SIF Systems Interoperability Framework
Association AU

TOWARDS SIF AU

→ SUMMARY OVERVIEW OF 12 PILOT PROJECTS

→ INTRODUCTION

The Digital Education Revolution envisages "technology enriched learning environments" for all young Australians. Putting the right information at the right time into the hands of learners, teachers, parents and policy makers is critical for its success.

Since 2007 Chief Information Officers from Australia's state and territory education systems, together with colleagues from the Catholic and Independent school sectors, supported by the Commonwealth Department of Education, Employment and Workplace Relations, have been building an open standard for interoperability between Australian schools to enable information to be used when and where it is needed. The work has centered on the use of the Systems Interoperability Framework (SIF) to facilitate the exchange of information.

This initiative, known as "Towards SIF AU", is a national program that operated from April 2009 to October 2010. It managed pilot projects that supported the "Business Case for Systems Interoperability in the Australian Schools Sector" which proposed a common approach to interoperability in the Australian school sector through solving real existing problems and creating re-usable materials for future use. The pilots evidenced savings on time, resouces and produced software items that are open for reuse for those beginning with their interactions with SIF.

The pilots and the program have enjoyed sucess with it's particpants contributing collaboratively to simplify processes and a continuing support of common problems in a standard way to produce shared benefits. The program's visible results were 12 pilot projects, over 100 participants, 600 pages of knowledgebase materials, 2 re-useable software frameworks, 8 open source agents, 3 ZIS servers available for projects to use and a downloadable demonstration kit. Each of the projects produced documentation and the materials that are available for reuse include webinars, solution documentation, and an index of participants all linked into an online website.

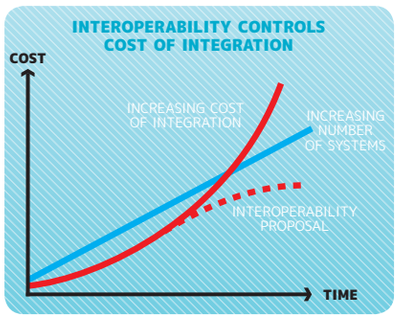
This flyer provides a summary of the pilot program and its achievements. The detailed activities and findings of the pilot program are listed in the summary case studies for each pilot, the in-depth Pilot Report and a comprehensive report compiled for the program sponsor Department Education Employment and Workplace Relations (DEEWR). For access to the resources from this program please contact info-au@sifassociation.org

→ REFLECTIONS

"*The project has delivered a successful proof of concept that teachers are able to more easily move beyond the confines of an education authority's prescribed learning management system and develop resources that can be moved between systems. Additionally, the further successful investigation into the transfer of assessment data between systems will be applicable at a national level and paves the way for transfer of other teaching/learning artefacts.*" - Lorraine Nicol, Director Education ICT, InTACT, ACT Department of Territory and Municipal Services

"*The two SIF AU projects that DoE Tas [has] been involved in over the past 12 months have enabled a very sound understanding by DoE Tas and its software vendors on the framework that will enable DoE Tas to leverage it in a Digital Regions Initiative project with our partners from the Catholic and Independent sectors. It will enable an easier exchange of data than was available previously.*" - Trevor Hill, Director, Information and Technology Services, Department of Education (Tas.)

"*SIF AU and collaboration between States or jurisdictions will enable interoperability and the sharing of important data. It will assist in enhancing availability and quality of information for students that move throughout Australia and will facilitate a higher level of cooperation between States. The Tri-Borders project has been an effective*



pilot to prove how SIF AU can assist in facilitating this cooperation." - Peter Malcolm, Acting Chief Information Officer, Technology & Knowledge Management Services, Department of Education and Childrens Services (S.A)

"*...I'd done many data integrations previously so why SIF? But with integrations the devil is in the details. Being a project that spanned multiple jurisdictions each with multiple school management systems and database platforms the project team could have spent a huge amount of time coming up with data specifications. With SIF we had an agreed specification that we could all work to...*" [Architect, NT-DET, Tri-Boarders]

→ KEY ACHIEVEMENTS

The Towards SIF AU team coordinated 12 pilots over 2 phases and each delivered specific benefits. Pilot projects involved State and Territory education departments as well as Victorian Catholic Schools. Pilot projects used products and services from ten vendors including Edustructures, Visual Software, RM Asia Pacific, Systemic Pty Ltd, Human Edge, The Learning Edge International, Insight4, VIPTone, Macquarie University, Education.au and Education Services Australia.

Each Phase 1 pilot successfully addressed a different specific technical requirement, showing the value of SIF within a jurisdiction. They tested SIF in the Australian context, including transfers of student information, and informed the development in the SIF Implementation Specification (Australia). Data generated during Phase 1 pilots were used to inform the Business Case showing benefits of SIF as an interoperability standard.

Phase 2 pilots showed the value of SIF in service delivery across jurisdictional boundaries. Many Phase 2 pilots involved sharing digital identities, where SIF was used to control the digital identity and login was solved by pairing OpenID with SIF to offer simple yet secure and robust solutions that could be reused.

The success of the Towards SIF AU pilots has been the delivery of project successes with tools or learnings that are re-usable in other projects and contexts. The open source common framework (developed as part of phase one) has been reused 6 times, the agent created for Me.edu extended the common framework with a cache which was then reused on the Scootle agent. Experince from the use of Open ID from Melco informed the decisions of three other pilots. The choice of how to create, map and use a SIF staging database was reused across three different states.

The business model was primarily built on findings from pilot projects that included there was a 28% cost saving within a Jursidiction reusing SIF, 25% saving from learning across Jurisdictions and up to a 50% reduction on costs in maintence due to the simplifcation of the number of interfaces and the use of a common approach to interoperability.

"*Working across Jurisdictions was improved becuase there was an enterprize level data model in the middle*" Greg Curits, Manager Application Support and Development – Projects, Department of Education Tasmania

SIF fulfills one important role in the broad landscape of interoperability which will work in tandem with many other tools and techniques, this program has provided progress on determining when it is right to use different options in standards based interoperability.

→ PILOT PROJECTS OVERVIEW

PHASE 1

Pilot 1.1a: Tasmania - Transfer of student details

The Department of Education Tasmania (DoE-Tas) manages identity information for staff and students and delivers that information securely to other systems within the enterprise. This pilot used SIF to communicate changes from this central Digital Identity system to Equella's digital learning repository.

Pilot 1.1b: WA - Realtime student data exchange

This pilot transferred centrally managed student, teacher, course and enrolment information into a Teaching and Learning System, verifying that the SIF Implementation Specification (Australia) worked well in this area and that standard SIF architecture could deal comfortably with high transaction loads.

Pilot 1.1c: DEECD - SIF Implementation Specification (Australia) confirmation

Unlike the now mature SIF Implementation Specification US, a SIF specification suitable for real-world Australian

→ FINDINGS

BUSINESS

- Latent demand for interoperability
- Common patterns of interoperability needs
- Jurisdictions' need control of peoples information

TECHNOLOGY

- Robustness and suitability of SIF
- Re-use benefits in collaboration on common items
- Access to expertise, tools and examples reduces costs

PROJECT METHODOLOGY

- Supporting people rather than direct projects assists cross organisation work
- Transparency and information online keeps people up to date
- Different requirements for engaging with jurisdictions of varying size.

THE FURTHER SUCCESSFUL INVESTIGATION INTO THE TRANSFER OF ASSESSMENT DATA BETWEEN SYSTEMS WILL BE APPLICABLE AT A NATIONAL LEVEL AND PAVES THE WAY FOR TRANSFER OF OTHER TEACHING/ LEARNING ARTEFACTS.

educational needs had never before been developed. This pilot helped define the required objects for all other pilots. The SIF Implementation Specification (Australia) Release Candidate 1, released early in the pilot process, was found to be viable and assisted by the SIF AU Data Standards Working Group it matured into the first version of an SIF Implementation Specification (Australia) 1.0

Pilot 1.2: Enterprise Scale Testing
This pilot tested the scalability, reliability and recoverability of the SIF Implementation Specification (Australia) using realistic test agents and infrastructure, set up by Visual Software Inc with Australia's large jurisdictions and peak loads in mind. It showed that SIF infrastructure could handle high loads for a sustained period with modest equipment, high reliability and recovery from failure modes.

Pilot 1.3: SA - Administration Data Exchange
Use of SIF allowed SA DECS to demonstrate that SIF could be used to gather student data held across many individual schools systems to a central system whenever changes were made.

Pilot 1.4: VIC-CEO - Census and Reporting
To better report census information on its 180,000 students, the Catholic Education Office Melbourne (CEOM) through this pilot demonstrated the synchronisation of distributed and heterogeneous student information to a central data store using SIF. This pilot has begun to move to production.

Pilot 1.5: National Systems Interoperability Service
This pilot provided interoperability to all other pilots by establishing 3 servers with SIF-enabling infrastructure from 3 SIF vendors. It showed that the SIF Implementation Specification (Australia) integrated well with vendor supplied SIF Software, and established conditions, costs and an evidential base for a permanent service.

PHASE 2
Pilot 2.1: Tri-Borders
To track the attendance of students who move between schools and state borders in WA, SA and NT, a cross-jurisdiction pilot project used SIF to gather attendance records from each jurisdiction and then matched them centrally to provide a view of attendance across all three jurisdictions.

Pilot 2.3 Reuse of National Infrastructure
This pilot showed how CEOM teachers could access Education Services Australia's me.edu.au teacher networking site from their authenticated e-learning environment without a further login, using an innovative combination of SIF and OpenID which allowed CEOM to retain continuous staff access management.

Pilot 2.4 Learning platform independence
This pilot took an important step forward in solving the interoperability puzzle by creating an innovative SIF/OpenID identity/authorisation model used with variations in three other pilots, as well as a SIF-based system which allowed assessment interpretation and collation to diverse systems.

Pilot 2.5. Cross Jurisdiction Access
The aim of this pilot was to provide access to Vic DEECD internal infrastructure and resources to approved staff at VIC-CEO. The pilot is reusing software from two previous pilots to demonstrate achieving this. It is due for completion in December 2010.

Pilot 2.6 Scootle Interoperability
This pilot extended the phase 1 pilot 1.1a and showed that Tasmanian teachers could securely access Education Services Australia's Scootle teaching learning resource, making it more attractive for teachers and students to use. It used a combined OpenID/SIF to provide solution to identity management, provisioning and authorisation beyond the jurisdiction.

→ ABOUT THE SYSTEMS INTEROPERABILITY FRAMEWORK

The Systems Interoperability Framework (SIF) is a simple but powerful approach to integrating information from diverse computer systems. SIF manages both the "what" and the "how" of information sharing. Its core components are: a specification of what is to be transferred (the SIF Implementation Specification); a software agent that maps the information in a computer system to the Specification; and a "traffic cop" directing the flow of information between systems known as the Zone Integration Server (ZIS).

The SIF Implementation Specification (Australia) is administered in Australia by the SIF Assocation Australian Management Board (SIFAAMB), and internationally approved by the SIF Association.

→ ACKNOWLEDGEMENTS

The Towards SIF AU Program acknowledges support provided by participating education authorities and the Online Curriculum Resources and Digital Architecture initiative, one of a suite of initiatives under the Australian Government's Digital Education Revolution (DER) provided by the Department of Education, Employment and Workplace Relations. The program was managed by the Towards SIF AU team based at the Victorian Department of Education and Early Childhood Development.

→ PROJECT SOLUTION PATTERNS

From solving common problems in consistent ways patterns emerged. These patterns can offer a way of reviewing the shared needs identified. These are summarised as:

IDENTITY PROVISIONING

Extending the control Jurisdictions have over their staff and students Digital Identities at school.

- Securely and cost effectively add services and applications for teachers and students.
- Linking and sharing services between education institutions
- Extending Digital Identity control into the Cloud

INFORMATION AGGREGATION

Bringing together information from a range of sources and a range of vendor applications into a central location

- Encourages competition and supports an open market
- Provides diversity and flexibility in purchasing options for schools
- Creates timely updates, previously once per year now can be done once per minute
- Provides basis for new business rules based on better information

PROGRESS TRANSFER

Near real-time information being sent on the progress of students

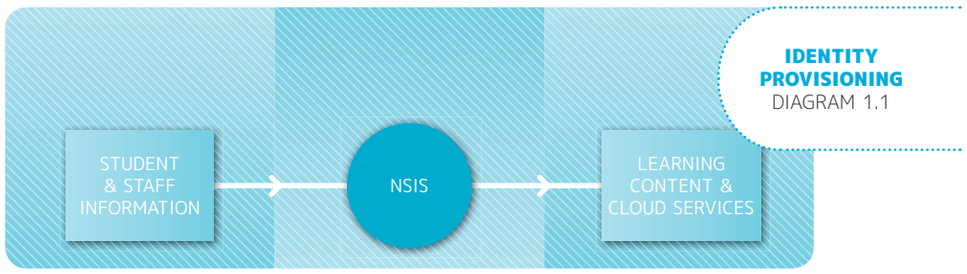
- Link what was recorded or done in one system back with another
- Report on students use of content in different systems
- Review attendance from a diverse set of schools in one place

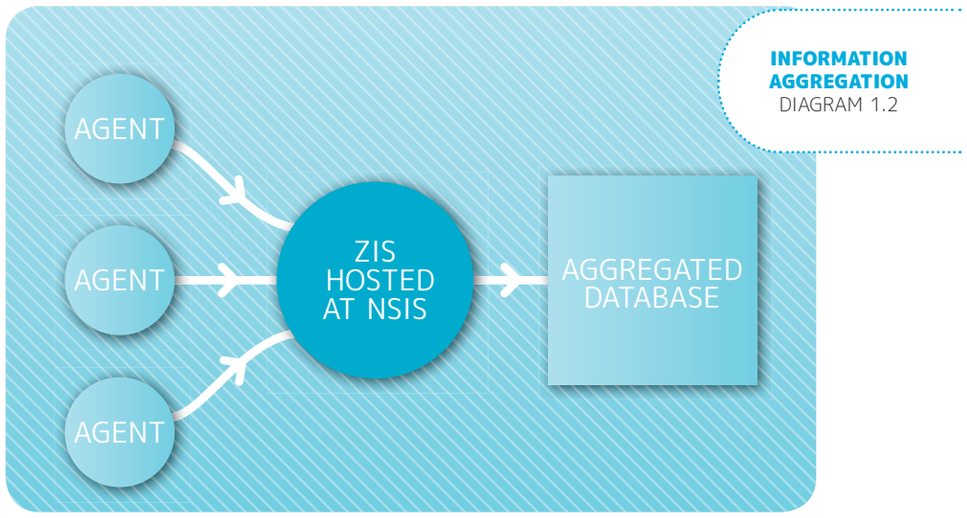
→ FIND OUT MORE

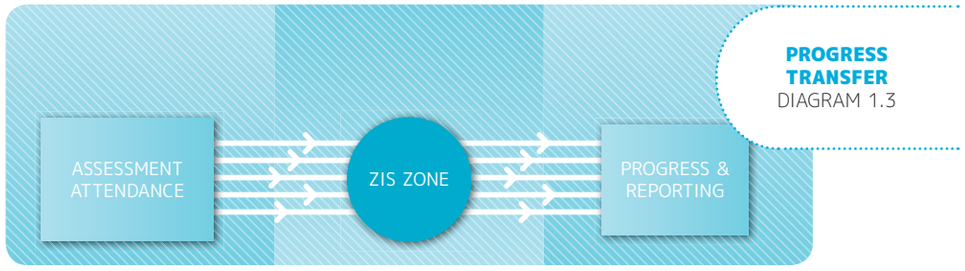
This study summarises 12 case studies on pilots from Tasmania, WA, SA, Catholic Education Office Melbourne, Enterprise Scale SIF, National Systems Interoperability Service and the SIF AU Specification, as well as Scootle Integration (TAS), Tri-Borders (WA, SA & NT), Cross Jurisdiction Integration (VIC & CEO), Reuse of National Infrastructure (CEOM & ESA) and Learning Platform Independence (ACT & MELCOE).

For more detailed information:
Find pilot case studies, the SIF AU Pilot Program Report and other useful information on the SIF AU website:
http://au.sifassociation.org/

Contact SIF AU by email:
info-au@sifassociation.org







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