August 2009

A National Standards Framework for Government

AUSTRALIAN GOVERNMENT INFORMATION MANAGEMENT OFFICE (AGIMO)
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1 Overview

1.1 Purpose

This document describes a framework for initiating, endorsing and managing the development of Information and Communication Technology (ICT) standards to support the integration of cross agency business processes.

ICT professionals, who are seeking agreement on ICT standards for cross agency interaction, may consider this nationally endorsed Framework to be a useful tool in achieving this goal.

1.2 Scope

This Framework deals with the need to agree on standards for cross agency interaction. It does not deal with formal standards setting processes conducted by Standards Australia nor does it impinge on sectoral standards governance procedures already in place (eg Health, Education). Standards that are set through a legislative mandate such as statistical standards through the Australian Bureau of Statistics are also not in scope.

The effect of this framework is to provide a mechanism that delivers transparency and a degree of certainty by agencies involved in collaborative projects. One of the problems identified in cross agency interactions is the method, or protocol, through which agreement is reached on the standards to be applied in those interactions.

A foundation of this Framework is that agency and jurisdictional independence is respected. At the same time the Framework provides agencies and jurisdictions a way to help ensure the timely completion of collaborative projects.

Further support is also available through the National Collaboration Framework (NCF). The NCF contains a Collaborative Head Agreement addressing the legal issues involved in cross agency integrations.

1.3 Context

The diagram right illustrates how the standards process supports effective and efficient agency collaboration.

The National Standards Framework for Government will develop over time an agreed set of reusable information and process models that can be accessed by agencies through an on line repository or library.

By using agreed tools and methods, complying with governance and policy frameworks and avoiding duplication through reference to a whole of government architecture framework and information model, agencies will have a sound basis for delivering cross agency projects.
1.4 Background

The need for a coherent national approach to standardisation in government is becoming more apparent for two reasons.

Firstly, the advent of new technologies and methods associated with service oriented architecture and web services now makes it possible to develop scalable cross agency integrations on a cost effective basis. This approach derives from international best practice and is based on the separation of the logical design from the physical implementation of systems. Consequently the development and reuse of components becomes possible including information and process models as well as technical interface patterns.
Overview

The figure below demonstrates the method by which each layer of analysis (Why, What and How) is separate from the deployment technology. This delivers information and process models that are independent of specific technologies – thereby promoting reuse.

Figure 2 Approach to the Development of Information and Process Models

The second reason is that government policy objectives in the 21st century require greater agility by agencies. This often requires collaboration across portfolios and jurisdictions. Complex policy objectives related to water management, carbon trading, standard business reporting, national security, tax fraud etc all require the participation of a wide range of agencies.

In this context it is important that agencies have a mechanism for agreeing on a “standardised” way of exchanging data to help achieve those business outcomes. With an agreed mechanism and processes in place considerable time will be saved
as each new multi agency project won’t have to start from scratch. They will have an authoritative process to follow with the potential to reuse work already completed in other projects.

The scope of work covered by this Framework is the area between agencies. Agencies are of course free to use whatever processes and standards they like within their agency boundary. However, when agencies seek to exchange data across their agency boundary the requirement is to operate in a standardised environment or the “alignment interface”. The diagram on the following page indicates the areas that need to be aligned to achieve scalable integrations. The key alignment parameters are goals, processes, information, security and messaging.

Figure 3 Business Domain Model

Standardisation of information and processes can provide significant benefits to Australian governments through reduction in risk, increase in reuse and a higher level of interoperability (and hence efficiency) within and across jurisdictions. They support the effective delivery of services to citizens and business.

While established national and international standards bodies are active in delivering standards across a wide range of domains their processes take significant time to finalise. This is partly due to the much wider range of stakeholders (international, private/public sector) and the treatment of intellectual property (IP) issues.

Governments however can collaborate to deliver “standards” that support their requirement for immediate or near term business needs. In this context “standards” are authorised through administrative agreement and review mechanisms.
It’s important to differentiate between semantic and syntactic standards. Semantic standards define **terms and their meaning** – whether represented on paper, XML, or any other presentation. For example “Address.Locality.Text” might be the standard term for suburb or country town used in the context of “addressing”. Syntactic standards define standard ways to **represent** the semantic terms in various formats (paper, EDI, XML, etc).

The translation of a semantic standard to a syntactic standard requires the use of an agreed methodology that:
- is an open standard.
- conforms with international best practice.
- leads to consistent representations so that a component developed by one group can be re-used by another; and
- is accessible to the majority of developers – through appropriate training and support.

The use of a standard methodology is important because a developer can implement a standard in many different ways. Over time this will lead to degradation of a standard and reduced interoperability. Some domains have already well established methodologies (eg HL7 for Health). The Name and Address standard was developed using the UNCEFACT Modelling Methodology (UMM) which is an internationally agreed standard.
Key Features of a Standards Governance Process
2 Key Features of a Standards Governance Process

A key requirement of any standards process is that standards are developed, and seen to be developed, in an open collaborative, transparent manner to ensure both quality and trust. This implies a clearly defined process, timelines and decision making rules.

The standards development process should aim to maximise re-use of standard information components that have already been developed.

Finally, a standards process should enable agencies to publish and discover the standards. There needs to be a “library” or repository where a standard, once agreed, is stored and maintained – so there is a single source of truth. It is proposed that this facility be provided in GovDex.

2.1 Exception

It is not proposed that this Framework apply to the Defence or National Security communities. Given the requirement for a rigorous security environment it is proposed that these groups develop their own arrangements for governing standards.

However it is recommended that the Department of Defence be fully engaged in this framework in so far as their interactions outside the national security space (e.g., interactions with Veteran’s Affairs, Centrelink etc).

2.2 Jurisdictional Sign Off

Any proposed standard that impacts across jurisdictions must be considered by each affected jurisdiction before proceeding to a vote at the Cross Jurisdictional Interoperability Group (CJIG) for endorsement. This will only apply in matters that will be ultimately endorsed by the Cross Jurisdictional Chief Information Officers’ Committee (CJCIOC). For this reason it is recommended that each jurisdiction that wishes to participate in this regime develop a transparent, easy to use, standards governance process.

1 GovDex is a resource developed by the Department of Finance and Deregulation to support cross agency collaboration within and across jurisdictions.
Governance Structure

The key element of a governance structure is a community of stakeholders who have a business need to collaborate to agree on an ICT standard or set of standards to help them address their policy objectives.

The governance structure will meet the needs of these communities by providing a clear pathway to gaining endorsement of a standard by authorities such as the CJCIOC (for cross jurisdictional standards) and the Chief Information Officer Committee (CIOC) (where the standard requires endorsement in the Commonwealth jurisdiction\(^2\)).

The Project Communities own and control the lifecycle of the standards they develop. Funding for Project Communities comes from members of the community.

Project communities will be supported by a secretariat based in the Department of Finance and Deregulation. This will help ensure that standards are developed efficiently and effectively.

Based on the paper that was endorsed by the OCC, it is proposed project communities will be supported by a range of Support Services that will focus on ensuring that standards are developed efficiently and effectively. Funding for Support Services will be provided jointly under the auspices of the CJCIOC 50% funding by the Commonwealth with the remaining 50% to be funded by the States and Territories as per an agreed Grants Commission formula).

The diagram on the next page shows the elements that comprise the standards governance framework.

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\(^2\) In most cases it will be a requirement for the CIOC to endorse standards that affect Commonwealth agencies prior to wider consideration by the CJCIOC.
3.1 Orphan standards

In rare cases there will be a need for a standard that is ubiquitous with no obvious “natural” owner. Examples would be the Name and Address standard and the XML Namespace protocol. It is recommended that where this exists that either CJCIOC or CIOC, on the advice of the relevant working group, allocates responsibility for developing/
3 Governance Structure

maintaining the standard to a particular agency and authorises that agency to convene a working group to manage the standard.

3.2 Support Service Description

**Development Process:** This is an “off the shelf” standards development process that is endorsed by CJCIOC. It is the default process that communities must show compliance with in order to gain endorsement of their standard. Communities can apply to vary this process or apply another development process however they must first gain approval from the relevant working groups CJIIG or in the case of Australian Government agencies, the Australian Government Services Architecture Working Group (AGSAWG). A candidate development process is at Attachment 1.

An important part of the standards development process is to identify any opportunities to reuse existing standards (in part or whole).

**Methods and Tools:** Over time a range of methods and tools will be provided to help communities develop their standards. This includes case studies, modelling methodology (UMM), and already developed UML models. These tools and methods can be accessed through GovDex.

**Coordination:** The Coordination service helps communities interface with the various recommending and endorsing bodies. They also monitor the progress of the project communities to ensure that they stay on track and provides advice to the communities as they progress. This service also interfaces with Standards Australia and other international standards bodies such as OASIS, W3C and UN/CEFACT.

**Compliance:** The Compliance service supports Project Communities in the management of their standards over time. Each Project Community specifies the compliance criteria successive implementations must achieve. These criteria could vary depending on the type of implementation (e.g., third party commercial software, government agency implementation). Compliance could also be self-assessed or require independent third party verification.

**Marketing and Communication:** This service helps Project Communities develop a marketing and communication strategy for their standard and assists in the monitoring of implementation and obtaining user feedback. It also ensures general awareness about the development and take up of standards in government.
How it Works – A Walkthrough
4 How it Works – A Walkthrough

4.1 Example 1

The Electronic Development Application Forum is developing a national standard for development applications.

Representatives are appointed from each affected jurisdiction – in this case all States and Local Government Associations. (Commonwealth agencies are not represented).

A project proposal is developed and sent to the CJIG. It is proposed that the Standard Development and Endorsement Process at Attachment 1 be used to develop the standard.

The CJIG agrees to the proposal out of session (their representatives having been separately advised by jurisdictional representatives on the project team).

The Project team appoints a project leader and elects an editorial team. The Editor prepares the first draft of the specification which is then reviewed by project team members. When the Project Leader thinks a consensus can be reached a vote is taken. If 80% of participants agree and at least 6 jurisdictions agree then the vote is resolved in the affirmative.

The Project Leader submits the specification to the CJIG who then decides whether to recommend its adoption to the CJIOC.

4.2 Example 2

Centrelink, Immigration, ATO and DEWR agree to work together to develop a standard data definition for the exchange of data concerning employment assistance eligibility.

Representatives are appointed from each agency (can be more than one representative from each agency BUT only one vote per agency).

A project proposal is prepared and sent to the AGSAWG. The AGSAWG agree to the proposal and the project team selects a Project Leader and Editor. The Editor prepares the first draft of the specification which is then reviewed by project team members. When the Project Leader thinks a consensus can be reached a vote is taken. If at least all but one of the agencies agree then the vote is resolved in the affirmative.

The Project Leader submits the specification to the AGSAWG which then decides whether to recommend its adoption to the CIOC.
Figure 5 Development and Endorsement Process

**Standards endorsement process**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Project proposal</td>
<td>High level proposal to CJIWG/AWG who will identify project leader and make recommendations to CJCIOC and CIOC</td>
</tr>
<tr>
<td>2) Project authorisation</td>
<td>CJCIOC/CIIOC authorise the project and participants and set the timeframes</td>
</tr>
<tr>
<td>3) Requirements definition</td>
<td>Business requirements collected from project participants and stakeholders. Project leader documents scope and requirements</td>
</tr>
<tr>
<td>4) First draft</td>
<td>Election of editorial team. Methodology training if required. Editor creates the first draft specification</td>
</tr>
<tr>
<td>5) Review</td>
<td>Submit to project participants. Minimum 1 month review period. Must have a minimum 80% consensus. (6 jurisdictions when cross jurisdictional)</td>
</tr>
<tr>
<td>6) Compliance review</td>
<td>Apply compliance process and advise CJIWG/AWG</td>
</tr>
<tr>
<td>7) Implementation verification</td>
<td>Standard successfully deployed by a minimum of two agencies/organisations</td>
</tr>
<tr>
<td>8) Endorsement</td>
<td>CJIWG/AWG recommends endorsement of the standard to CJCIOC/CIIOC</td>
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</tbody>
</table>
This process can also be used for **subsequent** implementation of a standard to ensure compliance with the original standard. For example, if an agency chooses to use the recently developed AS 4590 Name and Address syntax standard for car registration, then the developer of that instance can obtain a compliance check. This will determine whether this particular instance of the standard has been developed according to the agreed methodology.

Note: The Name and Address standard comprises all possible data elements that could possibly be required for ANY instance of Name and Address. Most instances of the Name and Address standard will use a subset of the standard.

The endorsement process can be modified where appropriate where, for example, standards have already been developed through another process and are seeking endorsement retrospectively. It is up to each community to decide on the endorsement process they wish to adopt. The only requirement is that they must obtain approval from the recommending body (CJIG or AGSAWG). Should this proposal proceed then further work will be required develop objective endorsement criteria that take account of a range of scenarios.