Department of Veterans Affairs

VLER Core Vendor Days
1/24, 1/25
Agenda

- Overview
- VLER Core Business Process
- VLER Core Model
- VLER Core Components
- Q&A
Overview

• Purpose: Consumers use VLER Core to exchange (create/read/update) 415 Collection Sets

• Criteria:
  – Complies with VA enterprise architecture
  – Provide a tool kit to allow consumers and producers to independently build wrappers within two business days to be able to participate in the VLER data exchange.
  – Be able to interface any independently developed wrappers with the recommended solution without additional labor (implement “plug and play”).
  – Include a durable generic distributed XML data store to support in-flight data, audit, caching, preferences, configuration, session state, and standardized references.
  – Implement consent management and consent evaluation requirements for VHA, VBA, NCA, and external partners.
  – Include a secure role based ROI portal for manual consent management and reporting.
  – Audit all data exchanges.
  – Provide ad hoc reports on audit data.
  – Provide monitoring and test capabilities.
  – Be standards based.
  – Must be portable.
5 Layer VLER Core Model

1. Service Subscribers
2. Applications & Service Consumers
3. SOA Based Business Services
4. Data Access
5. Data Source

Service Aware Interoperability Framework

Service Governance

Security
5 Layer VLER Core Model

1. Service Subscribers
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Service Aware Interoperability Framework
VLER Core Components

Layer 2 – Applications & Service Consumers

- **Veteran Facing Applications & Portals**
  - My HealtheVet, eBenefits, etc

- **VA Clinician Facing Applications & Portals**
  - iEHR, HMP, EDIS, CPRS, VistAWeb, JANUS, Other Clinical Care Applications & Portals

- **External Gateway Services**
  - (NwHIN CONNECT, DIRECT, B2B, CMS, etc.)

- **VA ROI and Administrative Staff Facing Applications & Portals**
  - Authorizations, ROI Portal, CRM, CPTS, WebDPRIS, C&P STAR, CAPRI, CH33, REAP, Other Administrative Portals

- **VLER Core**
  - Integrated Data Access for VA Enterprise: healthcare, benefits and administrative domains
  - Consistent Standards Based Interfaces
  - Decoupling of Producers and Consumers
  - Integrated Authorization Decisions
  - Integrated Preferences Management
  - Scalable and customizable ROI Reporting and Analytics
  - Centralized Auditing and Event Management/Propagation
  - Platform and Persistence as a Service
  - Integrated Testing and Monitoring Framework
1. Service Subscribers
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Service Aware Interoperability Framework

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Security
VLER Core Components

Layer 3 – SOA Based Business Services

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VLER Core
VLER Data Access Services
VLER Authorizations & Preferences
VLER Audit Service
VLER Reporting & Analytics
VLER Monitoring & Test Framework

Layer 3 – SOA Based Business Services
Overview

• **Data Access Services** - Highly reliable & scalable infrastructure for developing and deploying producer and consumer wrappers to facilitate VLER data exchange
  – Includes a variety of foundational services to facilitate data exchange (RESTDesc – Semantic Descriptions)
  – Parallel Processing – Parallel Retrieval, Thread Safe, Multiple Asynchronous Nodes using Load Balancer
  – Static Data Closer to Consumers, Dynamic Data Closer to Computing Components (Caching, Import/Export, etc.)
  – Security – IAM at every layer, Secure Data in transit, Confidential Data encrypted
  – Automatic Service Matching & Service Discovery
VLER Core Components

- **VLER Authorizations & Preferences**—Core module used for capturing consent directives (authorization and restrictions) from Veterans, Service Members or Authorized Representatives and rendering authorization decisions for data sharing.
  - Evolution of Veterans Authorizations and Preferences (VAP) Engine to meet enterprise needs (VHA, VBA, NCA, etc) by building a system that is loosely coupled, standards based, scalable, performant and highly available
  - Supports fine-grained Consent Management (Creation, Update, Retrieval of Authorizations, Revocations and Restrictions) and Consent Evaluation (PIP)
  - Alignment with XACML Specifications and VA Security Reference Architecture
  - Alignment with IDM/MVI Directives (Baker Memo)
  - ROI Portal – Veterans, Service Members, Authorized Representatives manage consent directives
    - Secure Role Based Access
    - Pre-Built, User-Driven, Vendor-Driven Portlets
    - Pre-Canned and Adhoc Reporting
  - Operational Data Store (ODS)
    - Relational Data Store that stores Veterans Preferences, Consent Directives, Partner Information and Reference Data
    - Uses the Core persistence framework for CRUD operations
    - XML DB
VLER Core Components

- **Audit Service** – Central, highly available store for logging information about messages, conditions, events, status updates, recurring activities, workflow processes, device/application states.
  - Auditing
  - Archival & Regulation Compliance
- **Reporting & Analytics Service** – A central view across the enterprise to present audit information consistently.
  - Monitoring & Tracking
  - Metering
  - Trend of Business Analysis
  - Ad-hoc Reporting
- **Monitoring and Test Framework Services**
  - Service Watch
  - Heart Beat Messages (may include Test Patients)
  - Pre-selected Metrics
  - Dead Letter Management
5 Layer VLNER Core Model

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Service Interoperability Framework

Service Governance

Security
VLER Core Components

Layer 4 – Data Access

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VLER Core

VLER Persistence as a Service

VLER Platform as a Service
VLER Core Components

- **Persistence as a Service**
  - Highly durable and distributed data store – HTTP REST interface stores and retrieves large amounts of data as objects in buckets (containers).
    - Static or Streaming Content (XML/JSON)
    - Real-time lookup and simple querying structured data without operational complexity (Key/Value Pairs)
  - Fully Redundant Storage Services (VLER SORN)
    - In-Flight Data
    - Audit
    - Caching
    - Preferences (HL7 CDA R2/NIEM)
    - Configuration and Session State (stored outside of component)
    - Standardized References/Lookups
- Off-instance Storage & Memory cache
- Import/Export Capability
- NoSQL and Relational Data store
VLER Core Components

• **Platform as a Service** – Build, Deploy, and Run
  Create/Read/Update/Delete (CRUD) Wrappers.
  
  – Standards-based open source language runtimes and implementations
  – Automated deployment process
  – Streamlined configuration and build process
  – Contract-first development (SOAP UI Projects & Mocks)
  – Built on Open Source, be Open Source, no proprietary APIs
  – Library of “Recipes” – Style sheet templates, configuration and deployment toolkits
  – Connectors, Transformers, Mock Services, Templates, How-to Guides
  – Pull Code from a Community of Contributors
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Service Aware Interoperability Framework

Service Governance

Security
VLER Core Components

Layer 5 – Data Source

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External Gateway Services
- NWHIN CONNECT, DIRECT, B2B, CMS, etc.

VLER Core
- VLER XML DB Core
- Operational Data Store
- VLER Relational Data Store
- VLER XML DB Replicas
5 Layer VLER Core Model - High Level Conceptual View

Service Subscribers
- DoD, VA, Private Clinician
- Veteran, Service Member, Designated Representative
- Case Managers
- Release of Information (ROI) User Designated Representative

Applications & Service Consumers
- Internal VA Systems & Services
  - VBA
  - VHA
  - NCA
- External VA Systems & Services
  - SSA
  - DoD
  - CMS
  - IRS
  - VSO
  - Other

Service Interoperability Framework
- VLER Gateway
- NwHIN CONNECT Gateway
- VLER Data Access Services
  - VLER Read Service
  - VLER Life Events Notification Service
  - VLER Business Transaction Service
- VLER Authorizations & Preferences Presentation Services
  - VLER Authorizations & Preferences Services
  - VLER Reporting & Analytics Services
  - VLER Monitoring and Test Framework
- VLER Audit Service
- Message Oriented Middleware

Data Access
- VLER CRUD Wrappers
- VLER Platform as a Service
- VLER Persistence as a Service

VLER Adaptors
- Other Adaptors
  - Identity & Access Management
    - Identity
    - Access
  - Standards & Terminology

Data Source
- VLER XML DB Core
  - Operational Data Store
- VLER XML DB Replicas

External to VLER Core
Questions