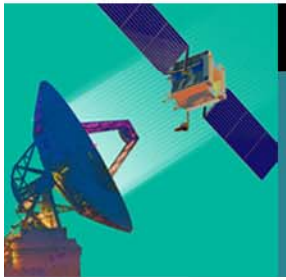
Working Group Outbrief

Ground System Architectures Workshop

Session 12C

Harmonizing Compatible Satellite C2 Architectures for an Enterprise of Mission Programs

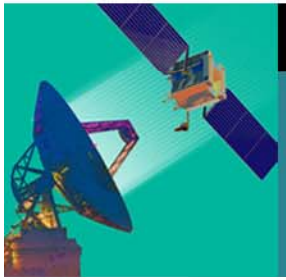
Ronald Nishinaga, The Aerospace Corporation



Session 12C

Session Goals

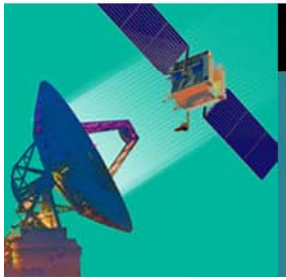
- Present initiatives of U.S. and European government space organizations in harmonizing future ground system development for Satellite C2
  - Identify architecture challenges and solutions that address mission needs for an enterprise of programs
  - Conduct a live demonstration of a compatible Sat C2 prototype



Session 12C

Presenters/Panelists

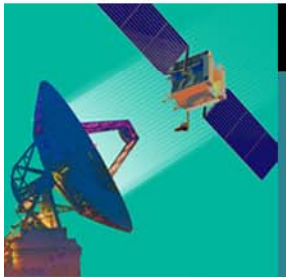
- Panel
  - Chair: R. Nishinaga, AFSCN Directorate, Aerospace Corp
  - Presenters:
    - N. Peccia, Data Systems Infrastructure Div, ESA
    - D. Sather, Launch & Satellite Control Div, Aerospace Corp
    - D. Smith, GMSEC, NASA Goddard Space Flight Center
    - T. Sullivan, Ground Systems Lab, Aerospace Corp
    - V. Swaminathan, SMC/SN, LAAFB
    - D. Harris, ORS Office, Aerospace Corp
    - A. Gilbertson, Ground Systems Lab, Aerospace Corp



Key Points

- Harmonization across multiple U.S. government space organizations is focused on common SATOPS goals.
  - Reduce lifecycle costs, increase operational efficiency & capabilities, and enhance situational awareness via the Joint SATOPS Compatibility Committee (JSCC)
  - Vendor community is actively engaged

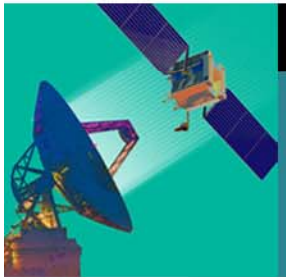
- ESA harmonized their stakeholders needs to plan common ground data systems across multiple space agencies and many missions
  - Identified common code for key functions
  - Issued reference architecture, high level requirements and ICDs
  - Way forward: establish common ground systems



Key Points (cont'd)

- JSCC produced a framework for National Security Space (NSS) leading to operational demonstrations for transition to full scale operations & sustainment.
  - Based on NASA GMSEC framework already in operation
  - Sat C2 test bed validated framework approach
  - Prototype in development to test Information Assurance controls
  - Recommended framework governance supporting the Defense Space Council (DSC).
- ORS incorporates the framework into its "Mission Service Interface"
- NASA harmonizing on many CCSDS Standards

JSCC is harmonizing SATOPS around a "Framework" rather than an "Architecture"



Session 12C

Conclusions

- Progress made by ESA and JSCC organizations in harmonizing their ground system mission needs
- Preparing documentation to support future acquisitions in NSS
- SATOPS Framework governance and policy need to be established at the NSS level