STATE of ARIZONA

Government **I**nformation **T**echnology **A**gency	**Statewide** **STANDARD** <u>P730-S731 Rev 3.0</u>	**TITLE:** <u>**Software Productivity Tools**</u> **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 (IT) (A.R.S. § 41-3504(A (1))), including the formulation of policies to effectuate the purposes of the agency (AR.S. § 41-3504(A (13))) and adopting statewide technical, coordination, and security standards (A.R.S. § 41-3504(A (1(a)))).

2. **PURPOSE**

   The purpose of this standard is to coordinate budget unit and State implementations of productivity software used to automate and support budget unit business processes by ensuring selection and use of productivity software that allows for the transparent exchange of data and information; is flexible and adaptable to changing technology, business, and information requirements; and that utilizes common, proven, and pervasive, open, products and services.

3. **SCOPE**

   This applies to all budget units. A budget unit is defined as a department, commission, board, institution or other agency of the state 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 colleges and the legislative or 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 Agency.

4. **STANDARD**

   The following standards for productivity software, in support of budget unit business functions, provide for effective collaboration and improve the quality, usefulness, and efficiency of resources and information throughout the State.

   4.1. <u>TRANSPARENT INTEROPERABILITY</u>: The State's heterogeneous environment requires productivity software that is capable of transparently transferring and exchanging information with other productivity software in place across the State.
   - Productivity software shall allow the transparent exchange of content information and data with the original formatting intact.
   - Whenever proprietary formats are used, the capability shall be provided to convert documents (reports, spreadsheets, messages, etc.) to formats acceptable for content exchange with the receiving productivity software.

- For SOA-based applications an Integrated Services Environment (ISE) shall be used to develop, debug and deploy services.

4.2. <u>E-MAIL</u>: E-mail applications and their associated productivity software shall conform to recognized standards SMTP, S/MIME, IMAP4, and LDAP to ensure interoperability and the effective exchange of information.
   - E-mail systems shall have the capability of supporting multiple email clients in a heterogeneous, distributed environment.
   - E-mail systems should allow a browser front-end.
   - E-mail systems shall allow for the transmission, exchange, viewing, and editing of a variety of attachments. The original format of an attachment must be maintained and not altered.
   - E-mail message transport and storage shall be secure, meeting the requirements of *Statewide Policy P800, IT Security* and related statewide IT security standards.
   - E-mail clients should be capable of email-enabling other productivity software through standard application programming interfaces (APIs) such as MAPI, VIM, CMC, etc., to enhance interoperability and productivity.

4.3. <u>CALENDARING AND SCHEDULING</u>: Calendaring and scheduling (C&S) software should align with proposed IETF standards to allow for interoperability between differing products.
   - C&S clients should allow a browser front-end with secure remote and proxy access.
   - C&S software should provide for attachments to the notification message.
   - C&S software should allow for the creation of both private and public notification groups and contact lists.
   - C&S software should enable task and resource management.

4.4. <u>PATCH MANAGEMENT</u>: Budget units shall develop and implement written procedures that identify roles and responsibilities for implementing patch management that include the following activities:

   4.4.1. Designated budget unit employees or contractors shall proactively monitor for productivity software patches for all platform devices attached to their network by ensuring that applicable patches are correctly acquired, tested, and installed in a timely manner. Productivity software manufacturers, security organizations, security vendors, and the Arizona Department of Administration (ADOA) Statewide Infrastructure Protection Center (SIPC), provide various tools and services to assist in identifying vulnerabilities and respective patches.

   4.4.2. Where practical and feasible, budget units shall test patches in a test environment prior to installing the patch. Testing exposes detrimental impacts to internal/external enterprise-wide application software systems, community-of-interest application software systems, and other third-party application software systems.

4.4.3. Budget units shall query SIPC prior to installing patches in production to determine if other State budget units have experienced problems during testing or post-installation. Budget units shall report testing and production problems discovered with patches to SIPC.

4.4.4. Patches shall be installed (use of an automated tool is recommended) on all affected platform devices. Designated employees or contractors shall monitor the status of patches once they are installed.

4.4.5. Patches make software changes to the configuration of a platform device and shall be controlled and documented in accordance with *Statewide Standard P800-S815, Configuration Management.*

4.5. <u>INTELLECTUAL PROPERTY</u>: All productivity software shall conform to requirements in *Statewide Policy P252, Intellectual Property* to fully comply with all legal provisions governing copyright laws and authorial integrity.

4.6. <u>CONFIGURATION MANAGEMENT</u>: Software applications (assets) shall be controlled, inventoried and managed in accordance with *P800-S815, Configuration Management.*

4.7. <u>TARGET PROGRAMMING, DATABASE, AND PRODUCTIVITY SOFTWARE TABLE</u>: Given the dynamic nature of target software lifecycles and advances in the information technology industry, changes to the Arizona Target Programming, Database, and Productivity Software table are inevitable.

- When a budget unit plans to implement a productivity software product not included on the current Arizona Target Programming, Database, and Productivity Software table[1], the CIO shall submit a Target Programming, Database, and Productivity Software Architecture Assessment (Attachment A) to GITA either in advance of or concurrent with the Project Investment Justification (PIJ) submittal.
- Requests for changes to programming, database, and productivity software ratings shall come from Budget unit CIOs via submittal to GITA of a completed Target Software Architecture Assessment (Attachment A) for the item requiring change.
- Arizona's State CIO in conjunction with the CIO Council shall have final approval of all software assessment ratings, whether conducted virtually or at a CIO Council meeting.

5.　DEFINITIONS AND ABBREVIATIONS

5.1. <u>Productivity Software</u> encompasses office automation and collaborative software products and tools, such as collaborative groupware, e-mail, calendaring and scheduling, word processing, spreadsheet, presentation, graphic applications, report writers, personal databases, etc., and productivity software components.

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[1] The Arizona *Target Software Programming, Database, and Productivity Software* table is available at: http://www.azgita.gov/enterprise_architecture/NEW/Software_Arch/appendix%20C.pdf.

5.2. Refer to the PSP Glossary of Terms located on the GITA website at http://www.azgita.gov/policies_standards for additional 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. § 41-1461, "Definitions."

6.5. A. R. S. § 41-1463, "Discrimination; unlawful practices; definition."

6.6. A. R. S. § 41-1492 et seq., "Prohibition of Discrimination by Public Entities."

6.7. A. R. S. § 41-2501 et seq., "Arizona Procurement Codes, Applicability."

6.8. A. R. S. § 41-3501, "Definitions."

6.9. A. R. S. § 41-3504, "Powers and Duties of the Agency."

6.10. A. R. S. § 41-3521, "Information Technology Authorization Committee; members; terms; duties; compensation; definition."

6.11. A. R. S. § 44-7041, "Governmental Electronic Records."

6.12. Arizona Administrative Code, Title 2, Chapter 7, "Department of Administration Finance Division, Purchasing Office."

6.13. Arizona Administrative Code, Title 2, Chapter 10, "Department of Administration Risk Management Section."

6.14. Arizona Administrative Code, Title 2, Chapter 18, "Government Information Technology Agency."

6.15. State of Arizona Target Network Architecture.

6.16. State of Arizona Target Platform Architecture.

6.17. State of Arizona Target Security Architecture

6.18. State of Arizona Target Software Architecture.

6.19. Statewide Policy P100, Information Technology.

6.20. Statewide Policy P252, Intellectual Property.

6.21. Statewide Policy P700, Enterprise Architecture.

6.22. Statewide Policy P710, Network Architecture.

6.23. Statewide Policy P720, Platform Architecture.

6.24. Statewide Policy P730, Software Architecture.

6.25. Statewide Policy P800, IT Security.

6.25.1. Statewide Standard P800-S815, Configuration Management.

6.26. Statewide Policy P750, Service Oriented Architecture.

7. **ATTACHMENTS**

Attachment A – "Target Software Architecture Assessment"

ATTACHMENT A.   TARGET SOFTWARE ARCHITECTURE ASSESSMENT

This assessment is an evaluative tool intended to determine the "readiness" level of interoperability, functionality, scalability, and adaptability of software relative to enabling new business opportunities and providing new e-government solutions for delivering service in the future. It is designed to support the planning and implementation of Target Software Architecture principles, recommended standards, and best practices. It addresses the alignment of the software applications and associated programming, database, productivity, and utility software proposed in a PIJ with Enterprise Architecture. It describes major attributes and characteristics derived from *Statewide Policy P100, Information Technology*, and the principles and recommended standards and best practices contained in the Target Software Architecture.

Ratings for programming, database, and productivity software are based on the latest production release of the software. Utility software products used in conjunction with target network and platform architectures are considered target.

This assessment is applicable for all software reported to the Information Services Inventory System (ISIS) as defined by *Statewide Standard P800-S815, Configuration Management*.

Score. Questions for the four (4) software categories are scored with one (1) point for a "Yes" answer and zero (0) for a "No" answer. **Maximum possible** is the total number of questions for each category.

Agency/Community of Interest: _____

Software Item Name: _____

Attributes/Characteristics	Maximum Possible	Score	Description
1. Functionality, scalability, and adaptability, emphasizing client interaction **(Software Applications only)**	5		Software Applications designed to fulfill business requirements and maximize the efficiency and effectiveness of business functions: able to scale and adapt as business requirements change and expand; that are interoperable, modular, and deployable across the State enterprise; and that support e-government and client self-sufficiency through browser-based access, regardless of location.
2. Platform independence and use of non-proprietary technologies	5		Addresses interoperability, portability, and integration across platforms utilizing open and/or de-facto standard protocols, programming languages, middleware, development tools, databases, utilities, etc.
3. Exchange of information, integration with other software	5		Utilizes common, standard interfaces and/or middleware having the ability to interoperate and integrate with other software without requiring custom programming or intermediate, interface-specific applications.
4. Ability to maximize (take full advantage of) Target Network, Security, and Platform Architectures	5		Has the capability to conform to, and adhere to, the standards and best practices delineated in the other domain architectures without requiring substantial modifications.
Total Rating Points	20/15		

Software when *italicized* in an assessment question encompasses all five (5) categories of Software Architecture, including:
1. Software Applications
2. Programming Software
3. Productivity Software
4. Database Software
5. Utility Software

Software Item Name: _____

	Yes
1. Functionality, scalability, and adaptability refer to software applications that have the ability to scale and adapt as business requirements change and expand; are interoperable, modular, and deployable across the State enterprise; and that emphasize e-government and client self-sufficiency through browser-based access, regardless of location. **(Software Applications only)**	
1. Is the software application extensible (capable of being expanded or customized), adaptive (the adjustment or modification that makes something more fit given the conditions of its environment), and capable of accommodating increased demands for service without substantial modifications and additional costs?	
2. Is the software application developed and deployed utilizing open and/or de-facto standard protocols, languages, development tools, databases, etc.?	
3. Is a browser or GUI presentation layer available for the software application?	
4. Does the software application emulate the "look and feel" of the client device's operating system and productivity software?	
5. Does the software application support e-government solutions and/or end user self-sufficiency or self-service?	
2. Platform independence and use of non-proprietary technologies addresses interoperability and portability across platforms utilizing open and/or de-facto standard protocols, programming languages, middleware, development tools, databases, utilities, etc.	
1. Is the *software*, as configured, portable, and accessible across platforms in use within the subject agencies or community of interest?	
2. Is the *software*, including version levels, consistent with current deployments of like or similar *software* within the subject agencies or community of interest?	
3. Is the *software*, as configured, platform independent, without proprietary issues and requirements?	
4. Is the *software* designed for, and/or supports, n-tier-oriented architecture deployment and implementation?	
5. Does the *software* allow for, or provide open and/or de-facto standard interfaces for, a variety of end-user client devices, server and storage platforms, and database products?	
3. Exchange of information, integration with other software emphasizes common standard interfaces and/or middleware having the ability to interoperate and integrate with other software without requiring custom programming and intermediate interface-specific applications.	
1. Does the *software*, as configured, provide for and/or support (directly or through extensions) the transparent transfer and exchange of information with other software products through open or de-facto industry standards?	
2. Does the *software* utilize target middleware technologies or open or de-facto industry standards for communicating and exchanging information with other software products?	
3. Does the *software* provide for and/or support the integration of, or interfacing with, productivity software currently deployed within the subject agencies or community of interest?	
4. Does the *software* provide the capability for sharing common software services and potential reuse of components?	
5. Is the *software*, as configured, unrestricted by any proprietary or vendor-specific integration requirements?	
4. Ability to maximize Target Network, Security, and Platform Architectures addresses the capability to conform to, and adhere to, the standards and best practices delineated in the other domain architectures, without requiring substantial modifications.	
1. Is the *software* capable of providing and/or supporting secure (as defined by the AZ EA Target Security Architecture) end-user interface access without substantial modifications, regardless of end-user location?	
2. Does the *software*, as configured, utilize target Network and Platform operating systems?	
3. Are the versions of the target Network and Platform operating systems utilized by the *software* consistent with current deployments within the subject agencies or community of interest?	
4. Do the security services included with the *software* align with Target Security Architecture and adhere with all security, confidentiality, and privacy policies as well as applicable statutes? If no security services are included, is the *software* unrestricted to align with Target Security Architecture?	
5. Is the *software* capable of being managed and maintained with standard SNMP-based management tools?	
Total Rating Points	

Please refer to http://www.azgita.gov/enterprise_architecture/NEW/Software_Arch/appendix%20C.pdf for latest Target programming, database, and productivity software table.