# Office of the Chief Systems Engineer Program of Record Engineering Support
## *Army SE Workforce Development, Education & Training*

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DESIGN • DEVELOP • DELIVER • DOMINATE
*SOLDIERS AS THE DECISIVE EDGE*

# Objective

➢Traditional, time-based approaches to training have met with varying levels of success over the years, it is an ineffective system when the goal is to train individuals to perform specific, job-related skills.

➢A participant centered approach to training is needed to increase the learner proficiency of specific knowledge and skills.

➢Training package must focus on skill performed to a specific standard under specific conditions.

➢Assessment of competency takes the participant's knowledge and attitudes into account but requires actual performance of the specific task as the primary source of evidence.
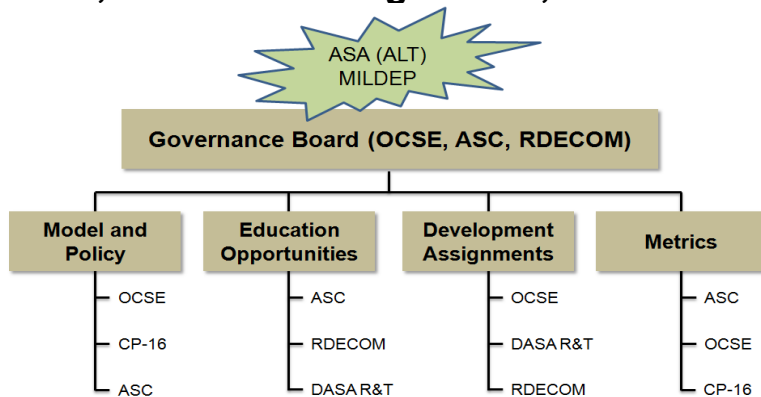
# Instill SE Discipline

## Goals

- **Systems Engineering support to Programs and Program Offices**
  - *Mentoring and Independent Assessment*
- **Establish Engineering policy, guides, best practices templates and metrics to insure SoS discipline across ASA(ALT)**
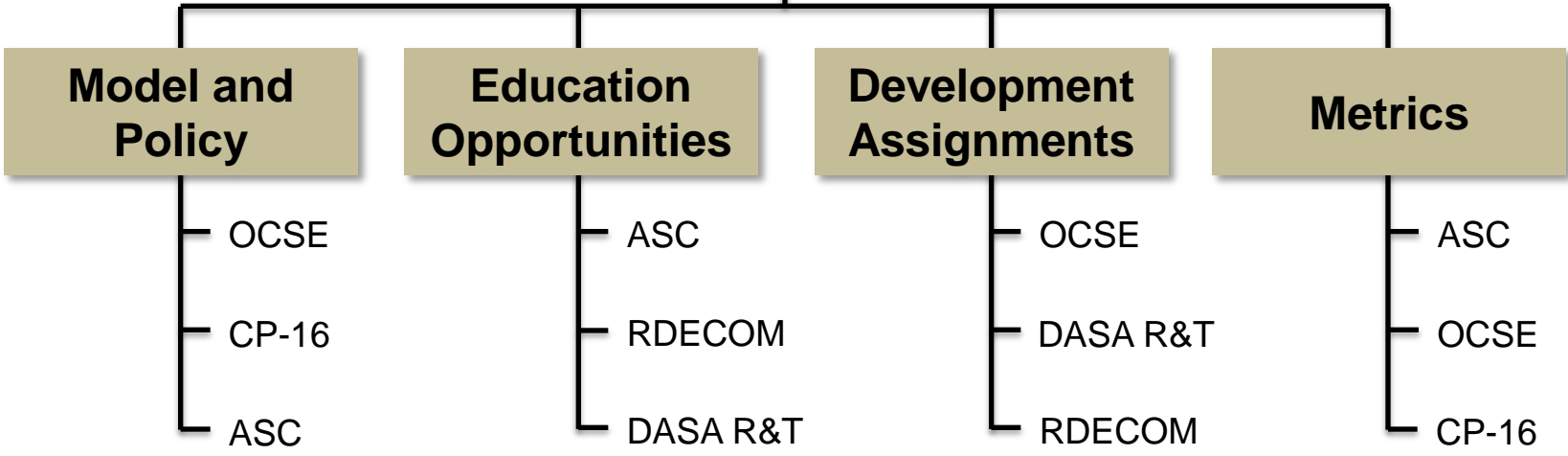
- **Address Legislative Mandates**
- **Regulatory Responsibility**
- **Provide Cadre of Engineering Expertise to support Acquisition Leadership**
- **Deliver Independent Engineering Advice and Assessments to Acquisition Leadership**
- **Provide Engineering Risk Assessment in support of MS Decisions**

**Building the Bench [Specialty Engineering and Training (SE2T) Program, Career Path 16, RDECOM Initiatives, Rotational Assignments, NDIA SE Forums]**



ASA (ALT) MILDEP

Governance Board (OCSE, ASC, RDECOM)

| Model and Policy | Education Opportunities | Development Assignments | Metrics |
|---|---|---|---|
| OCSE | ASC | OCSE | ASC |
| CP-16 | RDECOM | DASA R&T | OCSE |
| ASC | DASA R&T | RDECOM | CP-16 |

# OCSE Engineering Education Governance Vision



**ASA (ALT) MILDEP**

**Governance Board** (RDECOM, OCSE, ASC)

| Model and Policy | Education Opportunities | Development Assignments | Metrics |
|---|---|---|---|
| OCSE | ASC | OCSE | ASC |
| CP-16 | RDECOM | DASA R&T | OCSE |
| ASC | DASA R&T | RDECOM | CP-16 |

## Building the Bench

**Using Specialty Engineering and Training (SE2T) Program, RDECOM Initiatives, Career Path 16, Rotational Assignments, NDIA SE forums**

# RDECOM Systems Engineering Policy

## RDECOM Efforts

- Looking to provide guidance and Best Practices for Identifying the application of Systems Engineering (SE) and Project Management (PM) best practices to promote effective project planning and execution

- Required reviews: Requirements, Preliminary Design, Critical Design, and Test Readiness

- Required repository for Project Plans and Project Review charts

- Mandated training for each organizational Chief SE

- Standardized Project Plan Templates and briefings

## OCSE / RDECOM Alignment

- RDECOM CSEF and ASEF converge on Common Business Process and Tool Kit where possible

- RDECOM CSEF provide support and services to all PEO/PM

- Continue to support SEP, PPP, and other technical plan development with the PEO Acquisition Community

➢Identification of the specific clinical skills that will form the basis of the training course.

➢Development of training objectives which outline what the participant must do in order to master the clinical skills.

➢Development of course outlines which match a variety of training methods and supporting media to course objectives.

# Recommended PEO / PM SE Training Requirements

| Title/Role | CLM 017 Risk Management | Acquisition Certification | SYS 350A, B, C | INCOSE CSEP Certification |
|---|---|---|---|---|
| PEO Chief Systems Engineer (Chief SE) | Required within one (1) year | SPRDE- Program Systems Engineer (PSE) Level III certified within one (1) year of assuming this role * | Recommend within one (1) year of assuming this role | Recommend |
| Program / Product / Project Systems Engineering Lead | Required within one (1) year | SPRDE-Systems Engineer (SE) Level III certified within one (1) year of assuming this role * | Recommend, within two (2) years of assuming this role | Not Required |
| Systems Engineering Team Members | Required within one (1) year | SPRDE- Program Systems Engineer (PSE), Systems Engineer (SE) or Science and Technology Manager (S&T), Minimal certification as required in any career field * | Not Required | Not Required |

**Recommend all MDAP PEO Chief Systems Engineer positions require DAWIA Level 3 SPRDE PSE "W" Certification within their Position Description**

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# SYS 350A, B, C Technical Leadership Course

- Developed by Systems Engineering Research Center (SERC), a University-Affiliated Research Center of the US Department of Defense
- U.S. Department of Defense (DoD) has identified challenges in sustaining and growing its science, technology, engineering, and mathematics (STEM) workforces in support of acquisition excellence
- SERC Research Task 4 (RT-4) focused on developing ways in which the DoD can leverage education to develop competencies required of technical leaders
- SERC conducted research on the state-of-the-art and best practices associated with technical leadership training and education
- SERC and DAU develop a trial technical leadership program focused on systems engineering technical leadership

- Two Pilot courses to date, two more scheduled in the near future

- SYS 350A Systems Lens Pilot course 14 – 18 November (26 personnel), APG
- SYS 350A Systems Lens Pilot course 16 – 21 April (30 personnel), Redstone
- SYS 350B Business Lens Pilot course 4 – 8 June, APG
- SYS 350C Enterprise Lens Pilot course 5 – 9 November, APG

## Systems Lens

- Focuses on the technical product, system, or systems of systems.
- Leadership challenges during all lifecycle phases of definition, design, development, production and support in the presence of high ambiguity, rapid change and challenging non-technical constraints.

## Business Lens

- Focuses on the business and teaming dynamics of a complete technical project.
- Leadership challenges associated with designing, implementing, managing and improving the processes and organizations through which a technical system is realized.

## Enterprise Lens

- Focuses on the entire enterprise.
- Leadership challenges in driving sustainable near- and long-term growth, optimizing stakeholder and shareholder value, ensuring enterprise competitiveness, and implementing change initiatives through engineering and technology strategic planning.

- Targeted for SPRDE track SEs and PSEs
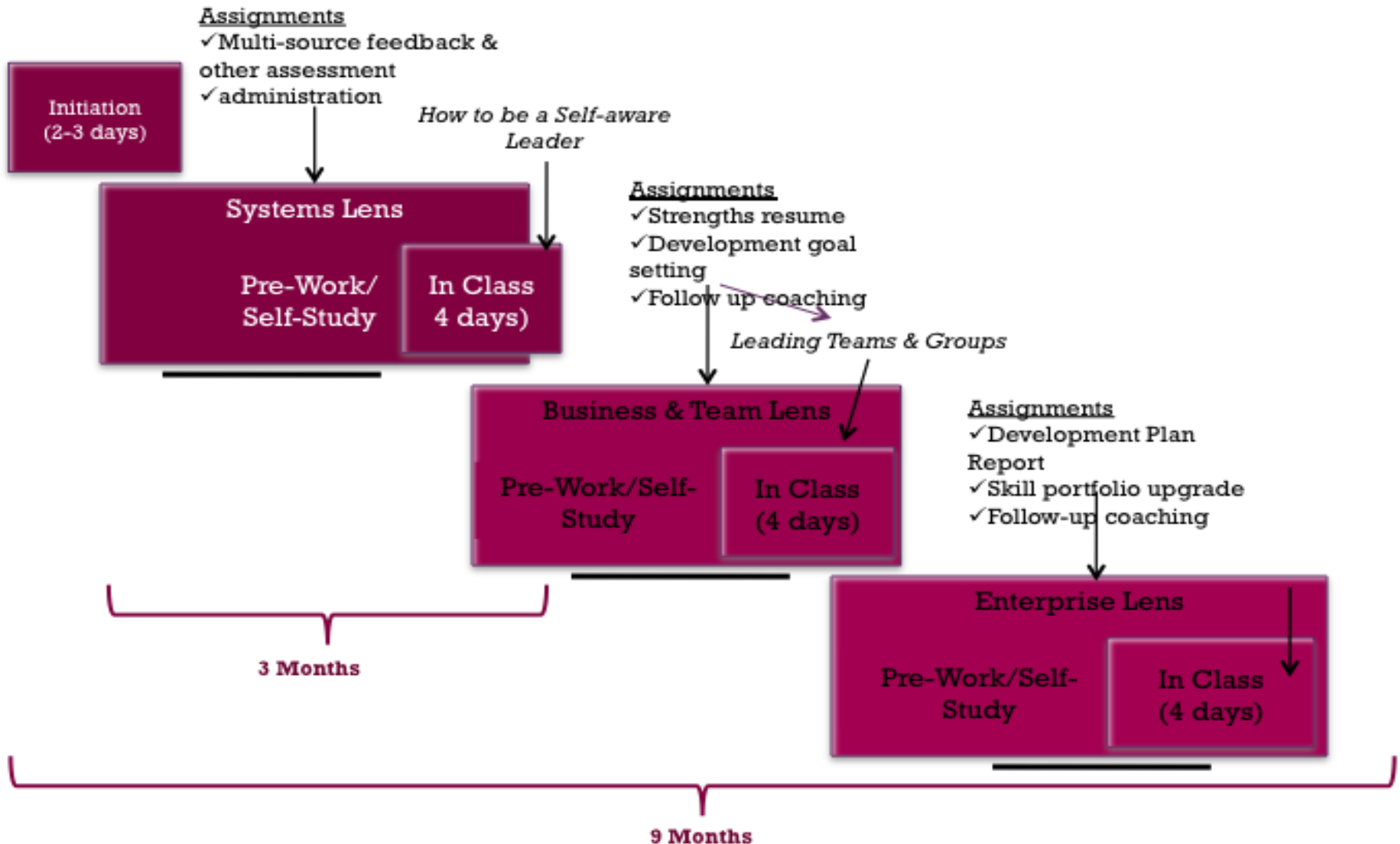- Begins & ends within a 12-month period
- Candidates will not be away from home base for more than 4 weeks over the course of the program

## Leadership Principles, Communications, Mentoring, Ethics

**Initiation (2-3 days)**

**Assignments**
✓ Multi-source feedback & other assessment
✓ administration

*How to be a Self-aware Leader*

**Systems Lens**

Pre-Work/Self-Study — In Class 4 days)

**Assignments**
✓ Strengths resume
✓ Development goal setting
✓ Follow up coaching

*Leading Teams & Groups*

**Business & Team Lens**

Pre-Work/Self-Study — In Class (4 days)

**Assignments**
✓ Development Plan Report
✓ Skill portfolio upgrade
✓ Follow-up coaching

**Enterprise Lens**

Pre-Work/Self-Study — In Class (4 days)

**3 Months**

**9 Months**

# RDECOM SE2T

# RDECOM
## SPECIALTY ENGINEERING
## EDUCATION & TRAINING PROGRAM

- **Program Of Instruction**

# SE2T Directive

## Program Directive

**Directive:** Define, Develop, & Implement a Pilot Specialty Engineering Education & Training ($SE^2T$) Program for the RAM, Logistics, & Quality Management Engineering Career Tracks that support the Defined Requirements & Outcomes Identified by the RDECOM engineering community of practice.

## OBJECTIVES (Design Imperatives)

- Develop "best" use of resources available at the ALLC, (Red River Army Depot), Texarkana, Tx, including faculty, GOTS curriculum, facilities

- Develop architecture that supports students remaining on-station (HSV) for duration of the training program, if practical

- Provide opportunity for advanced degree

- Field a full-time program not to exceed 24 month in length inclusive of the graduate degree program option

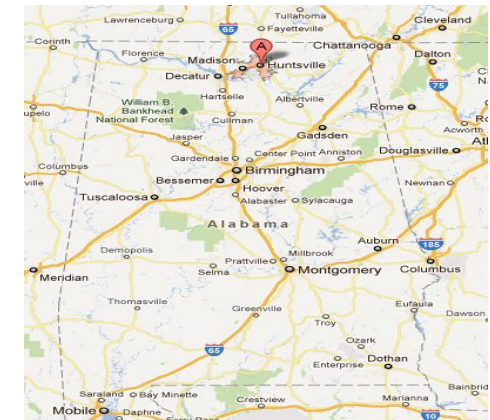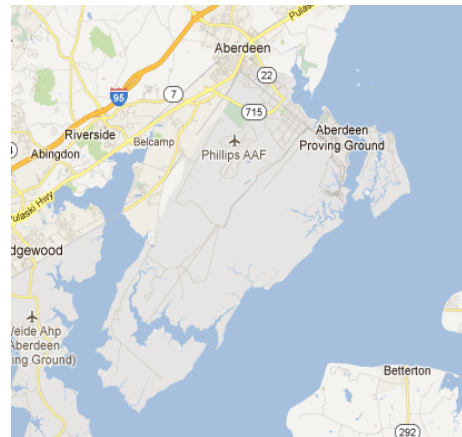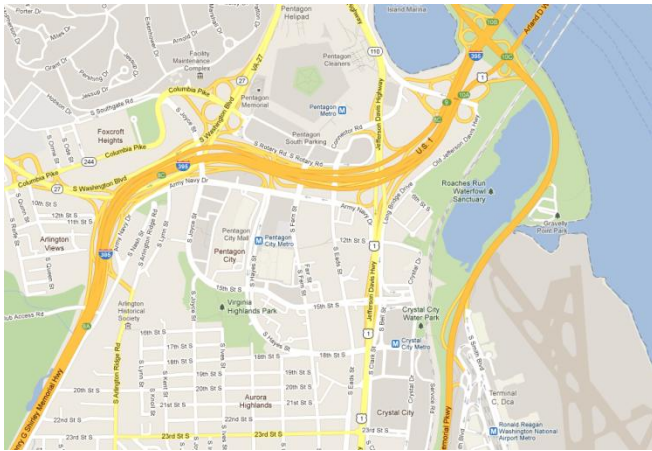# OCSE "Where we are"

## OCSE Front Office NCR
~ 6 Personnel (Pentagon)
~ 15 Personnel (Taylor Building)

## OCSE (APG)
~ 15 Personnel
(MITRE, CERDEC,....etc)

## OCSE (Huntsville)
~ 20 Personnel
MITRE, CERDEC,....etc

## OCSE Rotational Assignments Concept

✓ Use RDECOM Engineering Support from the Army Regional Centers
✓ Ideally a Six (6) month to one (1) year assignment in the NCR
✓ Follow on one (1) year or eighteen (18) month assignment as home station support
✓ Provides a Cadre of SE personnel familiar with HQ and PEO crosscutting initiatives with opportunities for additional education
  • Looking to Leverage CP 16 and S&T Liaison rotational assignments
  • Additional opportunities being sought with ASC, OSD SE, HQDA, etc.

## Other OCSE Resources
- ARDEC, Idaho National Labs(INL), MITRE, SEI…

Leveraging the Bench!

# Way Ahead

- Identify areas within or across the PEO community to increase SE expertise within the community to instill good engineering discipline

- Leverage education and rotational assignment opportunities to provide additional experience

- Establish Systems Engineering policy, guidance, best practice templates, and metrics to grow SE capabilities

## GOAL

Identify engineering training and education opportunities in support of Acquisition Systems Engineering efforts across the PEO community