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# **Working Group 9B**

## **Architecture-Centric Evolution, Evaluation & Elaboration (ACE3) of Software-Intensive Systems**

### **Chairs**

**Dr. Sergio Alvarado**

**Dr. Scott Turner**

**The Aerospace Corporation**

**Dr. Hadar Ziv**

**Institute for Software Research, UC Irvine**

# ACE3 Session Goals

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- **Address stakeholder needs in evolution, evaluation, and elaboration of architectures in software system lifecycle**
  - ❖ Presentations from members of government agencies, contractors, academia, and federally funded research and development centers
- **Promote central role of software architecture during acquisition/development of software-intensive systems**
  - ❖ Forum for elucidating high-level recommendations for improving architecture practices, representation techniques, and analysis tools

# ACE3 Session Discussion Baseline

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## 1. Elaboration

- ❖ Architecture-based management of “requirements-creep” risk
- ❖ Architecture constructs/tools for seamless requirement-to-implementation trace

## 2. Evolution

- ❖ Architecture constructs/tools for supporting system evolution requirements
  - Maintainability
    - » Upgrades, changes & integration of COTS products for system implementation
  - Extensibility
    - » Increased system size, complexity, environments, services & interoperability
  - Executability
    - » System performance and reliability

## 3. Evaluation

- ❖ Challenges to architecture evaluation within software system acquisition
- ❖ Architecture constructs/tools required for software system evaluation

# ACE3 Presentations

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- **Acquisition Perspective**

- ❖ Frank Sisti, Air Force Space and Missile Systems Center
- ❖ Maj. Mark Tuttle, Air Force Space and Missile Systems Center

- **Overseeing Perspective**

- ❖ Dr. Charles Hammons, Software Engineering Institute
- ❖ Dr. Peter Hantos, The Aerospace Corporation
- ❖ Dr. Phillip Schmidt, The Aerospace Corporation

- **Development Perspective**

- ❖ George Haley, Product Line Manager, Northrop Grumman
- ❖ Jeff Garland, “Large-Scale Software Architecture Book Coauthor,” CrystalClear Software
- ❖ Ted Faison, “Component-Based Development Book Author,” Faison Computing

- **Research Perspective**

- ❖ Dr. Hadar Ziv, Institute for Software Research, University of California, Irvine

- **Moderators**

- ❖ Dr. Sergio Alvarado, The Aerospace Corporation
- ❖ Dr. Scott Turner, The Aerospace Corporation