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 Vanderwerker, 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