System of Systems Engineering for Army Battle Command Convergence (Common Operating Environment Focus)

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ASA(ALT) SoSE
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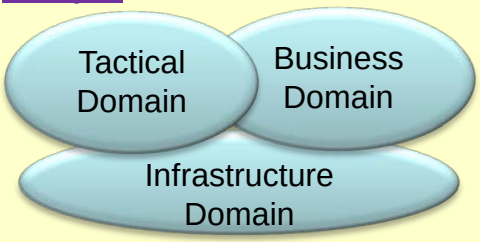
System of Systems Engineering (SoSE) – Environment

ASA (AL&T)

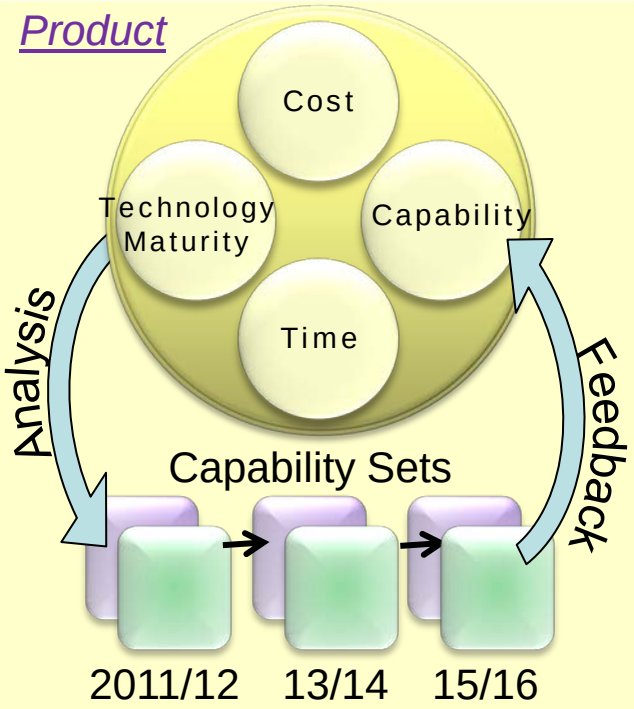
Scope



SOSE Mission

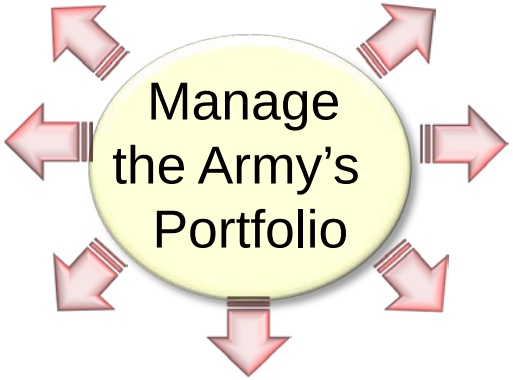
Provide the Army's leadership and materiel developers with the necessary engineering /architectural products to manage and shape the Army's materiel portfolio, to ensure a System Engineering discipline across the Materiel developer community throughout the acquisition life cycle and grow the System Engineering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

Product



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

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

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

SoSE

The Challenge

- Multiple common computing environments are duplicative and life cycle costs are unsustainable
- Disparate and fragmented architectures are key contributors to operational inefficiencies
- Technology progression in fielded PORs is limited and insufficient
- Development, certification, and deployment processes are not sufficiently flexible / agile
- Governance and strategic decision-making are lacking

Value Proposition

- Common Operating Environment Enables
  - Operational Adaptability / Capability Agility
  - Reduced Life Cycle Costs through standardized applications and Unity of Effort
  - Flexible Infrastructure to Evolve to Rapidly Emerging Standards
  - Cyber Protection

Requires Unified Strategy and Synchronized Execution

What is the "COE"

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The Common Operating Environment is an approved set of computing technologies and standards that enable secure and interoperable applications to be rapidly developed and executed across a variety of Computing Environments (i.e., Server(s), Client, Mobile, Sensors, and Platform).

Source: Army CIO G6 Appendix C

Mission Environments and Computing Environments

The Mission Environments in which Soldiers operate are differentiated by Network Bandwidth, Computing power, Environmental factors, and location permanence

Mission Environments	Computing Environments
 **Enterprise - Post/Camp/Station** • High bandwidth • High availability server-class machines • Highly controlled environment • Fixed location	
 **Command Post** • Moderate to high bandwidth • Server-class machines • Semi-controlled environment • Temporary location	
 **Mounted** • Low to moderate bandwidth • PC-class machines • Minimally controlled environment • Dynamic location	
 **Soldier/Sensor** • Low to moderate bandwidth • Smartphone and tablet-class devices • Uncontrolled environment • Dynamic location	

Source: Army CIO G6 COE Appendix C

Benefits of COE Initiatives

- Increased operational relevance (i.e. user experience)
- Reduced development, testing, certification, training, and deployment timelines
- Increased interoperability between systems – internal and external to the enterprise
- Strategic approach to reuse (“build once use many”) framework
- Improved data collection and sharing (collect once / use many)
- Reduced Life Cycle costs
- Rapid deployment of additional capability
- Mechanisms to enforce standards development, integration and conformance

Army COE and Modernization

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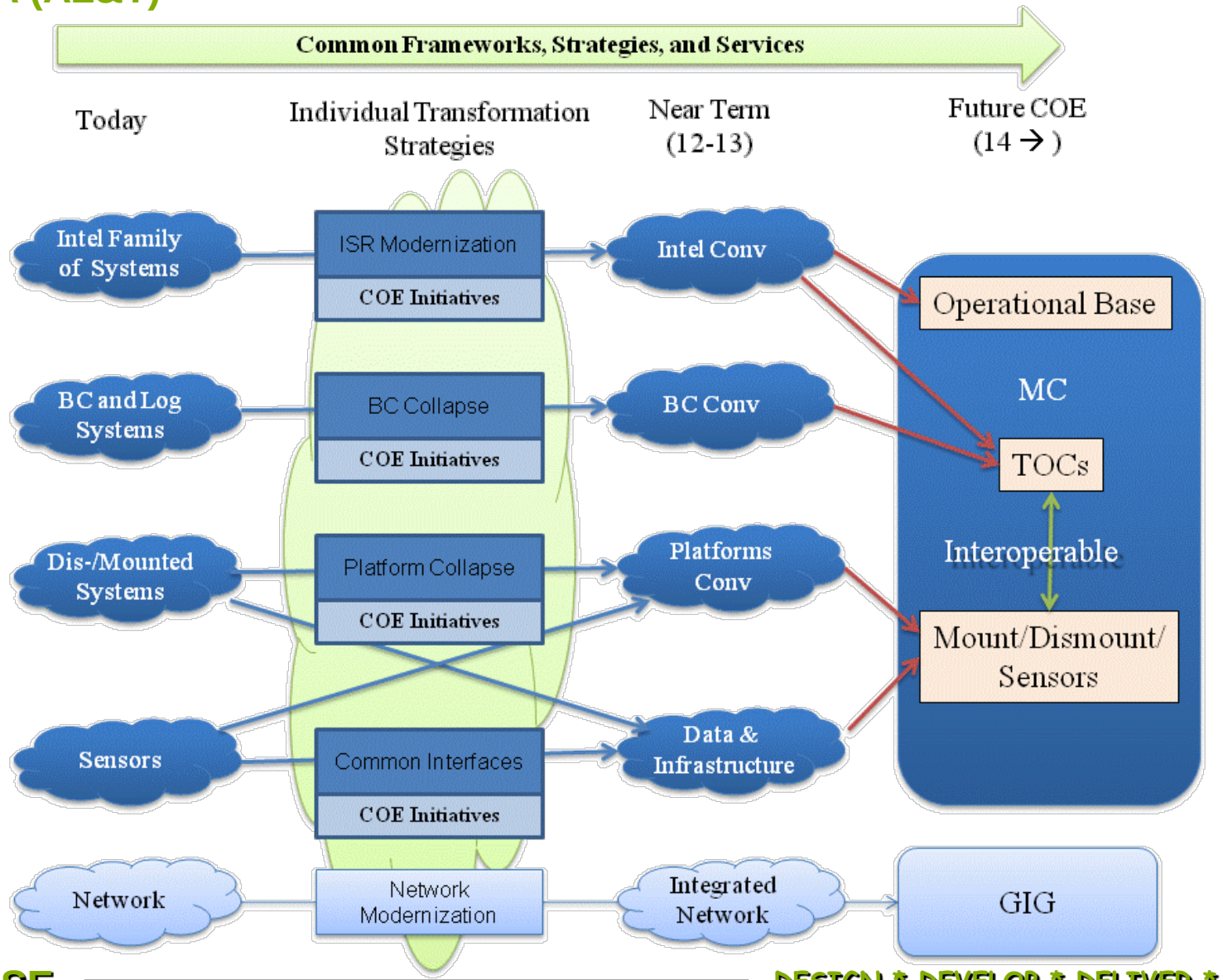
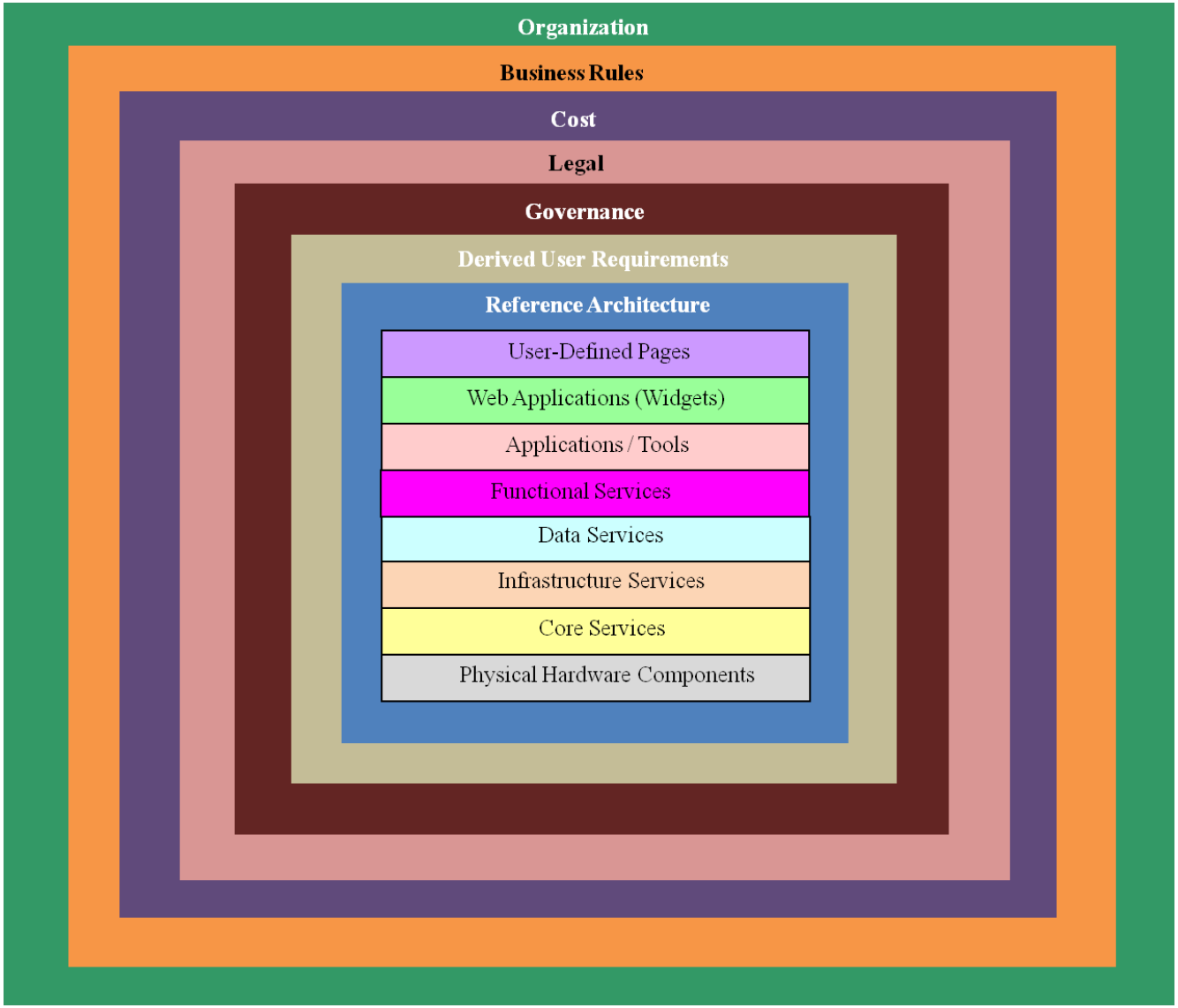


Ecosystem


Organization
Business Rules
Cost
Legal
Governance
Derived User Requirements
Reference Architecture
User-Defined Pages
Web Applications (Widgets)
Applications / Tools
Functional Services
Data Services
Infrastructure Services
Core Services
Physical Hardware Components

Way Ahead

- Develop ASA(ALT) COE Implementation Plan, to include Computing Environment Execution Plans, to include roles and responsibilities and resourcing
- Establish COE engineering, integration, test/validation, deployment synchronization, and Governance activities
- Establish Ecosystem
- Establish Federated Development and Test / Integration Environments
- Establish Widget Marketplace
- Develop COE Investment Profile

Work With Industry Partners

Discussion