

— *Working Group Session Summary* —

Network-Centric Operations: Industry Response and Emerging Standards for Ground Systems

Session #10C

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Session Goals

- Do a “deeper dive” on the emerging technical standards for web/grid services and service architectures
- Relate these to the concepts of netcentricity and ground system architectures
- Examine the defense industry response to these developments
- Examine the *non-technical barriers* facing the adoption and deployment of netcentric systems

Presenters/Panelists

- Prof. Geoffrey Fox, Indiana University
 - DoD Grid Opportunities for the GIG and NCOW
- Fred Mervine, IBM
 - The NCOIC Ground Systems Architecture Working Group
- Shirley Tseng, IGI
 - Update on NCO, SOA, and Grids
- Kevin Kreitman, Aerospace
 - Winning Hearts and Minds for the Adoption of NCO
- Brian E. Thomas, BAE Systems
 - Dot Com Lessons Learned
- Panel & Floor Discussion
 - *Winning Hearts and Minds: Critical Success Factors*
 - *What are the Critical Technical and Non-technical Requirements for the Adoption of Web/Grid Services in Satellite Ground Systems?*

Key Points: Emerging Standards and Industry Response

- Grid services build on web services to address and manage complexity in distributed "systems of systems" or "grids of grids"
 - The management of state, service lifetime, ...
- NCOIC Ground Systems WG is chartered to produce a "reference model" for netcentric ground systems
 - Lots of discussion from current related work in NASA GSFC and CCSDS at ESA
 - Potentially useful for identifying how to evaluate or adopt aspects of netcentricity
- Tremendous amount of work being done by industry (commercial and defense), government and academia
 - Lots of URLs and references in Shirley Tseng's talk

Key Points: Winning Hearts and Minds

- “How to get this technology successfully implemented”
- Lessons learned from Dot.coms to reap the benefits:
 - Central protagonist must resolve end-to-end tech issues, and allow all partners to play
 - New strategy is required to innovate and improve operational efficiencies
 - GIG is a new team sport which requires organizations to change how they interact
 - Organizations need to focus on their core strengths
- Conditions for success:
 - Leadership with vision of benefits
 - Topcover
 - Need (demand from ops)
 - Current Tech Competency of implementers
 - NOT “Business as Usual” contracting, mgmt, implementation

Key Points: Strategies for Success

- Sell the **BENEFITS, ADVANTAGES** not the technology:
 - Time to market, reduce decision cycle time, flexibility (plug in functionality), interoperability. Make decisions inside the adversary's OODA loop
 - Articulate the success story so managers, leaders can understand why this is better, and why old way won't work
- Leave ownership of systems (and recognition for success) with the Program--be a service to them
- Leave legacy systems in place, and link them into the SOA; choose development opportunities outside of the current program rice bowls
- Choose non-critical, but important value added services to start with (limit the risk for the program manager). Many small **SUCCESS STORIES** are important.
- Put infrastructure, value added services in place (by "stealth mode," if necessary) and evolve the capabilities. (DCGS and TSC-Navy are examples of good infrastructure)

Conclusions

- End-to-end management of technology adoption process is critical
- Track maturing technology and emerging best practices and standards
- Understand perceived and real risk issues of technology adoption by current and new programs
- Identify and implement appropriate paths to adoption