

Ground Systems Architecture Challenges

- COTS and IT
- Trade Studies
- Standards and Measurement
- Cost
- People

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COTS and IT

- **New processes and architectures to support COTS-based development**
 - **Business models**
 - **Technology projections**
- **System (especially COTS-based) evolution over lifetime**
- **The role of IT (should we be using java, xml, etc.)**
- **Appropriate use of “consumer grade” technologies in NSS applications (i.e., Microsoft NT)**

Trade Studies

- **How best to perform ground systems architectural trade studies (i.e., CDC-like capabilities)**
- **Optimum mix of space, air and ground functionality**
 - **Integrated architectures**
 - **Access-based evolution**

Standards and Measurements

- **The role of government/industry standards (DII COE, JTA, etc.) in system architecting**
- **How best to include architectural considerations in the new SEI integrated CMM**

Cost

- **Ways of building more cost effective ground systems**
 - **Improved cost/architecture models**
 - **Multi-mission flexibility**
 - **Program cost sharing**
 - **Integrated evolution planning for reduced LCC**
 - **Pre-planned re-use**
 - **Product families**
 - **Transparent hardware upgrades (a la avionics)**
 - **Shorten software and system development time**

People

- **How to develop and utilize software and systems architecting expertise**
 - **Use emerging Internet technologies vs. competing with the “dot coms”**
 - **Competition very hard, even after recent corrections**
 - **Better university/industry collaboration**
 - **Increased availability of expertise**
 - **A means for non-citizen EE/CS student contributions**
 - **Leverage existing talent pool**

The Bottom Line

- **Many challenges facing ground systems development**
- **FFRDC, industry, academic collaboration essential**
- **This is an excellent forum to address the issues**

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