

Linking People,
Potential and Progress

HimSS[®]12
ANNUAL CONFERENCE & EXHIBITION



Innovative Technologies
within the Military Health System (MHS)





Conflict of Interest Disclosure

Mark Goodge

Has no real or apparent
conflicts of interest to report.



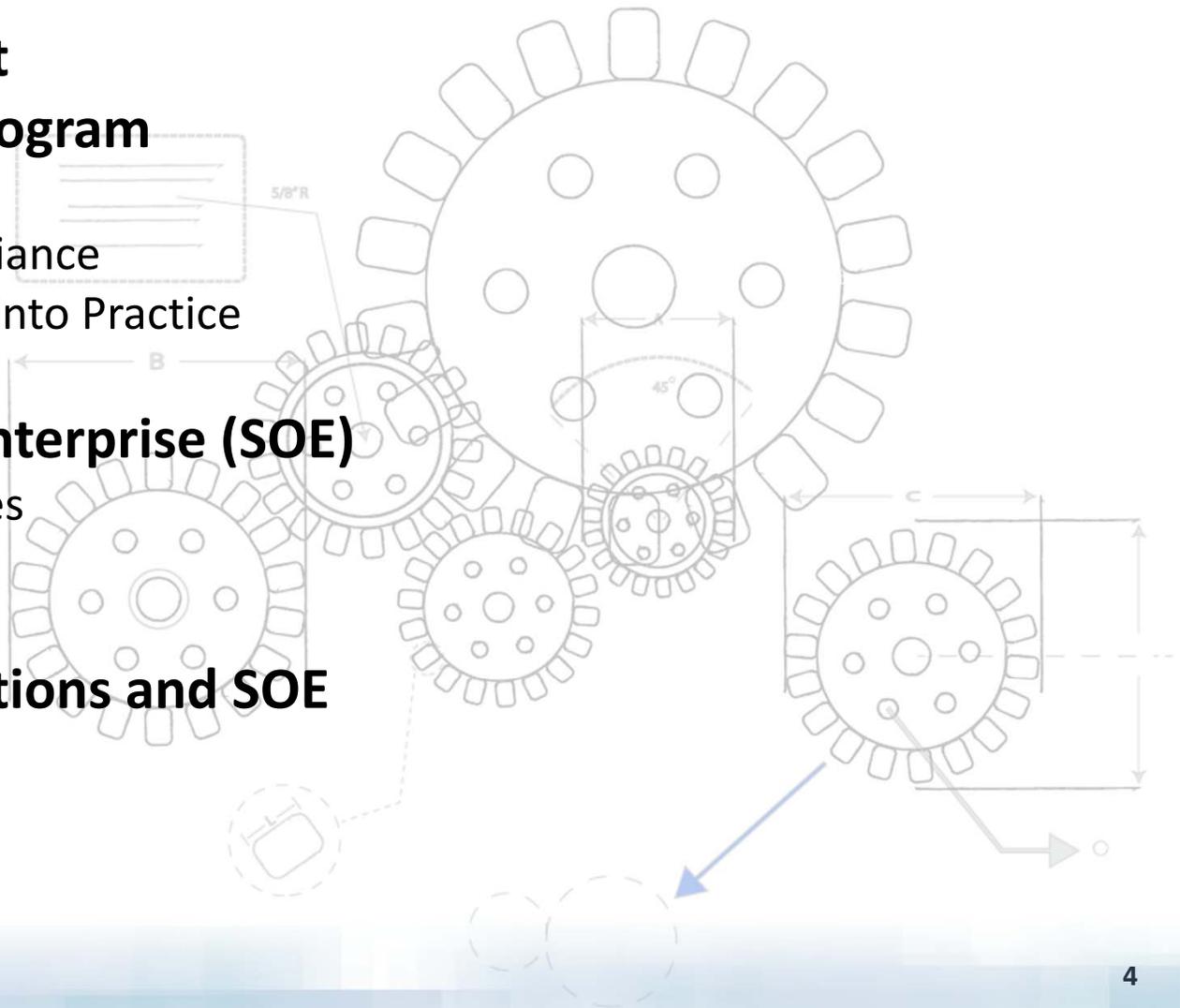
Session Learning Objectives

1. Identify how the innovation management process at the MHS reinforces **controlled development and application of useful enterprise capabilities**, to help the MHS provide cutting edge, value-add capabilities for consideration as enterprise assets
2. Discuss the role of the **MHS Innovation Alliance** - what it is today and what role it will play in the future - in support of early discovery of Health Information Technology Research and Development initiatives
3. Identify how the MHS is leveraging service-oriented architecture to **transition from a systems-based approach to a service-oriented approach** to allow for more flexible deployments of new capabilities
4. Discuss how the **Enterprise Service Bus** serves as the foundation for SOE components and will act as a catalyst to enable the rapid deployment of new solutions



Agenda

- **Problem Statement**
- **MHS Innovation Program**
 - Strategic Guidance
 - MHS Innovation Alliance
 - Translating Theory into Practice
 - Benefits
- **Service Oriented Enterprise (SOE)**
 - Completed Activities
 - Key Tenants
 - Benefits
- **Connecting Innovations and SOE**
- **Next Steps**
- **Questions**





Problem Statement(s)

- Although innovation is happening both in and around the MHS today, exposure and adoption is not always occurring uniformly
- Efficiently leveraging decentralized innovation remains difficult and two or more approaches to the same problem are often pursued in tandem by different organizations



MHS IM/IT Strategic Plan Released in January 2010

- Goal #8 covers **Innovative Technologies**
 - **Obj. 8.1:** Establish an Innovation **Lifecycle Management process** that aligns Information Technology (IT) innovation with MHS strategy and converts innovations into practice
 - **Obj. 8.2:** Establish the **policy, organization, structure**, process, funding mechanisms, and metrics for Innovation Lifecycle Management
 - **Obj. 8.3:** Develop and manage a process for defining, identifying, creating, and leveraging **Centers of Excellence (CoE)** for Information Management/Information Technology (IM/IT) development



Progressing the MHS' Innovation Program

- In the fall of 2010 the Office of the Chief Technology Officer (OCTO) was assigned responsibility develop and execute a **coordinated innovation portfolio and management process** to identify, research, develop, test, and evaluate innovative solutions that benefits the MHS enterprise

Overarching Tenants of the Innovations Program

#1 - Establishing the MHS Innovation Alliance

#2 - Translating Theory into Practice



Tenant

1 Establishing the MHS Innovation Alliance

- **Intent:** lead and execute Innovation lifecycle activities to sustain early discovery of Health Information Technology (HIT) Research and Development (R&D) initiatives containing attributed or significant capabilities needed by the operational environments of Military Medical





Role of the MHS Innovations Alliance

- Connect MHS organizations in a **business-to-business chartered “alliance”** guided by agreements
- Leverage each others **areas of expertise** and capabilities
- Seek and discover innovation assets suitable for **reuse**
- Manage or coordinate **transition planning** and execution of innovation assets into the MHS enterprise
- Promote closer (and earlier) **working relationships** between the health care and R&D communities
- Verify functional and **design requirements** are linked to MHS Business and Technical Architecture



MHS Innovation Alliance Networking

- Expanding the Alliance strategically across the five sectors of HIT spectrum will **increase our innovation technology resource availability and utilization**



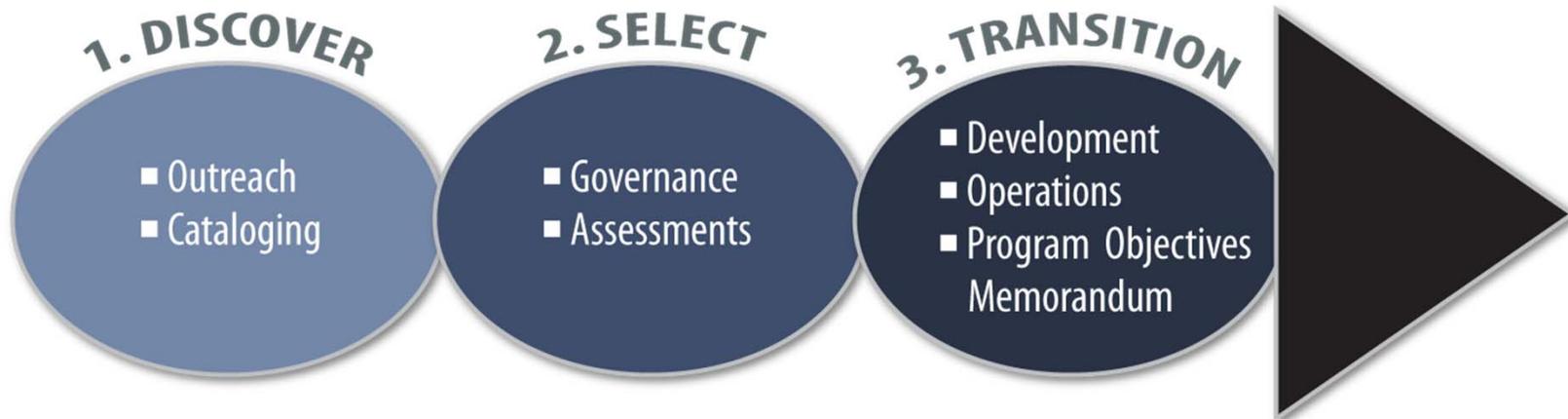
- ✓ Identification of existing relationships
- ✓ Establishment of new strategic relationships
- ✓ Identifying the opportunities for coordinated initiatives
- ✓ Identifying the opportunities to influence and shape the industry





^{Tenant} 2 Translating Theory into Practice

- The Innovation lifecycle process provides **a means of identification and traceability** for products that address current requirements and provide responses to requests for a capability



Adoption of innovation improves the MHS' ability to assimilate IT into the organization



Decomposing Discovery

1. DISCOVER

- Outreach
- Cataloging

- **Outreach:** spark **idea generation** and discovery (establishing a culture of innovation)
 - **Invite inventors** to participate (“call for innovation”)
 - Simple forms to **extract the traits** of their ideas or existing assets (Maturity at any level)
- **Cataloging:** a running **list of innovation ideas** and/or assets available for use across the Innovation Alliance
 - Outlines “resources” available for immediate or future use
 - Promotes further innovations and leveraging of existing “resources”



Decomposing **Select**

2. SELECT

- Governance
- Assessments

- **Governance:** ask **questions of functionally** relevancy, technical feasibility, and financial viability
 - Use existing Consolidated Portfolio Working Group (CPWG) processes to answer these questions
 - Ensures alignment to Key Performance Parameters enablers
 - Match requirements to product capabilities
 - Evaluate Capability Value to Total Cost of Ownership (e.g., ROI)
- **Assessments:** **validate maturity** and extensibility
 - Use technology-based maturity models to
 - Validate readiness for consumption/continued development
 - Baseline material decisions



Decomposing Transition

3. TRANSITION

- Development
- Operations
- Program Objectives Memorandum

- **Development:** transition lower maturity level innovations into adoptable enterprise capabilities
 - Requires additional development for enterprise use
 - Identify development partners
- **Operations:** transition mature innovations directly into sustainment operations
 - Requires no additional development for enterprise use
 - Requires definitive Service Levels of Agreements
- **POM:** transition innovations into a POM cycle for the preceding other transitions

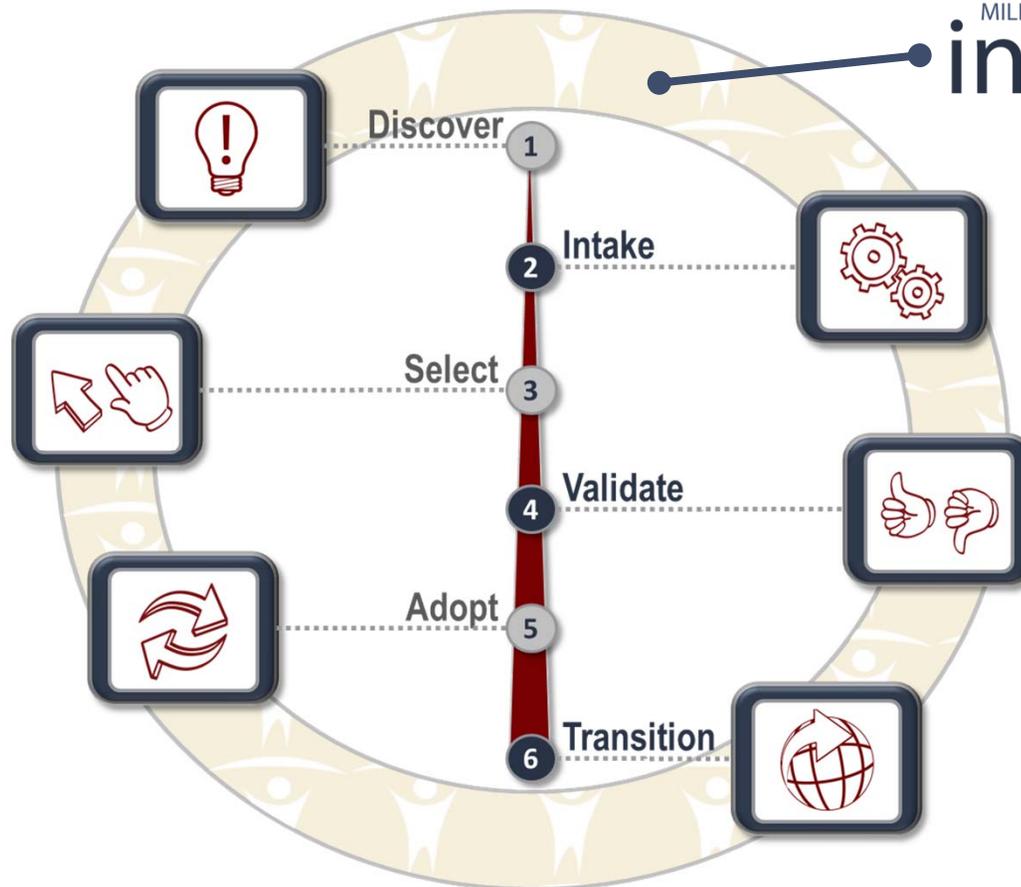


*One Program, One Lifecycle... for all MHS Innovation needs

Powered by the...

MILITARY HEALTH SYSTEM

innovation
alliance





Maturing Innovation through 6 Dimensions

Level 1: Reactive	Level 2: Active	Level 3: Defined	Level 4: Performing	Level 5: Pervasive	Innovation Management at Level 3
<p>MHS Initial Target</p>  <p>Decision driven by personality or seniority.</p> <p>Localized, ad hoc response to business demands.</p>	<p>Teams and business units share best practices and approaches.</p> <p>Locally funded innovation initiatives with strategic focus.</p>	 <p>Innovation Watch involves external sources.</p> <p>Teams funded and sustainable.</p> <p>Process, tools, and methods are formalized and shared.</p>	<p>Strategic partnerships contribute ideals and resources.</p> <p>Expert innovation and catalyst teams.</p> <p>Best-in-class processes, tools, and methods.</p> <p>Planned, funded, and championed at enterprise level.</p>	<p>World-class leader in new methods and practices.</p> <p>Expansive open innovation and co-development programs.</p> <p>Multiple high-functioning enterprise and distributed teams.</p> <p>Pervasive culture of innovation.</p> <p>Core competency integral to all business activities.</p>	<p>Innovating how we innovate</p> <p>Partnerships and open innovation</p> <p>Organization and infrastructure</p> <p>Culture and people</p> <p>Processes and practices</p> <p>Strategy and intent</p>



Benefits of an Innovations Program

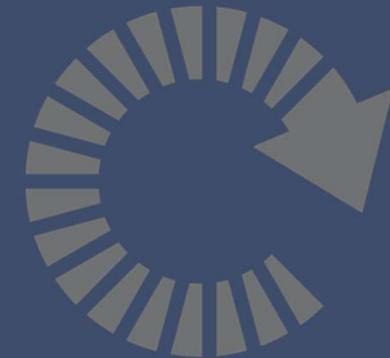
- Reduction in technical and operational risks
- Reduction in duplicate technology development activities
- Reduction of high sustainment costs driven by the variety of IT infrastructures required to support multiple solutions to the same problem
- Reduction in cost of converting the existing multiple solutions to a single enterprise solution
- **Increased agile collaboration during transition**



SOE and the MHS

- Today the MHS is moving towards **Net-Centric Service Oriented Enterprise (SOE)** framework
 - Mandated as **joint governance and technology approach** by the Secretary of Defense (SECDEF) and Secretary of the Department of Veterans Affairs (SECVA) during pre-acquisition synchronization

The objective of the OCTO's SOE strategic initiative is to **define, implement, and manage the creation of a Service Oriented Enterprise that is aligned with business priorities by providing an organizational framework for instilling, governing, and evolving the culture of 'reuse' and 'sharing' of enterprise assets for improved interoperability and agility in the delivery of health care**





Key SOE Activities under the OCTO

- Defined the SOE **strategy and foundational framework**
 - Identified target maturity state (Level 4/5) on the Open Group Service Integration Maturity Model (OSIMM)
- Captured the **“As-Is” SOE maturity assessment** of the enterprise
 - Held individual interviews with MHS components
 - Focused on the different dimensions of OSIMM
- Completed the SOE **Gap Analysis** to highlight gaps in maturity levels
- Developed the SOE **Roadmap** that outlines MHS’ transition to its target maturity state
 - Revealed **three key tenants**: governance, repository, and blueprints



1 SOE Governance Center (SOEGC)

- Establishes a focal point where technical and business interests **coordinate to implement SOA** in a manner that optimizes the ability to meet business goals
- Created in coordination with Services, CIO-Management Board, Divisions and MHS Program Management Offices (PMOs) to identify **membership, organizational structure and responsibilities**

Functions of the SOEGC

- Define and Execute Compliance Reviews
- Author Policies, Processes and Standards
- Establish and Maintain SOA Portfolio
- Develop and Maintain Toolkits
- Develop and Maintain a SOA Blueprint
- Establish Technology Management
- Define and Maintain a SOE Balance Scorecard
- Provide SOA Mentoring and Education
- Establish SOEGC Assessment Process
- Define and Execute Organizational Change Management



2 Enterprise Repository

- Maintain a variety of information such as metadata, policies, transformation models, data reference models, business rules, and service documentation in a **central location**
 - Capability Map / Investment Sequencing
 - Logical Application Portfolio
 - Logical Services Portfolio
 - Asset Lifecycle Management Report
 - Interface Inventory
 - SOA Balanced Scorecard
- **Establishes relationships among artifacts** to support efficiency and effectiveness assessment, costing, and impact analysis
- **Next steps** include: conduct a tool assessment; create an Enterprise Meta model; and work with stakeholders to collect policies, models, business rules, etc.



3 Blueprint and Reference Implementation

- **Blueprint:** provides a reference for SOA architecture; describes and provides SOA design patterns for
 - Interaction of services to provide workflow
 - Implementation of services to access packaged applications and legacy systems
 - Management of authentication and authorization for service usage
 - Relationship between service-enabling technologies such as an ESB with security and data repositories
- **Reference Implementation:** an implementation of the blueprint to provide an executable representation of the architecture



Enterprise Service Bus (ESB)

- The MHS will leverage an ESB to **build and test new business services**
- **The ESB will act as a catalyst** to enable the rapid deployment of new solutions
- The MHS is leveraging existing initiatives and development and test environments to ensure a **smooth, well informed transition** to a net-centric environment
- **Development Test Center (DTC) efforts:** publish pre-production services on ESB



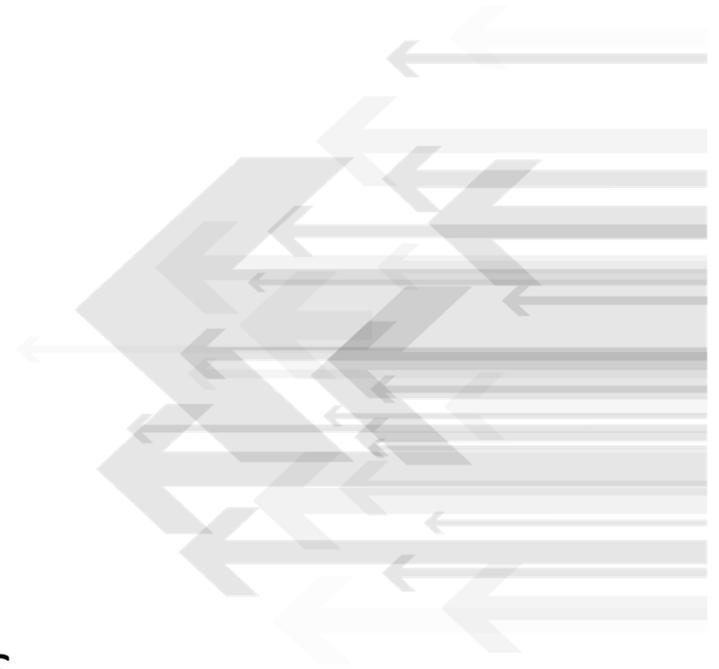
ESB as a Foundation and Catalyst

- Frees business function developers to focus on implementing business logic NOT on messaging and interoperability details
- Decouples Message Senders and Message Receivers
 - Functionality can be discovered (Service Discovery through Service Registries)
 - Senders and Receivers need not know each other's "real" locations (Virtual Endpoints)
 - Senders and Receivers need not know about each other's data formats or network protocols
 - Messages can be routed based on content and business rules
- Manages Complex Operations
 - Can combine business activities to create a composite business activities (Orchestration)
 - Can govern security requirements between Senders and Receivers (e.g., Encryption, Access Control)
 - Can ensure transactionality and reliable message delivery
 - Can process business-level and system-level events
- Many features and functions can be configured using declarative policies – change behavior without coding



Benefits of the SOE Initiative

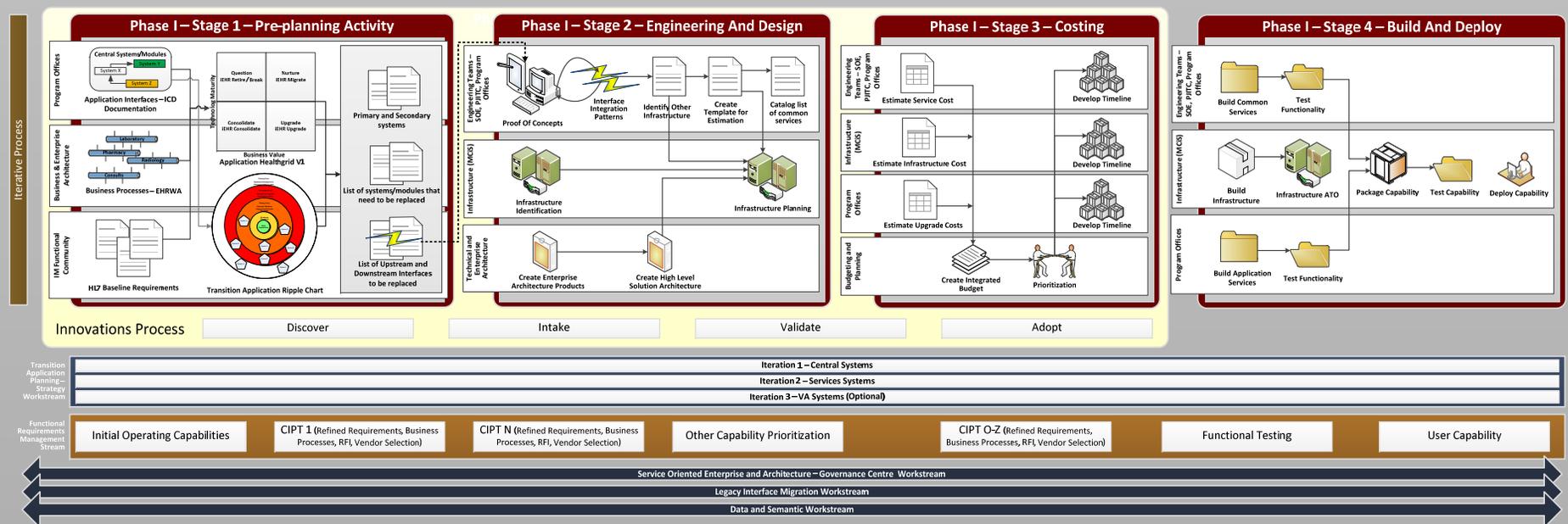
- Migration from systems-based to **services-based** approach
- Empowered **governance**
- **Reusable** enterprise assets lifecycle
- Improved **interoperability** and streamlined external partner interaction
- Improved ability in **adapting** to changing enterprise business needs





Connecting Innovations and SOE

IEHR Steering Committee





Next Steps

- Continue to implement an Innovations Portfolio and lifecycle management process within the MHS
 - Formalize the MHS Innovation Alliance to identify opportunities for collaboration and adoption
 - Mature Use/Reuse Readiness Level (URRL) guide to develop, and validate transition activities based on MHS technology standards and requirements
 - Technically and functionally assess individual innovations initiatives for future prioritization and adoption within MHS SOE
 - Ensure new developments align to the technology, processes, and principals necessary to facilitate a SOE
- Continue to work with our partners to develop and integrate SOE products/processes
 - Establish a standing forum for the alignment, proliferation, development, and assessment of new SOE artifacts, processes, and policies (leveraging SOEGC)
 - Conduct SOE and/or innovation pilot(s) to ensure suitability to the MHS infrastructure and create software development kits / accelerators for easy SOE adoption



Questions???

- For more information please
 - Email: AsktheMHSCTO@tma.osd.mil
 - Email: Mark Goodge at Mark.Goodge@tma.osd.mil
 - Visit: the OCTO kiosk at the **MHS Pavilion #14618** in Exhibit Hall G of the Sands Expo Center during the HIMSS Conference
 - Visit: www.health.mil/OCTO

