



ASA (AL&T)

ASA(ALT) System of Systems Engineering Processes

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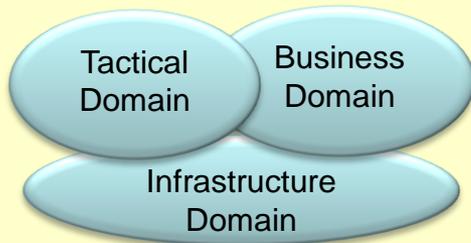
SoSE

DESIGN * DEVELOP * DELIVER * DOMINATE

System of Systems Engineering (SoSE) – Environment

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Scope



Build the Bench

- Organize the Army Engineering Community
- Establish Technical Authority and engineering expertise/capability
- Pursue accreditation and certifications of organic workforce & organizations

Create Data Transparency

- Establish CM and an authoritative repository for products
- Establish a collaboration environment
- Establish a common operating environment for engineering Products

Mission *The Mission of ASA(ALT) SOSE:*

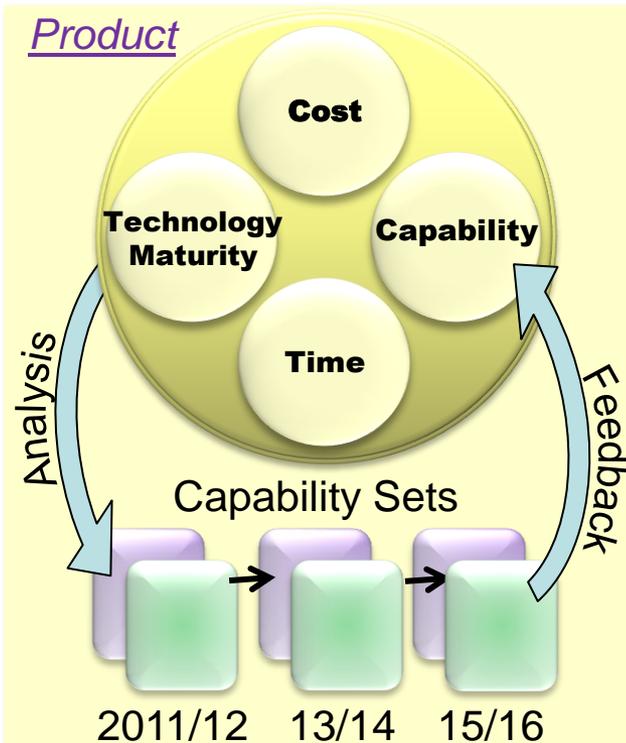
Provide the Army's leadership and materiel developers with the necessary engineering/architectural products to manage and shape the Army's materiel portfolio, to ensure a System Engineering discipline across the Materiel developer community throughout the acquisition life cycle and grow the System Engineering capability within the Army – through education, engineering policy, guidelines and adoption of best industry practices,...."Build the Bench".



Enable the Process

- Establish the engineering process to deliver synchronized capability
- Establish the analytical structure with models & simulations
- Establish the engineering compliance structure/process for acquisition execution excellence
- Deliver engineering support to HQ staff and acquisition community

Product



Manage the Portfolio

- Support the prioritization of capabilities within the portfolio
- Set the baseline architecture roadmap over time
- Support the resourcing process
- Synchronize and align the S&T, systems integration, test, and certification activities



Vision Statement

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At maturity o/a the end of FY 2012, the SoSE Directorate will provide the Army's leadership and Materiel Developers superior:

- ***Strategic level engineering and architectural products for both current and future configurations of each SoS domains (i.e. Networks, Mission Command, AVN etc.)***
- ***Automated tools necessary for tracking, managing and improving the technical cost, schedule and performance of SoS throughout their acquisition life cycle***
- ***Technical trades necessary for making informed SoS funding and programmatic decisions***
- ***Technical guidelines, protocols and standards for SoS life-cycle acquisition***
- ***Program reviews to develop, sustain and improve the cost, schedule and performance across the Systems Acquisition***
- ***SoS engineering organizational structure and processes to ensure consistence of SoS implementation across ASA(ALT)***
- ***Engineering policy, guides, best practices templates and metrics to insure SoS discipline across ASA(ALT)***
- ***Education and personnel development model to cultivate the SoSE capability across the Army***

Architectures & Analysis

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Goals

- Establish a unified governance structure for system Architecture within ASA(ALT)
- Align the Architecture Products to support Army and Acquisition processes
- Align System Architecture capability within ASA(ALT)

Tasks: 1.4.1 Provide strategic level SoS engineering and architectural products .

1.4.1.1 Document and publish the current strategic level Systems architecture for each SoS.

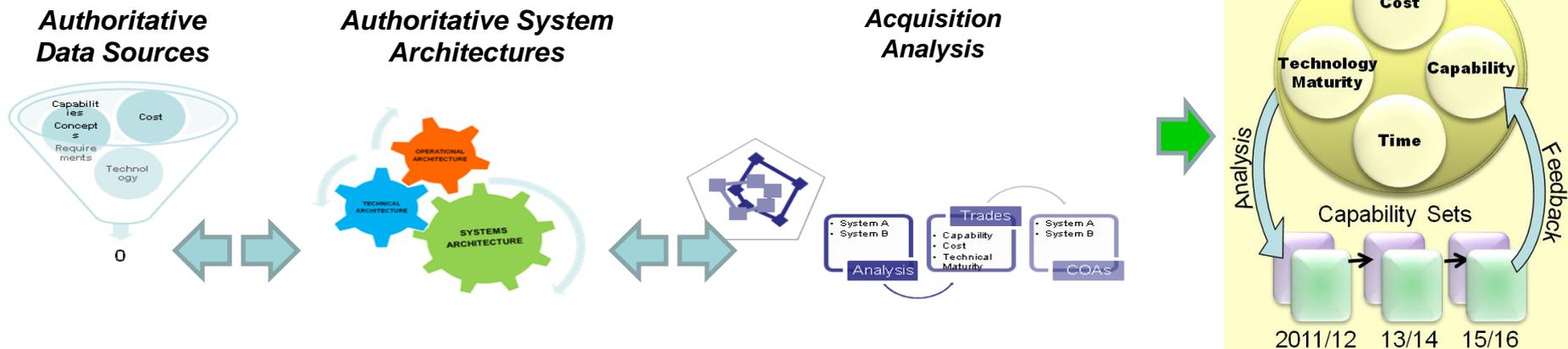
1.4.1.2 Develop and publish the future strategic level Systems architecture for each SoS at designated times in the future.

1.4.1.3 Develop and publish the strategic Systems Engineering Plan (SEP) for each SoS.

1.4.1.4 Establish and publish the standards and policies for SoS interfaces and data.

1.4.1.5 Identify, maintain and publish the official list of SoS and associated subsystems.

1.4.1.6 Provide input to the technical standards of performance for each SoS





Program Support & Mission Assurance

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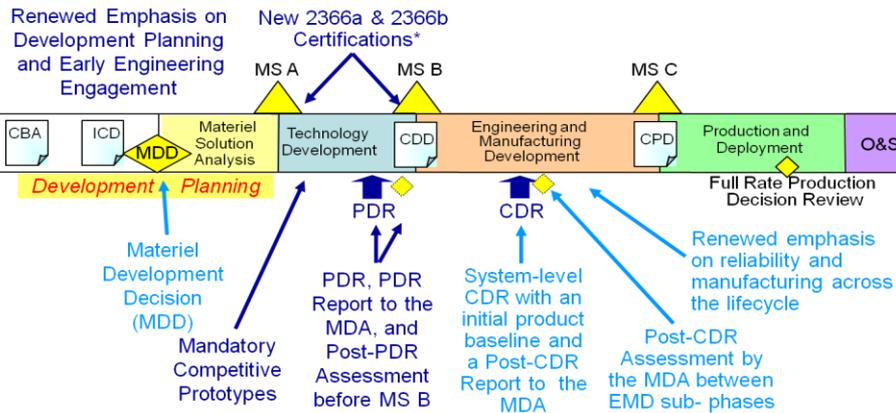
Goals

- **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)**

Tasks: 1.4.2 Establish engineering policy, guides, best practices templates and metrics to insure SoS discipline across ASA(ALT)

- 1.4.2.1 Address Legislative Mandates
- 1.4.2.2 Regulatory Responsibility
- 1.4.2.3 Provide Cadre of Engineering Expertise to support Acquisition Leadership
- 1.4.2.4 Deliver Independent Engineering Advice and Assessments to Acquisition Leadership
- 1.4.2.5 Provide Engineering Risk Assessment in support of MS Decisions

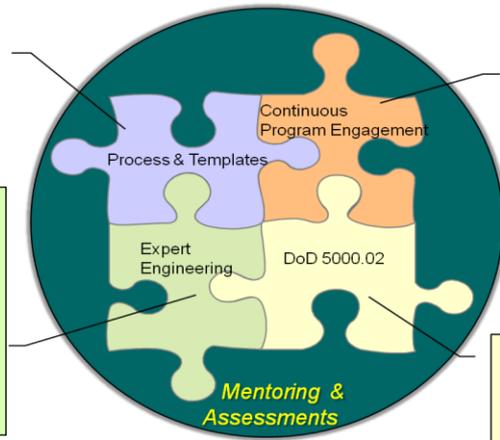
DOD 5000.2 Changing the Acquisition Landscape



"Knowledge-based" Decision Making . . . making acquisition decisions with solid evidence and well understood risk

Program Support Reviews

- DAPS Methodology
- Templates, process flow diagrams, Training
- Questions
- Assessment Plans



- Sharper insight into real program issues and complexities
- Greater trust and openness developed w/programs
- Recommendations target the real issues at their root cause

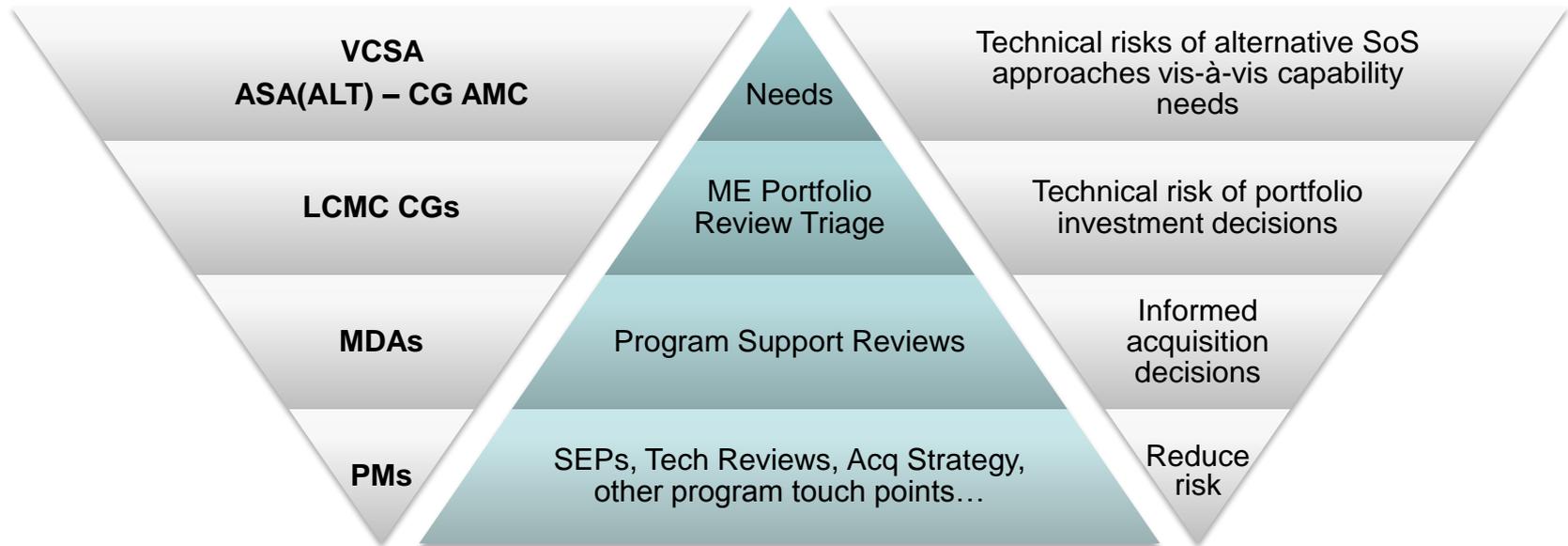
- Assessments of Major Programs
- Program Monitoring
- Systemic Root Cause Analysis

- Program unique recommendations to PMs
- Expert engineering advice within programmatic context to Acquisition Leadership
- Systemic issues to acquisition community for improvements to greater Acquisition effort

- PM acceptance of 90% of all PSR recommendations
- Supporting >90% of all DABs, ITABS, OIPTS, IIPs and SE WIPTS

The Army SoSE Approach to Program Support

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- Four (4) COAs for Program Support (PS) management were considered; most effective option outsources Technical Agent role to RDECOM/ARDEC
- PS staff – Domain experts will be selected across Army elements to include RDECs
- Yearly cost (\$12M est) to be shared across PEOs; recommend POM for outyears
- Start-up anticipated to be 6 months (initial staffing, methodology/templates/tools, etc)
- Leverages experience and methodology from OSD Major Program Support; acts on OSD's initiative to promulgate program support across Army/Services

Provides SE Leadership and Technical Oversight in Support of Planned Acquisition Programs

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Build The Bench

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Goals

- Improving Component System Engineering Competencies
 - Growing Engineering Capacity across ASA(ALT)
- Establish Career path for SE & SoSE professionals
- Establish curriculum for SE & SoSE Discipline
- Establish Career field for SE/SoSE

Tasks: Grow the System Engineering capability within the Army – through education, engineering policy, guidelines and adoption of best industry practices,...."Build the Bench".

- 1.4.3.1 Assess current state of manning and certification/education in ASA(ALT) SE workforce
- 1.4.3.2 Identify SE workforce manning requirements
- 1.4.3.3 Identify SE workforce developmental plan and career progression
- 1.4.3.4 Establish an SE Career Field
- 1.4.3.5 Educate, certify and hire to development plan
- 1.4.3.6 Maintain database of SE workforce/ certification levels

Assess

ID Req'ts

Est Dev Plan

Est Career Field

Execute Plan

Cont Re-Assess

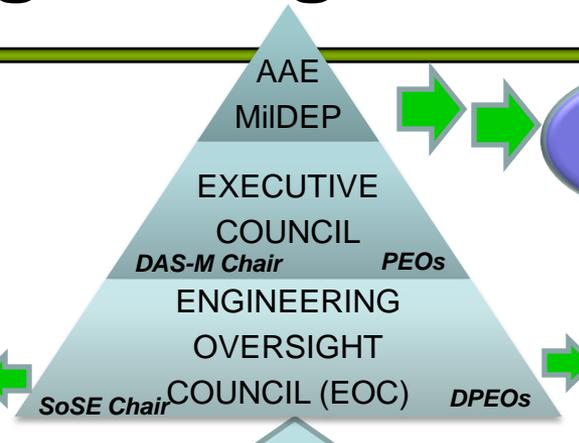
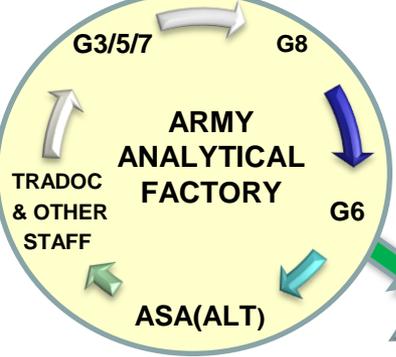




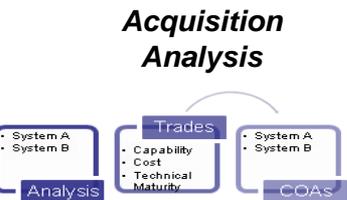
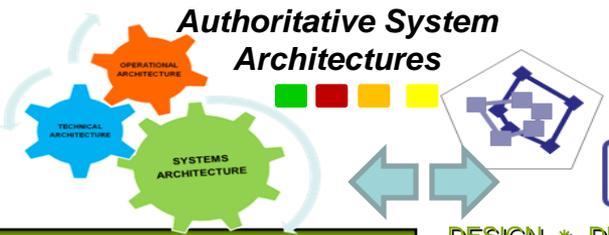
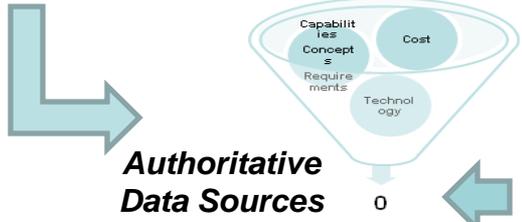
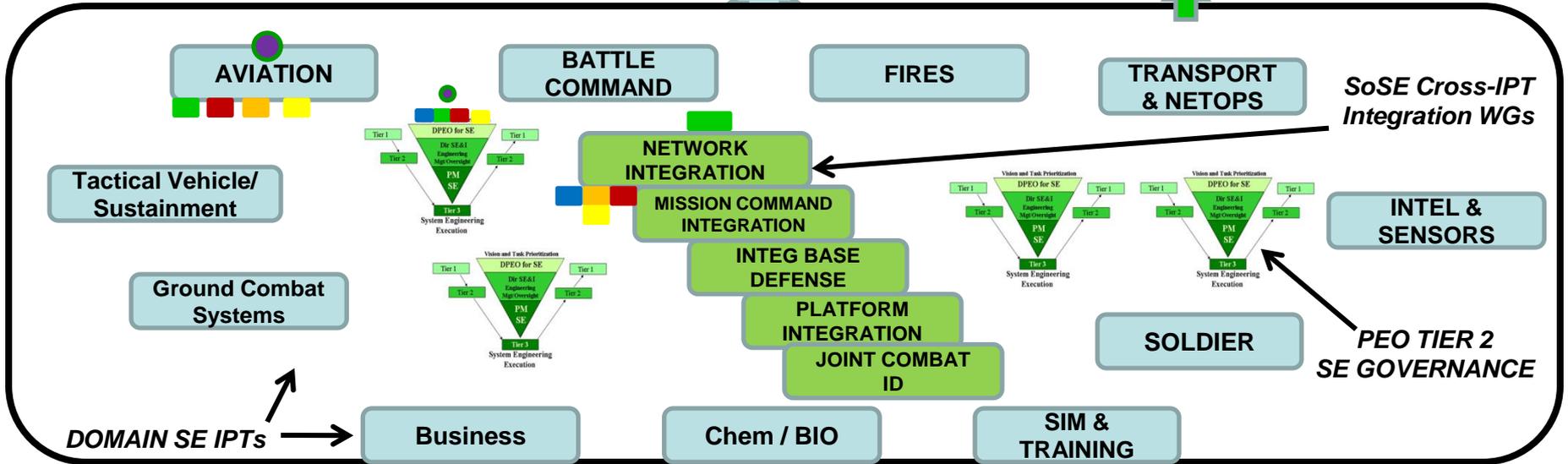
Organizing the SoS Space

UNCLASSIFIED

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- - PEO
- - SoSE
- - S&T
- - INTEGRATION
- - RDECOM
- - FFRDC



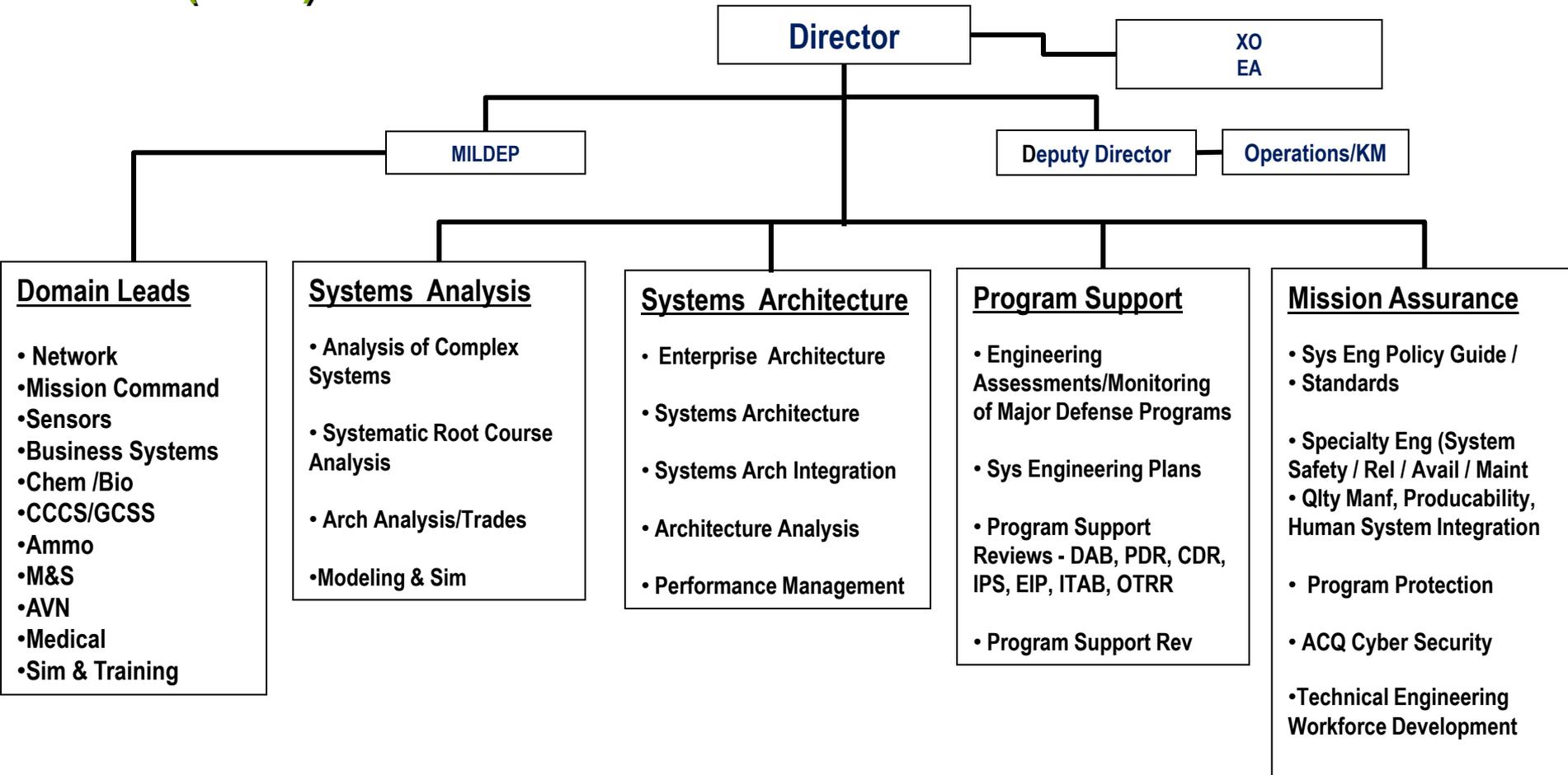
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Army SoSE Organization

ASA (AL&T)



-- Domain Leads

-- GOV

-- RDECOM

-- FFRDC/Contractor

Providing Technical and SE Leadership & Oversight to ASA (ALT) in support of planned ongoing Acquisition Programs

SoSE

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Way Ahead / Challenges

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- **Leverage expertise across the community**
- **Pool resources to do more with less**
- **Establish engineering discipline across the community consistently**
- **Continuously look for engineering opportunities**