Synergies Between TOGAF & DoDAF

The Open Group
Architecture Framework

US Department of Defense
Architecture Framework

The Open Group: Enterprise Architecture LONDON
Nov 30 – Dec 1, 2006

Rolf Siegers
Corporate Director, Architecture & Systems Integration
Engineering Fellow
Raytheon Company

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Topics

- **About the Analysis**

- **TOGAF Overview**

- **DoDAF Overview**

- **Sample of Analysis Outputs**

- **High-Level Results**

- **Summary**

About the Analysis

- **Core Participants**
  - **Dr. Fatma Dandashi, Mitre**
    - **Task Lead, DoDAF 1.0 Working Group**
  - **Rolf Siegers, Raytheon Company**
    - **Corporate Director, Architecture & Systems Integration**
    - **Lead, Raytheon Enterprise Architecture Process (REAP) Initiative**
  - **Judith Jones, Architecting-the-Enterprise**
    - **TOGAF 9 Development Lead**
  - **Terry Blevins, Mitre**
    - **Branch Chief and Lead Architect, Air Force Operational Support Enterprise Architecture**

- **Supporting Participants**
  - **Various Open Group Architecture Forum representatives**

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About the Analysis   (2)

- **Time Frame**
 - **Began 3rd quarter of 2004**

- **Approach**
  - **Face-to-Face workshops**
    - **DoDAF-to-TOGAF perspective**
    - **TOGAF-to-DoDAF perspective**

- **Outputs**
  - **50+ Page Joint White Paper**
    - **Final formatting and company release approvals are nearing completion**
    - **To be published through The Open Group web site**
  - **Broad summaries will be appearing In…**
    - **Federal Computer Week, SOA Web Services Journal, DM Review**

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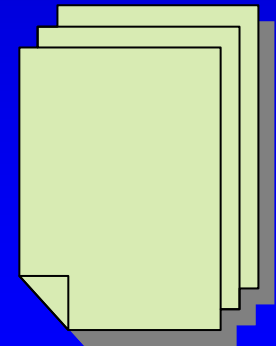
TOGAF Overview

- **Baselined in 1995 from the U.S. DoD's Technical Architecture Framework for Information Management (TAFIM)**

- **TOGAF's Architecture Development Method (ADM) leveraged from TAFIM Volumes 2 & 3**

- **A commercial license (or Open Group Architecture Forum membership) is required in order to use TOGAF for developing an architecture for an external customer**

Architecture Development Method Phases

Preliminary: Framework & Principles

A: Architecture Vision

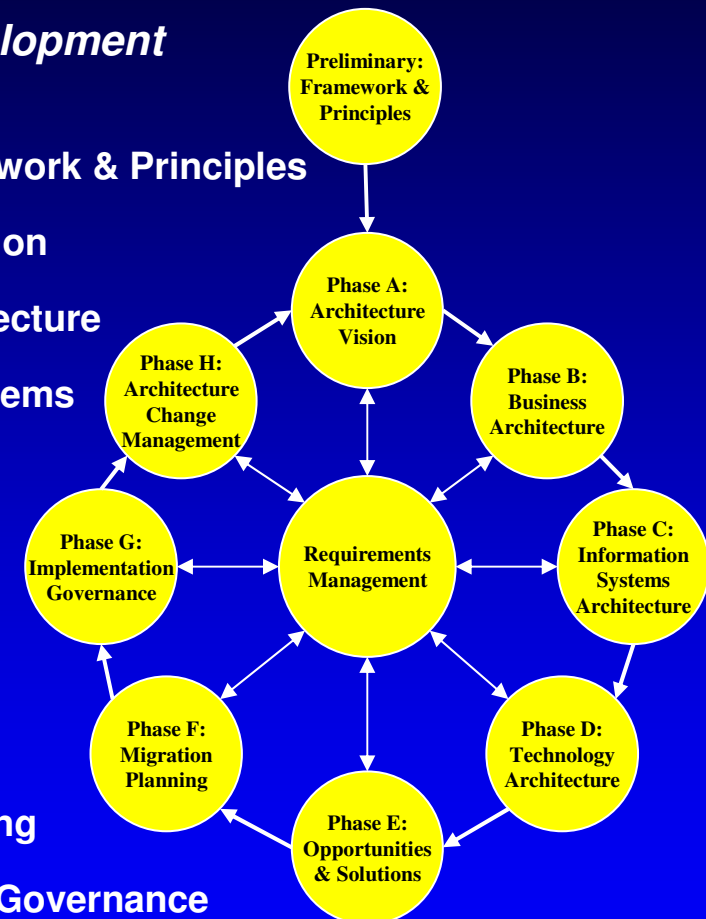**B: Business Architecture**

C: Information Systems Architecture

D: Technology Architecture

E: Opportunities & Solutions

F: Migration Planning

G: Implementation Governance

**H: Architecture Change Management**

TOGAF Overview (2)

"The TOGAF Architecture Development Method therefore does not prescribe any specific set of enterprise architecture deliverables - although it does describe a set, by way of example. Rather, TOGAF is designed to be used with whatever set of deliverables the TOGAF user feels is most appropriate. That may be the set of deliverables described in TOGAF itself; or it may be the set associated with another framework, such as Zachman Framework, FEAF, etc."
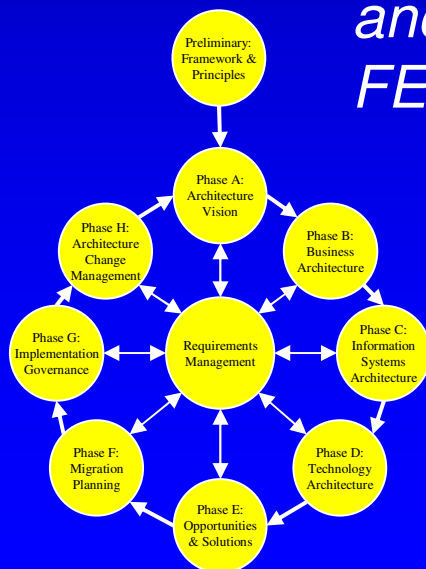
TOGAF 8.1
Introduction: The Role of TOGAF

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DoDAF Overview
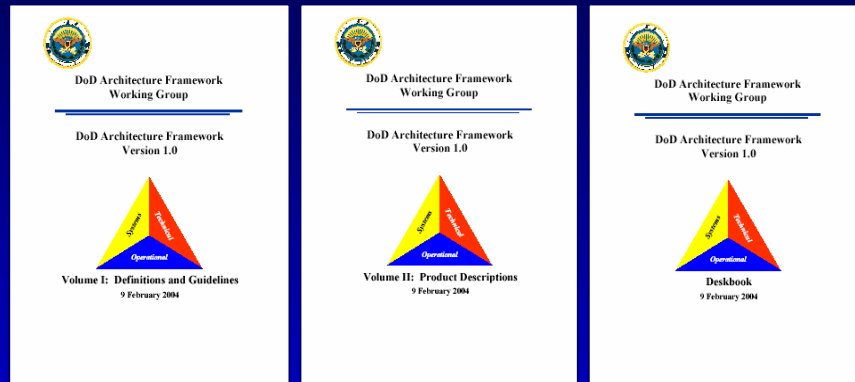
Beginning in the early 1990s, the U.S. Department of Defense directed several studies for ensuring interoperable and cost-effective military systems

Their recommendation:
Undertake the development of architectures as the basis for acquisition

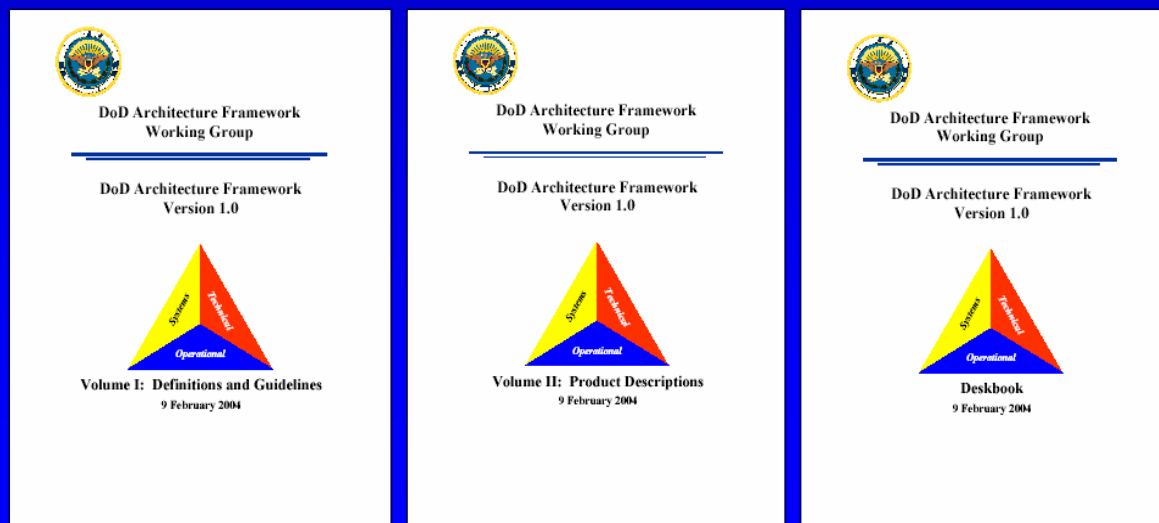**Emphasis was placed on interoperability through architecture product descriptions**

1996	**C4ISR Architecture Framework 1.0**
1997 (Dec)	**C4ISR Architecture Framework 2.0**
1998 (Feb)	**CAF mandate memo**
1998-2003	**Interim DoDAF draft versions**
2003	**DoD Architecture Framework 1.0 (fnal draft)**
2004 (Feb)	**DoD Architecture Framework 1.0**
2004 (Feb)	**DoD Architecture Framework mandate memo**

- **2 Volumes, 1 Deskbook**
- **26 Architectural Description Products**
- **Products Collected Into Views…**
  - **All Views**   **2 products**
  - **Operational View**   **9 products**
  - **System View**   **13 products**
  - **Technical Standards View**   **2 products**

DoDAF Overview (2)

"The purpose of the Department of Defense (DoD) Architecture Framework (DoDAF), Version 1.0, is to provide guidance for describing architectures for both warfighting operations and business operations and processes. "

DoDAF 1.0
Section 1.1, Purpose and Scope

DoD Architecture Framework
Working Group

DoD Architecture Framework
Version 1.0

Volume I: Definitions and Guidelines
9 February 2004

DoD Architecture Framework
Working Group

DoD Architecture Framework
Version 1.0

Volume II: Product Descriptions
9 February 2004

DoD Architecture Framework
Working Group

DoD Architecture Framework
Version 1.0

Deskbook
9 February 2004

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Sample of Output from White Paper

Textual guidance for DoDAF tailoring of TOGAF steps

TOGAF Phase A: Step #	TOGAF Phase A: Step Focus	DoDAF Tailoring
1	Project Establishment	Obtain approval for statement of Architecture work to document Project Establishment
2	Business Principles, Business Goals and Business Drivers	Gather Business Principles, Business Goals and Business Drivers. Develop an OV-1 that models: • their relationships • elements of the architecture that are constrained by them, • elements of the architecture that help achieve them
3	Architecture Principles	Develop an AV-1 to document Architecture Principles and Architecture Drivers
4	Scope	Develop OV-1 to document: • Scope • Architecture constraints • Stakeholders and concerns • Business Requirements, and • Architecture Vision
5	Constraints	
6	Stakeholders and concerns, Business Requirements, and Architecture Vision	
7	Statement of Architecture Work and Approval	Complete Statement of Architecture Work and Approval process within DoDAF AV-1

Sample of Output from White Paper (2)

Workflow graphics also reflect DoDAF product -to-TOGAF step relationships
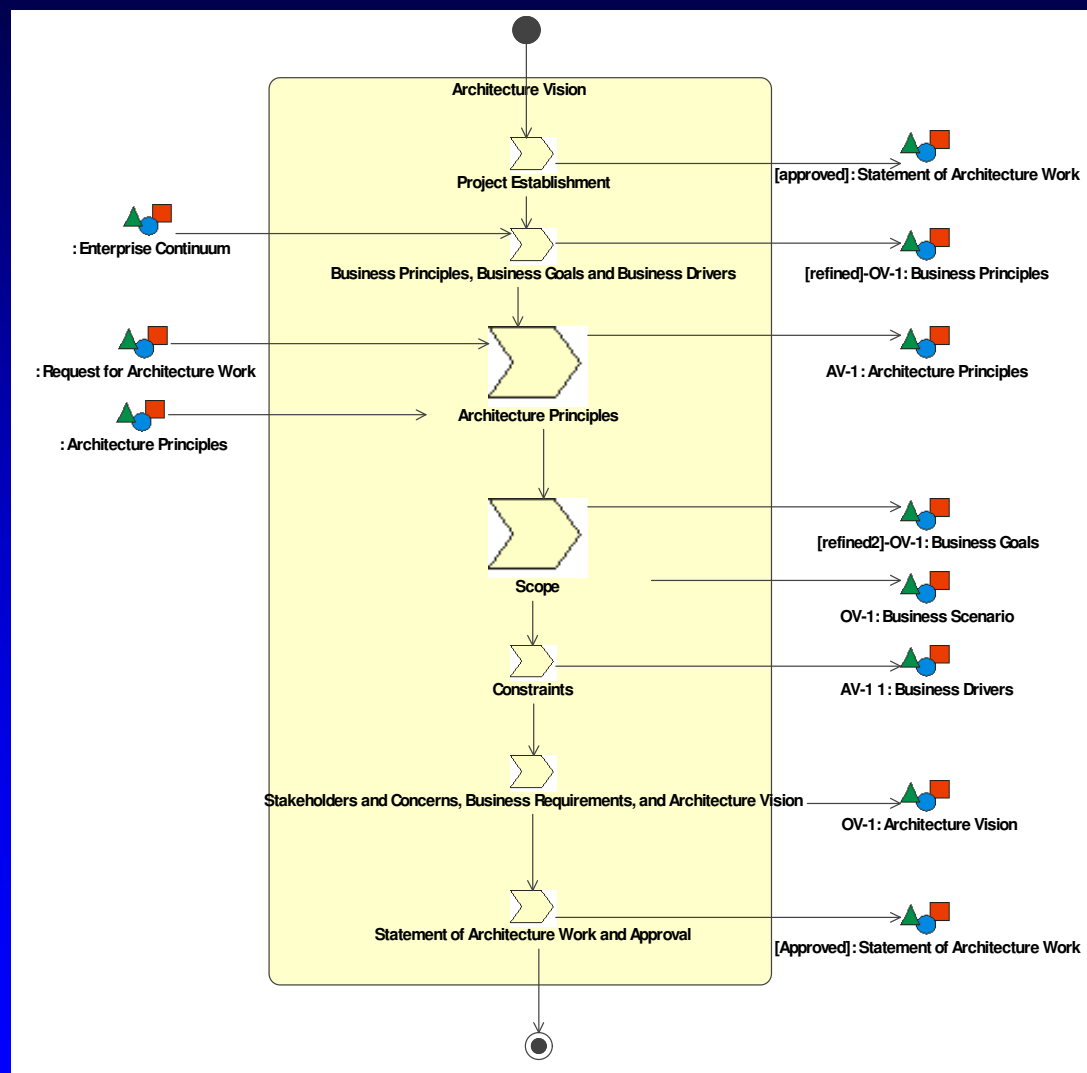
# High-Level Look At Results: Primary Relationships
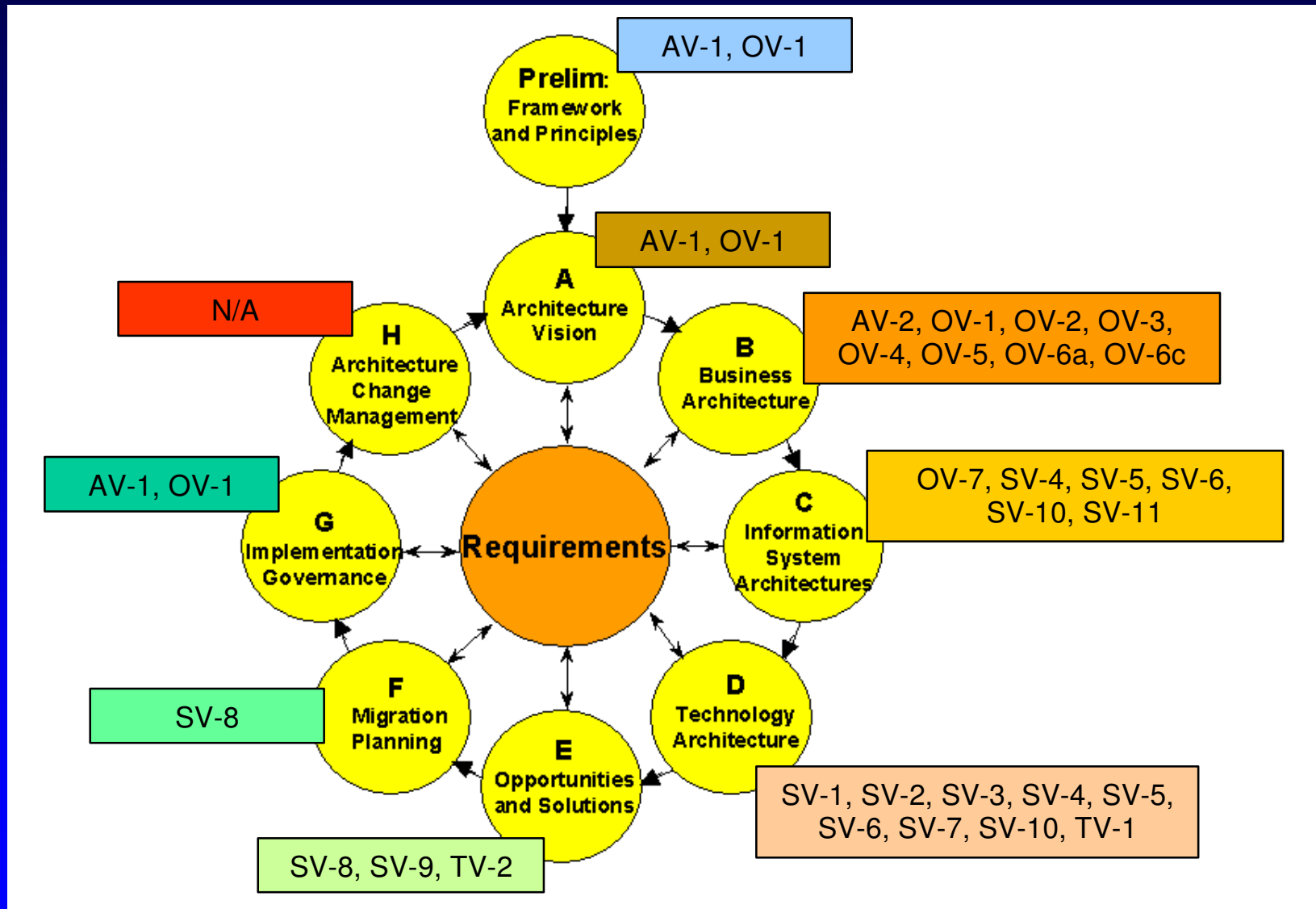
High-Level Look At Results: Primary Relationships (2)

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- ## DoDAF's All Views
  - TOGAF's *Preliminary Phase* and *Phase A: Architecture Vision*

- ## DoDAF's Operational View
  - TOGAF's *Phase B: Business Architecture*

- ## DoDAF's Systems View
  - TOGAF's *Phase C: Information Systems Architecture,*
    Phase D: Technology Architecture,
    Phase E: Opportunities & Solutions,
    Phase F: Migration Planning

- ## DoDAF's Technical Standards View
  - TOGAF's *Phase D: Technology Architecture,*
    Phase E: Opportunities & Solutions
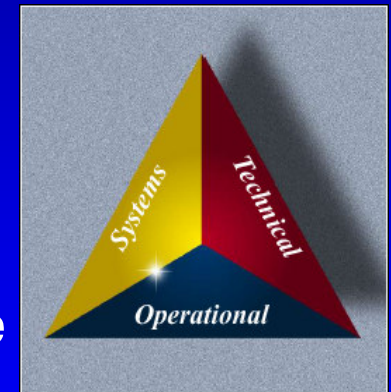
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Summary

TOGAF

– Well-established architecture methodology…
without prescribed architecture products
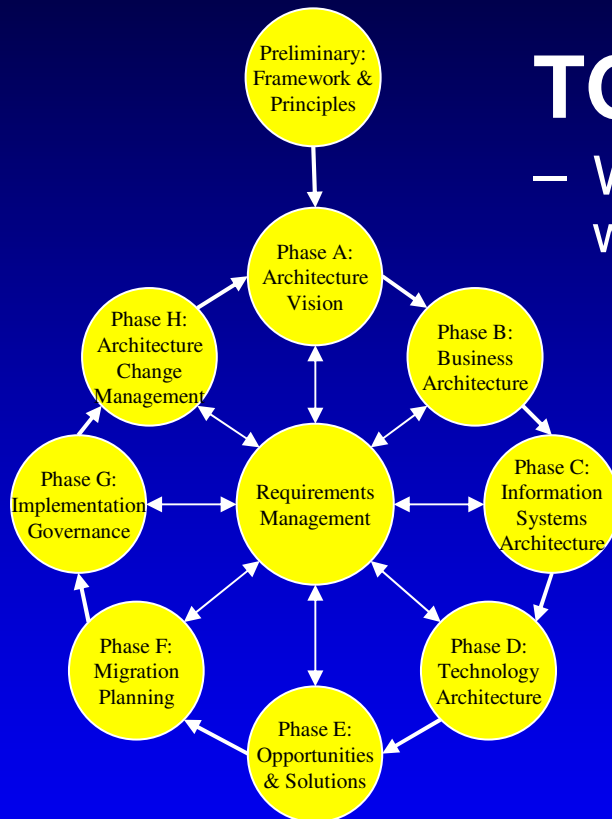
DoDAF

– Well-established architecture
product descriptions…
without prescribed architecture methodology

TOGAF & DoDAF Unification Provides A More Complete Architecting Solution

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Questions?

Rolf Siegers
Corporate Director, Architecture & Systems Integration

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Supplemental Slides

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Acronyms

ADM	**Architecture Development Method [TOGAF]**
AV	**All Views [DoDAF]**
C4ISR	**Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance**
CAF	**C4ISR Architecture Framework**
DM	**Data Management**
DoDAF	**Department of Defense Architecture Framework**
OV	**Operational View [DoDAF]**
SOA	**Service Oriented Architecture**
SV	**Systems View [DoDAF]**
TAFIM	**Technical Architecture Framework for Information Management**
TOGAF	**The Open Group Architecture Framework**
TV	**Technical Standards View [DoDAF]**

Speaker Biography

Rolf Siegers is Raytheon's Corporate Director of Architecture & Systems Integration and an Engineering Fellow. He joined Raytheon in 1984 and leads the corporate Raytheon Enterprise Architecture Process (REAP) Initiative, Raytheon's standards-based, company-wide architecting process. Rolf also chairs Raytheon's corporate Architecture Review Board, leading and supporting a variety of architecture-related initiatives across the company.

Rolf's program experience includes leading several multi-disciplinary architecture teams for large-scale, software-intensive national and international systems since 1997. He is a certified TOGAF-8 architect (The Open Group), ATAM® Evaluator (Software Engineering Institute), and Software Architecture Professional (Software Engineering Institute). He has previously presented at conferences by the U.S. Department of Defense, Integrated Defense Architectures, The Open Group, Software Engineering Institute, and the International Council on Systems Engineering (INCOSE).

Rolf holds bachelor degrees in Computer Science and Mathematics from Huntingdon College and is a member of IEEE and INCOSE.