Defense Intelligence Information Enterprise (DI2E)
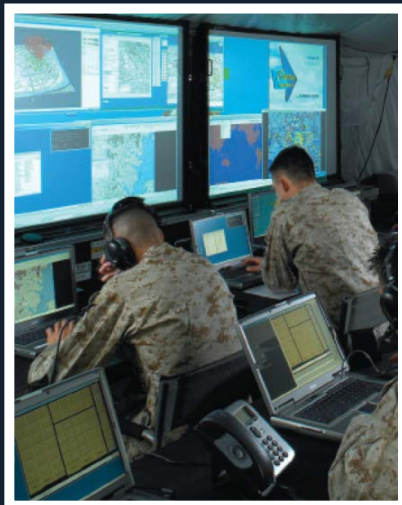# "Achieving the Vision"
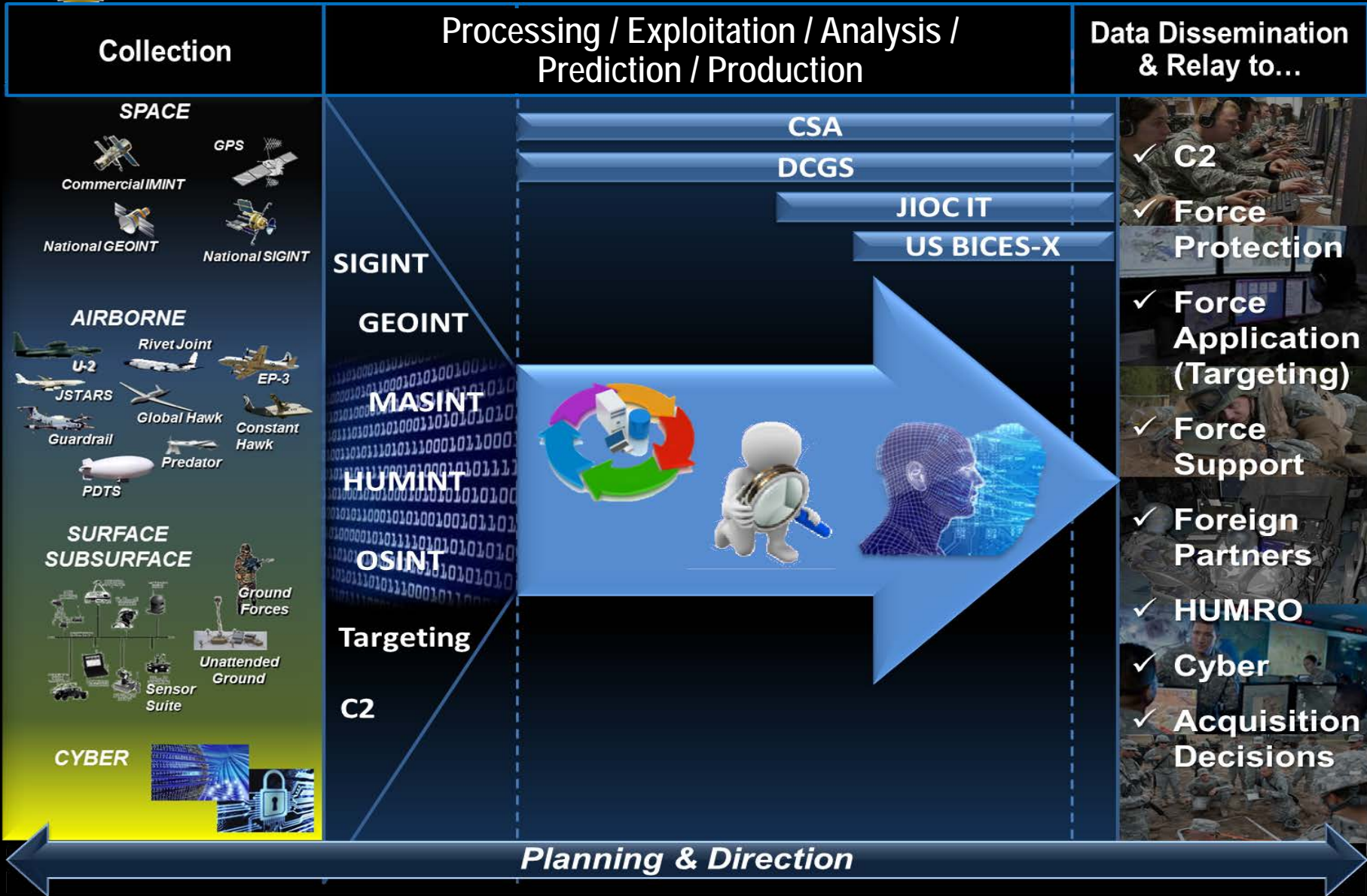
May 2014
Office of the Under Secretary of Defense for Intelligence

The "Battlespace Awareness" Challenge

Focus Areas

Date: November 5 2013
From: Teresa M.Takai, DoD CIO
Michael G. Vickers, USDI

"The DI2E Council will take the lead for the Department to ensure seamless integration of the intelligence information capabilities into both the JIE and the IC ITE by coordinating intelligence enterprise IT efforts across the DoD, IC, and with our international partners."
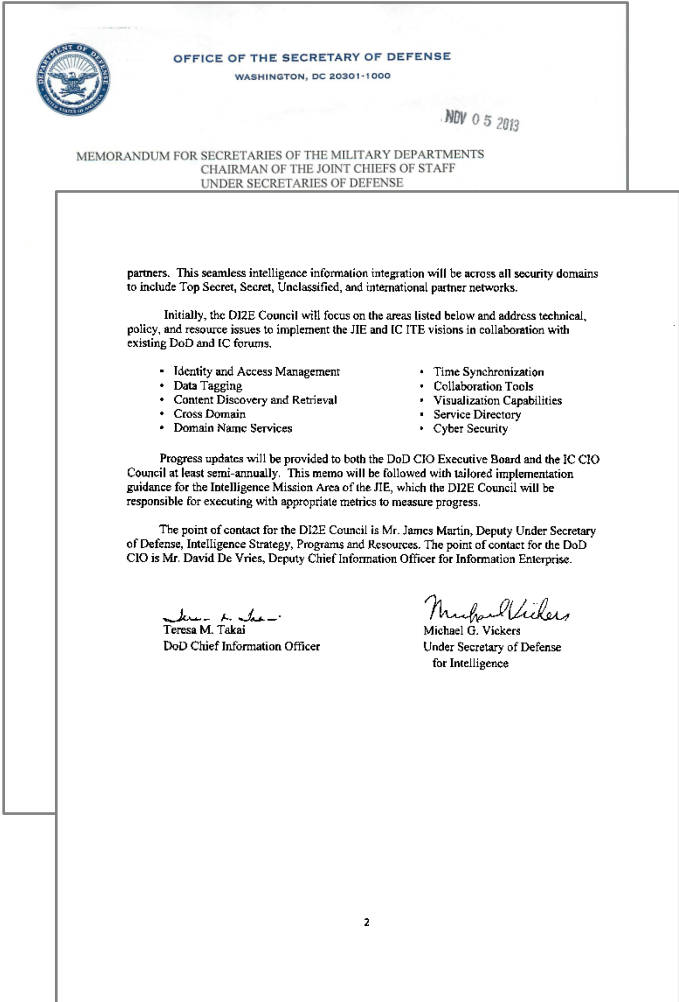
Required to enable JIE & IC ITE Interoperability:

- **Identity and Access Management**
- **Data Tagging**
- **Content Discovery and Retrieval**
- **Cross Domain**
- **Domain Name Services**
- **Time Synchronization**
- **Collaboration Tools**
- **Visualization Capabilities**
- **Service Discovery**
- **Cyber Security**

OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR INTELLIGENCE
DI2E DoDAF (SvcV-4) Architecture

DI2E SvcV-4 DATE: 3 June 2013

3.0 Mission Services

3.1 Planning and Direction
- 3.1.1 Define and Prioritize Requirements
  - 3.1.1.1 PIR Management
  - 3.1.1.2 RFI Management
- 3.1.2 Planning
  - 3.1.2.1 Collection Requirements Planning
  - 3.1.2.2 Sensor Cataloging
  - 3.1.2.3 Source Selection
  - 3.1.2.4 Exploitation Planning
  - 3.1.2.5 Target planning
  - 3.1.2.6 Weather Effect Planning
- 3.1.3 Asset Reporting
  - 3.1.3.1 Asset Status Summary
  - 3.1.3.2 Asset Discovery
- 3.1.4 Tasking Request
  - 3.1.4.1 Tasking Message Preparation
  - 3.1.4.2 Task Asset Request
- 3.1.5 Sensor Web Enablement
  - 3.1.5.1 Sensor Observation
  - 3.1.5.2 Sensor Planning

3.2 Collection
- 3.2.1 Asset Management
  - 3.2.1.1 Sensor Provisioning
  - 3.2.1.2 Sensor Registration
  - 3.2.1.3 Sensor Cross Queuing
  - 3.2.1.4 Sensor Command Conversion
  - 3.2.1.5 Sensor Alerting

3.3 Processing and Exploitation
- 3.3.1 GEOINT Processing
  - 3.3.1.1 Image Rectification
  - 3.3.1.2 FMV Geoprocessing
  - 3.3.1.3 AOI Processing
  - 3.3.1.4 State Service
  - 3.3.1.5 Image Chipping
- 3.3.2 SIGINT Processing
  - 3.3.2.1 Signal Pattern Recognition
- 3.3.3 CI/HUMINT Processing
  - 3.3.3.1 Source Management
- 3.3.4 Data Exploitation
  - 3.3.4.1 Language Translation
- 3.3.5 MASINT Processing
- 3.3.6 Targeting Processing
  - 3.3.6.1 Target Management
  - 3.3.6.2 Target Data Matrix
  - 3.3.6.3 Target Validation
  - 3.3.6.4 Target Folder
  - 3.3.6.5 Target List
  - 3.3.6.6 Target Mensuration
  - 3.3.6.7 BDA/CDA

3.4 Analysis, Prediction and Production
- 3.4.1 GEOINT Analysis
  - 3.4.1.1 Change Detection
  - 3.4.1.2 Triangulation
  - 3.4.1.3 Resection
  - 3.4.1.4 Georeonsuration
  - 3.4.1.5 DPPDB Mensuration
  - 3.4.1.6 Image Registration
  - 3.4.1.7 MTI Tracking
  - 3.4.1.8 Topographical Survey
  - 3.4.1.9 Automatic Target Recognition
  - 3.4.1.10 Sensor Model Instantiation
  - 3.4.1.11 GEO-Calculations
- 3.4.2 SIGINT Analysis
  - 3.4.2.1 SIGINT Analysis and Reporting
  - 3.4.2.2 Emitter Correlation
  - 3.4.2.3 Emitter Geolocation
  - 3.4.2.4 COMINT Externals Analysis
- 3.4.3 HUMINT Analysis
  - 3.4.3.1 Entity Linkages
  - 3.4.3.2 Entity Activity Patterns
  - 3.4.3.3 Identity Disambiguation
- 3.4.4 MASINT/AGI Analysis
- 3.4.5 Production
  - 3.4.5.1 Reporting Services
  - 3.4.5.2 Production Workflow
  - 3.4.5.3 Digital Production
- 3.4.6 Analytic Decision Support
  - 3.4.6.1 Timelines Analysis
  - 3.4.6.2 Structured Analytic Techniques
  - 3.4.6.3 Argument Mapping
  - 3.4.6.4 Alternative Future Analysis
  - 3.4.6.5 Link Analysis
- 3.4.7 Modeling and Simulation
  - 3.4.7.1 War Gaming
  - 3.4.7.2 Scenario Generation
  - 3.4.7.3 Model Building
  - 3.4.7.4 Sensor Modeling
  - 3.4.7.5 Target Solution Modeling
  - 3.4.7.6 Orchestration Modeling
- 3.4.8 Analysis Support to C2
  - 3.4.8.1 Order of Battle Analysis
  - 3.4.8.2 Intelligence Preparation of the Battlefield
  - 3.4.8.3 Mission Planning/Force Execution Support

3.5 BA Data Dissemination and Relay
- 3.5.1 Dissemination Management
  - 3.5.1.1 Dissemination Authorization
  - 3.5.1.2 Package Product
  - 3.5.1.3 Tear Line Reporting
  - 3.5.1.4 Foreign Disclosure Management

2.0 Common Services

2.1 Collaborative Information Environment
- 2.1.1 Information Boards
  - 2.1.1.1 Bulletin Board
  - 2.1.1.2 Wiki
- 2.1.2 Environment Sharing
  - 2.1.2.1 Desktop Sharing
  - 2.1.2.2 Whiteboard
  - 2.1.2.3 Web Conferencing/VTC
- 2.1.3 Collaborative Messaging
  - 2.1.3.1 Instant Messaging
  - 2.1.3.2 Audio messaging
  - 2.1.3.3 E-Mail
- 2.1.4 Social Networking
  - 2.1.4.1 Shared Calendaring
  - 2.1.4.2 Discussion Groups
  - 2.1.4.3 Community of Interest find

2.2 Visualization
- 2.2.1 Web Visualization
  - 2.2.1.1 Web Browser
  - 2.2.1.2 Widget Framework
- 2.2.2 Geographic Visualization
  - 2.2.2.1 Geographic Information Systems
  - 2.2.2.2 COP/UDOP
- 2.2.3 Analytics Visualization
  - 2.2.3.1 Analytic Rendering

2.3 Data-Content Discovery
- 2.3.1 Search
  - 2.3.1.1 Content Search
  - 2.3.1.2 Semantic Search
- 2.3.2 Search Management and Enhancement
  - 2.3.2.1 Search Criteria Management
  - 2.3.2.2 Query Results Management

2.4 Data Access
- 2.4.1 Retrieve and Deliver Data
  - 2.4.1.1 Retrieve Content
  - 2.4.1.2 Deliver Content
- 2.4.2 GEOSPATIAL DATA
  - 2.4.2.1 Web Coverage
  - 2.4.2.2 Web Feature
  - 2.4.2.3 Web Map

2.5 Data Mediation
- 2.5.1 Data Preparation
  - 2.5.1.1 Schema Validation
  - 2.5.1.2 Schema Transformation
  - 2.5.1.3 Data Validation
  - 2.5.1.4 Data Transformation
  - 2.5.1.5 Image Transformation
  - 2.5.1.6 Data De-Duplication

2.6 Data Analytics
- 2.6.1 Data Enrichment
  - 2.6.1.1 Entity Extraction
  - 2.6.1.2 Entity Association
  - 2.6.1.3 Categorize Content
  - 2.6.1.4 Data Commenting

2.7 Data Handling
- 2.7.1 Content Management
  - 2.7.1.1 Content Repository
  - 2.7.1.2 Content Navigation
  - 2.7.1.3 Object Processing
  - 2.7.1.4 Object Folders
  - 2.7.1.5 Managed Content Discovery
  - 2.7.1.6 Content Versioning
  - 2.7.1.7 Object Relationship
  - 2.7.1.8 Content Policy
- 2.7.2 Data Quality
  - 2.7.2.1 Data Quality Definition
  - 2.7.2.2 Data Quality Extraction
  - 2.7.2.3 Data Quality Measurement
- 2.7.3 Records Management
  - 2.7.3.1 Record Annotations
  - 2.7.3.2 Record Authorities
  - 2.7.3.3 Record Categories
  - 2.7.3.4 Record Dispositions
  - 2.7.3.5 Record Documents
  - 2.7.3.6 Managed Records
  - 2.7.3.7 Record Query
  - 2.7.3.8 Record Authentications
  - 2.7.3.9 Record Attribute Profiles
  - 2.7.3.10 Change Agent

1.0 Infrastructure Services

1.1 Enterprise Management
- 1.1.1 Metrics Management
  - 1.1.1.1 Metrics Measurements Collection
  - 1.1.1.2 Metrics Reporting
- 1.1.2 Translation and Synchronization
  - 1.1.2.1 Domain Name System (DNS)
  - 1.1.2.2 Time Synchronization
- 1.1.3 Enterprise Administration
  - 1.1.3.1 Fault Detection
  - 1.1.3.2 Fault Isolation
  - 1.1.3.3 Site Monitoring

1.1.4 Event Notification
- 1.1.4.1 Notification Producer
- 1.1.4.2 Notification Broker
- 1.1.4.3 Notification Consumer

1.2 Confidentiality, Integrity, Availability
- 1.2.1 Identity Management
  - 1.2.1.1 Global Object ID
- 1.2.2 Attribute Management
  - 1.2.2.1 Resource Attribute Access
- 1.2.3 Access Management
  - 1.2.3.1 Policy Decision Point
  - 1.2.3.2 Policy Enforcement Point
  - 1.2.3.3 Access Control List
- 1.2.4 Credential Management
  - 1.2.4.1 Security Token
- 1.2.5 Authentication Management
  - 1.2.5.1 Security Certificate Validation
- 1.2.6 Cryptography Management
  - 1.2.6.1 Encryption/Decryption
  - 1.2.6.2 Digital Signature
- 1.2.7 Security Metadata Management
  - 1.2.7.1 Data Security Marking
  - 1.2.7.2 Security Label Format Validation
- 1.2.8 Digital Policy Management
  - 1.2.8.1 Security Policy Access
- 1.2.9 System and Communication Protection
  - 1.2.9.1 Vulnerability Reporting
  - 1.2.9.2 Intrusion Detection
  - 1.2.9.3 Intrusion Prevention
  - 1.2.9.4 Virus Protection
  - 1.2.9.5 Incident Response
  - 1.2.9.6 Cross Domain
- 1.2.10 Audit Management
  - 1.2.10.1 Audit Log Management
  - 1.2.10.2 Audit Log Reporting

1.3 Service Management
- 1.3.1 Service Inquiry
  - 1.3.1.1 Service Inquiry
  - 1.3.1.2 Service Subscription
  - 1.3.1.3 Service Publishing
- 1.3.2 Service Artifact Discovery
  - 1.3.2.1 Service Artifact Inquiry
  - 1.3.2.2 Service Artifact Subscription
  - 1.3.2.3 Service Artifact Publication
- 1.3.3 Service Configuration Management
  - 1.3.3.1 Service Configuration Identification
  - 1.3.3.2 Service Configuration Control
  - 1.3.3.3 Service Configuration Verification and Audit

1.4 Services Orchestration
- 1.4.1 Orchestration Planning
  - 1.4.1.1 Matchmaking
  - 1.4.1.2 Optimization
- 1.4.2 Orchestration Execution
  - 1.4.2.1 Execution Engine
  - 1.4.2.2 Protocol Mediation

Legend:
- 1 – 26 (yellow)
- 27 – 50 (orange)

Adopt JIE & IC ITE Services First and Vet Exceptions through the DI2E Council

Focus Areas Aligned to Top 50

Touch Points	DI2ESvcV-4 Function	
Domain Name Services	1.1.2.1	Domain Name System (DNS)
Time Synchronization	1.1.2.2	Time Synchronization
Identity and Access Management	1.2.1.1	Local Identity Management
	1.2.1.2	Resource Policy Management
	1.2.1.3	Authentication Service
	1.2.1.4	Policy Decision Point
	1.2.1.5	Policy Enforcement Point
	1.2.1.6	Policy Access Point
	1.2.1.7	Security Token Service
	1.2.1.8	Security Token Validation
	1.2.1.9	Federation Service Management
	1.2.2.1	Resource Attribute Access
Content Discovery and Retrieval	2.3.1.1	Content Search
	2.3.1.2	Brokered Search
	2.3.1.3	Retrieve Content
	2.3.1.4	Deliver Content
	2.3.1.5	Describe Content
	2.3.1.6	Query Management
	2.3.1.7	Query Results Management
Visualization Framework	2.2.1.2	Widget Framework
	2.2.4.1	COP/UDOP
	2.2.2.1	Geographic Inforamtion Display
Cross Domain	1.2.7	Cross Domain

| Touch Points	DI2ESvcV-4 Function	
Collaboration Tools	2.1.3.1	Instant Messaging
	2.1.2.1	Desktop Sharing
	2.1.2.3	Web Conferencing
Cyber Security	1.2.6.1	Audit Log Management
	1.2.6.2	Audit Log Reporting
	1.2.5.1	Vulnerability Reporting
	1.2.5.2	Intrusion Detection
	1.2.5.3	Intrusion Prevention
	1.2.5.4	Virus Protection
	1.2.3.1	Encryption/ Decryption
Service Discovery	1.3.1.1	Service Inquiry
	1.3.1.2	Service Subscription
	1.3.1.3	Service Publishing
	1.3.2.1	Service Config Identification
	1.3.2.2	Service Configuration Control
Data Tagging	2.4.1.1	Schema Validation
	2.4.1.4	Schema Transformation
	2.4.1.2	Data Validation
	2.4.1.3	Data Transformation
	1.2.4.1	Data Security Marking
	1.2.4.2	Security Label Format Validation
	1.1.5.1	Global Unique Identifier

Updated to reflect 12 Sep DI2E SvcV-4 update

NRO Funded & Directed to Coordinate & Work these Areas

DI2E Framework Process

Conform to a community-defined framework utilizing the DI2E "clearinghouse" established and monitored by the DI2E Council, and funded by USD(I)

Ensure that DI2E framework services are IT platform agnostic
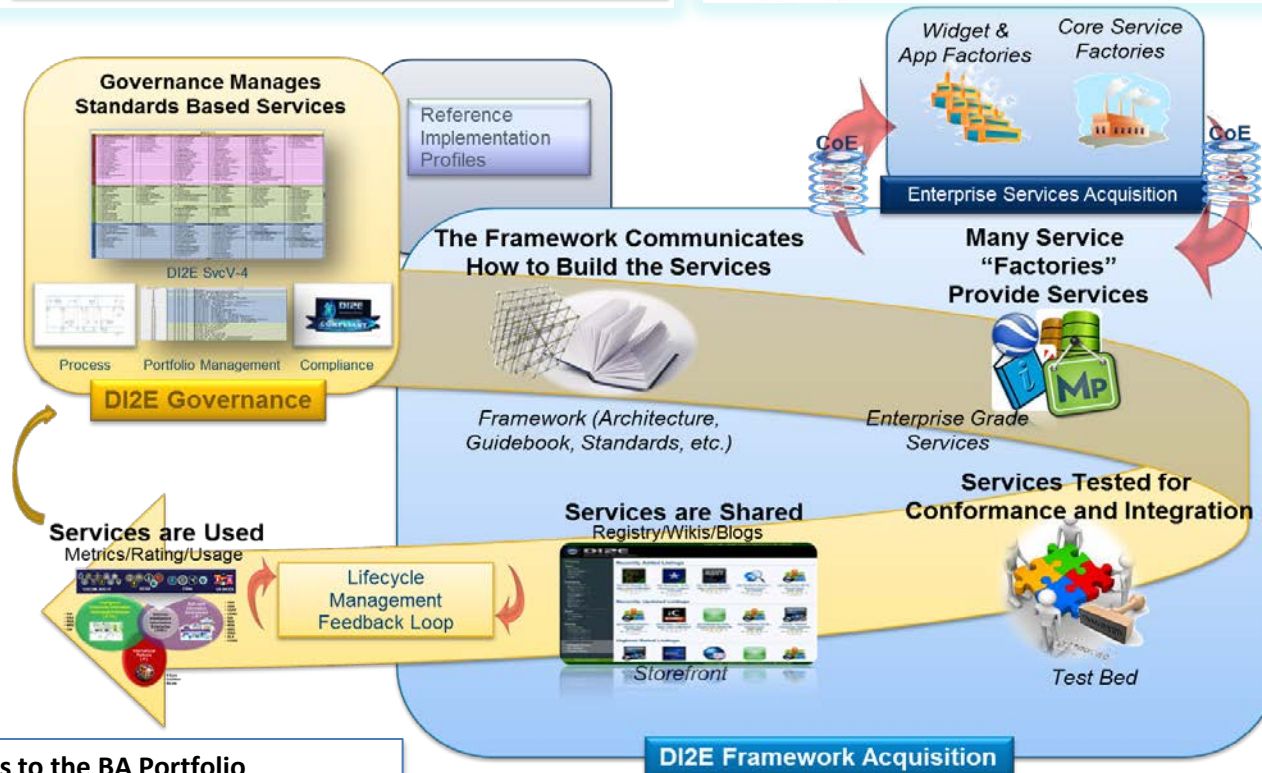
Standard Acquisition
- ✓ Designed to address their own needs
- ✓ Software components "hard-wired" together
- ✓ Vendor lock-in

  - *Not* Compatible
  - *Not* Reusable
  - *Not* Interoperable

Improved Acquisition
(DI2E Framework)

- ✓ Componentizing to enterprise-grade

  - *Compatible*
  - *Reusable*
  - *Interoperable*

- ✓ Separating data, apps, core services, visualization, etc.
- ✓ Enables a true service-oriented architecture (SOA)

Benefits to the BA Portfolio
- ✓ Greater Reuse
- ✓ Improved Agility & Speed to Market
- ✓ Cost Savings
- ✓ Enhanced Interoperability
- ✓ Assured Tiered Accountability

DI2E Framework: A New Acquisition Model Driving Greater Efficiency, Reuse, and Interoperability

Key Points

- ## We are focused on …

  - **Teaming together** at the technical, policy and leadership levels to build an effective, seamless Enterprise

  - Providing **innovative solutions** for our forces deployed in combat operations and addressing the challenges they face

  - Making the existing DI2E **more Effective & Efficient**

- ## Services & Agencies maintain responsibility for

  - **Execution** of their assigned missions

  - **Implementation** of the DI2E framework into their architecture and

  - **Ensuring information flows** freely across the enterprise

- ## This is a Community Effort

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Questions