



Summary of GSAW 99 Plenary Sessions

Outline

- Where Were We Two Years Ago?
- Where Are We Today?
 - ◆ Product Lines and Reference Architectures
 - ◆ A Maturing COTS Base
 - ◆ Advances in Technology
- Five Most Quotable Quotes

Where Were We Two Years Ago?

- Searching for ways to reduce the cost of developing and operating ground systems
- Exploring many different notions of “architecture”
- Looking for interoperability and commonality through “open architectures”
- Wondering if OO was the magic solution

Where Were We Two Years Ago?

- Stressing the importance of dealing with both space and ground
- Expressing frustration over our inability to apply the best of commercial practices
- Arguing about COTS, GOTS, ROTS, HOTS, ...
- Searching for appropriate ways to describe and analyze architectures

Where Are We Today?

- Still searching for ways to make ground systems less costly to develop, modify and operate
- Taking different paths toward a common goal
 - ◆ Moving away from single common system to multiple mission-specific systems
 - ◆ Moving toward reference architecture
- Greater emphasis on “commercialization”

Product Lines and Reference Architectures

- More evidence of successful application of product lines - but government examples are scarce
- Conditions for success are better understood
- A view of “reference architecture - alive and well”, tempered by some less successful government efforts to develop reference architectures

A Maturing COTS Base

- A call for standardizing interfaces in order to increase the utilization of COTS
- Mixed results
 - ◆ Some disasters with COTS mismatches
 - ◆ Substantial leveraging
- Technologies for better exploiting the full potential of COTS

Advances in Research

- A better perspective on why some system succeed where others fail
 - ◆ Model clashes
- More, better architecture description languages (Rapide, UML, ACME,)
 - ◆ A common theme of needing better defined semantics for UML

Advances in Research (con't)

- More quantitative architecture analysis methods
 - ◆ Quantifying consensus, multi-view integration, animation
- Architecture extraction, system synthesis
- New fresh faces, and old familiar ones
 - ◆ Everything on the net, Java, ...
 - ◆ AI for autonomous decision making

Five Most Quotable Quotes

- Better, cheaper, faster - pick any two
- Hidden cost of saving money
- Schedule as an independent variable
- Architectural beauty should not be in the eye of the beholder
- IKIWISI - I'll Know It When I See It