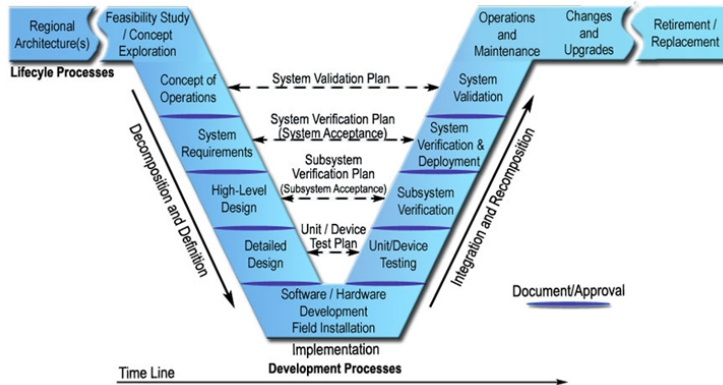


# SERC Research Challenge: Agility in SE

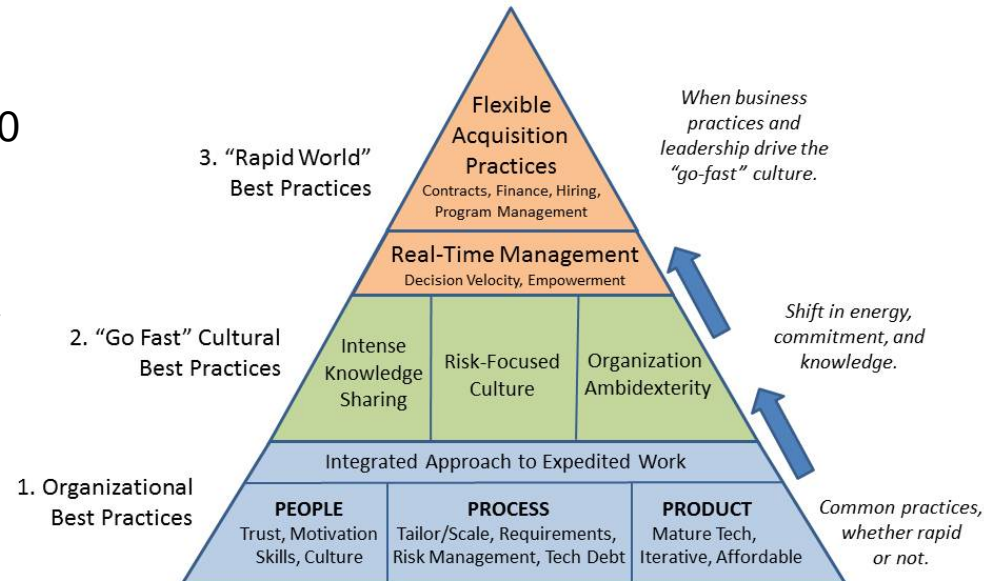


## Demands of Expedited SE

- Timelines measured in days/months not years/decades
- Delivering real solutions to problems, 80/20 as opposed to 100% of the “requirements”
- High understanding of risk and active management, what processes are needed (vs “checklists”) and what can be tailored / scaled
- Manage transitions, from lab/prototype to fieldable product, or even to a larger program
- Having the right team who can make experienced judgment calls

## Importance of Agility

- One size doesn't fit all – many “rapids” and lanes of acquisition, requiring flexible processes
- Enable response to rapidly changing and unknown threats
- Delivering the desired effect, at the right time, at an affordable cost



# Leveraging SERC RTs to Increase Agility of the Systems and the SE Process

## The SE Environment

**Agile MPTs MPT, RT- 9:** What agile methods, processes and tools are currently being used in SE, how can we model agile processes to evaluate their applicability to SE, and how can we describe their dependencies amongst each other

**Expedited SE RT-34:** How are expedited SE teams achieving success and what are the common factors among them, if any

## Top Level Strategies for Developing SE

**SE Transformation Roadmap RT-10:** Analysis and definition of SE concerns and definition of a set of enabling technologies for change

**Systems 2020 RT-20/20a:** Approach to evolving SE to meet defense challenges based on RT-10

**Evolutionary Acquisition RT-5:** identify next-generation DoD life cycle systems engineering process needs programs that are more cost-effective and rapidly adaptable to changing mission needs.

## Applications of Agile/Lean Principles

**Agile/Lean SE RT-35/35a:** Redefining the way SE is scheduled to provide more effective integration and better visibility in large system evolution

**Reconfigurable Architecture RT-2:** Enabling data-driven documentation for more agile management of SE artifacts

**VV&A Modeling RT-21:** Methods, languages and tools for effective M&S of complex systems as a means for Verification, Validation and Accreditation.

**Major Modeling and Simulation Change in Accreditation RT-38:** Redefinition of "major change" to accelerate SE by eliminating unnecessary model accreditation

**Integrating DoDAF with other artifacts RT-24:** Closer integration of DoDAF into architecture, M&S, SW design activities to reduce rework and improve resource efficiency

***Plus ... Concept Engineering, Affordability & Flexibility, Workforce, etc***