



Systems Engineering Modernization Initiative Overview for NDIA SE Division

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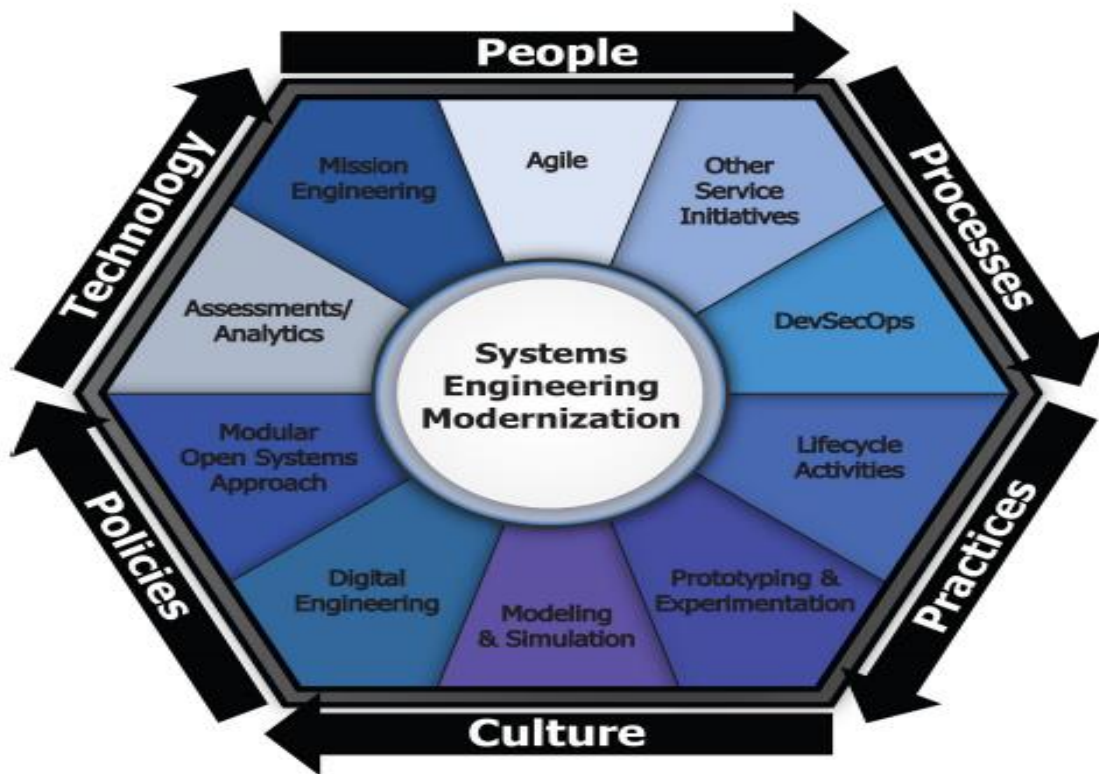


System Engineering Modernization (SE MOD)



SE Modernization Overview

Lead: Kelly Alexander & Ed Moshinsky (OUSD(R&E(SE)))



- **OBJECTIVE:** Modernize Systems Engineering to support the delivery of capability to meet mission needs
- **OUTCOME:** Roadmaps that provide a strategy to implement an integrated approach that coordinates the modern SE practices.
- Updated System Engineering practice, policy/guidance, and workforce development for the DoD.
- **VISION:** Implement modernized SE practices that maintain the essential rigor and enable DoD to develop and field the newest technology with more confidence.

Modernizing SE is a journey of evolving mindsets & integrating initiatives



What Is Driving SE Modernization?



- Several **SE Focus Areas Are Maturing** but are not fully implemented
- **Need Enhanced Tools** to Understand **Complex SoS Interactions**
- **SE Guidance is Outdated** and document-centered with a focus on static reviews VS data driven with continuous assessment
- **Workforce Skills need to adapt** to support complex environments that require **more collaboration and innovation in our SE practices**

INCOSE: “Traditional development methods do not adequately address the complexity of systems today.”



System Engineering Modernization Framework FY21 Task

Lead: Kelly Alexander & Ed Moshinsky (OUSD(R&E(SE)))



Tasks

SERC will review and assess currently existing best practices , systems engineering guidance along with the systems engineering workforce roles and characteristics across the Services, Industry, Academia

Outcomes:

1. Recommended SE Modernization Framework key processes and activities in the SE Modernization focus areas.
2. Compilation of best practices of SE Modernization Focus Areas that aligns with the Adaptive Acquisition Framework.
3. Identification of the gaps in systems engineering skills and training required to integrate and implement a holistic SE plan.

This Effort is APPROVED and is pending contract award



System Engineering Modernization Roadmaps FY22 Task

Lead: Kelly Alexander & Ed Moshinsky (OUSD(R&E(SE)))



Tasks

SERC will review and assess existing roadmaps and implementation strategies for SE Modernization Focus Areas at the OSD and Service levels to determine synergies and knowledge integration opportunities.

Outcomes:

- Draft SE Modernization Strategy to include recommended:
 - SE Modernization Framework that integrates and aligns the SE focus areas specifically addressing pain points;
 - Roadmaps indicating the paths to SE modernization from this integrated perspective;
 - Recommended policy guidance and processes that align & Integrate into the Acquisition Pathways
 - Recommended workforce strategy with the key roles and responsibilities from an integrated perspective

This effort is pending APPROVAL



SE Modernization Ongoing Activities



Completed Engagements

- June-July 2021, met with R&E Directors for Digital Engineering, Software Engineering, Specialty Engineering, Developmental Test, Evaluation & Assessment (DTE&A), Mission Engineering (ME)
- July 14, 2021 – Meet with NDIA Systems Engineering Division Leadership
- July 22, 2021 – Meet with Mission Integration Director
- July 27, 2021 – Initial meeting with Services representatives

Upcoming Engagements

- July 2021 – SERC FY21 System Engineering Modernization Framework Research Task (pending contract award)
- August – October – Planning ongoing for specific engagements with INCOSE and other Federal Agency SE Transformation initiatives (NASA, Homeland Security, Program Specific)
- October 2021 – Annual NDIA SE and Mission Engineering Conference presentation
- November 2021 – Inter-Agency Working Group (IAWG) Executive Meeting Topic of Interest

Initial SE Modernization Efforts will focus on leveraging ongoing activities across the Services, Industry and Academia