GSAW2004
Ground System Architectures Workshop

Breakout Session 10A
Architecture-Centric Evolution & Evaluation (ACE2) of Software-Intensive Systems

Chair

Dr. Sergio Alvarado
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Committee

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ACE2 Session Goals

- **Promote central role of software architecture during acquisition/development of software-intensive systems**
  - ❖ Improved responsiveness to changes in requirements and complexity
  - ❖ Early identification of flaws
  - ❖ Streamlined system implementation, testing, and maintenance
- **Explore how to specify and evaluate software system architectures that support software system evolution**
  - ❖ Techniques for software architecture representation
  - ❖ Tools for software architecture analysis
  - ❖ Software system architecting practices, standards, and policies

ACE2 Session Discussion Baseline

1. **Architecture as a Basis for Understandability**
   - Provide views of software system with levels of granularity appropriate for each stakeholder (acquirer, overseer, developer, tester, and operator) to have insight into system functionality

2. **Architecture as a Basis for Assessing Maintainability**
   - Link requirements to system implementation so that stakeholders can assess degree of system change and cost/schedule impact from upgrading, changing, and integrating COTS products used in implementation

3. **Architecture as a Basis for Assessing Extensibility**
   - Link requirements to system implementation so that stakeholders can assess degree of system change and cost/schedule impact from new requirements on system size, complexity, environments, services, and interoperability

4. **Architecture as a Basis for Assessing Executabilty**
   - Support development of executable models so that stakeholders can assess impact of new requirements on system performance and reliability

ACE2 Session Agenda

- **First Segment (13:00 – 15:00)**
  - Lt. Col. Laura Pope, Air Force Space and Missile Systems Center
  - Dr. Joel Sercel, MILSATCOM Joint Program Office
  - Dr. Linda Northrop, Software Engineering Institute
  - Dr. Peter Hantos, The Aerospace Corporation
  - Discussion and formulation of findings

- **Second Segment (15:15 – 17:00)**
  - Capt. Bryan Berg, Air Force Space and Missile Systems Center
  - Peter Shames, Jet Propulsion Laboratory
  - Jim Boegman, Raytheon
  - Dr. Allen Nikora, Jet Propulsion Laboratory; Myron Hecht and Douglas Buettner, The Aerospace Corporation
  - Discussion and formulation of findings