ODASD(SE) Workforce Efforts

Aileen Sedmak
Deputy Director, SE Policy, Guidance, and Workforce
Office of the Deputy Assistant Secretary of Defense for Systems Engineering (ODASD(SE))

NDIA Systems Engineering Division Meeting
April 9, 2014
DASD, Systems Engineering Mission

Systems Engineering focuses on engineering excellence – the creative application of scientific principles:

- To design, develop, construct and operate complex systems
- To forecast their behavior under specific operating conditions
- To deliver their intended function while addressing economic efficiency, environmental stewardship and safety of life and property

**DASD(SE) Mission:** *Develop and grow the Systems Engineering capability of the Department of Defense* – through engineering policy, continuous engagement with component Systems Engineering organizations and through substantive technical engagement throughout the acquisition life cycle with major and selected acquisition programs.

A Robust Systems Engineering Capability Across the Department Requires Attention to Policy, **People** and Practice
DASD, Systems Engineering

Stephen Welby
Principal Deputy Kristen Baldwin

Systems Analysis
Kristen Baldwin (Acting)

Addressing Emerging Challenges on the Frontiers of Systems Engineering
Analysis of Complex Systems/Systems of Systems
Program Protection/Acquisition Cyber Security
University, FFRDC and Industry Engineering and Research
Modeling and Simulation

Major Program Support
James Thompson

Supporting USD(AT&L) Decisions with Independent Engineering Expertise
Engineering Assessment / Mentoring of Major Defense Programs
Program Support Reviews
OIPT / DAB / ITAB Support
Systems Engineering Plans
Systemic Root Cause Analysis

Mission Assurance
Vacant

Leading Systems Engineering Practice in DoD and Industry
Systems Engineering Policy & Guidance
Development Planning/Early SE
Specialty Engineering (System Safety, Reliability and Maintainability Engineering, Quality, Manufacturing, Producibility, Human Systems Integration)
Counterfeit Prevention
Technical Workforce Development
Standardization

Providing technical support and systems engineering leadership and oversight to USD(AT&L) in support of planned and ongoing acquisition programs
Top Level FY14 DASD(SE) Goals
Shaping Roles: Workforce, Policy, R&E

Advocate for and ensure adequate DoD Engineering Workforce capacity and capability

– Shaping Role; DASD(SE) lacks authorities to drive significant changes in recruitment, retention, service organizational structure or pay and incentives
– Continue support for larger national engineering and STEM initiatives

Provide technical depth to acquisition Policy and Processes

– Shaping Role; Focus on support to execution vs new products
– Implement changes in response to revised 5000.02
– Includes role in Standardization (Engineering focus, supporting WH policy)
– Publish revised draft DoD Risk Guide

Support R&E on critical engineering research and prototyping investments

– Shaping Role; Need to help R&E engage the larger acquisition community
• “...will establish a Joint KLP Qualification Board, to be stood up in CY 2014, will prescreen Defense Acquisition Workforce personnel to qualify a pool of candidates to these important positions.”

• “They will simply identify individuals as prepared to fill mandatory KLPs based on their training, education, and experience.”

• “To aid in evaluating and selecting the best qualified KLP candidates, five factors have been identified as requirements essential for selection …”

• “KLP candidates are expected to meet all five requirements prior to assignment.”

• “… prequalify people to fill mandatory KLPs in a consistent and standardized manner across the DoD.”

• KLP Q-board will: “Be comprised of the acquisition functional leads from all Services, appropriate Agencies, …. ”

Sec 1706 of Title 10 requires “properly qualified” members in cited positions on MDAPs/MAIS

Nov 8 2013 USD (AT&L) Memo on KLP and Qualification Criteria
KLP Q-Board Approach

• Develop a Standard Operating Procedure to be used by all Career Fields to conduct their KLP Qualification Boards (Q-Board)

• Develop a standardized application and instructions to include:
  – Section 1: Common Cross-Functional Requirements.
  – Section 2: Functional Specific Requirements, documented in a standard format tailored to each Career Fields’ unique requirements.

• Coordination through other Career Fields, and through Legal and HR

• Implement Phase 1 of the KLP Q-Boards

Phase 1 Q-Board Will Be Initiated by T&E with ENG to follow
**Better Buying Power 2.0**
*A Guide to Help You Think*

---

**Achieve Affordable Programs**
- Mandate affordability as a requirement
- Institute a system of investment planning to derive affordability caps
- Enforce affordability caps

**Control Costs Throughout the Product Lifecycle**
- Implement “should cost” based management
- Eliminate redundancy within warfighter portfolios
- Institute a system to measure the cost performance of programs and institutions and to assess the effectiveness of acquisition policies
- Build stronger partnerships with the requirements community to control costs
- Increase the incorporation of defense exportability features in initial designs

**Incentivize Productivity & Innovation in Industry and Government**
- Align profitability more tightly with Department goals
- Employ appropriate contract types
- Increase use of Fixed Price Incentive contracts in Low Rate Initial Production
- Better define value in “best value” competitions
- Only use LPTA when able to clearly define Technical Acceptability
- Institute a superior supplier incentive program
- Increase effective use of Performance-based Logistics
- Reduce backlog of DCAA Audits without compromising effectiveness
- Expand programs to leverage industry’s IR&D

**Promote Effective Competition**
- Emphasize competition strategies and creating and maintaining competitive environments
- Enforce open system architectures and effectively manage technical data rights
- Increase small business roles and opportunities
- Use the Technology Development phase for true risk reduction

**Improve Tradecraft in Acquisition of Services**
- Assign senior managers for acquisition of services
- Adopt uniform services market segmentation
- Improve requirements definition/prevent requirements creep
- Increase small business participation, including through more effective use of market research
- Strengthen contract management outside the normal acquisition chain – installations, etc.
- Expand use of requirements review boards and tripwires

**Reduce Unproductive Processes and Bureaucracy**
- Reduce frequency of higher headquarters level reviews
- Re-emphasize AE, PEO and PM responsibility, authority, and accountability
- Reduce cycle times while ensuring sound investment decisions

**Improve the Professionalism of the Total Acquisition Workforce**
- Establish higher standards for key leadership positions
- Establish stronger professional qualification requirements for all acquisition specialties
- Increase the recognition of excellence in acquisition management
- Continue to increase the cost consciousness of the acquisition workforce – change the culture

---

For additional information on Better Buying Power 2.0: [http://bbp.dau.mil/](http://bbp.dau.mil/)
Growing Great Engineers

• **Depth**
  – Extensive expertise and experiences in one or more engineering disciplines and in one or more product domains

• **Breadth**
  – Awareness of and appreciation for other functional areas
  – Understanding of system lifecycle and processes
  – Knowledge of other engineering disciplines and how they integrate into a system solution
  – Knowledge of product domains

• **Leadership**
  – Ability to motivate and inspire individuals and teams
  – Comfort in dealing with complexity
  – Focus on underpinning decisions with data
  – Capability to make tough technical decisions
Engineering Workforce Development

Vision for 21st Century Engineering Workforce:
Develop capability, capacity and competence needed to address current and future technical and programmatic challenges.

• All DASD(SE) Workforce Development initiatives align with OSD(AT&L) priorities
• Initiatives address growing challenges to the DoD and the Defense Industrial Base for attracting, developing and retaining the most qualified engineering leaders:
  – Key Leadership Position and qualification criteria for Chief Engineer/Lead Systems Engineer and Program Lead, Production, Quality and Manufacturing
  – Systems Engineering Research Center Workforce Tasks:
    – Experience Accelerator and Technical Leadership Curriculum (with DAU)
    – SE Capstone Program (with STEM Development Office)
    – Project Helix (with Services and Defense Industrial Community)
    – Body of Knowledge and Curriculum to Advance Systems Engineering (BKCASE)
  – ASD(R&E) Science, Technology, Engineering, and Mathematics (STEM) Strategic and Implementation Plans and Executive Board
DoD ENG Workforce: Age Demographics

FY2007 Mean Age: 43.6 years
FY2008 Mean Age: 43.4 years
FY2009 Mean Age: 43.0 years
FY2010 Mean Age: 42.7 years
FY2011 Mean Age: 42.9 years
FY2012 Mean Age: 43.1 years

Source: AT&L Defense Acquisition Workforce Data Mart
SPRDE – Systems Planning, Research, Development and Engineering
Acquisition Engineering vs. Engineering (Non-Construction) Functional Community
Age Demographics

Acq. ENG Source: AT&L Defense Acquisition Workforce Data Mart, 30 Sep 13
ENG(NC) Source: Defense Civilian Personnel Data System (DCPDS), 30 Sep 13
### Engineering (Non-Construction) Functional Community by Occupational Series & Component

**Total = 74,923**

<table>
<thead>
<tr>
<th>Occupational Series</th>
<th>4th Estate</th>
<th>Navy</th>
<th>Air Force</th>
<th>Army</th>
</tr>
</thead>
<tbody>
<tr>
<td>0801-General Eng</td>
<td>14,571</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0805-Materials Eng</td>
<td>814</td>
<td>2,048</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0819-Environ Eng</td>
<td>2,149</td>
<td>3,361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0840-Nuclear Eng</td>
<td>10,766</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0854-Computer Eng</td>
<td>2,149</td>
<td></td>
<td>4,033</td>
<td></td>
</tr>
<tr>
<td>0855-Electronics Eng</td>
<td>17,046</td>
<td></td>
<td>5,624</td>
<td></td>
</tr>
<tr>
<td>0851-Aerospace Eng</td>
<td>4,033</td>
<td>821</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0853-Chemical Eng</td>
<td></td>
<td></td>
<td>821</td>
<td></td>
</tr>
<tr>
<td>0856-Industrial Eng</td>
<td></td>
<td></td>
<td>1,158</td>
<td></td>
</tr>
<tr>
<td>0862-Engineering Tech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0856-Electronics Tech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. 0840, 0854, 0855 designated “Mission Critical Occupations (MCOs)”
2. Does not include 0801A Acquisition Program Management Function

Source: DCPDS, June 30, 2012
Mission Critical Occupations: Age by Occupational Series

Source: DCPDS via DRS, June 30, 2012
Questions for Industry

• What are your workforce challenges and what mitigating techniques/strategies do you utilize?

• How do you ensure technical capability is maintained within your workforce?

• How do you identify and grow your technical leaders?
Additional References
Current ACQ Workforce Initiatives

• Development of guides, tools, and competency models to support Acquisition Workforce Members
  – Engineering Career Field Competency Models: used to redesign the career field curriculum in FY14 (revising SYS 101, SYS 202, SYS 203, and SYS 302 courses)

• Chief Engineer/Lead Systems Engineer Key Leadership Position Qualification Board Pilot

• Acquisition Engineering Workforce Strategic Planning

• ‘SPRDE-SE’ Career Path revised to ‘Engineering’ Career Field in FY14; PSE Career Path phased out in FY13