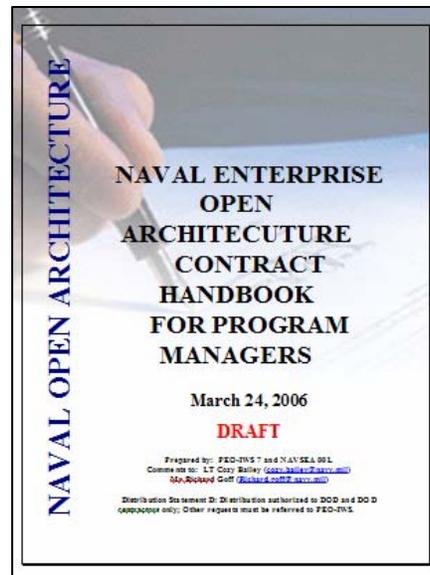
ASN RD&A has tasked the Naval OA Enterprise Team to develop OA contract guidance

### 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***



***Our panel today will cover OA implications on contracting as well as developing performance based requirements...***

**TODAY'S PANEL DISCUSSIONS**

***“Using a Modular Open Systems Approach in Defense Acquisitions: Implications for the Contracting Process”***

by [Dr. Rene Rendon](#)

***“Developing Performance-Based Requirements for Open Architecture Design”***

by [Mr. Brad Naegle](#)

***“OA Case Study - Acoustic Rapid COTS Insertion”,***

by [Mr. Mike Boudreau](#)

***...and conclude with an OA case study***



# *Thank You*





**Dr. Rene Rendon** - *“Using a Modular Open Systems Approach in Defense Acquisitions: Implications for the Contracting Process”*

- Rene Rendon is on the faculty of the Naval Postgraduate School where he teaches graduate acquisition and contract management courses. Prior to his appointment at the Naval Postgraduate School, he served for more than 22 years as an acquisition and contracting officer in the United States Air Force, retiring as a Lt Col. His Air Force career included assignments as a contracting officer for major space launch systems and satellite programs, as well as the F-22 Advanced Tactical Fighter and the Peacekeeper ICBM. Rene also served as a contracting squadron commander, and as a contracts manager for the NCR Corporation.





## Mr. Brad Naegle - “Developing Performance-Based Requirements for Open Architecture Design”

- **Brad R. Naegle**, Lieutenant Colonel, US Army (Ret), is a Senior Lecturer and Academic Associate at the Naval Postgraduate School, Monterey, California. While on active duty, LTC (Ret) Naegle was assigned as the Product Manager for the US Army 2 ½-Ton Extended Service Program (ESP) and the USMC Medium Tactical Vehicle Replacement (MTVR) from 1994 to 1996, and the Deputy Project Manager for Light Tactical Vehicles from 1996 to 1997. He was the 7th Infantry Division (Light) Division Materiel Officer from 1990 to 1993 and the 34th Support Group Director of Security, Plans and Operations from 1987 to 1988. Prior to that, Naegle held positions in Test and Evaluations and Logistics fields. He earned a Master’s Degree in Systems Acquisition Management (with Distinction) from the Naval Postgraduate School and a Bachelor of Science degree from Weber State University in Economics. He is a graduate of the Command and General Staff College, Combined Arms and Services Staff School, and Ordnance Corps Advanced and Basic Courses.





## Mr. Mike Boudreau - “Acoustic Rapid COTS Insertion”

- **Michael W. Boudreau**, Colonel, US Army (Ret), has been a senior lecturer at the Naval Postgraduate School since 1995. While an active-duty Army Officer, he was the Project Manager, Family of Medium Tactical Vehicles, 1992-1995. He commanded the Materiel Support Center, Korea, 1989-1991, and the Detroit Arsenal Tank Plant, 1982-1984. COL Boudreau is a graduate of the Industrial College of the Armed Forces; Defense Systems Management College; Army Command and General Staff College; Long Armour-Infantry Course, Royal Armoured Corps Centre, United Kingdom; and Ordnance Officer Basic and Advanced courses. He holds Bachelor of Mechanical Engineering and Master of Business Administration degrees from Santa Clara University, California.

