

## Working Group Outbrief

# Ground System Architectures Workshop



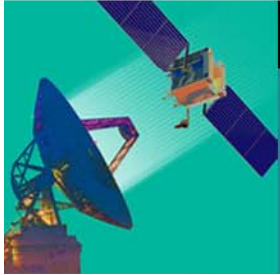
Session 12E

Technology Investments for  
Emerging Cyber Strategies

*Frank Belz, Jandria Alexander, The Aerospace Corporation*

[Frank.Belz@aero.org](mailto:Frank.Belz@aero.org)    [Jandria.Alexander@aero.org](mailto:Jandria.Alexander@aero.org)

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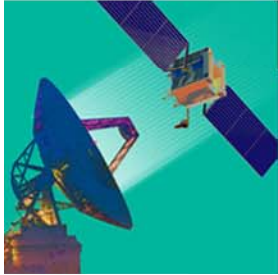


## Session 12E

### Session Goals

- Collect community views on key cyber technology questions regarding:
  - Effectiveness of Space/Ground Systems technology investment strategy to meet cyber challenges
- Exchange information about ongoing Cyber technology investigations
- Determine need for information flow on technology investments for cyber (and especially for cyber operations)

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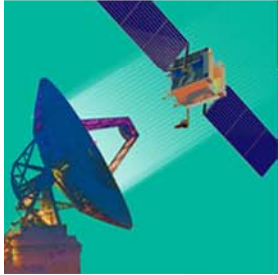


Session 12E

## Presenters/Panelists

- **Participation**
  - Aerospace, AFRL, BAE, Honeywell, Integrated Systems, JPL, NGC, NOAA, NPS, SMC, other USAF
- **Panel**
  - Roberta Ewart, Chief Scientist, SMC
  - Jean Michael, Force Enhancement Directorate, Aerospace
  - Kymie Tan, System Engineer, JPL
- **Presenters**
  - Thuy Nguyen, NPS, Multilevel Security Research Projects for High Assurance Systems
  - Dan Balderston, Aerospace, Flight Cyber Defense Testbed
  - Joe Betser, Aerospace, Dynamic Semantic Cyber Situation Awareness
  - Kymie Tan, JPL, Research on System Resilience

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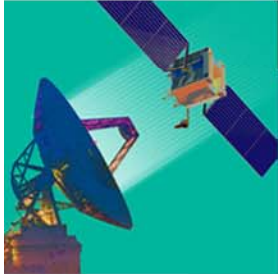


## Session 12E

### Key Points

- Notable quotes from the session:
  - Is harmonization a liability (for cyber security)?
    - Single lowest common denominator?
  - Technology is overemphasized
    - We chase the latest & greatest tech regardless of the requirement
    - Need to consider human and operational factors
  - People are the weakest link
  - How do you visualize Cyberwarfare?
    - What is a cyber weapon?
  - Will programs pay to test for the absence of side effects?

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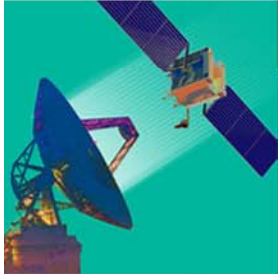


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### Key Points

- Do technology investments address cyber threats?
  - How do we know?
    - If loss-of-life, doing ok.
    - Not doing well in specific technical areas (e.g. Intrusion detection).
    - Does security/resilience have a simple (or usable) metric?
- Recommended technology investments
  - Focus on operations and mission criticality
  - Resilience, Fault Tolerance and Redundancy
  - Timely Cyber Situational Awareness
  - Trusted Infrastructure
  - Selective source code analysis

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## Session 12E

### Conclusions

- The Space Ground Systems community's technology investment strategy is only partially appropriate to meet our cyber challenges
- There is relevant research going on within the community that needs to be tracked
- Unanimous consent – must continue WG dialog
  - Incorporate classified conversations
  - Facilitate more frequent exchanges (quarterly/semiannually?)
  - Contact the chairs to get on distribution
    - [Frank.Belz@aero.org](mailto:Frank.Belz@aero.org) [Jandria.Alexander@aero.org](mailto:Jandria.Alexander@aero.org)