

**Session 9.0**  
**SMC Resources**  
**and**  
**What's Next: SMC SE Revitalization**  
**Commitment**



# A Question

**“OK, so now we’re moving away from Insight and more towards Oversight, where we get more engaged with the contractors. So, how will Systems Engineering Revitalization change the job I do?”**



# An Answer

**It depends upon your own skill set, and how your particular program is structured. However, here's a general comparison, using the "building a house" example:**

## **Old "Insight" paradigm:**

- You let the contractor do it their way – as long as they build it to the building code, on time, and within budget
  - Contractor has total responsibility, from site survey through furnishing the completed house; you are not directly involved
  - Contractor determines which building code to follow, and selects the building materials
  - Contractor deals with all the various suppliers, subcontractors, and building inspectors
  - Contractor has total responsibility – you get the keys to the house when it's finished
- Only when the contractor runs into problems do you get involved
- Requires less involvement on your part



# An Answer

(continued)

## New “Oversight” paradigm:

- You make sure the contractor builds it your way
  - You have direct involvement on the individual efforts
    - Site survey,
    - Building the house,
    - Furnishing the house
  - You determine which building code to follow and specify which building materials to use
  - Contractor only deals with their own suppliers and subcontractors
  - Contractor no longer has total responsibility – you do!
- You stay engaged with the contractors to get early identification of problem areas
- Requires more involvement on your part



# Enhancing Our Abilities

- **Understand the breadth of SE's, functional's, and specialist's responsibilities**
  - Important in knowing how to best apply individual skills; competency can always be improved
    - Systems Engineer's ability to work with functionals and specialists, to help them with their tasks
    - Functional's and specialist's ability to work together with systems engineers on systems issues
- **Adopt the right attitude - promotes the integrated approach**
  - Be a team player
  - Be a Mentor/Mentee
- **Learn what tools/resources are available to enhance the work of SEs, functionals, and specialists**



# Sample Breadth of Responsibilities

	<i>EVM</i>	<i>Req Dev</i>	<i>Trade Studies</i>	<i>IBR</i>	<i>PDR</i>	<i>RM</i>	<i>CM</i>
<b>Finance</b>	X			X		X	
<b>Sys Eng</b>	X	X	X	X	X	X	X
<b>Elec Eng</b>		X	X		X	X	X
<b>Mech Eng</b>		X	X		X	X	X
<b>Contracts</b>	X			X	X		X
<b>Safety</b>		X	X		X	X	
<b>Prog Mgr</b>	X	X	X	X	X	X	X



# Core Disciplines/Functions

[http://ax.losangeles.af.mil/se\\_revitalization/disciplines.htm](http://ax.losangeles.af.mil/se_revitalization/disciplines.htm)

Configuration management, base lining, change management

Contract administration and development

SOO, SOW, CDRLs, RFPs etc.

Design

Earned Value

Environments

Environmental Management

External interfaces

Human factors

Independent Readiness Reviews

Logistics

Manufacturing/producibility/quality assurance

Mass properties

Modeling and simulation

Parts

Pricing/fact-finding

Program Reviews (Design, Technical)

Protection planning

Reliability, maintainability

Requirements flow down

Risk Management

Software

Subcontract management

Supportability and logistics

Survivability

Systems Safety

Tech transfer/insertion

Test

Threat

Tech processes and improvement (CMMI)

Training

Trade analysis

Value engineering

Verification/test and validation

Work breakdown

- Both HW-SW System and Acquisition System
- Principally the Acquisition System
- Principally the HW-SW System



# SE Functions and Competencies

- **Bottom line: By possessing competency in systems engineering related functions, we are all better able to add value to the SMC acquisition process**
  - More competent/confident in becoming more proactive with Contractors/Customers
    - Must occasionally push back
  - Each function is important – ignore at peril of system failure!



# Adopt The Right Attitude

- **Be willing to research problems and provide the basis/rationale for the approach**
  - Understand the terms and roles
  - Be familiar with requirements
  - Call in expertise as needed
  - **You may find the next O-ring problem!!!**
- **Ensure that you're always adding value**
  - Tie to decisions that need to be made and/or products that need to be delivered
    - If you're not working decisions/products, you're not adding value!
- **Be proactive in establishing mentorship**
  - Be a Mentor
  - Be a Mentee



# Learn What Tools/Resources Are Available

- **Significant resources exist for SMC acquisition team members**
  - Start with the resource list that follows
  - Compile your own customized resource list
- **Effective use of the available resources is everyone's responsibility**
  - Use the appropriate resource as guidance to perform the right work at the right time
    - Design Review support
    - Risk Management support, etc.



# On-line Resource List

- **SMC Information on-line**
  - [http://ax.losangeles.af.mil/se\\_revitalization/main.htm](http://ax.losangeles.af.mil/se_revitalization/main.htm)
- **Acquisition and Logistics Related Education and Training Courses**
  - [http://web2.deskbook.osd.mil/htmlfiles/DBY\\_Courses.asp](http://web2.deskbook.osd.mil/htmlfiles/DBY_Courses.asp)
- **DAU/DSMC Information**
  - <http://www.dau.mil/>

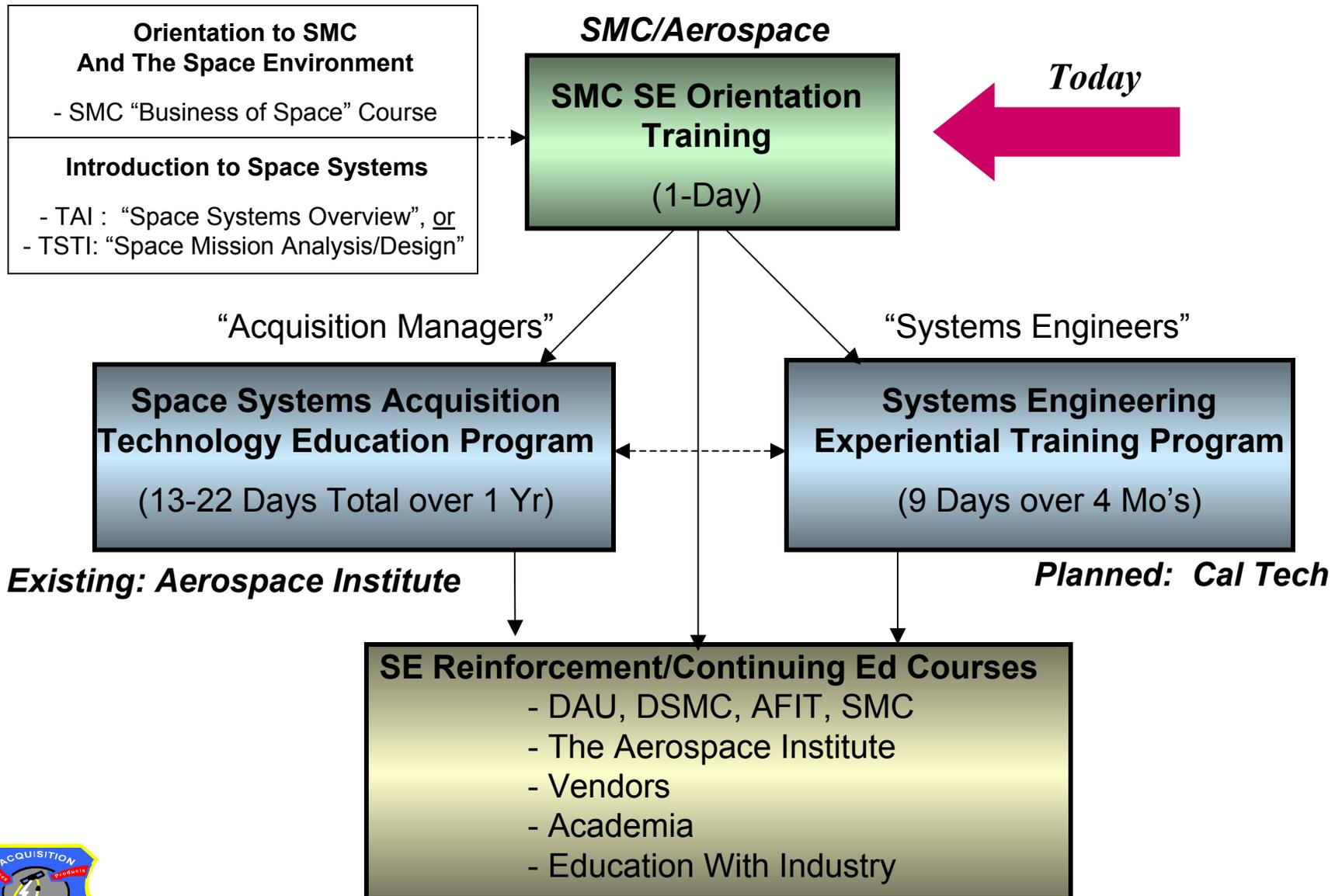


# SMC SE Resource List

- **SMC Information on-line**
  - [http://ax.losangeles.af.mil/se\\_revitalization/main.htm](http://ax.losangeles.af.mil/se_revitalization/main.htm)
- **SMC Staff Expertise**
  - AX: Directorate of Systems Acquisition
    - <http://ax.losangeles.af.mil/>
  - FM: Comptroller
    - <https://www.losangeles.af.mil/SMC/FM/>
  - PK: Directorate of Contracting
    - <http://www.losangeles.af.mil/SMC/PK/PKHOME/pkhome.htm>
  - JA: Staff Judge Advocate
    - <http://www.losangeles.af.mil/ABG/JA/procurement.htm>
  - IN: Intelligence Directorate
    - [http://www.losangeles.af.mil/SMC/IN/ino/org\\_chart.html](http://www.losangeles.af.mil/SMC/IN/ino/org_chart.html)



# SMC SE Training Curriculum Plan



# Aerospace Corporation SE Training Resources

- **Aerospace Institute Course Links**

- <http://www.aero.org/education/tai/ffrdc-courses.html>
- [http://info.aero.org/tai/courses/schedule\\_technical.shtml](http://info.aero.org/tai/courses/schedule_technical.shtml)

- **Near-term Aerospace Institute Courses**

- Sept. 17 - Practical Software and Systems Management - T4310



# Additional Aerospace Corporation SE Resources

- **Aerospace Library**
  - Textbooks, Journals, Technical Reports
- **Space Systems Engineering Database**
  - Technical database from many systems
    - On-orbit anomalies
    - Lessons Learned
  - Contact [smcax.systemseng@losangeles.af.mil](mailto:smcax.systemseng@losangeles.af.mil) for access



- Acquisition Planning
- Budget Information Systems(SAF/FMBMA-S)
- Configuration Management (AFMC)
- Contract Administration
  - 
  - 
  - 
  - 
  -
- Software Acquisition Management
- Supply Discrepancy Reports
- Systems Acquisition
- Value Engineering



http://www.dau.mil/

DAU Home - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Print Mail

Address <http://www.dau.mil/> Go Links >>

Acquisition Initiatives Member ACQWEB

DAU Defense Acquisition University

Search All DAU 10 Search Help

Who We Are > Mission > Course Schedules > DAU Virtual Campus > Plans & Initiatives > Accomplishments > Alliances / Partners > Stakeholders > Contacts >

Section 508 Compliance Security & Privacy

**Products / Services**

- Education / Training
- Certification Courses
- Course Equivalency
- Continuous Learning Center
- Continuous Learning Modules
- Performance Support
- Research
- Publications

**Resources**

- Regions / Campuses
- DAU Registrar
- Deskbook Transition
- Defense Acquisition Deskbook
- DAU Catalog
- Acquisition Links
- Knowledge Centers
- Acker Library
- Performance Based Services Acquisition
- DAU Alumni Association

**Featured Sites**

- Dod 5000 Resource Center
- Acquisition Careers
- Acquisition Support Center
- E-Learning Orientation
- Job Opportunities at DAU

[2nd Consecutive] **USDLA** 2002 Award Winner

Defense Acquisition University  
Fort Belvoir, VA  
Excellence in Distance Learning  
Programming

DAU & DSMC offices and classes are open. We are at THREATCON CHARLIE. Individuals can expect to experience random checks on Post. Due to strict security measures, individuals are encouraged to arrive at Ft. Belvoir earlier than Normal.  
[More information.....](#)

**DAU News**

[The Defense Acquisition University \(DAU\) and the American Graduate University \(AGU\) have formed a strategic partnership for the establishment of cooperative graduate degree and professional certificate programs.](#)

[2002 Acquisition and Logistics Excellence Events Pages](#)

**Publication News**

[November / December Program Manager Magazine - Entire Issue On-line. November 15, 2001](#)

Start Internet 12:52 PM



# Reiterating the Course Material

- **We've covered a lot of material**
  - Multiple definitions of Systems Engineering
  - TSPR is dead (James G. Roche, Aerospace and Defense Investor Conference, 14 May 2002; Remarks to the New York City Investors Group (Goldman Sachs sponsorship), New York, May 24, 2002)
  - Some STDs are being resurrected (1540, etc.)
  - Proactive oversight
  - Get engaged with the customer/contractor
  - Push back
  - On-line resources are available
  - Classes are available
  - Be a Mentor/Mentee
- **Feeds into your Personal Action Plan**



# Reiterating the Material

(continued)

- **Many sessions had specific learning objectives**
  - Review these to identify where you need to learn more
- **Begin to execute**
  - Adopt principles and apply them on the job
  - Continue learning – develop a personal SE action plan



# List of Key Actions To Help Revitalize Systems Engineering

- **General Arnold's Policy Letter lists 18 Key Actions to help revitalize Systems Engineering at SMC**
- **These Key Actions are the SMC Plan**



# List of Key Actions To Help Revitalize Systems Engineering

(continued)

- **Get systems engineering and program management revitalization strategy out to all SMC through articles and other publications**
- **Publish policy letter and an SMC Operating Instruction explaining system engineering and its important role to overall program management**
- **Establish metrics to track progress and help determine success of our actions**
- **Establish formal initial and recurring SE training programs**
- **Solicit graybeard advice on our strategies**
- **Make sure industry understands this “shift” by incorporating basic principles into Center briefs etc.**
- **Continue to work with AFMC and NRO on their evolving SE initiatives**
- **Build off existing SE framework at SMC, the Aerospace Corporation, our SETA team and Detachments to improve SE contributions to overall program management**
- **Target specific improvements in the SMC talent base, in our processes and show a visible leadership commitment to SE revitalization**
- **Make prudent investments to fill gaps and exploit corrective actions, as required**



# List of Key Actions To Help Revitalize Systems Engineering

(continued)

- Reissue/update former guides, provide a compendium of local tools to support individual self-improvements
- Encourage/incentivize SE continuing education through AI, DAU, academia and professional associations
- Seek additional DAU SMC billets and/or create local equivalency courses that are available to more of the SMC population
- Baseline SPO SE maturity
- Leverage Aerospace Corporations Strategic Initiatives for Program Executability
- Use Chief Engineers Council more effectively as a SE focused forum
- Better allocate tasks between existing Center organic, FFRDC and SETA resources
- CC Policy letter re-emphasizing SE principles



# But what's your plan? What can you do?

- **Seek out a mentor, and/or become a mentor yourself**
- **Use the SMC Systems Engineering web site to further learn how your specialty fits into the systems engineering disciplines, and what the expectations are of your specialty in the acquisition process**
- **Take classes in either your specialty area or in systems engineering (The Aerospace Institute, local universities, DAU, etc)**



# But what's your plan? What can you do?

(continued)

- **If you're a Systems Engineer, sign up for the SMC Systems Engineering course (scheduled to begin on 7 August)**
- **Look for opportunities to become more proactive/engaged with your customer/contractor**
  - Include the SMC Systems Engineering Revitalization topic in meetings/briefings with your customer/contractor – get the word out!



# Personal Action Plan

- **Reflect on the course contents**

- Was there information that interested you that needs to be researched?
- Were there organizations identified that can provide information/help?
- Did you identify specific problems to tackle that you weren't aware of before?
- Are there learning opportunities that can help you?
- Are there areas that you'd like to learn more about and/or "do" more effectively?



# Personal Action Plan

(continued)

- **Outline a personal action plan to help you:**
  - Determine next steps in learning more about the Acquisition/SE-related concepts introduced in this course and/or
  - Act upon the concepts to be more effective on the job
- **Identify potential mentors (within or outside your current organization) to help you work those items**
- **Write your plan down and discuss it with your supervisor**



# Commitment

- **You are responsible for adopting a mindset change and revitalizing SE**
- **Some staff already has high capability**
  - Challenge is to mentor, apply skills, and continue to learn and do more
- **Other staff is ramping up**
  - Challenge is to develop a personal SE learning plan and to develop/use new skills



# Course Evaluation

- The completed Evaluation Form is our way of knowing how we did – can improve for subsequent classes
- Complete the Evaluation Form
- Turn it in as you leave



Questions??

