Session 10D: Multimission Ground Systems: Approaches and Challenges

• Easy Agreement:
  – Multimission Ground Systems are the right way to go for many mission sets
  – It often is not a technological challenge
    • Culture, Mission-Oriented Funding Paths, Organizational Structures often restrict multimission plans. Really need an organization focused on common needs.

• Interesting Discussions
  – Are many systems so “special” that COTS solutions and other multi-mission solutions need not be considered?
  – There are several key architectural approaches
    1. Home grown systems that meet the core needs of an organization’s many missions
    2. End-to-End systems provided by a COTS vendor
    3. Open architecture which allows mix of multiple vendor products and in-house products

Regardless of approach, systems need to be modular with clean interfaces and few dependencies – SOA and message-oriented middleware systems both support this approach. The right granularity is important.
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• Are there sufficient business incentives for vendors to invest their own money for a specialized niche product that NASA may find useful?
  – The chances are better if systems are composed of parts and the niche areas are separated from the common areas

• What can we do to make multimission support a strategic goal with support from management and the missions?

• Standards are essential, but can’t answer all concerns. We do not believe than a predominant architecture standard will emerge – we’ve heard about many great ideas
We knew terminology would be a big factor in our discussions and that key changes are now taking place in how we build systems.

For example, one very large government organization has eliminated all stovepipes!
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They have “cylinders of excellence”