

COMMONWEALTH OF VIRGINIA

Enterprise Architecture

**Information Technology
Resource Management**

**Enterprise
Architecture
Policy**



Preface

Publication Designation

Enterprise Architecture Policy (EA200)

Subject

Enterprise Architecture

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Periodically or as needed.

Authority

[Code of Virginia, §2.2-2006](#)

(Definitions)

[Code of Virginia, §2.2-2007](#)

(Powers of the CIO)

[Code of Virginia, §2.2-2007.1](#)

(Additional duties of the CIO relating to information technology (IT) planning and budgeting)

[Code of Virginia, § 2.2-2009](#)

(Additional duties of the CIO relating to security of government information)

[Code of Virginia, § 2.2-2012](#)

(Additional powers and duties related to the procurement of IT)

[Code of Virginia, §2.2-603\(F\)](#)

(Authority of agency directors, with respect to IT and data security and risk management)

Scope

Standard applies to all Executive Branch agencies (hereinafter "agencies") that are responsible for the management, development, purchase, and use of IT resources in the Commonwealth of Virginia (COV).

Purpose

Establishes *the framework for enterprise architecture* direction and technical requirements, which govern the acquisition, use and management of IT resources by agencies.

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

Agency head of VITA. Responsible for and approves statewide technical and data policies, standards, guidelines, and requirements for IT, including with respect to IT planning, procurement, and security.

Virginia Information Technologies Agency (VITA)

At the direction of the CIO, VITA leads efforts that draft, review, and update technical and data policies, standards, guidelines, and requirements for IT.

VITA uses requirements in IT technical and data related documents when establishing contracts; reviewing procurement project, and security and budget requests and strategic plans, and when developing and managing IT enterprise and infrastructure services.

Executive Branch Agencies

Provide input and review during the formulation, adoption and update of statewide technical and data policies, standards and guidelines for IT.

Comply with the requirements established by COV policies and standards. Apply for exceptions to requirements when necessary.

Publication Version Control

Please direct questions related to this publication to VITA's Enterprise Architecture (EA) Division at ea@vita.virginia.gov. VITA notifies the Agency Information Technology Resources (AITRs) at all agencies, and other interested parties of revisions.

The following table contains a history of the revisions to this publication.

Version	Date	Revision Description
220-v3	3/1/2023	Last versioned copy of webpage in T4
220-v4	7/17/2024	Administrative revision, focused on reformatting the document to delineate the guidance document framework from the individual technical publications.

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Enterprise Architecture Purpose

The EA Policy establishes an IT framework to develop, maintain and use the EA as a tool for making decisions around IT changes and investments. The EA Policy implements the requirements specified for agencies within EA standards, incorporating related laws, regulations, and other mandatory guidance as well as best practice related to EA. The primary intent of the IT framework is to meet the following objectives:

- Provide description and documentation of the current, transitional, and desired relationships among business, management processes and IT.
- Support decision making that ensures IT investments and technology support COV mission, strategy, and annual performance goals.
- Evaluate IT investments and technology to ensure they maximize business value, support business transformation, are not redundant and adhere to appropriate IT standards.
- Assist in the improvement of identified performance objectives and optimizing the use of IT by identifying capability gaps, eliminating IT redundancies, and improving business and IT alignment.
- Outlines the framework and responsibilities for gathering data necessary to link the IT portfolio with Commonwealth vision, mission, performance goals and priorities.
- Ensure alignment of the requirements for information systems with the processes that support the Agency's missions
- Ensure adequate interoperability, redundancy and security of information systems
- Support and enforcement of EA requirements during agency evaluation and acquisition new systems.

Overview

EA is a management best practice that provides a consistent view across all program and service areas to support planning, business transformation and IT investment decision making. EA promotes mission success by serving as an authoritative reference, promoting functional integration and resource optimization with internal and external service partners.

Achieving EA objectives requires collaboration, cooperation and coordination among agency business stakeholders, systems developers, partners, and technology providers. The Commonwealth's EA is strategic and operational direction used to manage and align business processes and IT infrastructure/solutions with strategy.

The EA requirements implements an IT framework and repository which defines:

- the models that specify the current ("as-is") and target ("to-be") architecture environments;
- the information necessary to perform the Commonwealth's mission, the solutions, and technologies necessary to perform that mission; and
- the processes necessary for implementing new technologies in response to the Commonwealth's changing business needs.

The EA contains four components as shown in Figure 1.

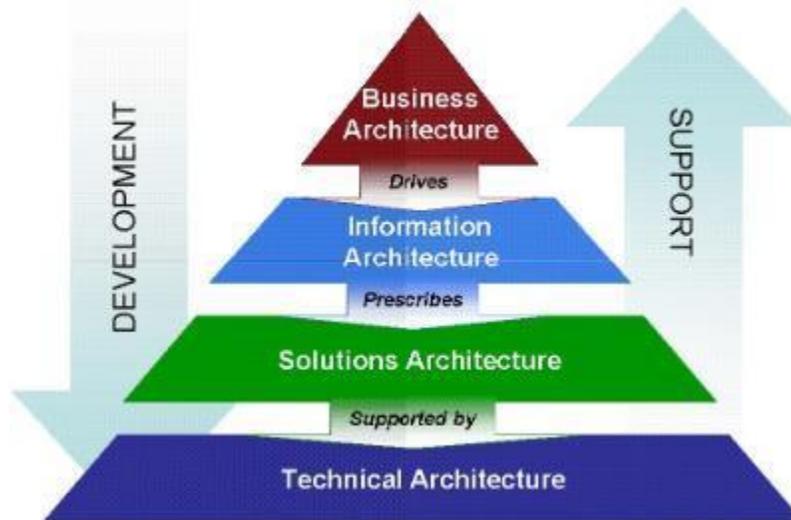


Figure 1: COV EA Model

Enterprise Business Architecture

The Business Architecture drives the Information Architecture which prescribes the Solutions Architecture all of which is supported by the Technical (or technology) Architecture.

Enterprise Information Architecture

The Enterprise Information Architecture (EIA) promotes the governance, management and sharing of the Commonwealth's data assets with primary focus on consistency and extensibility of data within the enterprise.

Enterprise Solutions Architecture

An Enterprise Solutions Architecture is the collection of information systems (applications and components, purchased or custom-developed) supporting or related to the business functions defined in the Enterprise Business Architecture and the Enterprise Business Model.

Enterprise Technical Architecture

The Enterprise Technical Architecture (ETA) consists of technical domains that provide direction, recommendations, and requirements for supporting the Solutions Architecture and for implementing the ETA. The ETA establishes requirements for the development and support of an organization's information systems and technology software services, and infrastructure.

Figure 2 shows the ETA relationship to the EA.

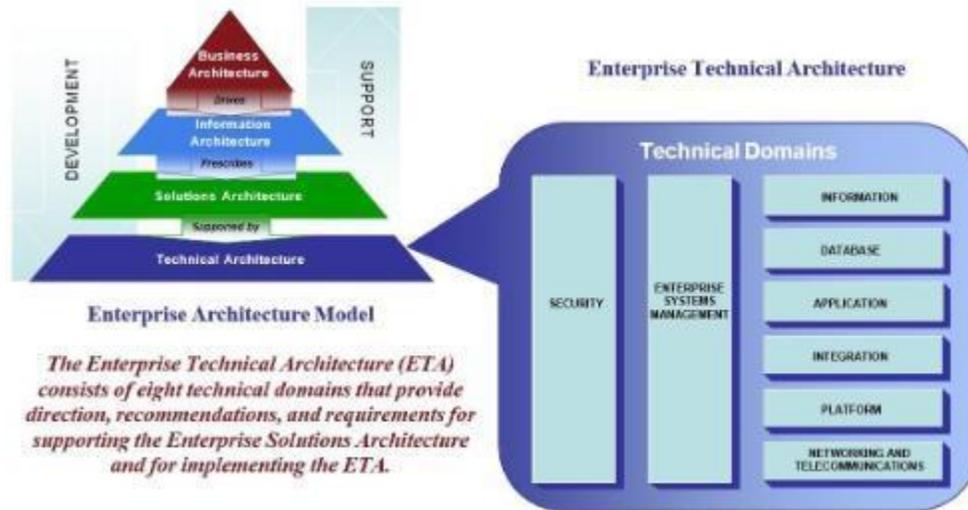


Figure 2: ETA Relationship to the EA

Each of the domains is a critical piece of the ETA. The Network and Telecommunications, and the Platform Domains address the infrastructure base and provide the foundation for the distributed computing. The Enterprise Systems Management, Database, Applications, and Information Domains address the business functionality and management of the technical architecture. The Integration Domain addresses the interfacing of disparate platforms, systems, databases, and applications in a distributed environment. The Security Domain addresses approaches for establishing, maintaining, and enhancing information security across the ETA.

Enterprise Architecture Policy Statements

Achieving the “to be” EA requires collaboration, cooperation and coordination among agency business stakeholders, systems developers, partners, and technology infrastructure providers.

Future Enterprise Architecture Vision

The EA component reports and the corresponding EA Standard provide guidance and technical direction for achieving the envisioned future EA. Executive branch agencies shall comply with the direction provided by the EA in developing and implementing technology solutions and the corresponding IT infrastructure required to support the Commonwealth’s business needs.

To ensure that the EA remains relevant and current, and that the state progresses future state EA, agencies and other interested parties or stakeholders will collaborate, and work with the VITA Policy, Practice and Architecture Division to identify:

- emerging technologies to be included;
- emerging technologies to be considered strategic technologies;
- technologies that should be considered obsolete/rejected or transitional/contained; requirements and recommended practices to be added, and changes/enhancements to existing requirements and recommended practices, and products/tools that support the standards/requirements in the EA.

It is the intent of the EA to standardize and simplify the many technologies used in the Commonwealth. This will require reducing the number of technologies used to develop and support production systems based on the EA. The

Commonwealth will accomplish this through the ongoing development and implementation of its EA and related standards.

The Commonwealth will use the process defined below to govern changes and exceptions to the EA and to ensure that all recommendations and requests for changes or exceptions are logged, reviewed, evaluated, considered, and responded to in a timely manner.

Enterprise Information Architecture Domain

Information continues to be a critical resource. Agencies gather and process data to create information needed to support their missions. The EIA provides a governance framework, information model, shared vocabulary and methodology supporting each agency's ability to efficiently discover, access, share and utilize Commonwealth data assets.

The EIA is designed to provide a common framework for the cost-effective exchange of information across organizational lines while ensuring security, privacy, and appropriate use of that information. The EIA enables agency leaders to manage Commonwealth data assets to better serve the citizens of Virginia. EIA supports a great agency capacity and efficiency for using data assets to accomplish the Commonwealth's core strategies.

The EIA provides technical direction and benchmarks to achieve the future state described at the Enterprise Level of the EIA Maturity Model. Agencies shall comply with the direction established in the EIA in the design, development, implementation, and integration of data-management solutions.

Applications Domain - Systems Development

This policy recognizes that the ultimate responsibility for the management, control, development, maintenance, enhancement, and use of information systems rests with the agencies. Accordingly, it is the policy of the Commonwealth that agencies must adopt written standards for the development, maintenance, and enhancement of all information systems. The purpose of written standards is to ensure that quality, effective and maintainable information systems are developed by agencies.

Applications Domain – Open-Source Software

Within the Commonwealth, "open-source software" is treated the same as any other type of software. All software including "open source" that is used for development and support of "mission critical applications" must be at a version/release level that has vendor or equivalent quality level support available. This support should include security hot fixes and updates.

Open source doesn't just mean access to the source code. The distribution terms of open-source software must comply with the following criteria: (as recommended by the [Open Source Initiative \(OSI\)](#)).

1. **Free Redistribution.** The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.
2. **Source Code.** The program must include source code and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost—preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.
3. **Derived Works.** The license must allow modifications and derived works and must allow them to be distributed

under the same terms as the license of the original software.

4. **Integrity of The Author's Source Code.** The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.
5. **No Discrimination Against Persons or Groups.** The license must not discriminate against any person or group of persons.
6. **No Discrimination Against Fields of Endeavor.** The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.
7. **Distribution of License.** The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.
8. **License Must Not Be Specific to a Product.** The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.
9. **License Must Not Restrict Other Software.** The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.
10. **License Must Be Technology-Neutral.** No provision of the license may be predicated on any individual technology or style of interface.

EA Change/Exception Requests

The EA Change/Exception Request Process defines the roles and processes to be used to review, debate, discuss, and make decisions concerning requests for additions, changes and exceptions to the Commonwealth's EA.

Roles of the key players in the EA Change/Exception Request Review Process are:

- CIO - final authority for approving exceptions and change requests related to the EA.
- Chief Enterprise Architect – Responsible for reviewing proposed changes and requests for exceptions to the EA standard requirements and, as appropriate, making recommendations to the CIO to approve/reject. This role resides with the Director of EA at VITA. When there is a difference in opinion and/or recommendations between subject matter experts (SMEs)/business owners and the assigned enterprise architects that cannot be resolved, EA can escalate the issue and/or concern to the CIO.
- Enterprise Architect – assigned responsibility to ensure appropriate research and recommendations are developed in a timely manner for each assigned Change/Exception Request.
- EA Teams – responsible for researching and reviewing new or emerging technologies and requested changes/additions related to the ETA or to other EA component architectures, domains and topics, and for developing revised reports requirements and standards for review and comment.
- SMEs – IT and business experts on various subjects and topics from agencies, partners, and VITA that support the process.

Agencies and other stakeholders can initiate potential changes to the EA by:

- requesting an exception(s) for one of more EA requirements or technology/data standards;
- proposing architecture changes (add new requirements or technology/data standards or change existing requirements or technology/data standards); or
- requesting a topic, technology, or data standard area be researched and/or evaluated.

All requests for EA exceptions or proposed changes must be submitted electronically using [Archer](#). Requestors should attach any additional project or research materials or documentation that supports their request.

Processing Change/Exception Requests

When an agency or other stakeholder initiates an EA Change/Exception Request that can cause a potential change to the EA, the Chief Enterprise Architect uses the following processes to ensure all such received requests are logged, evaluated, and responded to in a timely manner:

Receive Architecture Change /Exception

The Chief Enterprise Architect will ensure all change/exception requests received are logged and assigned to an Enterprise Architect within three business days after receipt. The assigned Enterprise Architect will notify the submitting organization of receipt and the start of work within two business days of receiving the assignment.

Research, Review and Respond to EA Change/Exception Request Exception Requests

Exception requests come in two forms; those that ask for a temporary exception for some period of time or until an event occurs; or those that seek a permanent exception to one or more EA requirements or standards.

The assigned Enterprise Architect is responsible for conducting appropriate research, consulting with SMEs, developing recommendations and forwarding those recommendations to SMEs for review within seven business days after the request was assigned.

SMEs will review the request and Enterprise Architect's recommendations and provide comments and/or recommendations to the Chief Enterprise Architect within five workdays of receiving the request from the assigned Enterprise Architect.

If the assigned Enterprise Architect and SMEs recommendations are different or they identify one or more issues, and the Chief Enterprise Architect cannot facilitate a consensus, the Chief Enterprise Architect can escalate the request to the CIO for resolution.

The Chief Enterprise Architect, after reviewing the recommendations of the assigned Enterprise Architect and SMEs, and additional consulting as needed, will recommend a course of action on the request to the CIO within three business days of receiving all appropriate recommendations.

It is VITA's intent that all research, reviews and recommendations required to make an informed decision be completed and provided to the CIO within four weeks of receipt of the request for exception.

The CIO of the Commonwealth will take one of the following actions related to an exception request:

- Approved
- Denied
- Returned – the CIO may return the request to the original sender or one of the involved individuals/groups (assigned Enterprise Architect, SMEs or Chief Enterprise Architect) with a request for additional information, including development of new or revised recommendations.

If the exception request is approved by the CIO and the analysis or recommendations cause a change to an ITRM Policy, Standard or Guideline, then that policy, standard or guideline shall be revised using the process defined in the current version of the COV ITRM Standard GOV 101. The CIO's approval decision shall also be provided immediately to the

requesting agency so that they may proceed in a timely manner.

Change Requests and Other Requests

This includes all types of requests other than exceptions. The assigned Enterprise Architect will work with the appropriate EA team(s) and/or business owners for research and SMEs to develop a solution/recommendation that addresses the request.

Depending on the type of request, the assigned Enterprise Architect/EA team/business owner recommendation is due to the Chief Enterprise Architect as follows:

- Approve emerging technology for pilot – no later than 15 workdays after date assigned to the Enterprise Architect.
- Alternative technology proposal and/or change language/definition in an policies, standards or guidelines – no later than 25 workdays after date assigned to the Enterprise Architect.
- Alternative data standard proposal and or change language/definition in an existing data standard – no later than 5 25 workdays after date assigned to the Enterprise Architect

Requests to change language/definitions in an EA report or requests for research/review of a topic or technology will be handled by the Chief Enterprise Architect based on recommendations received from the assigned Enterprise Architect. These types of requests do not require CIO approval, but require the requested language change, topic or technology be added to the potential workload of the EA Division.

For alternative technology proposal requests and approve emerging technology for pilot requests, the request will be forwarded to appropriate SMEs for review and recommendation development at the same time the request is assigned to the Enterprise Architect. The SMEs recommendation should be provided to the assigned Enterprise Architect and the Chief Enterprise Architect.

For alternative data standard related proposal requests, the request will be forwarded to the VITA manager responsible for coordinating data owner/SMEs reviews and recommendations development at the same time the request is assigned to the Enterprise Architect. The designated VITA manager shall provide SMEs recommendations to the assigned Enterprise Architect and to the Chief Enterprise Architect.

As appropriate and after reviewing input recommendation(s) and as needed, consulting with SMEs, the Chief Enterprise Architect will recommend a course of action to the CIO within three business days of receiving the recommendation(s).

The CIO of the Commonwealth will take one of the following actions related to the request:

- Approved
- Denied
- Returned – the CIO may return the request to the original sender or one of the individuals/groups (assigned Enterprise Architect, ETA Domain Team, or Chief Enterprise Architect) that provided recommendations with a request for additional information, including possible development of a new or revised recommendation.

If the change request is approved by the CIO and the analysis or recommendations cause a change to an ITRM Policy, Standard or Guideline, the corresponding policy, standard or guideline shall be revised using the process defined in the current version of the COV ITRM GOV 102 Standard.

Communicate and Document Review Decisions

Final decision results of all received EA change/exception requests will be documented and posted on VITA's website under the EA Library. This provides a record of the evolution of the EA decision process and history.

EA change/exception requests are logged as part of the receiving process and their corresponding outcomes shall be documented and published regardless of whether a request was accepted or rejected.

The assigned Enterprise Architect will:

- Update the EA Change/Exception Request log on VITA's website with pertinent information that documents the outcome of a request within three business days after the request has been evaluated and finalized.
- Ensure that all appropriate EA teams, and enterprise architects have any outcomes and approved recommendations that may impact their areas of responsibility.
- Communicate the final outcome and recommendations related to a request to all appropriate stakeholders within two business days after the request has been finalized.
- A complete, up-to-date log of all EA change/exception requests can be viewed in [Archer](#).