Defense Systems
Systems Engineering

Keynote Address

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## Current Situation

### What we need to do better

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Acquisition</th>
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<tbody>
<tr>
<td>- Adapting to changing conditions</td>
<td>- Acquiring systems-of-systems</td>
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<td>- Matching operational needs with systems solutions</td>
<td>- Making system decisions in a joint, mission context</td>
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<td>- Overcoming biases of Services and others</td>
<td>- Transitioning technology</td>
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<td>- Moving to transform military</td>
<td>- Assessing complexity of new work and ability to perform it</td>
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### PPBES

- Laying analytical foundation for budget
- Aligning budgets with acquisition decisions

### Sustainment

- Controlling O&S costs
- Reducing logistics tails
USD(AT&L) Imperatives

- “Provide a context within which I can make decisions about individual programs.”
- “Achieve credibility and effectiveness in the acquisition and logistics support processes.”
- “Help drive good systems engineering practice back into the way we do business.”
How Defense Systems is Responding

Instituted a new Systems and Mission Integration organization
• Extends and complements work of former Interoperability Office
• Engaging OSD, Joint Staff, Services, and COCOM staffs to define joint integrated architectures
• Synchronizing the requirements, acquisition, and budget processes

Warfare offices (formerly Strategic and Tactical Systems) tailoring the application of DoD 5000
• Leading IPT process for program oversight and review
• Role is to help programs succeed

Formed a new Systems Engineering organization
• Institutionalizing Systems Engineering across the Department
• Setting policy for implementation, capturing best practices, setting standards for training and education
• Enhancing emphasis on system assessment and support
Enterprise Development

- Defines “good systems engineering”
- Finds, captures, and shares best practices
- Establishes systems engineering policy and procedures
- Implements education of government and industry workforce
- Conducts outreach with industry, academia, associations, others

Assessment and Support

- Directs, manages, and coordinates SE and SW studies and reviews
- Leads special projects and DoD studies relating to software issues
- Recommends changes to systems engineering policies and procedures
- Focal point for outreach to individual programs

Development Test & Evaluation

- Verifies system performance
- Confirms the design meets specifications
Major Challenges

- Focus shifting from platforms to capabilities and system solutions
- System complexity is increasing – Family of Systems and/or System of Systems interdependencies
- Demand for network centric capability drives higher levels of integration
- Functional and physical interfaces expanding in number and complexity
- Evolutionary acquisition institutionalizing change
- New approaches to testing must match new systems views
- Multiple practitioner communities not well aligned
  - Hardware
  - Software
  - Information technology
  - Telecommunications