STATE of ARIZONA

Government Information Technology Agency	**Statewide POLICY** P700 Rev 2.0	**TITLE: Enterprise Architecture** Effective Date: October 31, 2007

1. AUTHORITY

The Government Information Technology Agency (GITA) shall develop, implement and maintain a coordinated statewide plan for information technology (A.R.S. § 41-3504(A (1))), including, the formulation of policies to effectuate the purposes of the agency (A.R.S. § 41-3504(A (13))).

2. PURPOSE

The purpose of Enterprise Architecture (EA) is to create a holistic perspective of information technology strategies and its infrastructure support for state programs and business functions. This perspective can be achieved through effective governance, practical and effective policies and standards, and best practices for designing, developing, and implementing technology systems. EA provides a pragmatic roadmap for ongoing research and assessments of digital innovation opportunities for the State of Arizona.

3. SCOPE

A budget unit is defined as a department, commission, board, institution or other agency of the state organization receiving, expending, or disbursing state funds or incurring obligations of the state including the Arizona Board of Regents but excluding the universities under the jurisdiction of the Arizona Board of Regents, the community college districts and the legislative and judicial branches (A.R.S. § 41-3501(2)).

The Budget Unit Chief Executive Officer (CEO), working in conjunction with the Budget Unit Chief Information Officer (CIO), shall be responsible for ensuring the effective implementation of Statewide Information Technology Policies, Standards, and Procedures (PSPs) within each budget unit.

4. POLICY

Budget units shall utilize Enterprise Architecture (EA) target technologies[1], methodologies, standards, and best practices to develop, implement, and/or acquire computer hardware systems, software systems, application systems, operating systems, security systems, and networking systems.

4.1. Enterprise Architecture (EA) for the State of Arizona is a business-driven, comprehensive, interoperable IT framework that aligns with and supports the business strategies and services of state government. Strategies and initiatives guiding this direction are derived from the Governor's strategic plan, budget unit strategic plans, the Statewide IT Plan, and budget unit annual IT plans.

[1] The Arizona Target Technology Environment is available at: http://www.azgita.gov/enterprise_architecture/.

4.2. Due to the complexity of information technologies, Arizona's EA encompasses five individual domains to form its Enterprise Wide Technical Architecture (EWTA). The five domains are: 1) Network Architecture, 2) Security Architecture, 3) Platform Architecture, 4) Software Architecture, and 5) Data/Information Architecture.

Arizona's EWTA Domains	
Infrastructure	**Application**
Platform	Data/Information
Network	Software
Security	
Basic, Fundamental Principles of Arizona's EA Business Focus and Alignment Secure Interoperability, Flexibility, Adaptability, Scalability, Portability, Common, Secure, Pervasive, Industry-wide, Open-standards-based Technologies	

4.3. Statewide policies for each of the five domains provide strategic direction and structure for information technologies supported by guiding principles, open- and/or pervasive-industry standards, and best practices. Additional information about each domain appears in the *Enterprise Architecture Framework and Strategies* document and individual *Target Network, Security, Platform, Software, and Data/Information Architecture* documents available at http://www.azgita.gov/enterprise_architecture.

4.4. EA target technologies are based on widely-accepted principles and open architectures, supported by open- and/or pervasive-industry standards and best practices. Through the identification of target technologies, Arizona's EWTA provides a strategic direction leading to an interoperable, portable, scalable, and adaptive IT technical framework for e-government and strategic business solutions that improve government services, eliminate redundancies, and reduce costs. Technologies traverse a practical and functional life cycle, determined by open- and/or pervasive-industry standards and best practices, from emerging to target then, over time, to transitional, and eventually obsolete.

4.5. While each technical domain represents a separate discipline, they all share and build upon the basic, fundamental principles of secure interoperability; flexibility; adaptability; scalability; and common, secure, industry-wide, open-standards-based technologies. The technologies are identified by industry standards organizations such as the

- American National Standards Institute (ANSI),
- Institute of Electrical and Electronics Engineers (IEEE),
- International Organization for Standardization (ISO),
- International Electro-technical Commission (IEC),
- International Telecommunication Union Telecommunication (ITU-T) Standardization Sector,
- Internet Engineering Task Force (IETF),
- National Committee for Information Technology Standards (NCITS),

- National Institute of Standards and Technology (NIST),
- Object Management Group (OMG),
- Open Group, and
- Organization for the Advancement of Structured Information Standards (OASIS).

Target information technologies are depicted relative to the Open Systems Interconnection (OSI) Reference Model to furnish a common ground for analysis and standards development.

4.6 ARCHITECTURE GENERAL PRINCIPLES

The planning, design and development of EA are guided by the following general principles that support the State's strategic business goals and objectives.

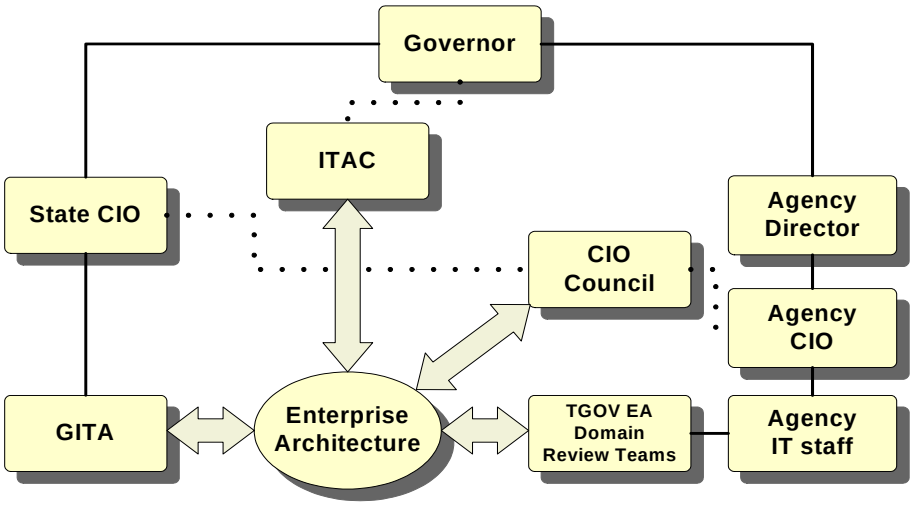
4.6.1 Budget units shall adopt and implement Arizona's Enterprise Wide Technical Architecture.
4.6.2 Business and IT shall have a common vision.
4.6.3 EWTA shall address and facilitate business continuity, security, and disaster recovery.
4.6.4 Business requirements and processes shall drive EWTA.
4.6.5 EWTA shall provide for interoperability.
4.6.6 Architecture shall be extensible, scalable, and adaptive.
4.6.7 EWTA shall facilitate change.
4.6.8 Architecture shall reduce the complexity of integration and business process improvements.
4.6.9 Market forces shall be considered in the design of the infrastructure architecture.

Supporting rationale for the above principles can be found in the *Enterprise Architecture Framework and Strategies* document available at http://www.azgita.gov/enterprise_architecture.

4.7 GOVERNANCE MODEL FOR ENTERPRISE ARCHITECTURE

Governance provides the structure, commitment, and support for the development, implementation and management of EA, as necessary, to ensure it achieves its objectives. Governance consists of the leadership, organizational structures, direction, and processes that ensure IT supports and enhances budget units' and the State enterprise's mission, strategies, and objectives in a planned manner.

ARIZONA ENTERPRISE ARCHITECTURE GOVERNANCE MODEL

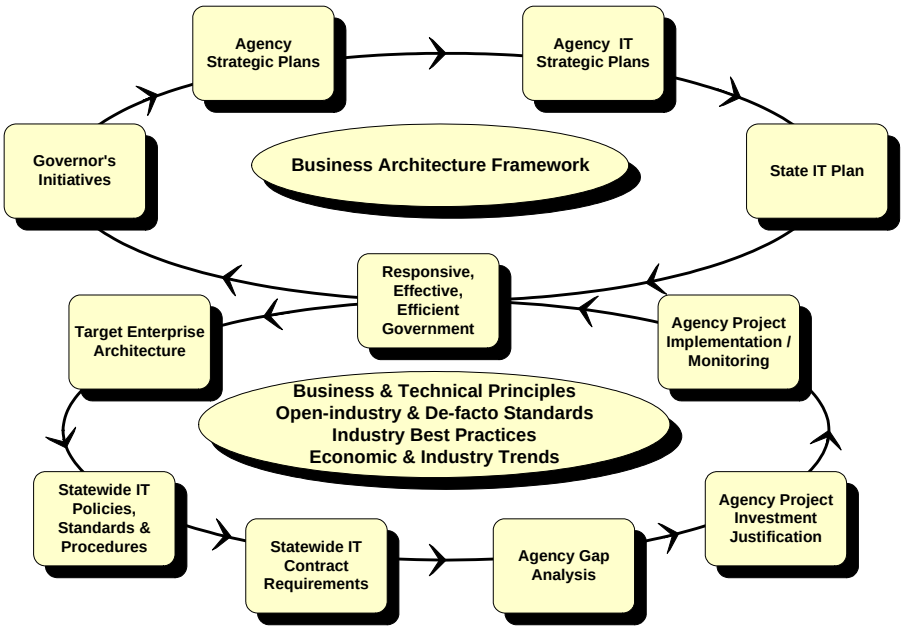


Roles and responsibilities are specific to the functions performed. Arizona has distributed roles among individuals, groups, and committees according to Statute and as best meets the needs of the State. Specific roles and responsibilities are delineated in the *Enterprise Architecture Framework and Strategies* document available at http://www.azgita.gov/enterprise_architecture.

4.8 ENTERPRISE ARCHITECTURE LIFECYCLE

The EA Lifecycle indicates how the various components and processes interact and portrays the vitality and continuous renewal of EA within the State enterprise.

ARIZONA ENTERPRISE ARCHITECTURE LIFECYCLE



The vitality of the EA Target Framework depicted in the lifecycle process is maintained through planned reviews. The more static components, such as the Architecture Governance Framework, undergo annual or biennial reviews.

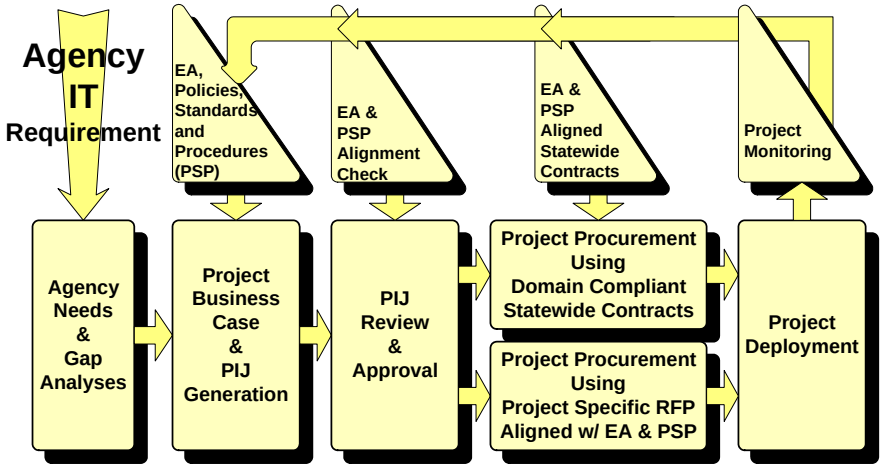
Components of the EWTA are reviewed and refreshed continuously to address major shifts in technology, as well as the emergence and adoption of new technology-related industry or open standards.

Approved and published target domain documents and associated material used to create Statewide Policies and Standards are considered to contain informational value, and as such shall be retained until a subsequent revision is approved, in accordance with *Records Retention and Disposition for Arizona State Agencies*.

4.9 IMPLEMENTATION

Arizona's EWTA has been designed to maximize current investments in technology, provide a workable transition path to targeted technologies, maintain flexibility, and to enhance interoperability and sharing.

ARIZONA ENTERPRISE ARCHITECTURE IMPLEMENTATION PROCESS FLOW



Within the context of the Arizona Enterprise Architecture Implementation Process Flow, budget units assess their existing technologies relative to target technologies and business needs associated with a given project. Where gaps exist between existing and target technologies, the budget unit should identify them in the annual IT Plan submittal. Before the budget unit initiates the IT project or investment to close the gap, it submits a Project Investment Justification (PIJ) for necessary approvals in accordance with *Statewide Policy P340, Project Investment Justification (PIJ).*

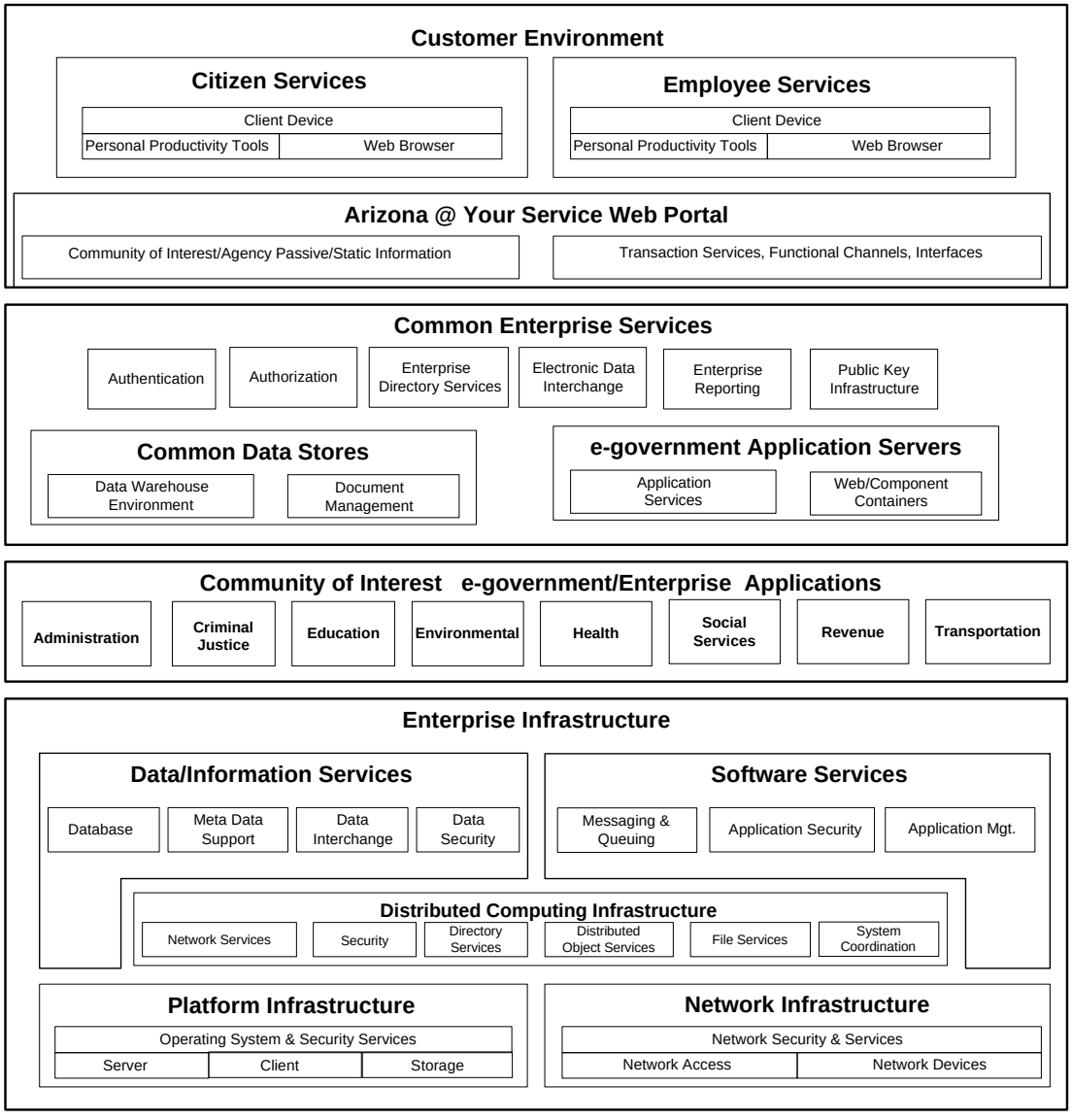
4.10 CONFORMANCE OF IT INVESTMENTS AND PROJECTS TO EA

To achieve the benefits of an enterprise-standards-based architecture, all information technology investments shall conform to the established EWTA that is designed to ensure the integrity and interoperability of information technologies for budget units. *Statewide Standard P340-S340, Project Investment Justification (PIJ),* defines conformance with the established EWTA and associated Statewide Policies and Standards. Variances from the established EWTA shall be documented and justified in the appropriate section of the PIJ document.

4.11 EWTA REFERENCE MODEL

The EWTA Reference Model defines the desired target environment designed to support the State's business functions and services. The EWTA Reference Model advances a consistent, industry-aligned framework for technology having the ability to accommodate a variety of viable e-government and other strategic business solutions. The model is flexible and capable of adapting to new and improved technologies as they become available.

ARIZONA EWTA REFERENCE MODEL



4.11.1. Customer Environment includes the computer hardware systems, software systems, application systems, operating systems, security systems, and networking systems utilized by the user (citizen, business, state employee) to electronically access State government information, resources, and services.

4.11.2. Common Enterprise Services are those technical processes and services that are required and common for all budget units that support electronic access to State government information, resources, and services.

4.11.3. Community of Interest e-Government and Enterprise Applications are families of similar government functions and services that typically serve the same constituency.

4.11.4. Enterprise Infrastructure includes the computer hardware systems, software systems, application systems, operating systems, security systems, and networking systems utilized by budget units to enable and support State business functions and services.

4.12 ARCHITECTURE INDEPENDENCE

Arizona's EWTA is intentionally designed to be as product/vendor agnostic as possible to maximize current investments in technology, provide a workable transition path to targeted technologies, maintain flexibility, enhance interoperability and sharing, and to promote fair competition. Related improvements in Statewide and budget unit IT contracts will ensure products and services acquired by budget units conform to the established architecture.

4.13 APPLICABILITY TO OTHER STATEWIDE EA POLICIES AND STANDARDS

Statewide Policy P700, Enterprise Architecture and *Statewide Policy P750, Service Oriented Architecture* adhere to and demonstrate the purpose established in *Statewide Policy P100, Information Technology*.

4.13.1. Individual Statewide policies for the five domains of Arizona's EWTA utilize common, secure, industry-wide, open-standards-based technologies and standards, identified by industry standards organizations, and based on documented methodologies, principles, and best practices. As such, individual Statewide EWTA domain policies and associated Statewide IT Standards adhere to the principles, governance, lifecycle process, and implementation elements described herein.

4.13.2. Statewide IT Standards will not constrain technology development. They will not be developed or implemented in a manner that limits the use of new and emerging technologies. Statewide IT Standards will not be written or implemented in any way that limits any vendor of technology to maximize the use of the standard. Statewide IT Standards will not be developed from any copyrighted or proprietary standards that would limit the ability of the Statewide IT Standard to be vendor or product independent.

4.13.3. Statewide IT Standards will evolve as technology and legislative mandates change. Statewide Standards will be written to allow for evolution and will accommodate backward compatibility for solutions implemented under previous standards, whenever possible.

4.13.4. Statewide IT Standards are developed, approved, updated, and maintained in accordance with *Statewide Policy P105, Policies, Standards, and Procedures (PSPs).* Statewide IT Standards are developed and presented in a structured manner to promote understanding and use by all budget units.

5. DEFINITIONS AND ABBREVIATIONS

Refer to the Glossary of Terms located on the GITA website at http://www.azgita.gov/policies_standards for definitions and abbreviations.

6. REFERENCES

6.1. A. R. S. § 41-621 et seq., "Purchase of Insurance; coverage; limitations, exclusions; definitions."
6.2. A. R. S. § 41-1335 ((A (6 & 7))), "State Agency Information."
6.3. A. R. S. § 41-1339 (A), "Depository of State Archives."
6.4. A. R. S. § 41-1346 (A), "Records Management Program."
6.5. A. R. S. § 41-1461, "Definitions."
6.6. A. R. S. § 41-1463, "Discrimination; unlawful practices; definition."
6.7. A. R. S. § 41-1492 et seq., "Prohibition of Discrimination by Public Entities."
6.8. A. R. S. § 41-2501 et seq., "Arizona Procurement Codes, Applicability."
6.9. A. R. S. § 41-3501, "Definitions."
6.10. A. R. S. § 41-3504, "Powers and Duties of the Agency."
6.11. A. R. S. § 41-3521, "Information Technology Authorization Committee; members; terms; duties; compensation; definition."
6.12. A. R. S. § 44-7041, "Governmental Electronic Records."
6.13. Arizona Administrative Code, Title 2, Chapter 7, "Department of Administration Finance Division, Purchasing Office."
6.14. Arizona Administrative Code, Title 2, Chapter 10, "Department of Administration Risk Management Section."
6.15. Arizona Administrative Code, Title 2, Chapter 18, "Government Information Technology Agency."
6.16. "Records Retention and Disposition for Arizona State Agencies," Arizona State Library, Archives and Public Records, Records Management Division, March 2002.
6.17. State of Arizona Enterprise Architecture Documents.
  6.17.1. State of Arizona Enterprise Architecture Framework and Strategies.
  6.17.2. State of Arizona Target Data/Information Architecture.
  6.17.3. State of Arizona Target Network Architecture.
  6.17.4. State of Arizona Target Platform Architecture.
  6.17.5. State of Arizona Target Security Architecture.
  6.17.6. State of Arizona Target Software Architecture.
6.18. Statewide Policy P100, Information Technology.
6.19. Statewide Policy P136, IT Planning.
6.20. Statewide Policy P340, Project Investment Justification (PIJ).
  6.20.1. Statewide Standard P340-S340, Project Investment Justification (PIJ).
6.21. Statewide Policy P710, Network Architecture.
  6.21.1. Statewide Standard P710-S710, Network Infrastructure.

6.22. Statewide Policy P720, Platform Architecture.
  6.22.1. Statewide Standard P720-S720, Platform Infrastructure.
6.23. Statewide Policy P730, Software Architecture.
  6.23.1. Statewide Standard P730-S730, Applications and Related Software.
  6.23.2. Statewide Standard P730-S731, Software Productivity Tools.
6.24. Statewide Policy P740, Data/Information Architecture.
  6.24.1. Statewide Standard P740-S740, Data Modeling.
  6.24.2. Statewide Standard P740-S741, Classification of Data.
  6.24.3. Statewide Standard P740-S742, Database Access.
6.25. Statewide Policy P750, Service Oriented Architecture
6.26. Statewide Policy P800, IT Security.
  6.26.1. Statewide Standard P800-S805, Risk Management.
  6.26.2. Statewide Standard P800-S810, Account Management.
  6.26.3. Statewide Standard P800-S815, Configuration Management.
  6.26.4. Statewide Standard P800-S820, Authentication and Directory Services.
  6.26.5. Statewide Standard P800-S825, Session Controls.
  6.26.6. Statewide Standard P800-S830, Network Infrastructure.
  6.26.7. Statewide Standard P800-S850, Encryption Technologies.
  6.26.8. Statewide Standard P800-S855, Incident Response and Reporting.
  6.26.9. Statewide Standard P800-S860, Virus and Malicious Code Protection.
  6.26.10. Statewide Standard P800-S865, Business Continuity/Disaster Recovery (BCDR).
  6.26.11. Statewide Standard P800-S870, Backups.
  6.26.12. Statewide Standard P800-S875, Maintenance.
  6.26.13. Statewide Standard P800-S880, Media Sanitizing/Disposal.
  6.26.14. Statewide Standard P800-S885, Physical Security.
  6.26.15. Statewide Standard P800-S890, Personnel Security.
  6.26.16. Statewide Standard P800-S895, Security Training and Awareness.

7. ATTACHMENTS

None.