Data Interoperability and Emerging Standards

SOA Platform (Shared Services) & Commonwealth Data Standards
Current status and Future State

September 27, 2011
COV Executive Branch Agencies have two current major data interoperability initiatives:

- Shared services - SOA Platform
- Commonwealth Data Standards

- Context
- Drilldown
- Where are the standards - examples
COV Executive Branch Agencies

SOA Platform (Shared Services)
Shared Services

• HHR Secretary and the MITA Program Director have requested that VITA provide Enterprise-level services in support of the MITA Program.

• Leverages federal funding to provide services that can eventually be used by all state agencies.

• VITA will develop an approved cost allocation/charge back model for ongoing support of the services as part of these projects.
MITA

• Initiative to promote improvements in the Medicaid enterprise and systems that support it through collaboration between Centers for Medicare and Medicaid Services (CMS) and the states

• Framework that provides a blueprint consisting of models, guidelines and principles to be used by states as they implement enterprise solutions
Historically, these tools have been too expensive for the agencies to procure themselves.

Sharing, allows the Commonwealth to leverage the HHR investment and results in significant value. Examples:

- Reusability of services among agencies
- Decoupling legacy applications
- Shared testing & development environments
- Shared expertise and support
SOA Platform - components

- Enterprise Service Bus (ESB)
- Robust Asynchronous Messaging (MQ)
- Healthcare Industry Pack
- SOA Management, Registry & Governance
- Business Rules Management System (BRMS)
- Business Process Management (BPM)
SOA Platform – data exchange support

• Enterprise Service Bus (ESB) – where data is exchanged

• MQ – “publish” and “subscribe” support
  – VDH Birth and Death registries
First Uses of SOA Platform

• Commonwealth Authentication Services (CAS) - being built by DMV

• Enterprise Data Management (EDM) for individual, provider and organization entity resolution

• Will also support 20 MITA projects managed by DMAS
Commonwealth Data Standards

Context - the “big” picture
COV Data Standards – The Big Picture

- Enterprise Information Architecture is a component of the COV Enterprise Architecture
- Located within Enterprise Architecture Library
Enterprise Information Architecture

[Diagram showing the components of an Enterprise Information Architecture, including Governance, Business Architecture, Solutions Architecture, Technical Architecture, Data Strategy, Data Management Program, Data Standardization Process, and Collect and Maintain Data Asset Inventory.]
EIA framework: Major Component

- EIA framework has three sub-components that will contain information about the Commonwealth’s data assets that can be used to answer questions such as:
  - What data is available?
  - Who has the data and who owns it?
  - Is the data in a format that I can use?
  - Is the quality and reliability of the data good enough to meet my needs?
  - Can I get access to that data?
EIA Framework: 3 sub-components

- **Data Sharing**: Supports the access and exchange of data where access consists of ad-hoc requests (such as a query of a data asset) and the exchange of fixed, re-occurring transactions between parties.

- **Data Description**: Provides a means to uniformly describe data, thereby supporting its discovery, sharing and standardization.

- **Data Context**: Facilitates discovery of data through the categorization of data. Additionally, it facilitates
EIA Framework based on FEA DRM

**Data Context**
- Business Context
  - Subject Area
  - Information Class
- The broad categories of data that support business processes of a line of business or community of interest.
- The sub-categories of data used for mapping data groupings of many lines of business or communities of interest.

**Data Sharing**
- Information Exchange & Query Points
- Information that is generated or required by a Unit of Work and is subsequently passed to another Unit of Work. Units of Work consume and produce data.

**Data Description**
- Structured
- Semi-structured
- Unstructured
- The organized description of data to convey semantic understanding usually through an entity relationship diagram.
- Data that has characteristics of both structured and unstructured data, such as an e-mail.
- Data that is of more free-form format, such as unstructured text.

Based on FEA DRM Version 1.0 and 2.0
The Vision: *Enterprise data and information is managed as a Commonwealth asset to provide value to citizens and stakeholders*

- Goal 1: Implement an enterprise data management program
- Goal 2: Enable enterprise data sharing
- Goal 3: Establish data governance and oversight
Strategic goals for a Data Management Program may include:

- Understanding the information needs of the enterprise and all its stakeholders.
- Capturing, storing, protecting and ensuring the integrity of enterprise data assets.
- Continually improving the quality of enterprise data and information.
- Ensuring privacy and confidentiality and to prevent unauthorized or inappropriate use of enterprise data and information.
- Maximizing the effective use and value of enterprise data and information assets.
- Removing barriers for data sharing so that it is possible to respond timely to state or national situations.
The Data Standardization Process documents how agencies will collaborate to define and adopt data standards for use in the Commonwealth:

- repeatable approach to facilitate the implementation of information sharing and reuse of data in response to business needs
- defines key roles and responsibilities
Commonwealth Data Standards

Drilldown
COV Internal Data Standards

- Developed by business representatives with functional subject matter expertise.
  - Example: Procurement Vendor data standard - defines the data the Commonwealth manages about procurement vendors

- Each internal data standard contains a data model, data dictionary reports generated from the data model and a corresponding narrative document.
  - The narrative document describes the scope of the standard, requirements, compliance and policy implications.
COV Internal Data Standards: Status

- **Procurement Vendor**
  - Complete; Compliance date: 7-1-2011

- **HR Employee Information**
  - Complete

- **Chart of Accounts**
  - Tied to implementation schedule for Cardinal; Probable implementation: 2014

- **Order to Pay**
  - Tied to implementation schedule for Cardinal; Probable implementation: 2014

- **Check Printing (Process)**
  - Treasury is lead; stakeholder agencies (DOA, VEC, TAX, DSS, and VRS)
  - Target draft standard by early November; Implementation target 12/31/2011

- **Enterprise Data Management: Person**
  - 16 Stakeholder agencies; Ready for CIO, SoTech approval stage

- **Newborns and death just getting underway**
COV External Data Standards

• Developed and maintained by national, federal or industry organizations with input from business experts

• Include varying levels of detail and may be farther reaching than typical COV developed internal data standards. Examples:
  – National Information Exchange Model (NIEM) includes many data exchange standards in use by state and federal agencies working on global justice and homeland security systems (State Police, Corrections)
  – Data standards and formats for health information exchanges being developed and continually refined by the federal government and other industry experts in the Health IT field. (HL7 etc.)

• Each external data standard contains a corresponding guidance document
  – Describes the scope of the standard, requirements, policy implications and implementation guidance.
COV External Data Standards: Status

- 140+ external data standards in process

- 95 standards (ex. HL7) are at the CIO and SoTech approval stage
  - All HITSAC – Interoperability and Vocabulary

Health IT Standards Advisory Committee created in “code” – current focus is external standards that are needed to support MITA projects
Commonwealth Data Standards

Where are the standards - examples
- Technology Oversight - Enterprise Architecture – Data Management
Data Management: Web page

- Commonwealth Data Strategy
- Data Governance
- Data Standards Information
- Standards Repository
- Initiatives
- Presentations
- Resources
Data Standards Repository
Enterprise Data Standards Repository

- Details the data, data exchange, vocabulary and interoperability standards adopted under consideration or in development by the Commonwealth of Virginia
- Contains external (e.g., national or industry) standards with corresponding implementation guides and specifications as well as internal Commonwealth standards
- Each standard lists its applicability and version along with its corresponding implementation guides and specifications
Data Standards Repository: Functions

Not just a web page - application

Enterprise Data Governance Standards:
- **Search and Review Standards**: Lists internal Commonwealth and external national/industry standards
- **Print Standards by Criteria Report**: Creates a PDF document of standards that match the selected criteria
- **Print Adopted Standards Report**: Creates a PDF document of standards approved on the specified date

HITSP Documents:
- **Search and Review HITSP Documents**: Lists reviewed HITSP documents with their associated Health standards (for the Health domain only)
EDS-R-126: Enterprise Data Management Data: Person Standard

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EDM Standard: Person Model
**EDM Standard: Person Entity**

<table>
<thead>
<tr>
<th>Entity Name</th>
<th>Entity/Table Definition</th>
<th>Entity/Table Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>A Person is a human being</td>
<td></td>
</tr>
<tr>
<td>Person Alias</td>
<td>A Person Alias is an alternate name used by a person.</td>
<td></td>
</tr>
<tr>
<td>Person Telephone Number</td>
<td>A Person Telephone Number is a number for a telecommunication device by which a person or organization may be contacted.</td>
<td></td>
</tr>
<tr>
<td>Person Address</td>
<td>A Person Address is a place that a person can be physically located at or is a postal location to which paper mail can be directed.</td>
<td>USPS International Addressing: <a href="http://www.usps.com/international/addressingintimail.htm">http://www.usps.com/international/addressingintimail.htm</a>; <a href="http://pe.usps.gov/text/intm/intm1_007.htm">http://pe.usps.gov/text/intm/intm1_007.htm</a>; USPS Military Addressing: <a href="http://www.usps.com/supportingourtroops/addressingtips.htm">http://www.usps.com/supportingourtroops/addressingtips.htm</a>; USPS Publication 28 - Postal Addressing Standards: <a href="http://pe.usps.gov/text/pub28/welcome.htm">http://pe.usps.gov/text/pub28/welcome.htm</a></td>
</tr>
<tr>
<td>Person Identifier</td>
<td>A Person Identifier is a alphanumeric value assigned to a person by an organization to identify the person.</td>
<td></td>
</tr>
</tbody>
</table>
# EDM Standard: Person Attributes

<table>
<thead>
<tr>
<th>Entity Name</th>
<th>Attribute Name</th>
<th>Attribute/Column Definition</th>
<th>Attribute/Column Note</th>
<th>Column Datatype</th>
<th>Column Null Option</th>
<th>Primary?</th>
<th>Foreign?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Enterprise Data Management Person Identifier</td>
<td>An Enterprise Data Management Person Identifier is a unique identifier assigned to the person by the Enterprise Data Management tool.</td>
<td></td>
<td>NUMERIC(10,0)</td>
<td>NOT NULL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Person</td>
<td>First Name Text</td>
<td>A First Name Text is the first name of a person.</td>
<td></td>
<td>VARCHAR(30)</td>
<td>NULL</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Person</td>
<td>Middle Name Text</td>
<td>A Middle Name Text is one or more middle names of a person.</td>
<td></td>
<td>VARCHAR(30)</td>
<td>NULL</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Person</td>
<td>Last Name Text</td>
<td>A Last Name Text is the last or family name of a person OR the sole name that a person is known by.</td>
<td></td>
<td>VARCHAR(75)</td>
<td>NOT NULL</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Person</td>
<td>Name Suffix Text</td>
<td>A Name Suffix Text is a term appended after the family name that qualifies the legal name. Examples are Jr., Sr., and IV.</td>
<td></td>
<td>VARCHAR(10)</td>
<td>NULL</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Person</td>
<td>Gender Code</td>
<td>A Gender Code is the gender or sex of a person. Valid values are Male, Female, Other, Unknown.</td>
<td></td>
<td>CHAR(1)</td>
<td>NOT NULL</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
## External Standard: Example

### Accredited Standards Committee X12N 270/271 (Health Care Claim Eligibility EDS-R-60: Inquery/Response)

<table>
<thead>
<tr>
<th><strong>Abbreviation:</strong></th>
<th>ASC X12N 270/271</th>
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<tbody>
<tr>
<td><strong>Category:</strong></td>
<td>Messaging</td>
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<tr>
<td><strong>Domain(s):</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health</td>
</tr>
<tr>
<td></td>
<td>Health insurance</td>
</tr>
<tr>
<td><strong>Version:</strong></td>
<td>005010</td>
</tr>
<tr>
<td><strong>Status:</strong></td>
<td>Submitted for Adoption</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Health Care Eligibility &amp; Benefit Inquiry/Response Transactions are used by authorized service centers to request (270) and receive (271) enrollee eligibility and benefits verification.</td>
</tr>
<tr>
<td><strong>Example Use(s):</strong></td>
<td>Typically used by providers prior to rendering services to verify eligibility and determine benefits.</td>
</tr>
<tr>
<td><strong>Availability:</strong></td>
<td>Electronic and print copies of the standard can be purchased from ASC X12.</td>
</tr>
<tr>
<td><strong>Development Type:</strong></td>
<td>External</td>
</tr>
<tr>
<td><strong>Maintenance Organization:</strong></td>
<td>Accredited Standards Committee (ASC) X12</td>
</tr>
<tr>
<td><strong>Agency Contact:</strong></td>
<td>Virginia Information Technologies Agency (VITA)</td>
</tr>
<tr>
<td><strong>Documents:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>External Website: ASC X12 Store <a href="http://store.x12.org/">http://store.x12.org/</a></td>
</tr>
<tr>
<td><strong>Last Reviewed Date:</strong></td>
<td>5/26/2011</td>
</tr>
</tbody>
</table>
HITSAC: Web Site

Health Information Technology Standards Advisory Committee

HITSAC Meetings
- 2011 Meetings
- 2010 Meetings
- Archived 2010 Meetings
- Archived 2009 Meetings

HITSAC Documents
- 2011 Documents
- 2010 Documents
- Archived 2010 Documents
- Archived 2009 Documents
- HITSAC Committee Charter

Health Information Technology Standards Advisory Committee Members

<table>
<thead>
<tr>
<th>Member</th>
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<tr>
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<td>(216) 535-5186</td>
</tr>
</tbody>
</table>
Next HITSAC meeting: Agenda

• October 20th (3rd Thursday of each month)
• Updates on External Data Standards under development
• Demos
  – EDM tool demo – Initiate
  – Healthcare Industry Pack (sits on ESB)

• At CESC – open public meeting
• Health Information Technology Standards Advisory Committee (HITSAC)
Questions

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