



GSAW 2002
Session 10D
Breakout Group

**Architectural Approaches
for
Multi-Mission Ground Systems**

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Session Chair

Session Goals

- **Definition of a Multi-mission Satellite Ground Control System (GCS):**
 - System for controlling multiple families of satellites of different make/model
- **Session Goals**
 - Identify key elements of a Multi-Mission Ground Control System
 - Understand how these elements support the Multi-Mission capability

Participants

Satellite Operators

- Susan Kurtik, Jet Propulsion Laboratory
- Tina Arechiga, PanAmSat

Ground System Vendors

- David Allen, L-3 Communications/Storm Control Systems
- Pete Gaffney, Integral Systems, Inc.

Ground System Component Vendor

- Robert Andzik, RT Logic

Session Results

- **Multi-mission approach is preferred**
 - Multiple dedicated systems were too costly
 - Valid at operations, systems & component level
- **Systems must be designed for upgrade**
 - H/W & S/W Maintenance Problems
 - Personnel training and interest
 - Systems must support regression and operations testing while in use

Session Results, pg 2

- **Decouple Components**
 - Isolate mission specific functions from core
 - Isolate hardware dependencies
 - Multiple versions of APIs support evolution
 - Supports layered, tailorable architecture
- **Use of Standards**
 - Must be widely accepted
 - TCP/IP
 - CCSDS/SLE
 - CORBA
 - Not too low level

Session Results, pg 3

- **Distributed Architectures**
 - Architectural flexibility
 - Hardware independence/flexibility
 - Personnel and operations flexibility
- **COTS Components**
 - Total COTS system is not possible
 - Need some in-house development to keep maintainers trained/interested
 - Node-locked licenses inhibit s/w distribution