Working Group 4A
Architecture-Centric Evolution (ACE) of Software-Intensive Systems

Chairs
Dr. Sergio Alvarado
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The Aerospace Corporation
ACE Working Group Goals

• 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
ACE Invited Panelists

• 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

• 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

• **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

- 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?