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1. Document History

Date	Version	Editor	Change
July 21, 2006	1.0	Scott Came	Initial Draft
August 4, 2006	1.1	Scott Came	Second Draft

November 16, 2006	1.2	Paul Warren Douglas	EAC and Documenter Team revisions
November 30, 2006	1.3	Paul Warren Douglas	Documenter Team revisions - Near Final Draft
December 6, 2006	1.4	Paul Warren Douglas	Documenter Team final revisions to present to EAC for endorsement, and EAC edits
December 13, 2006	1.5	Paul Warren Douglas	EAC edits for endorsement Changed status to EA Committee document
January 4, 2007	1.6	Paul Warren Douglas	ISB Briefing suggested edit to SLA, and minor edits for changing 'standards' to governance within document
January 8, 2007	2.0	Trina Regan	Updated to ISB Format

2. Document Context

This document currently has ISB document status. This status signifies that the document has been adopted by a vote of the Information Services Board. For more information about the ISB Enterprise Architecture Committee and its initiative, please visit the EA Committee website at:

<http://isb.wa.gov/committees/enterprise/index.aspx>.

3. Introduction and Purpose

The purpose of this document is to establish a governance structure for the state's integration architecture, services deployed within that architecture, and infrastructure that supports integration.

This document answers the following questions:

- How can the state manage and control changes to service interfaces?
- How can the state identify versions of services, and associate sets of service artifacts

with a version identifier?

- How can the state ensure that agencies reuse services properly, only creating variants of services when justified by a business case?
- How can the state ensure that services properly achieve their advertised REAL-WORLD effect?
- How can the state ensure that service interfaces conform to the standards of a service interaction profile within the architecture?
- What are the standard issues that agencies should consider addressing in the service-level agreement (SLA) for a service?

This document does not provide guidance on overall business or information technology governance issues. In particular, it does not suggest which services agencies should provide to one another, nor does it suggest which agencies should provide which services. These governance issues should be addressed by individual projects or system implementation initiatives.

4. Scope

The ISB Integration Architecture standards available at:

<http://isb.wa.gov/policies/eaprogram.aspx> [1] apply to executive and judicial branch agencies and educational institutions. Academic and research applications at institutions of higher education are exempted. In this document, the terms "state agency" and "agency" mean any agency or institution within the scope of the previous paragraph, and the term "state enterprise" means all agencies and institutions (collectively) within the scope of the previous paragraph.

Starting November 9, 2006, the Integration Architecture Standards will govern the planning and construction of all applications that share data with other agencies.

Exemption requests must be submitted to the DIS Management and Oversight of Strategic Technologies Division and will be forwarded to the ISB for decision. Applications existing or under construction as of November 9, 2006, are not required to immediately comply, but will be required to comply when redesigned or replaced.

5. Public and Private Services

According to the [OASIS] SOA Reference Model [SOA-RM], 'private services' and 'public services' are two broad categories of services within service oriented architectures. For purposes of this document, and integration architecture, these terms should not be confused with 'public and private government services.' A PRIVATE SERVICE is one that an agency offers to a known, finite, specific set of consumers. Private services should be governed by specific service level agreements negotiated between the consumers and the provider. A PUBLIC SERVICE is one that an agency offers to a much broader set of consumers whose identity cannot be determined in advance, and that may change regularly. Public services should be governed by generic service level agreements that the provider publishes publicly with the service

description, and that apply to all consumers.

The standards in this document will distinguish governance mechanisms for public and private services, where appropriate.

6. Roles and Responsibilities

This section establishes the governance of integration architecture, infrastructure, and services.

6.1. Change Management

Change management standards define the way in which the state will manage and control changes to service interfaces (both public and private) and the shared integration infrastructure. Change management includes the management of the initial deployment of a service.

6.1.1. Public Services

Each public service shall have an agency responsible for provisioning the service. This agency is called the "provisioner." The provisioner may represent the interests of several agencies through a program office or similar organizational unit; however, there is a single entity responsible for provisioning the service.

The provisioner is responsible for identifying a group of stakeholders of the service. This should primarily include agencies responsible for current or planned consumer systems that use (or will use) the service, but may also include other stakeholders. The provisioner shall consult with this stakeholder group when considering changes to a service's real-world effect or interface. This consultation shall begin with a notification, using the service repository's notification capabilities (described in [Repository Solution Set]) and other appropriate mechanisms (for example, announcements at a Customer Advisory Board meeting). The standard service-level agreement for the service shall state clearly who has the final authority to authorize changes to the service (e.g., can the provisioner make the decision after consulting the stakeholder group, or must the provisioner seek a majority or consensus of the stakeholder group in favor of the change.)

The provisioner is responsible for the implementation and proper functioning of the service, but need not inform the stakeholder group of any service implementation changes that do not change the interface or real-world effect. The provisioner is responsible for the implementation of adapters that connect provider systems to the integration infrastructure, and is also responsible for implementing and maintaining any orchestrations involved in the implementation of the service.

For definitions of the concepts real-world effect, service interface, provider system, adapter, and orchestration, the reader should consult [CITRA].

6.1.2. Private Services

The provisioner of a private service shall negotiate change management processes with consumers of the service, and shall establish those processes in the service-level agreements.

The agreement shall specify, at a minimum:

- Under what conditions (including how often) a provisioner may change the service's interface
- How far in advance of a proposed change the provisioner must notify consumers of the intent to change
- How to resolve disputes between consumers regarding the viability or desirability of a change to the interface
- How the partners will fund and implement system changes that result from the interface change

6.1.3. Infrastructure

The Integration Competency Center (ICC), defined in section 6 below, will not typically be the provisioner of a service, but will manage changes to the shared integration infrastructure environment according to DIS' standard change management processes. The ICC shall be responsible for notifying users of the infrastructure about planned changes, consulting with users, and coordinating with users' project schedules. The standard service-level agreement into which the ICC enters with agencies to provide infrastructure and repository access shall establish change procedures, notification windows, and the decision-making process.

6.2. Configuration Management

The provisioner of a service is responsible for assigning version labels to each new version of a service, according to the following convention. A version label has four parts: a major version number, a minor version number, a point version number, and a build number. For example, version 1.2.3.4 has major version number 1, minor version number 2, point version number 3, and the build number is 4.

A point version increment indicates a cosmetic change to a service interface that has no impact on the behavior of the service or the interaction of consumers with the service. An example would be correcting or adding documentation to the interface description. A minor version increment indicates a change to the interface that has very minor or no impact on existing consumer implementations. That is, the new service interface is backwards compatible with previous versions.

A major version increment indicates a change to the interface, or policies associated with use

of the service, that has significant impact on existing consumer implementations. After observing the change management standards in section 6.1 above, if a service provisioner makes a change to a service, the provisioner updates the service repository to reflect the new version.

6.3. Quality Assurance

Mechanisms are necessary to ensure that services reliably achieve their advertised real-world effect, and that each service interface conforms to a service interaction profile.

6.3.1. Assurance of Real-World Effect

The provisioner of a service is responsible for assuring the quality of the service, in particular making sure the service properly achieves the stated real-world effect. The ICC can assist the provisioner in fulfilling this responsibility (for example, by providing a version of the infrastructure platform dedicated to testing), but the final responsibility rests with the provisioner.

Provisioners of public services shall consider providing tools to assist consumers in testing consumer systems that use the service. These tools could include:

- Providing a standalone implementation of the service interface(s) that a consumer can use in developing a consumer system, including basic testing
- Deploying the service in a test environment managed by the ICC to support more sophisticated testing and to test performance

Services deployed on the integration infrastructure platform and service models stored in the shared service repository must conform to any standards adopted by the Information Services Board in the area of system integration. In particular, service interfaces must conform to a service interaction profile standards (currently defined in [Web Services SIP], [MQ SIP], and [File Drop SIP]), and service models should conform to service modeling standards (defined in [SMG]), in order to use the shared infrastructure and repository. The ICC, in coordination with the Management and Oversight of Strategic Technologies Division (MOSTD) of DIS, are responsible for advising agencies on public service design and implementation to ensure conformance with standards and service interaction profiles. The ICC shall be responsible for ensuring that any service deployed on the shared integration infrastructure platform, and any service model stored in the shared service repository, conforms to the standards.

6.4. Service Level Agreement When establishing a service-level agreement for a service, the parties (provisioner and consumer(s)) shall consider addressing the following issues in the agreement:

6.3.2. Assurance of Standards and Interaction Profile Conformance

Availability requirements (with what probability is the service available for interaction; provisions for negotiations and notifications for outages)

Responsiveness requirements (how quickly does the service respond, both synchronously and asynchronously)

Privacy requirements (what restrictions are there on what the parties may do with information that they obtain as part of the service interaction)

Change management processes (as discussed in section 6.1 above) Financial aspects (does the provider charge a fee for usage of the service)

6.5. Service Reuse Services and interfaces fall under the Enterprise Architecture Commonality Principle. Services and interfaces shall be designated as Tier One common assets upon demonstration of a clear business case; once designated as common, a business case is required for an agency to invest in and provide a duplicate service or interface. It is within the role of the ICC to promote the reuse of services and interfaces, even when those services or interfaces have not been designated Tier One common assets. Processes for developing and defining Tier One services for reuse should be defined by the EA Committee as the common services architecture is documented. Provisioners can attach policies to services that govern their reuse, and incorporate these policies into the service-level agreement associated with the service. For instance, a provisioner can prevent users from ?repackaging? a service (simply wrapping the service interface with another service that the user provides) and changing the conditions of use (for instance, by charging users for access to the service.)

7. Integration Competency Center

The standards in this document refer to an organizational unit called an Integration Competency Center (ICC) to support interagency system integration. An ICC is a key to the delivery of quality and reliable enterprise integration services, and is an important facilitator of an enterprise approach to integration. The main objective of the ICC is to improve the efficiency and effectiveness of system integration activities, through close coordination of shared integration infrastructure with system implementation projects. This coordination is the responsibility of a team of skilled technical staff that has two principal roles:

The operational function maintains and monitors the infrastructure of the enterprise integration system. This is a support job, somewhat similar to network or system management, except that it deals with application-level logic and middleware instead of lower-level network or server management technical levels.

The development function helps developers in each application project team in the design and build of their connections (adapters) into the integration infrastructure. This usually also involves assembling and maintaining documentation (interface metadata) for the application interactions. This is similar to a data administration or database administration function. The development function also includes ensuring that agencies and projects are aware of available shared integration infrastructure and how to use it to accomplish project objectives.

As part of fulfilling both of these roles, the ICC maintains a single statewide repository of system interfaces (called Service Models in [CITRA]). The ICC ensures that service models are consistent in format and content across the enterprise, ensures that each model contains proper, consistent metadata, owner agency identified as accountable for the service, and ensures that models reflect the reuse of existing services to meet the needs of new projects. Industry experience demonstrates that consistent application of standards, usage of infrastructure, and reuse of services is much less likely to occur without the centralized coordination function provided by an ICC. The Chief Integration Architect will manage and lead the ICC. This position will have overall responsibility for the proper functioning of the infrastructure, for delivery of quality consulting services to agencies, and for making and communicating the decisions assigned to the ICC by these standards. The Department of Information Services will manage the ICC, and is responsible for provisioning the shared integration infrastructure. This infrastructure includes mechanisms to transmit messages between systems (messaging middleware, defined in [Platform Solution Set]) and a repository to store and display service models and interface descriptions (defined in [Repository Solution Set]). The ICC will support integration between agencies. Individual agencies may form an organizational unit similar to an ICC to support system integration within each agency; the statewide ICC may serve as a resource and consultant to agency ICC units as needed.

8. References

CITRA

Washington State Information Services Board, Enterprise Architecture Committee (2006). Conceptual Integration Technical Reference Architecture, Information Services Board.

File Drop

Washington State Information Services Board, Enterprise Architecture Committee (2006). File Drop Service Interaction Profile Standards, Information Services Board.

SIP

Platform Solution Set Repository Solution Set SMG SOA-RM Web Services SIP MQ SIP

Washington State Department of Information Services, Enterprise Architecture Program (2006). Integration Infrastructure Solution Set, Information Services Board. Washington State Department of Information Services, Enterprise Architecture Program (2006). Service Repository Solution Set, Information Services Board. Washington State Information Services Board, Enterprise Architecture Committee (2006). Service Modeling Standards, Information Services Board Reference Model for Service Oriented Architectures, Working Draft 11. Organization for the Advancement of Structured Information Standards (OASIS) 2005. Washington State Information Services Board, Enterprise Architecture Committee (2006). Web Services Service Interaction Profile Standards, Information Services Board. Washington

State Information Services Board, Enterprise Architecture Committee (2006). MQ Service Interaction Profile Standards, Information Services Board.

Appendix A: Documenter Team

This document was developed through the Integration Architecture enterprise architect initiative, chartered December 14, 2005. The following individuals were members of the Documenter Team for this initiative, and participated in review of this document.

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Integration Services Governance

Appendix B: Review Log

The following feedback on this document was received by the Enterprise Architecture Program;

the response to each contribution is noted below.

Review by whom and when	Contribution	Response
November 30, 2006	<ul style="list-style-type: none">• Changed document title to reflect document content.• Added additional descriptions for public and private services terms• Changed guidelines to standards where applicable• Changed should to shall where applicable• Revised references to reflect ISB standards• Revised Websphere MQ Service references to reflect MQ Service Profile revisions• Removed reference to Gartner Hype Cycle and predictions• Revised ICC language to reflect an implemented ICC rather than recommendations for implementing the ICC• Moved ICC section to Section 6.	Incorporated into document.
December 6, 2006	<ul style="list-style-type: none">• Minor editorial changes for readability by the Documenter Team• Final DT endorsement, ready for EAC approval.	Incorporated into document.
December 6, 2006	<ul style="list-style-type: none">• Added 'build number' information to 5.2 Configuration Management• Minor editorial changes	Incorporated into document.
1.	<ul style="list-style-type: none">• Added Scope statement	

December 13, 2006	<ul style="list-style-type: none"> • Changed Standards to Governance in title and sectional headings to more appropriately classify document type • Modified Scope intro to reflect changes • Changed title of section 6 to Roles and Responsibilities 	Incorporated into document.
	<ul style="list-style-type: none"> • Added 'Processes for developing and defining Tier One services' directional statement within 6.5 Service Reuse 	
January 4, 2007	<ul style="list-style-type: none"> • Modified 6.4 Service Level Agreement, Availability to include provisions for negotiating for outages 	Incorporated into document.
January 8, 2007	<ul style="list-style-type: none"> • Modified document to ISB document status 	Document changed to version 2.0

Source URL: <https://ocio.wa.gov/policies/1833010-integration-services-governance-standards>

Links:

[1] <http://isb.wa.gov/policies/eaprogram.aspx>