

*Latest Requirements and Techniques for Implementing...*

*Presented by Expert Lecturer*

**Mark. N.  
Klett**



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# OPEN ARCHITECTURE

- How to Achieve Compliance with DoD's OA Interoperability Requirements
- Compressing Development and Upgrade Cycles and Reduce Life Cycle Costs
- Assessing the Impact of OA on Current DoD/Service Business & Acquisition Models
- How Will OA Affect GIG and FORCEnet Development?
- Proven Methods for Implementing the Modular Open Systems Approach (MOSA)

**Washington, D.C. June 10-11, 2009**

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## ABOUT THE SEMINAR

**Department of Defense (DoD) has mandated that Open Architecture (OA) is required for all future system development.** Unfortunately, most “in service” or legacy command and control and computer based weapons systems do not have the capability to meet the demanding OA requirements imposed by DoD. However, there are ways to harness OA-based solutions that reduce this problem with rapidly upgradeable OA system components that also enhance affordability in production and modernization. Additionally, OA creates the ability to **re-use components across programs or domains and enable affordable hardware and software acquisition, while reducing life cycle maintenance.** For DoD, OA provides the technology basis necessary for improved warfighting capability. OA promotes **Global Information Grid (GIG)** interoperability and promises to make the Navy’s **FORCEnet** implementation a reality.

This seminar presents a comprehensive methodology for designing OA conforming systems consistent with the new requirements imposed by **DoD 5000.2, DOD Enterprise Architecture, DON Enterprise Architecture Joint Chiefs of Staff (JCS) Joint Capability Areas (JCAs), the Business Transformation Agency (BTA) Business Enterprise Architecture (BEA), the functional areas defined by the Assistant Secretary of Defense (Networks and Information Integration) (ASD[NII]), and those functional areas to be defined by the Intelligence community.** Attendees will receive the **latest concepts and techniques for compressing development and upgrade cycles and reducing life cycle costs.** Attendees will receive a complete guide and learn how it enables common standards and guidance. Additionally, you will receive a detailed analysis of the DoD MOSA Program Assessment and Review Tool (PART) to assess the implementation of OA across major defense platforms.

- ◆ **Expert Insights on Meeting DoD’s OA Requirements**
- ◆ **How Does OA Leverage Common Architectures to Create an Interoperable System of Systems?**
- ◆ **Tips on Achieving Compliance within Net-Centric Categories (Portability, Software Re-Use)**
- ◆ **Proven OA Techniques for Affordably Managing COTS Obsolescence**

## ABOUT THE SPEAKER

**Mark N. Klett** is a renowned authority on Open Architectures, DoD Architecture Frameworks (DoDAF) and the Global Information Grid (GIG). As a Program Manager for US Joint Forces Command C4 Systems Directorate (USJFCOM J6), he co-authored the GIG Capstone Requirements Document (CRD), published by USJFCOM after full concurrence by all CINCs, Services and Agencies and approval by the Joint Chiefs of Staff (JCS) Joint Requirements Oversight Council (JROC). Additionally, Mr. Klett was a part of the core team that established USJFCOM’s Joint Interoperability and Integration Program. He also developed the Joint Distributive Engineering Plant and promoted GIG-compliant material solutions to achieve C4 integration and joint interoperability of legacy, new and emerging systems.

Currently, Mr. Klett is President & CEO of KCG-INC, an award-winning engineering consultancy that provides innovative operational system engineering services and professional consulting services. They specialize in military transformation, C4I, and interoperability Subject Matter Expertise, for clients such as NETWARCOM, OPNAV, SPAWAR and Commander, Second Fleet, and he has developed a full range of GIG, Net-Centric Warfare, FORCEnet, Maritime Domain Awareness, and DoDAF Compliant architectures for a variety of capabilities in support services to DoD. Mr. Klett served as lead consultant to the Navy OPNAV Staff on the Open Architecture Strategy and the NETWARCOM FORCEnet Operational Advisory Group, and co-authored the “Open Architecture – The Critical Network Centric Enabler” white paper for OPNAV staff. This paper serves as a desk reference for Open Architecture implementation and addresses the integration of GIG and FORCEnet.

# OPEN ARCHITECTURE

## 1. OPEN ARCHITECTURE DEFINED

- Factors Driving OA Requirements
- Open Architecture Computing Environment
  - What Constitutes an OACE
  - Integrating with Legacy Computing Environments
  - Dealing with Moore's Law and the Ever-Evolving OACE
- Capabilities-Based Functional Architecture
  - What are the 9 Functional Elements?
  - When Does Functional Architecture Alignment Matter?
- Common Service and Application Imperatives
  - What are Common Services & What Makes Them Common?
  - When Does the Math Matter?
- Open Source and/or DoD Open Community Relationships
  - What is Open Source or DoD Open Community?
  - How Does Industry Deal with Intellectual Property in an Open Environment?

## 2. UNDERSTANDING WHAT OA COMPLIANCE MEANS

- What OA Compliance Categories Are & What They Mean
  - Why Achieving Hardware/Software Independence is Crucial
  - Understanding OA Interface Standards for "Plug and Play"
- How to Categorize Compliance for Fielded & Emerging Systems
  - Techniques in Baselining Current Weapon Systems with OA Compliance
  - Determining What Matters in Deciding on Whether or Not to Migrate to OA

## 3. OPEN ARCHITECTURE'S RELATIONSHIP TO GIG/FORCENET

- How Today's Weapons and Combat Systems Stack Up to the GIG
  - User Defined & Controlled Information Dissemination Challenges
  - Survival vs. Planning Information in Defining Real-time Data Exchange
- Challenges of Internet Protocol-Based Computing Technology in Weapons
  - TCP/IP and Real-time Collide & What New Protocols Provide
  - Area Network Challenges & Solutions
- Web-Based Command & Control Implications
  - Addressing the Bandwidth Challenge in Network Centric Environments
  - Detect, Control, and Engage in a Web-Based C2 Environment
  - Insights into Human Systems Interface (HSI) Impacts & Challenges

## 4. IMPACTS ON CURRENT BUSINESS AND ACQUISITION MODELS

- Current DoD Acquisition and Upgrade Process Shortcomings
  - Why Today's Acquisition Paradigms Create Fundamental Barriers
  - New Business Model Imperatives
    - Commercial Acquisition Process Sequencing
    - Prime System Integrator Roles & Responsibilities
- What DoD 5000.2R & OMB Circular A-130 Require
  - Basic Considerations and Assumptions
  - Policy Issues Related to Open Architecture
- Defining New Approaches that Leverage OA for Affordability & Agility
  - Harnessing the Realities of COTS Obsolescence
  - Rapid Capability Insertion Process/Advanced Processor Builds
    - What Drives the Process?
    - Why Requirement Generation is Time Critical
- DoD Open Source Policy Implications & Issues

## 5. NAVY CASE STUDY EXAMPLE — HOW DO WE GET TO OPEN ARCHITECTURE BASED SYSTEMS?

- The Navy's Transformation Roadmap
  - Harnessing Future Platform Development
  - Joint Track Management and Common Services — Key to Interoperability
  - Establishing the OA Functional Architecture Migration
  - Transformation Risk Mitigation
  - Establishing Conditions for Future Capabilities
- Key Architecture Discussion and Relationships
  - DOD Enterprise Architecture
  - DON Enterprise Architecture
  - Joint Chiefs of Staff (JCS) Joint Capability Areas (JCAs)
  - Business Transformation Agency (BTA) Business Enterprise Architecture (BEA)
  - Functional Areas Defined by the Assistant Secretary of Defense for Networks and Information Integration (ASD/NII)
  - Functional areas to be Defined by the Intelligence Community

## 6. APPLYING STANDARDS AND IMPLEMENTING OA CONCEPTS — THE MOSA APPROACH

- The Modular Open Systems Approach Defined
  - The Process
  - Building Blocks
  - Migration Methodology
  - Risk Assessment
- Harnessing the DoD Business Model

