

Virginia Information Technologies Agency



# Commonwealth Enterprise Information Architecture (EIA) Strategy: 2014-2020

Virginia Information  
Technologies Agency

**DRAFT-FOR DISCUSSION**

July 1, 2013

[www.vita.virginia.gov](http://www.vita.virginia.gov)

# Executive Summary

## Vision

*The Commonwealth of Virginia has a model Enterprise Information Architecture (EIA) program, integral to achieving the highest quality of government service.*

## Mission

*The Commonwealth of Virginia manages its EIA program in the disciplines of data governance, data standards, data asset management, and data sharing to align with and support its business objectives.*

## Background & Purpose

In July 2012, the Secretary of Technology adopted into Enterprise Architecture (EA) Policy 200-02 a more robust definition of enterprise information architecture (EIA) and an EIA Maturity Model designed to guide the Commonwealth toward its desired “future state” in four program areas: data governance, data standards, data asset management, and data sharing.

The purpose of the Commonwealth EIA Strategy will be to:

- Articulate a strategic vision for EIA aligned with business drivers and focused on achieving EIA outcomes.
- Establish measurable EIA goals and objectives designed to track progress toward the desired EIA “future state.”
- Provide a strategic framework that will support development of EIA implementation plans across the Commonwealth.

## Business Drivers

### *Business Driver 1: Data Quality*

The Commonwealth EIA Strategy will promote activities to enhance the quality of the state’s data assets. This will include a more formal approach to data governance, greater scrutiny and enforcement for compliance with adopted data standards, common performance and service specifications for agency information exchange, and strategies for data asset management focused on data quality.

### *Business Driver 2: Standardized Data and Shared Vocabulary*

The Commonwealth EIA Strategy will support data standardization as a means of achieving semantic interoperability and shared vocabularies across domains and levels of government. This will be done primarily through adoption and compliance with Commonwealth standards. In addition, the EIA program will work to formalize data governance roles and responsibilities across state government to ensure a common discipline and set of standards for information management.

### *Business Driver 3: Data Reuse and Reduced Data Redundancy*

The Commonwealth EIA Strategy will generate opportunities for reuse of data assets and reductions in data redundancy across agency silos. Recognizing the statutory constraints for security, privacy and confidentiality, the EIA program will promote discovery, reuse, transparency, efficiency, and a higher return on investment for information resources.

### *Business Driver 4: Data-driven Decision Support*

The Commonwealth EIA Strategy will strengthen the state government's capacity for data-driven decision-support systems. A formalized approach to data governance will align data management functions with business architecture and requirements. Strategies around data standards and enterprise data sharing will enable information exchange across agencies. Also, the EIA program will promote development and analytics of data warehouses, facilitating increased utility of archived data.

## **EIA Goals & Objectives**

*Goal 1: Data Governance. Forge a more disciplined approach to data governance across the Commonwealth, with formal roles for data stewards and business stakeholders.*

Objective 1.1: Establish clearly defined enterprise-level roles for data stewards across Commonwealth agencies.

Objective 1.2: Develop and implement an enterprise data governance program as part of the EIA governance structure.

Objective 1.3: Formally adopt an EIA governance framework with policies, standards, guidelines, implementation plans, and performance metrics.

Objective 1.4: Provide training, technical assistance, and other resources to enhance the EIA knowledge, skills, and abilities Commonwealth data stewards, particularly those in small agencies.

*Goal 2: Data Standards. Promote semantic interoperability and vocabulary through data standardization as a means of supporting information exchange across source systems, government domains, and levels of governance.*

Objective 2.1: Develop policies, standards, and guidelines to migrate the Commonwealth toward conformance with NIEM.

Objective 2.2: Continue to develop and implement health IT standards based on HITSAC guidance.

Objective 2.3: Continue to develop and submit for adoption data standards for the seven business areas pursuant to the 2008 Appropriation Act, as

amended. (Note: Remaining business areas requiring data standards are as follows: Receiving Information, Invoice Information, Purchase Information, including commodity codes, and Agency Identification Information)

Objective 2.4: Refine and implement the governance and process model established for developing, reviewing, submitting for adoption, and maintaining Commonwealth standards.

*Goal 3: Data Asset Management. Management of information as an enterprise asset, with an emphasis on quality, efficiency, reduced redundancy, and a higher return on investment.*

Objective 3.1: Complete an inventory of enterprise data assets across the Commonwealth and compile metadata on each enterprise asset.

Objective 3.2: Develop a taxonomy with information classes to structure the metadata from the data asset inventory.

Objective 3.3: Design, develop, and implement an enterprise metadata repository to support discovery and reuse of enterprise data assets.

Objective 3.4: Map metadata on agency systems to business, solutions, technology architecture, and adopted Commonwealth data standards.

*Goal 4: Data Sharing. Leverage the sharing of information resources to increase government performance, improve service to citizens and more effectively achieve business outcomes.*

Objective 4.1: Secure an executive-level directive to Commonwealth agencies to establish a trust-agreement framework in support of enterprise data sharing.

Objective 4.2: Form a governance committee of executive staff, data owners, data stewards, business leads, technical leads, legal staff, security staff, and other representatives from Commonwealth agencies to develop, implement, and maintain a trust agreement framework.

Objective 4.3: Identify applicable legal, regulatory, policy, and technical constraints impacting data sharing and orient the trust-agreement framework to comply with applicable requirements.

Objective 4.4: Identify legal requirements for informed consent and authorization and design the trust-agreement framework to comply with these requirements.

Objective 4.5: Develop policies, standards, guidelines, and procedures to govern the operations, onboarding, maintenance, breach resolution, and certification processes associated with the implementation of the trust-agreement framework.

## Table of Contents

<b>Executive Summary .....</b>	<b>i</b>
<b>Vision .....</b>	<b>1</b>
<b>Mission .....</b>	<b>1</b>
<b>Background, Purpose &amp; Statutory Authority .....</b>	<b>1</b>
<b>Enterprise Architecture Framework &amp; EIA Maturity Model .....</b>	<b>3</b>
<b>Business Drivers .....</b>	<b>7</b>
<b>EIA Goals &amp; Objectives .....</b>	<b>10</b>
<b>Glossary of Key Terms .....</b>	<b>13</b>

DRAFT

# Commonwealth of Virginia

## Enterprise Information Architecture (EIA) Strategy: 2014-2020

### Vision

*The Commonwealth of Virginia has a model Enterprise Information Architecture (EIA) program, integral to achieving the highest quality of government service.*

### Mission

*The Commonwealth of Virginia manages its EIA program in the disciplines of data governance, data standards, data asset management, and data sharing to align with and support its business objectives.*

### Background, Purpose & Statutory Authority

In July 2012, the Secretary of Technology adopted into [Enterprise Architecture \(EA\) Policy 200-02](#) a more robust definition of enterprise information architecture (EIA) and an EIA Maturity Model designed to guide the Commonwealth toward its desired "future state" in four program areas: data governance, data standards, data asset management, and data sharing.

The Commonwealth EIA Strategy represents the next step toward a mature EIA program and a formal statement of the Virginia's vision for maximizing its information assets. The strategy has been developed to align with the Commonwealth Strategic Plan for Information Technology and respond to key business drivers. (Note: A glossary of key terms has been provided at the back of this document.)

The purpose of the Commonwealth EIA Strategy will be to:

- Articulate a strategic vision for EIA aligned with business drivers and focused on achieving EIA outcomes.
- Establish measurable EIA goals and objectives designed to track progress toward the desired EIA "future state."
- Provide a strategic framework that will support development of EIA implementation plans across the Commonwealth.

The Commonwealth EIA Strategy has been developed and adopted pursuant to the statutory authority granted by the *Code of Virginia*, as referenced below:

**Secretary of Technology**

[§ 2.2-225. Position established; agencies for which responsible; additional powers \(As Amended\)](#)

**Chief Information Officer (CIO) of the Commonwealth**

[§ 2.2-2007. Powers of the CIO \(As Amended\)](#)

**Virginia Information Technologies Agency**

[§ 2.2-2010. Additional powers of VITA \(As Amended\)](#)

VITA staff drafted the strategy based on input from more than XXXX data stewards, business leads, and other stakeholders from across executive branch agencies. A series of three stakeholder engagement sessions was facilitated by VITA staff from February through April 2013.

The following agencies Commonwealth agencies participated in the strategic planning process:

- Auditor of Public Accounts
- Department of Alcoholic Beverage Control
- Department of Behavioral Health and Developmental Services
- Department of Corrections
- Department of General Services
- Department of General Services,  
    Division of Consolidated Laboratory Services
- Department of Education
- Department of Social Services
- State Board of Elections
- Virginia Community College System
- Virginia Department of Health
- Virginia Information Technologies Agency

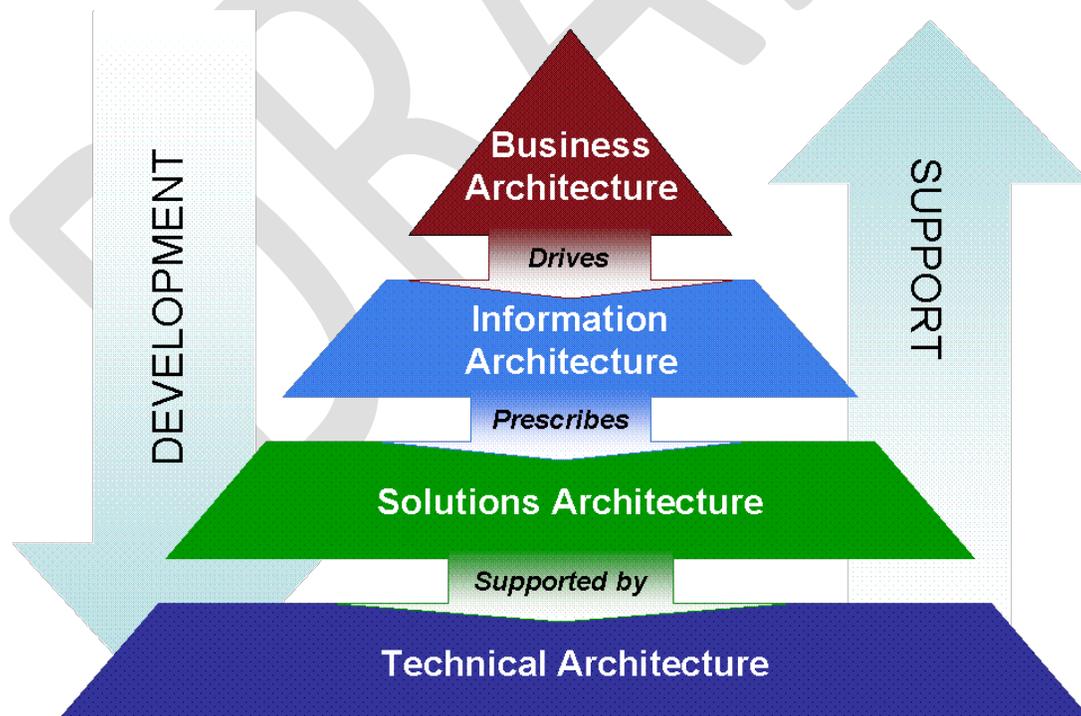
## Enterprise Architecture Framework & EIA Maturity Model

The Commonwealth's EIA Strategy resides within the broader Enterprise Architecture (EA) framework, as established in the Information Technology Resource Management (ITRM) Policies, Standards, and Guidelines. The EA framework is a strategic asset used to manage and align the Commonwealth's business processes and IT infrastructure and solutions with the state's IT strategy.

As shown in **Figure 1**, the EA framework represents a comprehensive model and repository which defines:

- Models that specify the current ("as-is") and target ("to-be") architecture environments
- Information necessary to perform the Commonwealth's mission
- Solutions and technologies necessary to perform that mission
- Processes necessary for implementing new technologies in response to the Commonwealth's changing business needs.

**Figure 1. Commonwealth's Enterprise Architecture Framework**



The EIA elements adopted into the EA framework promote the governance, management, and sharing of the Commonwealth's data assets. The EIA elements have been structured based on an EIA Maturity Model. Maturity models describe the levels of evolutionary progress in systems change. Lower maturity levels represent the system's early stage of development; higher maturity levels serve as outcome targets for the desired "future state."

The EIA Maturity Model, shown in **Figure 2**, features three stages beginning with the Informal Level, through the Emerging Level and toward the desired Enterprise Level. Each stage has been described around the Commonwealth's EIA program areas – data governance, data standards, data asset management and data sharing – with benchmarks to track progress within each area.

The Informal Level of the EIA Maturity Model is characterized by an array of data silos with no meaningful governance or integration. The Emerging Level features the first steps toward a systematic, integrated approach to data management. Finally, the desired "future state" outcome at the Enterprise Level consists of a fully developed, Commonwealth-wide EIA.

### **EIA Scorecard**

To assess the current state of EIA across executive branch agencies and identify strategies for moving the Commonwealth toward its desired future state in the EIA Maturity Model, VITA in August 2012 implemented the EIA Scorecard – a survey instrument designed based on Gartner's IT Score for EA methodology. For a full set of summary tables for the EIA Scorecard results, visit <http://www.vita.virginia.gov/oversight/dm/default.aspx?id=6442470851>

Highlights from the EIA Scorecard:

- Respondents covered a range of Commonwealth agencies, with a high degree of representation from across small, medium, and large size agencies
- More than 70% of respondents said they agreed or strongly agreed that their agency engaged in EIA activities
- Most respondents (50% or more) also said their agency was actively implementing or preparing to implement primary EIA deliverables
- A majority of respondents (60%) said their agency had internal governance-related activities but only limited engagement in Commonwealth-wide governance
- Just over half (56%) of the respondents said their agency maintained metadata for their enterprise information assets
- More than 80% of the respondents said their agency implemented data standards

- However, these tended to be internal standards (63%) rather than Commonwealth (20%) or external (11%) standards
- More than half (50%-55%) gave favorable responses to the Commonwealth's EIA program on each of the key measures
- Commonwealth EIA received the highest rating (72%) on its publication of adopted standards in the Web-based standards repository
- A majority (84%) of the respondents said their agency actively exchanges data with other entities, of these agencies
  - 76% said the exchanges helped to maximize the value of their data assets
  - 90% viewed data sharing critical for achieving business objectives
  - 80% had integrated shared data into their performance/outcome measurement systems

Findings from the EIA Scorecard have been used to inform the articulation of an enterprise-level vision statement for the Commonwealth's EIA, to align the EIA Strategy with key business drivers and to establish measurable EIA goals and objectives. These elements have been covered in the remaining sections of this strategy document.

**Figure 2. EIA Maturity Model (Adopted July 3, 2012)**

	<b>Level of Maturity</b>	<b>Characteristics and Performance Benchmarks</b>
1	<b>Informal Level</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Data management functions reactive and distributed across Agency data silos; very little governance, more of an “ownership” approach to data; poorly defined roles for data stewards; no meaningful data strategy; no valuation model for data inventory or data management functions.</i></li> <li>▪ <i>Data Standards – Low levels of standardization; data maintained in redundant silos with diverging semantics; minimal data integration or integrity.</i></li> <li>▪ <i>Data Asset Management – Very little, if any, metadata or data documentation in agency source systems.</i></li> <li>▪ <i>Data Sharing – High degree of agency resistance to data sharing; no business involvement in data management to drive trust or data-sharing agreements.</i></li> </ul>
2	<b>Emerging Level</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Data “ownership” begins to give way to clearer roles for data stewards; increased executive awareness of information assets; governance limited to ad hoc activities; no clearly defined data strategy at the enterprise level; some valuation and cost recognition of data.</i></li> <li>▪ <i>Data Standards – Standardization begins in specific domains but still lacking full semantic interoperability; first steps toward master data management; standards tend to be internal (agency) in nature.</i></li> <li>▪ <i>Data Asset Management – Documentation and metadata emerge as new systems come online; still no documentation for existing or legacy systems.</i></li> <li>▪ <i>Data Sharing – Contention remains against enterprise data-sharing, but point-to-point agreements emerge at the agency and program level.</i></li> </ul>
3	<b>Enterprise Level</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Governance driven by relationships among data stewards at the enterprise, agency and program level; central data governance organization with executive sponsorship; enterprise data strategy and well-defined Policies, Standards and Guidelines (PSGs); feedback loops in place to support continuous improvement; data governance staff, data stewards, and business leaders monitor and promote strategies to enhance the value chain of information architecture and assets.</i></li> <li>▪ <i>Data Standards – Semantic interoperability across domains based on adopted standards; emphasis away from internal standards and toward external standards maintained by national/international Standard Development Organizations; standards reinforce strategies for data quality and integrity; compliance monitoring and tracking; central standards repository.</i></li> <li>▪ <i>Data Asset Management – Enterprise data-asset management program; metadata taxonomy, subject areas, and information classes in central repository; data assets mapped to enterprise data standards.</i></li> <li>▪ <i>Data Sharing – Enterprise data-sharing built on a solid trust framework and legal agreements; security, privacy, consent and authorization addressed based on applicable law; Commonwealth interoperability with other states and national information exchanges.</i></li> </ul>

## Business Drivers

The Commonwealth EIA Strategy has been designed in response to key business drivers impacting the state's information management activities. Business drivers represent the principal needs to be addressed by the EIA program. Current business drivers for the Commonwealth EIA Strategy include demands for data quality, standardized data and shared vocabulary, data reuse and reduced data redundancy, and data-driven decision support for government services. These business drivers and their alignment with EIA program areas have been shown in **Figure 3**.

### *Business Driver 1: Data Quality*

The National Association of State Chief Information Officers (NASCIO) has referred to information as the "currency" of state government. (NASCIO 2011, *Capitals in the Clouds*) This means that each action taken by the state depends upon information, with the value of the action dependent upon the quality of the data. Therefore, ensuring data quality continues to be a primary objective underlying the Commonwealth's information management initiatives.

The Commonwealth EIA Strategy will promote activities to enhance the quality of the state's data assets. This will include a more formal approach to data governance, greater scrutiny and enforcement for compliance with adopted data standards, common performance and service specifications for agency information exchange, and strategies for data asset management focused on data quality.

### *Business Driver 2: Standardized Data and Shared Vocabulary*

Government's business objectives rarely fall into single domains. Commonwealth agencies increasingly must work across lines of business and with partners at multiple levels of governance to achieve outcomes. However, such partnerships become hindered by disparate data definitions, specifications and terminology. Without standardized data and a shared vocabulary, agencies lack the information sharing capacity needed for meeting performance goals.

The Commonwealth EIA Strategy will support data standardization as a means of achieving semantic interoperability and shared vocabularies across domains and levels of government. This will be done primarily through adoption and compliance with Commonwealth standards. In addition, the EIA program will work to formalize data governance roles and responsibilities across state government to ensure a common discipline and set of standards for information management.

**Figure 3. Business Drivers and EIA Program Alignment**

	<i><b>Business Driver</b></i>	<i><b>EIA Program Alignment</b></i>
1	<b>Data Quality</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Formalized roles and responsibilities for Commonwealth data stewards/data owners; training and technical support focused on data quality enhancement.</i></li> <li>▪ <i>Data Standards – Shared compliance and enforcement for adopted data standards to increase data quality; shared vocabulary around highest quality data sources.</i></li> <li>▪ <i>Data Asset Management – Focus on Commonwealth data as an enterprise asset, with objectives around enhancing the quality and value of the data resources.</i></li> <li>▪ <i>Data Sharing – Information exchange across domains of government based on an enterprise trust framework with clear performance and service specifications.</i></li> </ul>
2	<b>Standardized Data and Shared Vocabulary</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Partnership with Commonwealth data stewards/data owners to enforce adopted standards.</i></li> <li>▪ <i>Data Standards – Semantic interoperability and vocabulary through data standardization.</i></li> <li>▪ <i>Data Asset Management – Metadata documenting alignment of data assets with adopted standards.</i></li> <li>▪ <i>Data Sharing – Enterprise information exchange supported by data exchange standards, shared vocabulary and standardized performance and service specifications.</i></li> </ul>
3	<b>Data Reuse and Reduced Data Redundancy</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Engagement with data governance stakeholders to compile information on enterprise data systems.</i></li> <li>▪ <i>Data Standards – Documented alignment between data assets and adopted standards.</i></li> <li>▪ <i>Data Asset Management – Strategies to build metadata repository to support discovery and reuse of information assets.</i></li> <li>▪ <i>Data Sharing – Enterprise reuse of data assets supported by a trust framework and compliance with applicable law for security, privacy and confidentiality.</i></li> </ul>
4	<b>Data-driven Decision Support</b>	<ul style="list-style-type: none"> <li>▪ <i>Data Governance – Established communication processes to align EIA program activities with business requirements and architecture.</i></li> <li>▪ <i>Data Standards – Consistency, integrity and quality of data to support informed decision-making based on adopted standards.</i></li> <li>▪ <i>Data Asset Management – Discovery of information sources available to decision-makers; support for agency or domain data warehousing and effective use of archived data.</i></li> <li>▪ <i>Data Sharing – Information exchange across domains of government to support holistic decision support systems.</i></li> </ul>

### *Business Driver 3: Data Reuse and Reduced Data Redundancy*

Commonwealth agencies spend millions of dollars each year to collect, manage and utilize data on persons and other entities. Agencies frequently collect the same data from the same persons as other agencies, storing these data in agency or system-centric data “silos.” Such data redundancy presents an unnecessary cost and negatively impacts the value of government’s data assets.

The Commonwealth EIA Strategy will generate opportunities for reuse of data assets and reductions in data redundancy across agency silos. Recognizing the statutory constraints for security, privacy and confidentiality, the EIA program will promote discovery, reuse, transparency, efficiency, and a higher return on investment for information resources.

### *Business Driver 4: Data-driven Decision Support*

Public-sector leaders require accurate, timely and reliable data to make informed decisions. An important trend in information technology involves enhancing data management in the back-end to support front-end data-driven decision support systems. Demand for this type of capability cuts across branches and levels of government, with the emphasis on getting the right information into the right hands and the right time.

The Commonwealth EIA Strategy will strengthen the state government’s capacity for data-driven decision-support systems. A formalized approach to data governance will align data management functions with business architecture and requirements. Strategies around data standards and enterprise data sharing will enable information exchange across agencies. Also, the EIA program will promote development and analytics of data warehouses, facilitating increased utility of archived data.

## EIA Goals & Objectives

The EIA approach envisioned in the desired “future state” of the EIA Maturity Model and aligned with the key business drivers has been articulated into actionable, measurable EIA goals and objectives. These goals and objectives represent the required steps and milestones for achieving an enterprise, Commonwealth-wide approach to information management through the 2020 planning horizon. VITA will work with agencies to track performance on the EIA Goals and Objectives on an annual basis.

*Goal 1: Data Governance. Forge a more disciplined approach to data governance across the Commonwealth, with formal roles for data stewards and business stakeholders.*

The “current state” of EIA observed in the EIA Scorecard results indicated that a high degree of data governance activity occurs at the agency level. More than 70% of respondents said they engaged in EIA activities, and 60% indicated their agency had internal governance-related activities. However, these respondents added that they engaged in governance roles at the Commonwealth level.

To achieve the desired “future state” these agency-centric activities will need to be supported, formalized, and integrated into an enterprise data governance discipline. This will include more defined roles and responsibilities for data stewards, formal assignments of data stewards and an established data governance organization for the Commonwealth EIA program.

Objective 1.1: Establish clearly defined enterprise-level roles for data stewards across Commonwealth agencies.

Objective 1.2: Develop and implement an enterprise data governance program as part of the EIA governance structure.

Objective 1.3: Formally adopt an EIA governance framework with policies, standards, guidelines, implementation plans, and performance metrics.

Objective 1.4: Provide training, technical assistance, and other resources to enhance the EIA knowledge, skills, and abilities Commonwealth data stewards, particularly those in small agencies.

*Goal 2: Data Standards. Promote semantic interoperability and vocabulary through data standardization as a means of supporting information exchange across source systems, government domains, and levels of governance.*

The Commonwealth, with guidance from the Health IT Standards Advisory Committee (HITSAC), has made significant process in the health IT domain on promoting semantic interoperability and vocabulary through standards for data, data exchange, messaging, vocabulary, and implementation guides. Pursuant to the Item 427 of the 2012 Appropriation Act, and in-line with VITA's Corrective Action Plan from the May 2012 audit by the Auditor of Public Accounts, these

activities will need to be expanded to include the non-health domains of state government and to complete the data standardization requirements codified in the 2008 Appropriation Act, as amended.

The Secretary of Technology, in the [Commonwealth Data Standardization: Interim Plan](#), submitted November 1, 2012, identified a bold strategy for achieving the Item 427 data standardization objectives: migration of the Commonwealth toward conformance with the [National Information Exchange Model \(NIEM\)](#). The objectives under this goal will be oriented around continuing with progress in the health IT domain and implementing NIEM for the other domains of governance across the Commonwealth

Objective 2.1: Develop policies, standards, and guidelines to migrate the Commonwealth toward conformance with NIEM.

Objective 2.2: Continue to develop and implement health IT standards based on HITSAC guidance.

Objective 2.3: Continue to develop and submit for adoption data standards for the seven business areas pursuant to the 2008 Appropriation Act, as amended. (Note: Remaining business areas requiring data standards are as follows: Receiving Information, Invoice Information, Purchase Information, including commodity codes, and Agency Identification Information)

Objective 2.4: Refine and implement the governance and process model established for developing, reviewing, submitting for adoption, and maintaining Commonwealth standards.

*Goal 3: Data Asset Management. Management of information as an enterprise asset, with an emphasis on quality, efficiency, reduced redundancy, and a higher return on investment.*

A common thread in the business drivers for the EIA strategy focuses on information as an enterprise asset and the management of that asset to meet business objectives. The Commonwealth EIA Strategy must support activities to build the necessary discipline, infrastructure, and toolset for data asset management.

Data asset management requires its own information source for data – specifically, metadata, or data about data. Primary objectives supporting the EIA data asset management goal will be on compiling, organizing, managing, and making available metadata on the Commonwealth's enterprise data systems.

Objective 3.1: Complete an inventory of enterprise data assets across the Commonwealth and compile metadata on each enterprise asset.

Objective 3.2: Develop a taxonomy with information classes to structure the metadata from the data asset inventory.

Objective 3.3: Design, develop, and implement an enterprise metadata repository to support discovery and reuse of enterprise data assets.

Objective 3.4: Map metadata on agency systems to business, solutions, technology architecture, and adopted Commonwealth data standards.

*Goal 4: Data Sharing. Leverage the sharing of information resources to increase government performance, improve service to citizens and more effectively achieve business outcomes.*

In August 2011, the Secretary of Health and Human Resources (HHR) and the Secretary of Technology formed the [Secretarial Committee on Data Sharing \(SCDS\)](#). The SCDS consisted of representatives from HHR and other Commonwealth agencies. Its mission centered on identifying opportunities and constraints for an enterprise data-sharing agreement, and recommending action steps needed to establish such an agreement for participating agencies.

The SCDS conducted a review of Federal and state-level trust agreements designed to support enterprise information exchange. This analysis resulted in recommendations to develop a trust-agreement framework for the Commonwealth, clearly defined in policies, standards, guidelines, and procedures. The objectives under the information sharing goal have been aligned with the SCDS recommendations.

Objective 4.1: Secure an executive-level directive to Commonwealth agencies to establish a trust-agreement framework in support of enterprise data sharing.

Objective 4.2: Form a governance committee of executive staff, data owners, data stewards, business leads, technical leads, legal staff, security staff, and other representatives from Commonwealth agencies to develop, implement, and maintain a trust agreement framework.

Objective 4.3: Identify applicable legal, regulatory, policy, and technical constraints impacting data sharing and orient the trust-agreement framework to comply with applicable requirements.

Objective 4.4: Identify legal requirements for informed consent and authorization and design the trust-agreement framework to comply with these requirements.

Objective 4.5: Develop policies, standards, guidelines, and procedures to govern the operations, onboarding, maintenance, breach resolution, and certification processes associated with the implementation of the trust-agreement framework.

## Glossary of Key Terms

Data/Information assets – An agency's data and information resources viewed as having a measurable value and used to achieve business objectives.

Data management – Development and execution of architectures, policies, practices, and procedures for managing the full data lifecycle: define, obtain/create, store/maintain, use, share, archive, and destroy.

Data standards – Mutually accepted agreements governing the data elements, representations, formats, and definitions of common or shared data.

Data stewards – Agency staff responsible for managing or overseeing all or part of the data lifecycle.

Interoperability – Ability of diverse information systems to share or exchange data regardless of differences in applications or system platforms.

Metadata – A set of data that describes and gives information about other data.

Trust framework – A formal, legal agreement and supporting policies and procedures executed among agencies or other organizational entities that enforces the requirements, specifications, and permitted purposes for the participants to exchange, view, access or otherwise share data.