



ENGINEERED RESILIENT SYSTEMS (ERS) COI



Overview

The Engineered Resilient Systems (ERS) Community of Interest (COI) is one of the 17 Science and Technology (S&T) Strategic Priorities of the Office of the Secretary of Defense. The purpose of the ERS COI is to facilitate the use of Department of Defense (DoD) S&T investments for challenges within the DoD acquisition community. The ERS COI has participation from all the Services, as well as key industry and academic partners.

In an environment marked by rapidly changing threats and missions, ERS seeks to create engineering concepts, techniques, and tools that lead to the design, development, testing, manufacturing, and fielding of trusted, assured, and easily modified weapons systems.

Leadership

Dr. Jeffery P. Holland
(Steering Group and Army Lead)

- Director, U.S. Army Engineer Research and Development Center
- Director, Research & Development, U.S. Army Corps of Engineers

Mr. Jeffrey Stanley
(Air Force Lead)

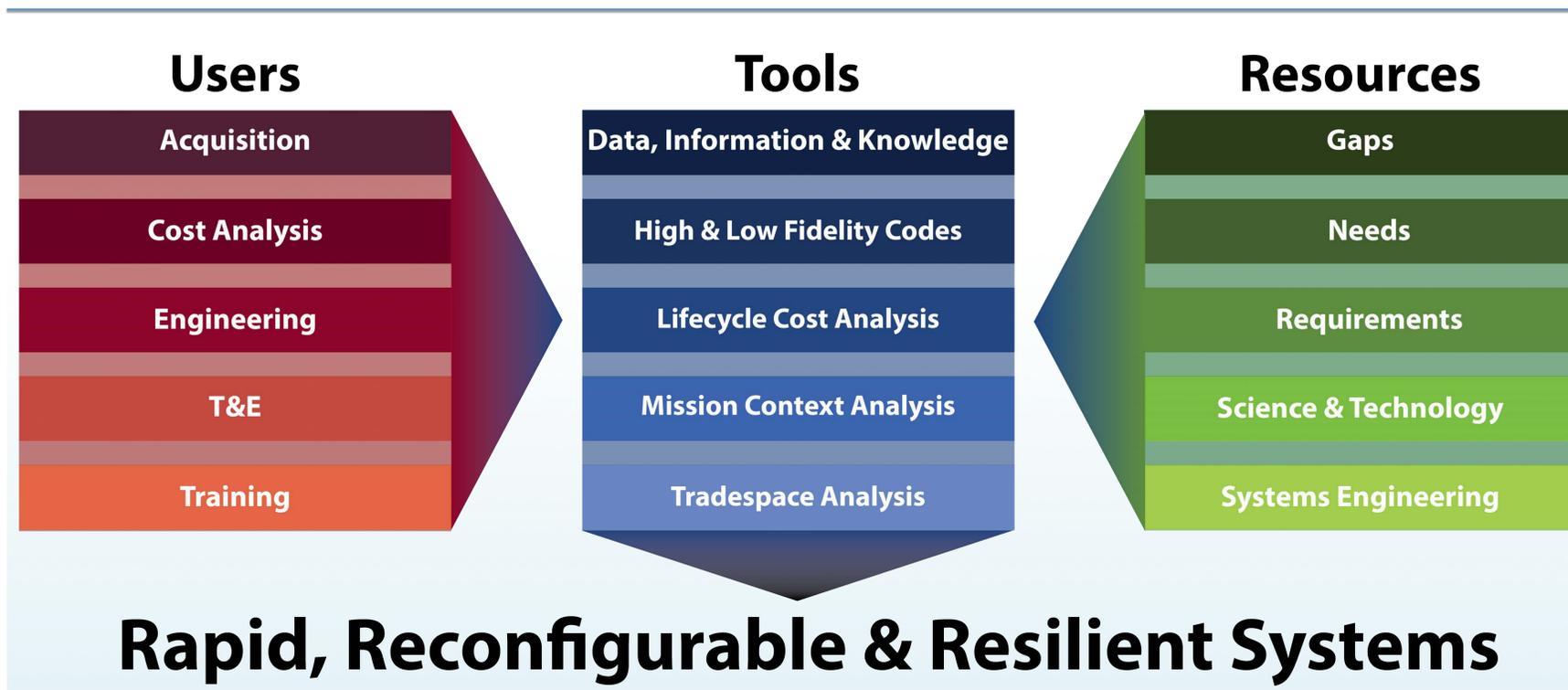
- Associate Deputy Assistant Secretary of the Air Force for Science, Technology and Engineering

Mr. Robert Gold
(OSD Lead)

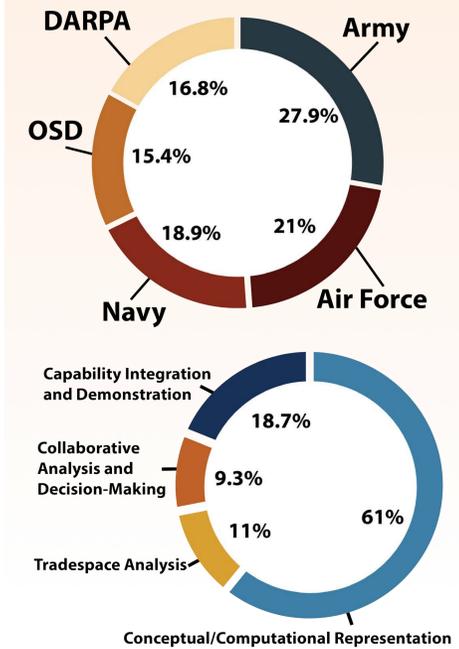
- Director, Engineering Enterprise, DASD SE

Dr. Thomas Killion
(Navy Lead)

- Director, Office of Technology, Office of Naval Research



DoD FY15 Investment Profile



Thrust Areas

Conceptual and Computational Representation Objectives

- Readily available, easily configurable models of systems and environments
- Computational environments that allow for rapid configuration and execution of models at scale
- Representative mission environments compatible with desired level of fidelity

Opportunities

- Ability to easily move from concept to virtual prototype to analysis
- Ability to leverage DoD M&S and analytic tools for all stages of acquisition
- Ability to utilize realistic environmental data and models for performance modeling

Tradespace Analysis Objectives

- Comprehensive tradespace analytics that support complex DoD systems under a wide range of operational scenarios

Opportunities

- Allow balance among multiple, varied interests when making effective decisions in today's increasingly complex acquisition environment with many heterogeneous operational and business demands
- Need to present decision-makers with alternatives that satisfy a range of possible futures

Collaborative Analysis and Decision-Making Objectives

- Technology to present and share results among a range of diverse, distributed stakeholders
- Ability to retain and reuse representations, scenarios, and analysis results across trades, and over time, to ensure that the knowledge gained can be leveraged broadly

Opportunities

- Successfully communicating complex results to stakeholders to support effective decision processes
- Developing and maintaining a repository of analysis results in a searchable and accessible manner, offering a ready resource to jumpstart new analyses by providing the ability to leverage knowledge that accrues over time

Capability Integration and Demonstration Objectives

- Enable "open" architectural framework that allows software to plug-and-play
- Use the open architecture to drive opportunities that enhance innovation and re-use across government, academia, and industry
- Leverage technical standards that support a modular, loosely coupled, and highly cohesive system structure
- Perform pilot projects to demonstrate ERS concepts and to drive refinement of ERS tools

Opportunities

- A framework to empower sharing and reuse (tools, models, algorithms, data, etc.) in the ERS technical areas
- Development of an open architectural framework, integration of technologies, and the regular application, evaluation, and demonstrations to enable:
 - Near-term benefit from evolving technology
 - Effective assessment of progress
 - Constructive identification of gaps to drive technical investment

Engagement Opportunities

- Seeking industry input across ERS gaps and opportunities
- Encouraging participation in ERS collaborative working groups
- Identifying platforms that could benefit from ERS



Connect to ERS

Visit us in DoDTechSpace: <https://www.dtic.mil/REGateway/groups/ers>
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 Program Manager: Owen Eslinger, Owen.J.Eslinger@erdc.dren.mil