



Ground System
Architectures Workshop

GSAW 2002

Breakout Session 11A Summary

Business Cases and Acquisition Strategies

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Business Cases and Acquisition Strategies

- Acquisition decisions continue to be driven by business case, cost and risk considerations
- Continuing emphasis on COTS and reuse emphasize need for cost/benefit/risk trade-offs
- Successful acquisitions mitigate cost and schedule risk caused by disconnects between product capabilities and system requirements
- Successful strategies need to address supportability, maintenance, and product improvement drivers
- Well defined ground system architectures can have a strong impact on the reduction of system life cycle costs



- Greg Hollister, United Space Networks
 - *Universal Space Network Commercial Antenna Network Evaluation (CANE) Overview*
- CANE Objectives and Results
 - Demonstrate “SGLS+” (SGLS, Unified S-band)
 - Quantify effectiveness of service
 - Deliver residual operations capability
 - CANE proved it is feasible to perform “simple” SGLS TT&C using a commercial ground station
 - Using commercial assets can offset infrastructure investment
 - More work needs to be done: e.g. demonstrate SGLS Ranging



- Daniel Vanderwarker, The Aerospace Corporation
 - *Strategies for Implementing a Product Line Approach to Software Reuse at the NRO*
- Summarized a study to develop a business case for strategic software reuse at the NRO
 - Fund and acquire key assets
 - Identify potential users and provide incentives for them to develop systems from core assets
 - Provide the infrastructure to sustain the effort
 - Fund the sustainment of core assets and products
 - Several issues exist that must be resolved before a product line can be successful



- Stephen Book, MCR, Inc.
 - *Schedule Risk Analysis: Why It is Important and How to Do It*
- The Schedule Risk Imperative
 - “Time is not Money, Time is More Complex than Money”
 - Schedule Durations Have Probability Distributions
 - “Risk Drivers” Impact Activity-Duration Uncertainty
 - A Schedule-Risk Analysis is Really a Computer Simulation of Project Duration
 - Do Not Sum Most Likely Activity Durations, because if you do You Will Almost Certainly Underestimate Most Likely Project Duration



- Don Reifer and Ricardo Valerdi, University of Southern California Center for Software Engineering
 - *COSYSMO: Constructive Systems Engineering Cost Model*
- Provided status of COSYSMO Research
 - Goal is to build a COCOMO II-like model for estimating effort and duration of system engineering tasks
 - Framed scope using a Satellite Ground System as a reference system
 - Delphi questionnaire will be used to determine the range for size driver and effort multiplier ratings
 - Data from completed systems will then be used to statistically confirm or deny initial ratings