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# **Working Group 4A**

## **Architecture-Centric Evolution (ACE) of Software-Intensive Systems**

### **Chairs**

**Dr. Sergio Alvarado**

**Sheri Benator**

**Dr. Phillip Schmidt**

**The Aerospace Corporation**

# ACE Working Group Goals

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- **Fifth of a GSAW series**
  - ❖ Promote the central role of software architectures during the acquisition & development of software-intensive systems
- **Forum for software-intensive system experts, users, developers & researchers**
  - ❖ Collaborate and elucidate high-level recommendations for improving software architectures representation, development & design
- **Presentations & panel discussion**
  - ❖ Methodologies, Tools, Techniques, & Practices for Analyzing Architectures for Software-Intensive Systems

# ACE Invited Panelists

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- **Acquisition and Oversight Perspective**
  - ❖ Peter Capell, Software Engineering Institute
  - ❖ Dr. Peter Hantos, The Aerospace Corporation
- **Development Perspective**
  - ❖ Richard Anthony, General Dynamics C4 Systems
  - ❖ Sean Kelly, Lockheed Martin, IS&GS
- **Research and Tools Perspective**
  - ❖ Dr. Hans-Peter Hoffman, Telelogic
  - ❖ Dr. Azad Madni, Intelligent Systems Technology, Inc.
  - ❖ Dr. Kathryn Weiss, Jet Propulsion Laboratory
- **Moderator**
  - ❖ Dr. Sergio Alvarado, The Aerospace Corporation

# ACE Discussion Questions - 1

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- **Architecture related problems in ground or space systems**
  - ❖ What types of problems have you encountered (or avoided) in your ground or space systems that are architecture related?
- **Architecture analysis**
  - ❖ What types of processes, techniques, and tools have you used for analyzing evolving system/software architecture models?
  - ❖ How and when have you used these practices, techniques and tools?
  - ❖ How do architecture types such as Service Oriented Architecture or embedded systems impact your analysis?
  - ❖ What experience have you had in assessing quality attributes?

# ACE Discussion Questions - 2

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- **System architecture modeling languages and frameworks**
  - ❖ How do you envision system architecture modeling languages and frameworks such as SySML and DODAF integrating with the software architecture development, description, and evaluation?
- **Evolving architecture standards**
  - ❖ What is the role and impact of standards such as UML 2.0 and MDA?
  - ❖ How do you see the standards evolving?

# ACE Discussion Questions - 3

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- **Future methodologies, tools, techniques, & practices**
  - ❖ How do you expect methodologies, techniques, tools, and practices to change to meet the increasing complexity of software-intensive systems?
  - ❖ What types of capabilities would be useful that don't fully exist today?
- **System acquisition impact on software architecture**
  - ❖ What acquisition practices support or inhibit good architecture processes?
  - ❖ What changes would you like to see in system acquisition?