



NAVAL  
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SCHOOL

# The Department of Navy's Digital Transformation

*with the Digital Warfighting Platform, Strangler Patterns,  
Machine Learning, and Autonomous  
Human-Machine Teaming*

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Dr. Yakimenko

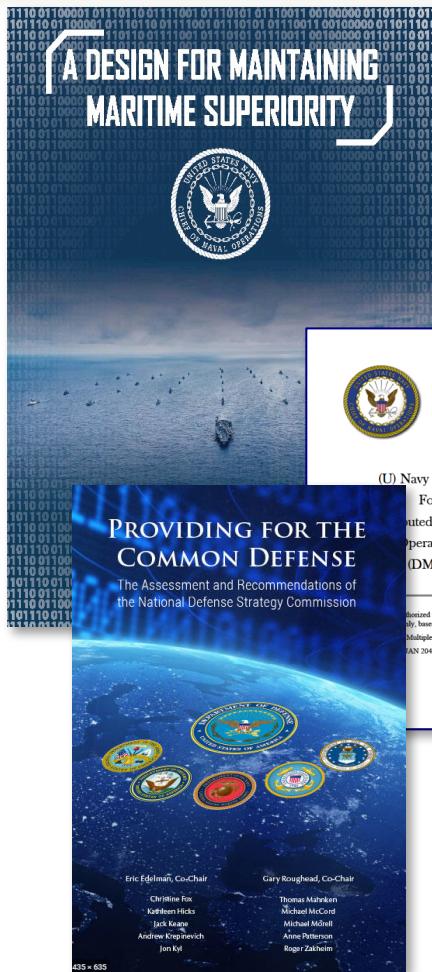
UNCLASSIFIED



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# Call to Action & Changing Landscape



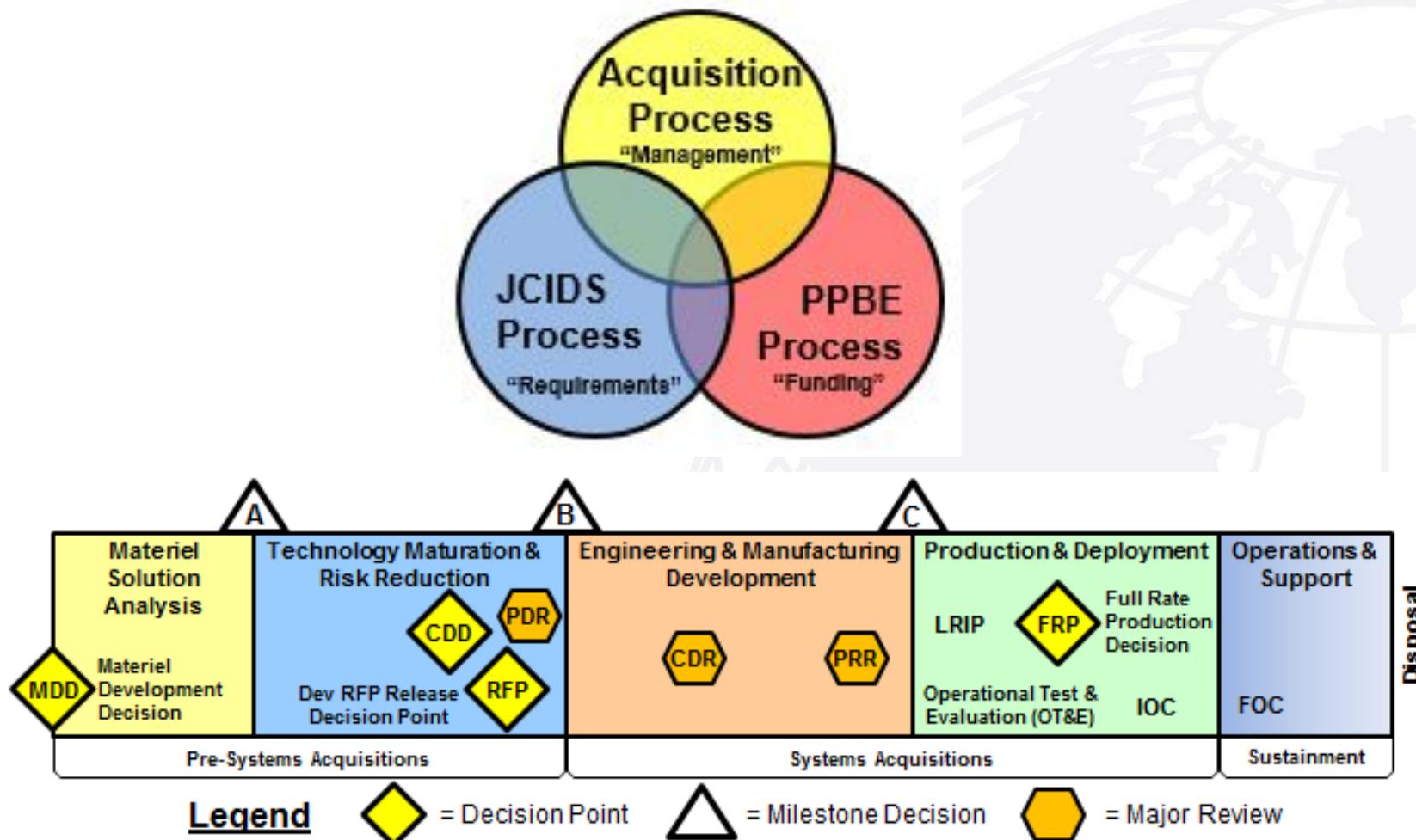
- Design and implement a comprehensive operational architecture to support Distributed Maritime Operations (DMO) to provide accurate, timely, and analyzed information to units, warfighting groups, and fleets.
- The architecture will include:
  - A tactical grid to connect distributed nodes.
  - Data storage, processing power, and technology stacks at the nodes.
  - An overarching data strategy.
  - Analytic tools such as artificial intelligence/machine learning (AI/ML), and services that support fast, sound decisions.
  - A highly integrated, service-oriented design
- Design the operational architecture to be extensible to Joint and coalition forces. Will include a development environment to rapidly generate enhancements and support its continued evolution.

Problem Statement: Need for coordinated cross SYSCOM/PEO development of digital infrastructure, environment, and SoS design to deliver integrated warfighting capability ISO DMO



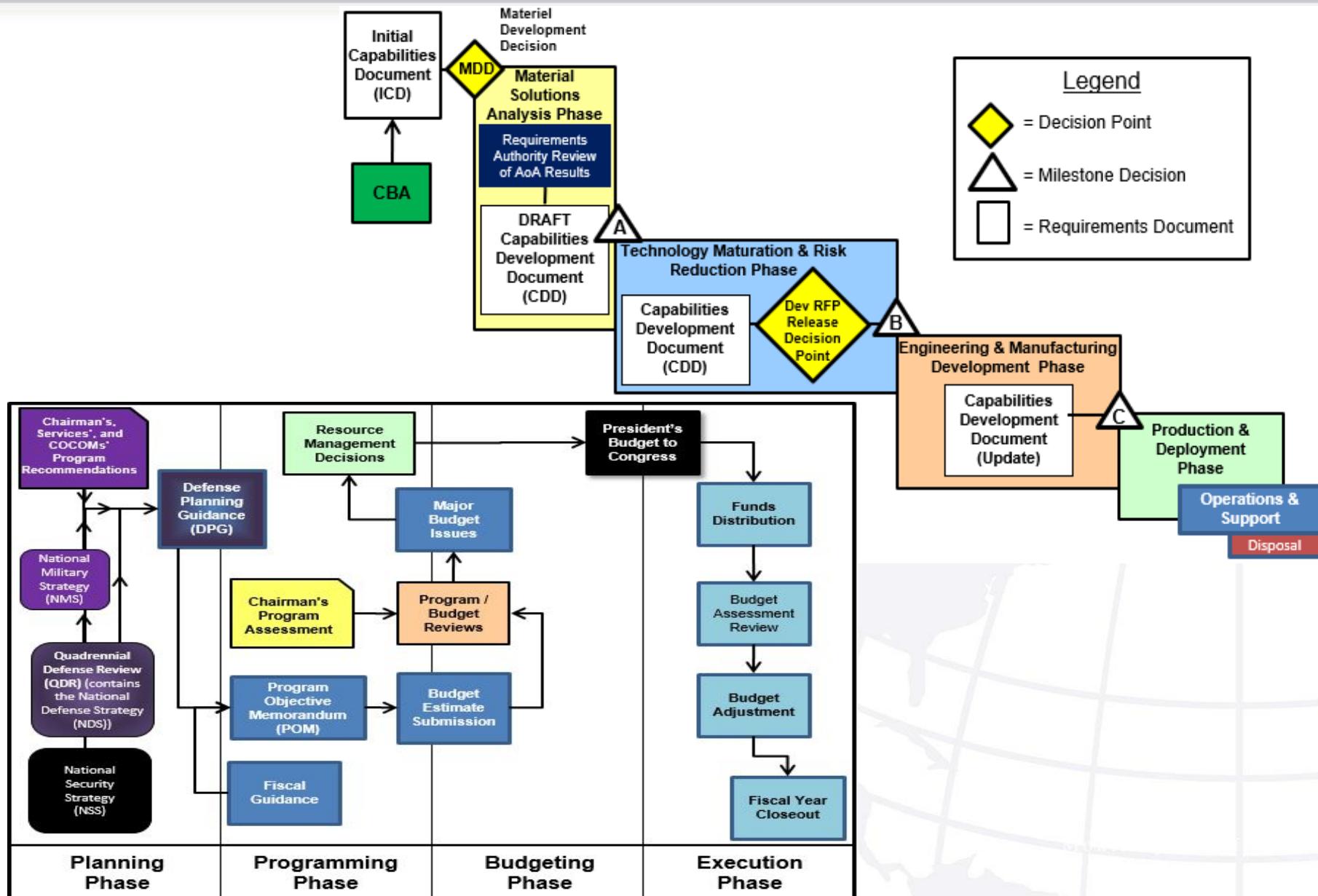
# Defense Acquisition System

- Complex, confusing, antiquated



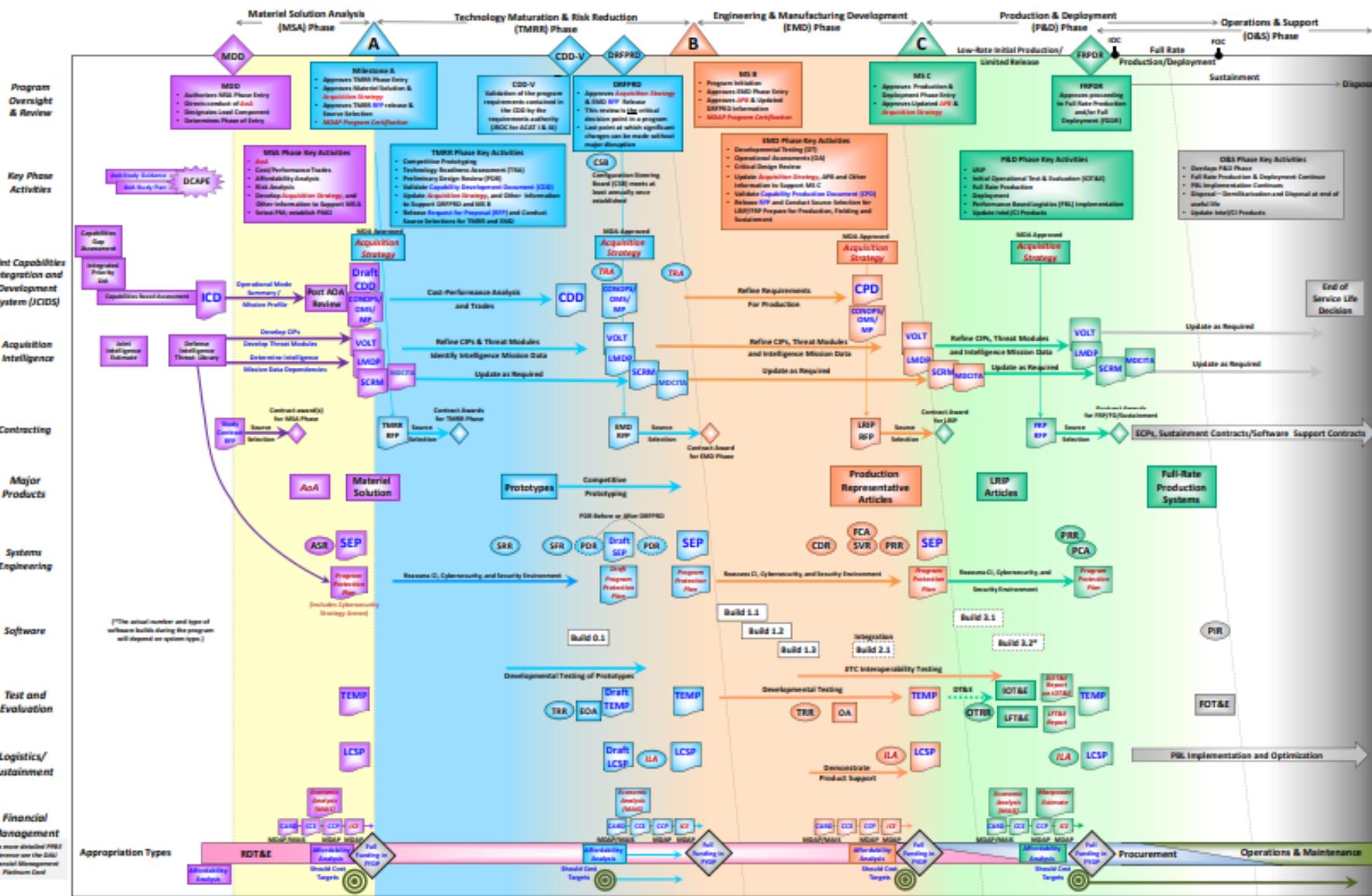


# Defense Acquisition System



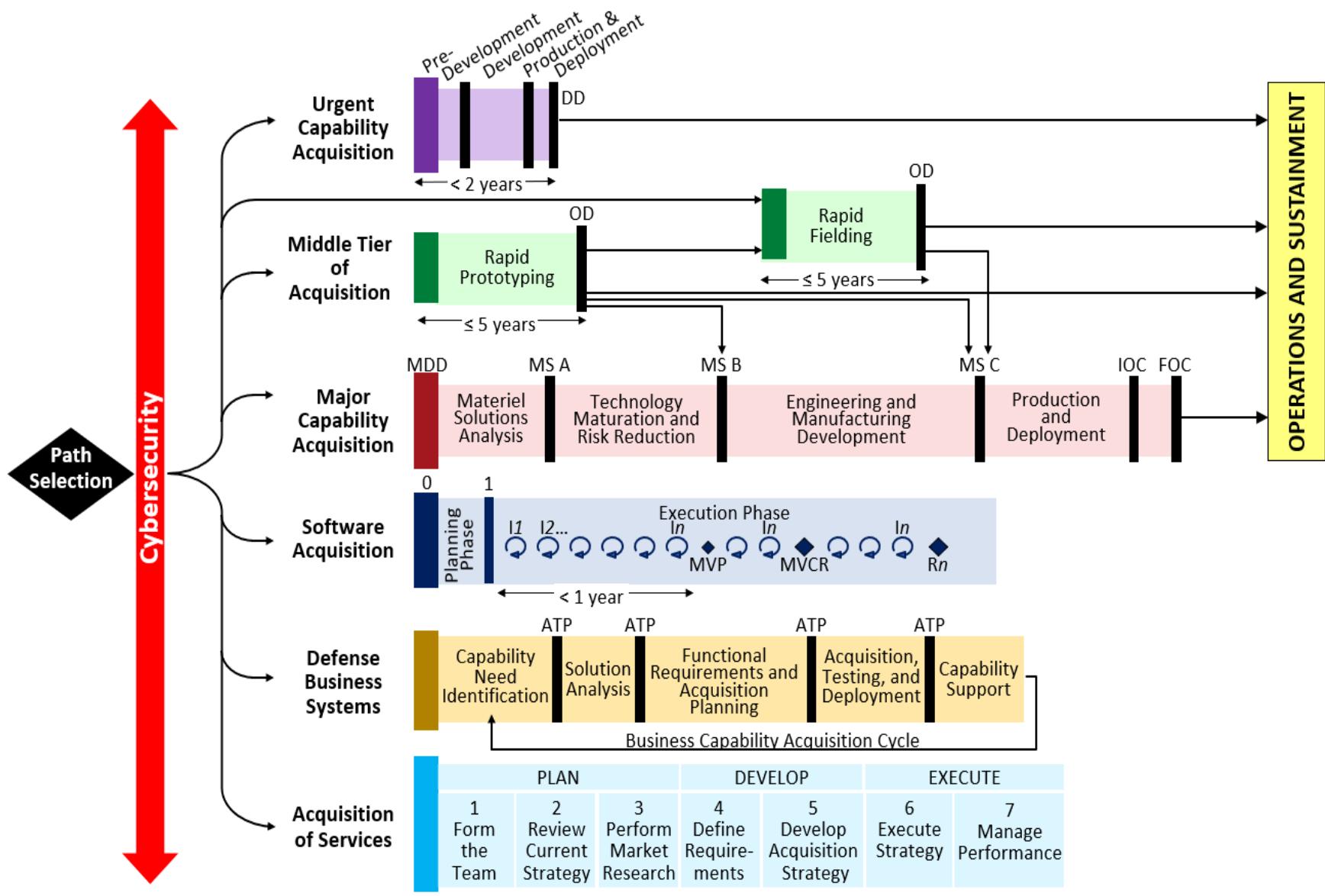


# Defense Acquisition System





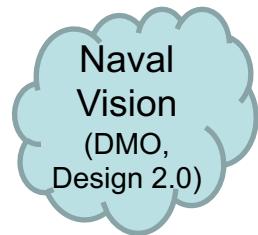
# Defense Acquisition System





# Naval Digital Evolution

ASN / OPNAV



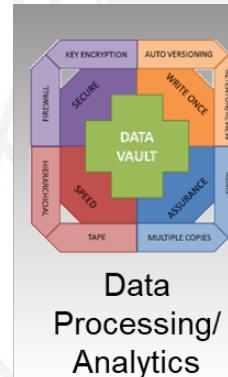
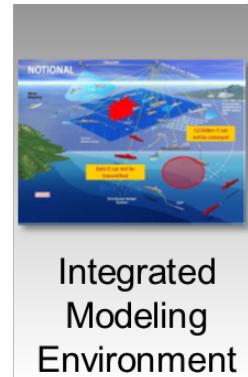
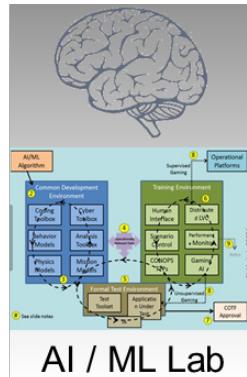
DISC



PEOs /  
SYSCOMS

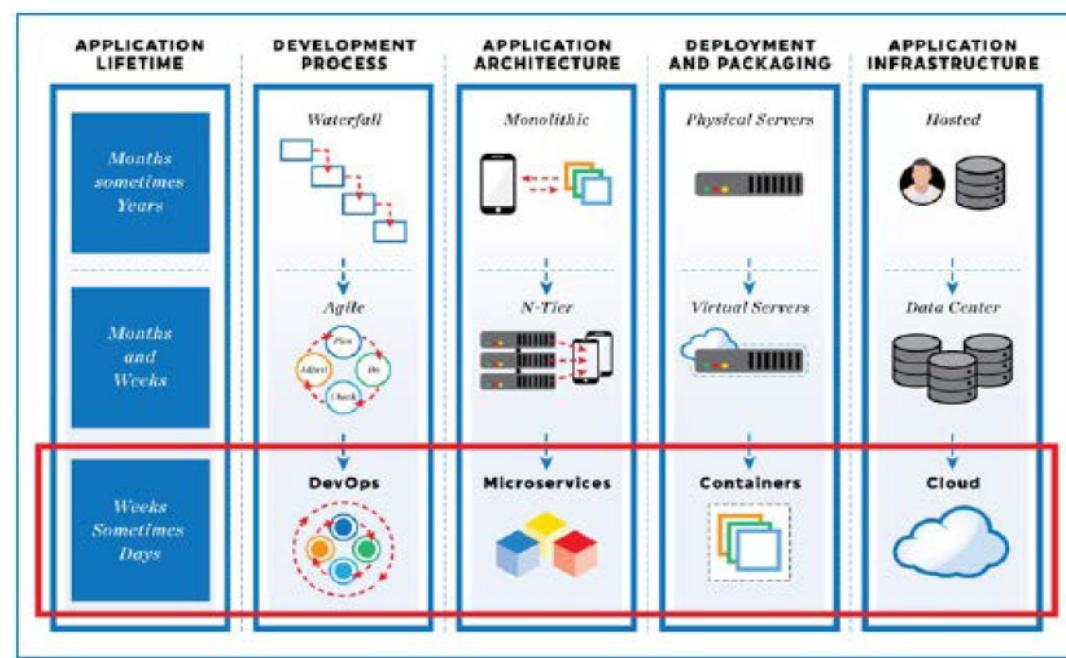
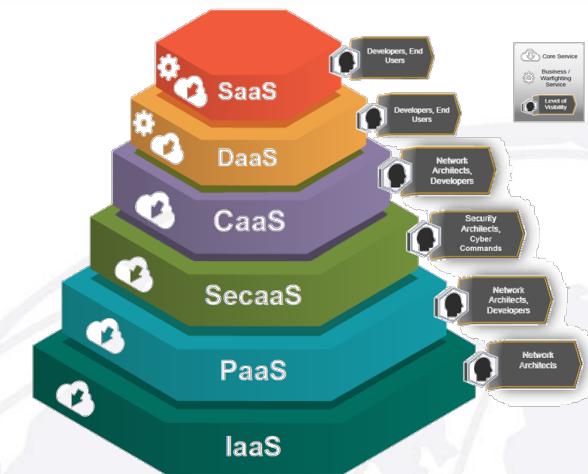
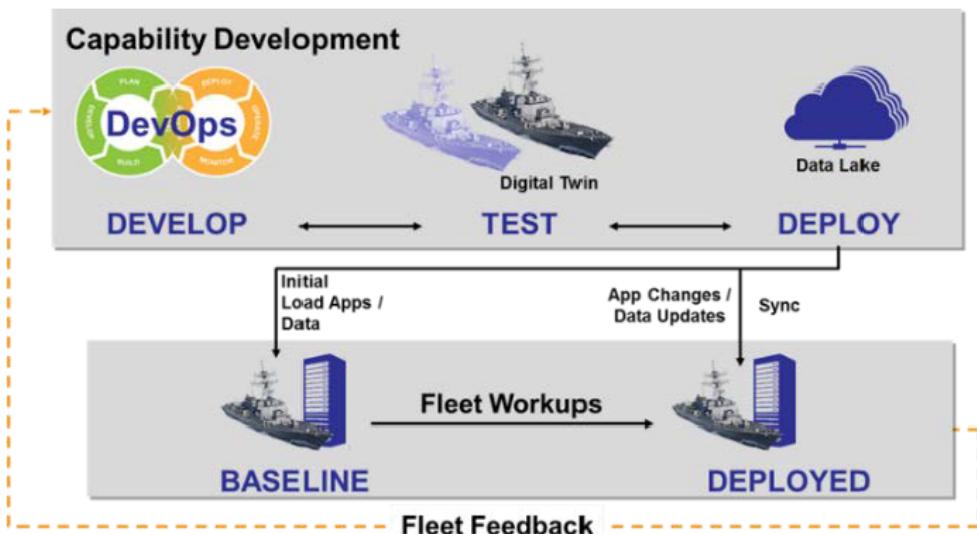
POR

Fleet



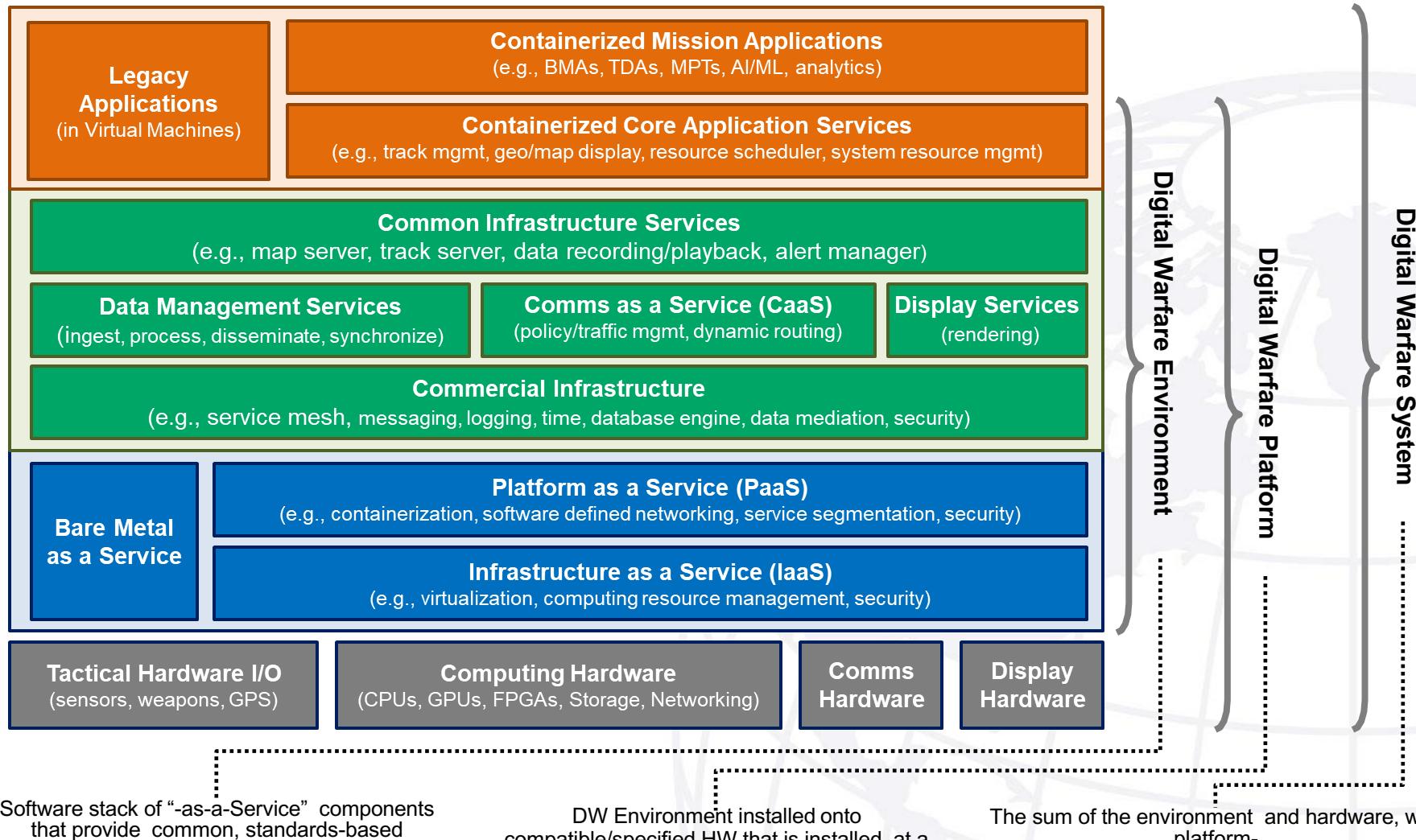


# Essence and Structure of Digital Transformation



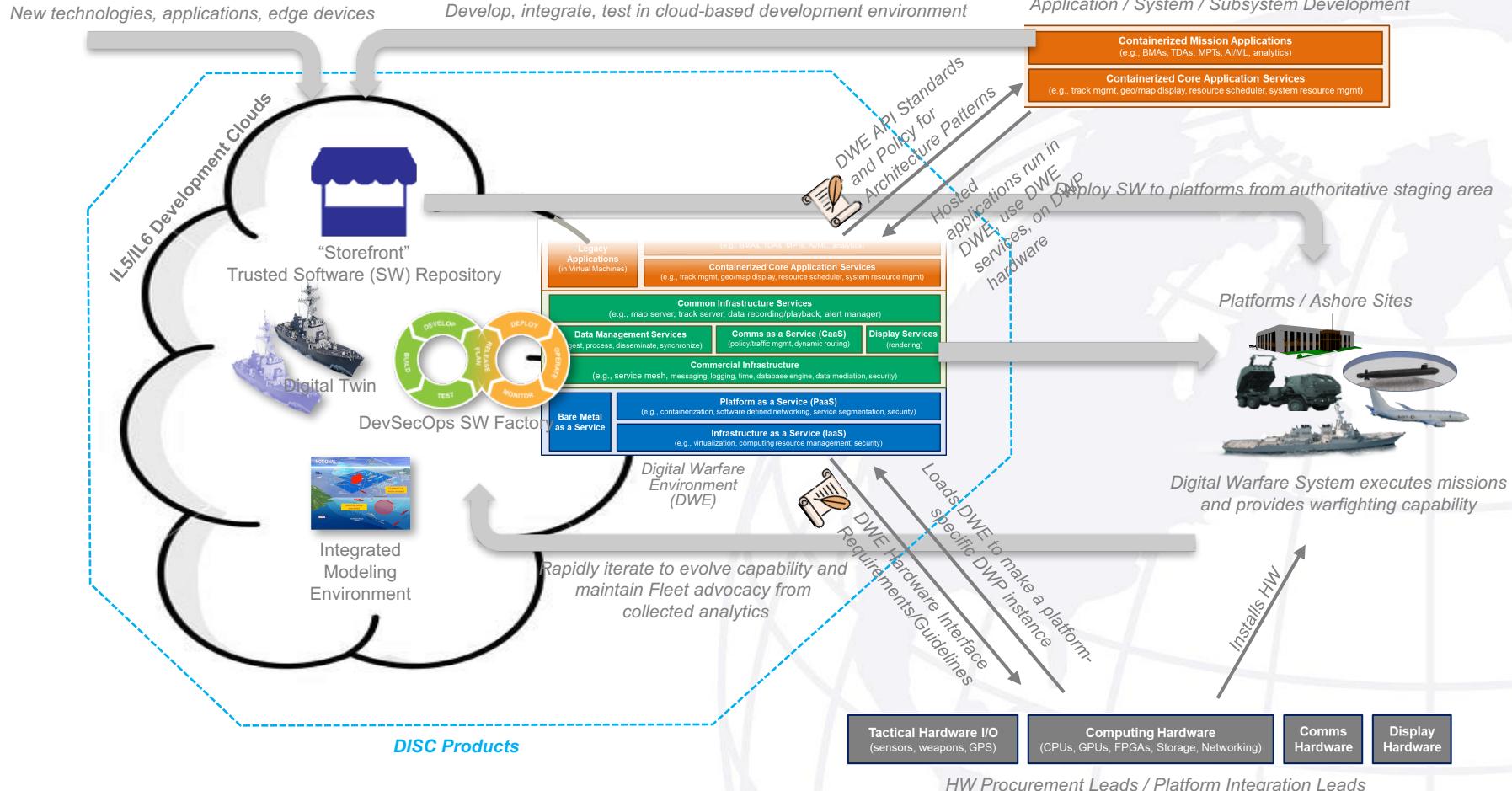


# Digital Warfighting Platform, Environment, and System



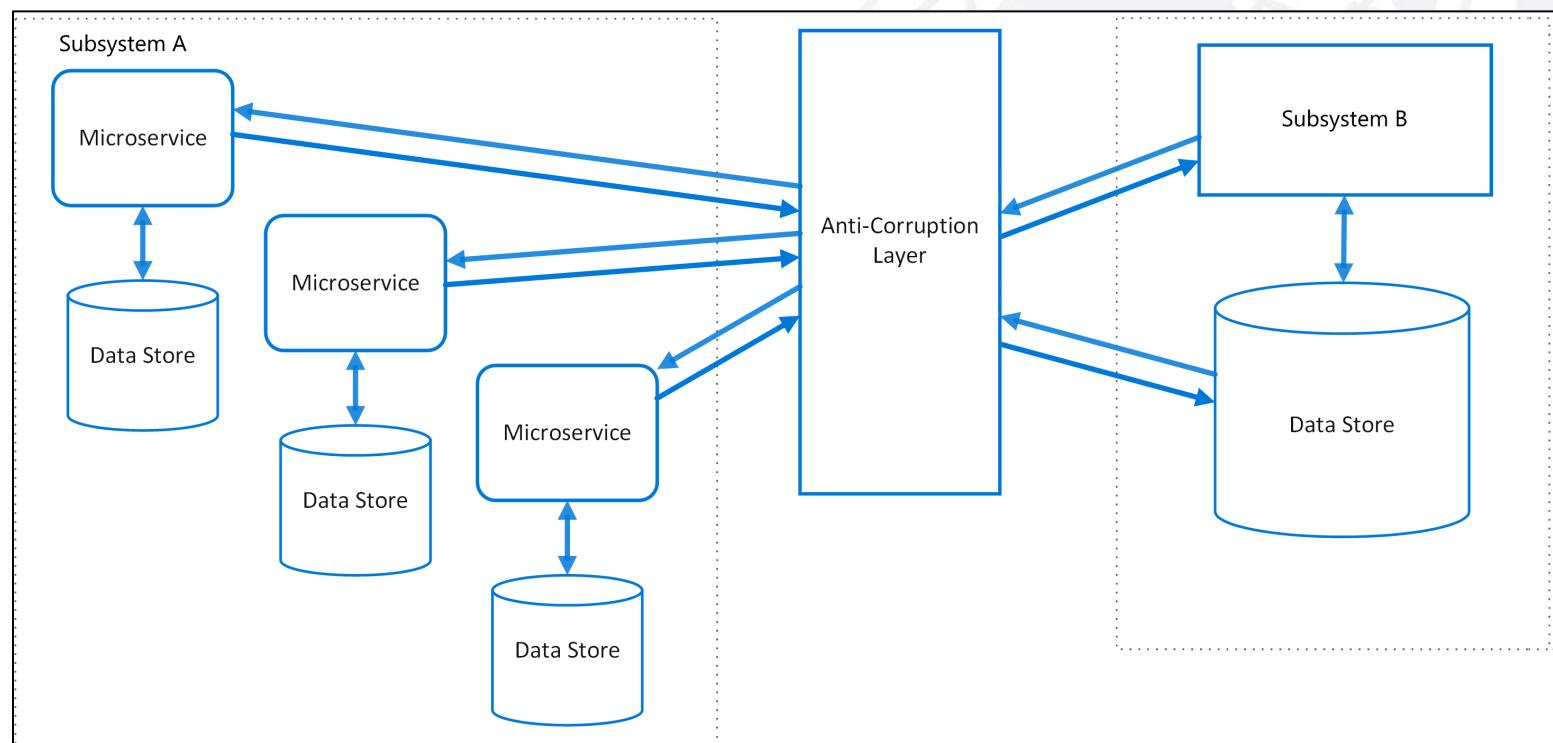
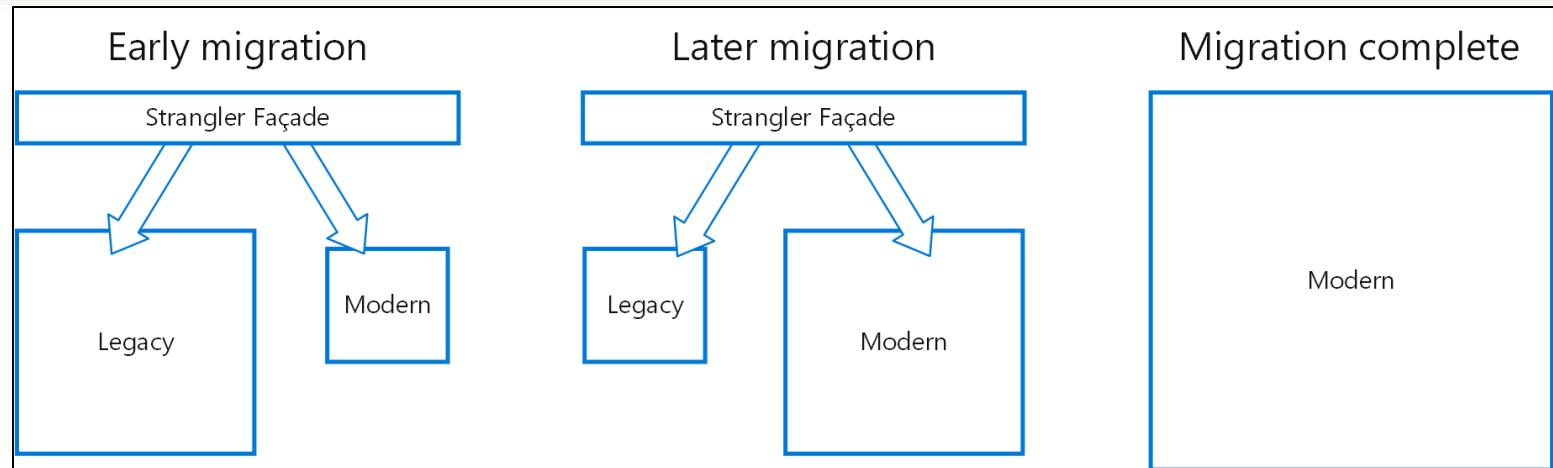


# Digital Warfighting Platform, Environment, and System





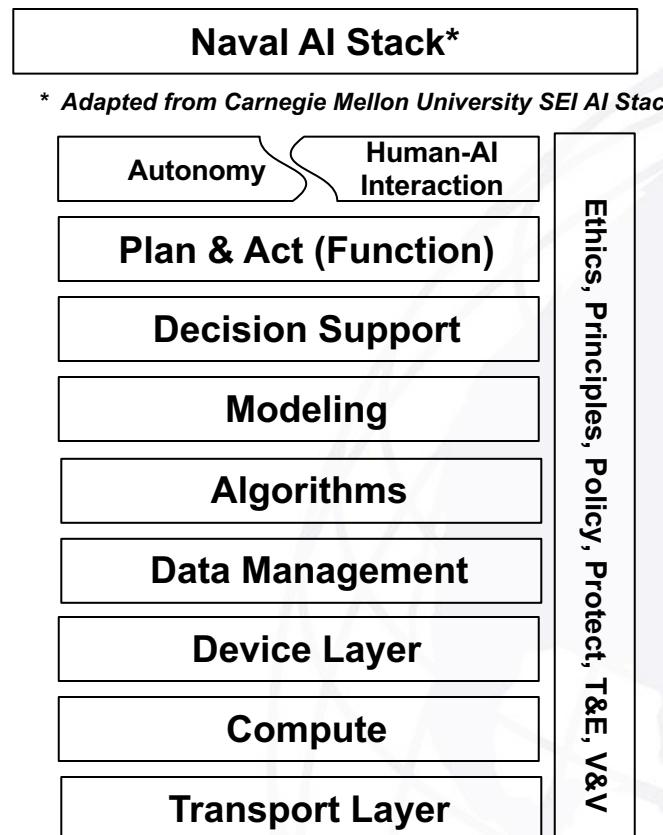
# Adaptation of Strangler Pattern





# Machine Learning Challenges

- Technology
  - Infrastructure
  - Tech Refresh
  - Apps & Services
  - Platform
- Data
  - Standards
  - Management



- Processes
  - Requirements
  - Delivery
  - Engineering
  - Resources
  - Accreditation
  - Contracting
- Organization
  - Training
  - Education
  - Management
  - Culture



We have a lot of work ahead of us.

Thank You.

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