



Guide to the SIF 2 Certification Program



www.A4L.org

March 2017, version 1.8

Contents

1. Introduction	2
1.1 What is SIF Certification?	2
1.2 What are the major pieces of collateral defining SIF Certification?	2
1.3 What SIF releases have Certification Programs?	3
1.4 How many releases does an application have to certify to?	4
1.5 Certification Collateral specifics	4
1.6 Additional Collateral for Compliance Testing.....	5
1.7 SIF Certification Email points	6
2. SIF Architectural Overview	7
3. Application Certification Process Options	9
3.1 Do it yourself.....	9
3.2 Work with an Agent Vendor	9
3.3 Leave everything to the Agent Vendor.....	9
APPENDIX.....	10
Certification Checklists.....	10
Checklist – Initial Certification.....	11
Checklist – Certification Renewals.....	12
PART ONE.....	12
PART TWO	12
Checklist – Amendment to existing SIF Certified products.....	13
Checklist – Update to an existing SIF Certified product	14
Checklist - Certification of an OEM (Original Equipment Manufacturer) or re-badged product	15
Checklist – Adding a Profile to a SIF Certified product	16
Glossary of Terms	17

1. Introduction

This SIF 2 Certification Guide is targeted at vendors and / or end users (applicants) who wish to officially certify that their product(s) conform to the SIF Standard or additionally one or more profiles. It documents all the steps required for SIF Certification and the certification policies which they support.

1.1 What is SIF Certification?

Simply put, any vendor or applicant's software product which has demonstrated conformance with the requirements contained in the SIF Specification under formal testing conditions is awarded SIF Certification. Once this is accomplished certification for profiles may be added for that product, subsequently, allowing the applicant to market the certified product to end users (school agencies and State Educational Agencies that utilize SIF implementations. The detailed set of requirements is identified in the applicable SIF Implementation specification, and the formalized testing capability is provided by the SIF Test Harness (Test Suite – see Glossary). Only the suppliers of a certified product may use the SIF Certification Logo in connection with their product.

1.2 What are the major pieces of collateral defining SIF Certification?

In addition to the information provided in this Guide, there are three other important documents located on the SIF Certification website at <http://www.a4l.org/page/SIFCertification>

- The *SIF Certification Program Policy* is the collection of rules and requirements which govern the SIF Certification Program
- The *Trademark License Agreement* defines the acceptable usage of the SIF Certification Logo.
- The *SIF Certification Agreement* contains the formal set of responsibilities and obligations for all parties involved with the SIF Certification process

Applicants must conform with to the terms and conditions contained in all three of these documents prior to certification. The more significant highlights of the SIF certification process are outlined below, and later sections of this guide provide more comprehensive information.

Highlights of the SIF Certification Program

1. The SIF Certification Program is administered by the SIF Association doing business as (dba) Access 4 Learning Community.
2. After an applicant has formally agreed to all the required terms, a license to use the SIF Certification Logo will be awarded to their product once it has passed the applicable test suite(s), and the appropriate fee for certification testing has been paid.
3. The applicant must sign the *Trademark License Agreement*.
4. Certified products are subject to renewal of certification on a periodic basis as stated in the *SIF Certification Program Policy*. All profiles associated with that product will be renewed at the same time, regardless of when they were issued.
5. All product information supplied to the Access 4 Learning (A4L) Community will be treated as confidential.

At the end of this document is a [Certification Checklist](#) to help an applicant successfully navigate the registration process.

Note: In the event of any conflicts, this guide defers to the SIF Certification Policy, the Trademark License Agreement, and the SIF Certification Agreement.

1.3 What SIF releases have Certification Programs?

Not every release of the SIF Standard comes with its own individual certification program, although the A4L Community endeavors to provide a Test Suite for most. As of the time of this writing (November, 2012), the SIF Certification Program is currently associated with the following versions:

- SIF Implementation Specification, US Version 2.0r1
- SIF Implementation Specification, US Versions 2.3 – 2.6
- SIF Implementation Specification (United Kingdom), Version 1.1

The complete specifications for these and other SIF releases are located at <http://www.a4l.org/page/SIFSpecifications>

The Certification Program for the earlier SIF Implementation Specification, US Version 1.5r1 has been closed.

1.4 How many releases does an application have to certify to?

SIF minor releases are always constructed to avoid “breaking” legacy applications. It is then usually only necessary for a vendor to certify their application against one minor release within a major version, in order to demonstrate that there would be minimal interoperability issues with another application certified to any minor release for that major version.

An exception is where an end user requires a specific piece of functionality which was introduced in a later minor version, to be available to applications in the SIF solutions they are constructing. In such cases, the requirement might be for software which was SIF-certified to a particular minor release of the standard or later.

Additionally, an Educational Authority may designate a “data profile” that tightens and customizes the SIF Specification more closely to their specific needs. Examples of such customizations might include changing optional elements to mandatory or adding specific values to existing code lists. Depending upon the level of support desired, a specialized SIF Test Harness may be produced to validate these additional requirements are being met, and in some cases an entire profile-specific program may be created to certify vendor products to the profile.

1.5 Certification Collateral specifics

The collateral defining or explaining the SIF Certification process is located at on the SIF Certification website at <http://www.a4l.org/page/SIFCertification>. These documents cover the business rather than the technical issues surrounding the certification process. They include:

- The **SIF Certification Program Policy**, which defines the SIF Certification policies and procedures, including:
 - Details on what constitutes SIF Conformance
 - The test harness and its role in certification
 - The licensing requirements to display the SIF certification logo
 - How to have your product be included in the SIF Certified Products Registry.

This is generally the first document that you should review, as it overviews the remainder of the documents and agreements below, and describes when and how they should be used. It is located at: <http://www.a4l.org/resource/collection/D44B484D-4C49-4A46-BC51-FB1D3F672D15/SIF%20Certification%20Program%20Policy.pdf>

- The **SIF Certification Fee Schedule** which enumerates the certification product categories and contains the associated fee schedule at: <http://www.a4l.org/page/CertificationFees>

- The **Registry** of all certified SIF applications at:
<http://cert.sifassociation.org/SitePages/CertificationRegistry.aspx>
- The **Trademark License Agreement** (TMLA), filed once for each vendor, which defines the responsibilities of both the A4L Community and the Licensee regarding the use of the SIF Certification logo on a product which successfully passed certification testing, at: <http://www.a4l.org/resource/collection/D44B484D-4C49-4A46-BC51-FB1D3F672D15/Trademark%20License%20Agreement%20-%20TMLA.pdf>
- The **SIF Certification Agreement**, filed once for each product undergoing certification, in which the vendor uniquely defines the product and agrees to the specified certification policies at: <http://www.a4l.org/resource/collection/D44B484D-4C49-4A46-BC51-FB1D3F672D15/SIF%20Certification%20Agreement.pdf>

1.6 Additional Collateral for Compliance Testing

The following collateral is of a more technical nature, targeted at the developer of a company or organization seeking to get their product certified as being compliant with a release of the SIF standard. Note that for agent application pairs, certification to any minor version of a major release (ex: SIF 2.3) will ensure interoperability with applications conforming to later versions of that major release (SIF 2.x).

- The various SIF Test Harnesses available for pre-testing application (and ZIS) compliance with a selected version of the SIF standard, at:
<http://www.a4l.org/page/TestSuites>
- The SIF Compliance Frequently Asked Questions (FAQ) list, containing answers to the most common technical problems encountered by developers during the certification testing phase prior to product certification, at: <http://www.a4l.org/page/SIFCertFAQs>
- SIF Test Harness XML message and object validator at:
<http://compliance.sifinfo.org/validate/>
- SIF Test Harness' use of encryption:
<http://compliance.sifinfo.org/sifcompliance/docs/HTTPS.jsp>
- SIF Test harness SSL/TLS connection testing tool at:
<http://compliance.sifinfo.org/sslhello/>
- To report a technical problem with the Test Harness, email sif-tsma@sifassociation.org

1.7 SIF Certification Email points

An applicant may contact the SIF Certification Authority via email at TestResults@sifassociation.org for questions regarding certification.

The SIF Test Suite Maintenance Authority at testresults@sifassociation.org should be contacted for any questions or problems regarding the test suites.

During the Certification process, the A4L Community may send email notifications to the designated certification contact for the applicant. These notifications could provide information on the organizational actions required to certify a product or renew or update a product's certification as well as a change of status for the current certifications.

Email will be sent from various addresses within the sifassociation.org and A4L.org domains, and any organizational spam filters should be adjusted accordingly.

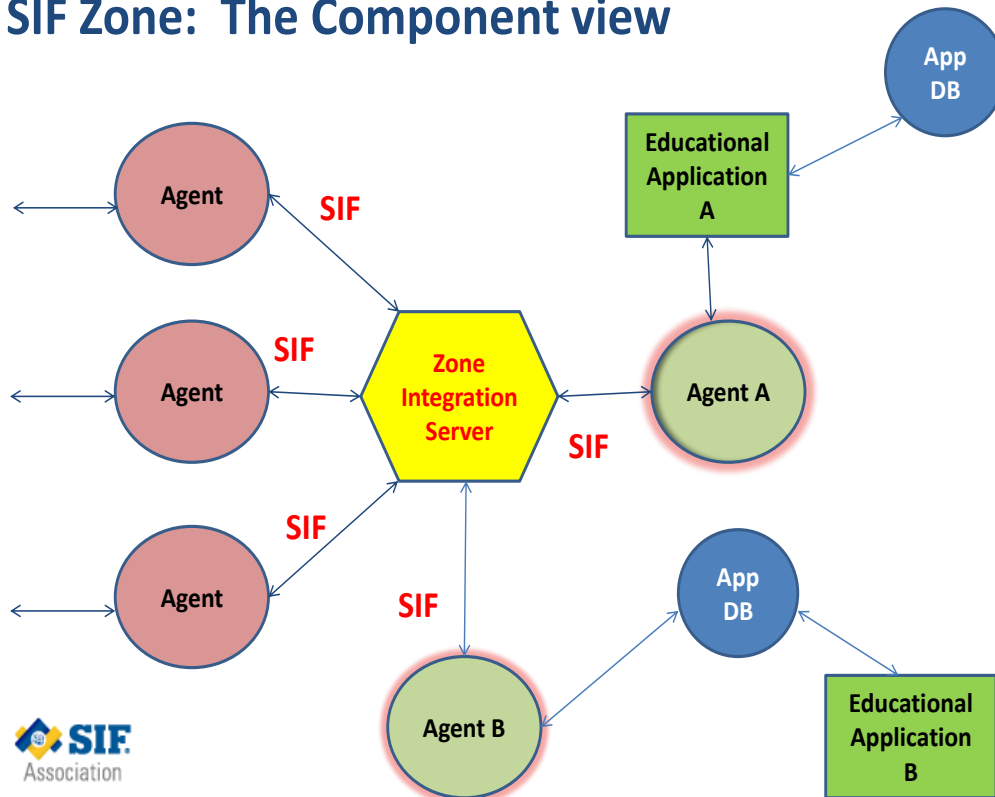
2. SIF Architectural Overview

The SIF Certification process spans two main categories of software products, each with a separate and distinct certification suite:

- The Zone Integration Server (ZIS)
- Agent / Application Pairs

A diagram of the SIF Zone Architecture is shown below:

SIF Zone: The Component view



A SIF Zone consists of a collection of interoperating educational applications, each connected to the central Zone Integration Server through a SIF Agent. In essence:

- The ZIS is a middleware product specifically tailored to supporting the SIF infrastructure. As the centerpiece of the Zone, it has more rigorous SIF certification requirements than the other components.
- The educational application is of a type, such as a Student Information System, District Transportation system or State Data Warehouse, whose interoperability requirements (the data elements it needs and those it supplies) are currently defined within the SIF Standard.

- The Agent functions basically as an adapter, which maps between the application's internal data model and the interoperability requirements of the SIF standard.

SIF Certification is focused on ensuring application to application interoperability. As such (and as indicated in the diagram) the entire series of certification suite tests are applied only to the data passing between the ZIS and the various Agents.

How an individual Agent is connected to its application is thus external to the SIF Standard, which affords a considerable degree of architectural flexibility to educational application vendors seeking to get their products SIF certified. In the diagram of the SIF Zone shown above:

Educational Application A

This application is integrated directly with its SIF Agent. Whether or not the Agent was written by the application vendor, the vendor was involved in making necessary changes to the application that would support the interoperability requirements of the SIF Standard.

Educational Application B

This application is transparently connected to its SIF Agent through its internal DB. The Agent accepts data Request messages from other SIF applications forwarded by the ZIS, issues SQL requests to get the internal DB data, transforms it into SIF standardized format and issues the Response message back to the ZIS.

It also uses data base triggers to detect when the application updates its internal data, whereupon it collects and transforms that data into SIF standardized format and publishes a SIF Event message to the ZIS, alerting any subscribing applications of the data change.

The important point to note is that not a line of code needed to be changed in application B, which updates and utilizes its internal data exactly as it always has. All logic which integrates the application into the SIF Zone and performs the necessary data conversions can be contained in Agent B.

3. Application Certification Process Options

The architectural flexibility of the Agent to Application connection results in considerable business flexibility for any vendor of an educational application who wants to obtain SIF certification. After deciding to SIF-certify your product, the next step is deciding which of the certification process options described below you will pursue. All are valid alternatives, and each of them is currently reflected by one or more entries in the SIF Certification Registry.

3.1 Do it yourself

This involves reading the SIF Specification, writing the Agent code and correspondingly modifying the application code, and then repeatedly testing the resulting Agent / Application pair it against the publicly available SIF Test Harness until it passes. At that point the Agent / Application pair can be submitted for SIF Certification.

This is a fairly major undertaking, and some software packages have been made available to reduce the developer effort involved. These are generally referred to as “Agent Developer Toolkits” or ADKs. There is at least one free, open source SIF ADK available to those vendors considering this option. If interested please check the web or feel free to contact the A4L Community directly.

3.2 Work with an Agent Vendor

Several SIF infrastructure vendors offer their own ADKs, along with training and support programs and associated consulting packages if needed. These can greatly reduce both the time and resources it takes to get a vendor application SIF-Certified.

3.3 Leave everything to the Agent Vendor

Depending upon the needs of the application vendor, it may be possible to encapsulate all the SIF integration logic in the SIF Agent (see the architectural details of Education Application B above). Since this would involve no application code changes, the Agent Vendor could be hired to perform all the integration work, the testing, and even the effort around getting the Agent / Application formally SIF-Certified.

APPENDIX

Certification Checklists

The following checklists are divided into the relevant SIF Certification categories as follows. Please refer to the SIF Certification Policy document for additional information on each category.

- Initial Certification
- Certification Renewals
- Amendments to existing SIF Certified products
- Update to existing SIF Certified product
- Certification of an OEM (Original Equipment Manufacturer) or re-badged product
- Adding a Profile to a SIF Certified product

Relevant documentation referenced in these checklists can be found on the SIF Certification site: <http://www.a4l.org/page/SIFCertification>

Checklist - Initial Certification

Product Name: _____

Go to the [SIF Certification](#) page. Underneath the page title, click on 'More in this section...', then select 'SIF Certification Programs & Test Suites'. Then choose the relevant Test Suite.

Description	Due Date	By Whom	Completed Date
Complete CSQ			
Complete Test Harness			
Submit completed CSQ and Test Harness results (will be sent automatically on completion of Test Suite if selected)			
Complete SIF Certification Agreement			
Complete Trademark Licensing Agreement (TMLA)			
Email completed SIF Certification Agreement and TMLA to testresults@sifassociation.org			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: *The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.*

Checklist - Certification Renewals

Product Name: _____

Identify whether your product needs re-testing - if no re-testing is required, skip to Part Two.

PART ONE

Go to the [SIF Certification](#) page. Underneath the page title, click on 'More in this section...', then select 'SIF Certification Programs & Test Suites'. Then choose the relevant Test Suite.

Additionally, do this for each applicable profile.

Description	Due Date	By Whom	Completed Date
Complete CSQ			
Complete Test Harness			
Submit completed CSQ and Test Harness results (will be sent automatically on completion of Test Suite if selected)			

PART TWO

Description	Due Date	By Whom	Completed Date
Complete SIF Certification Agreement			
Email completed SIF Certification Agreement to testresults@sifassociation.org			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: *The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.*

Checklist - Amendment to existing SIF Certified products

Product Name: _____

If a certified product is to be renamed, with no other change to the scope defined in the Conformance Statement, the certification may be amended upon request to the A4L Community.

Description	Due Date	By Whom	Completed Date
Submit email with notification of your request to rename an existing certified product (including original CSQ) to testresults@sifassociation.org			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: *The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.*

Checklist - Update to an existing SIF Certified product

Product Name: _____

If the changes made are within the scope, as defined in the Conformance Statement, then there is no requirement to re-test or update the certification information.

If the changes are outside the scope of the certified product, or require modification of the scope through an update to the Conformance Statement, then the Solution Provider is required to re-test and provide the information necessary to update the Conformance Statement to accurately represent the conformance claim.

Go to the [SIF Certification](#) page. Underneath the page title, click on 'More in this section...', then select 'SIF Certification Programs & Test Suites'. Then choose the relevant Test Suite.

Description	Due Date	By Whom	Completed Date
Complete CSQ			
Complete Test Harness			
Submit completed CSQ and Test Harness results (will be sent automatically on completion of Test Suite if selected)			
Complete SIF Certification Agreement			
Email completed SIF Certification Agreement to testresults@sifassociation.org			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.

Checklist - Certification of an OEM (Original Equipment Manufacturer) or re-badged product

Product Name: _____

A re-badged or OEM (Original Equipment Manufacturer) product will not require re-testing, but reference must be provided to the test results of the previously certified product to which it is technically identical, with the agreement of the Solution Provider of the referenced certified product.

Description	Due Date	By Whom	Completed Date
Complete CSQ (this must be technically identical to the original certified product, apart from product name and vendor information)			
Complete SIF Certification Agreement			
Submit completed CSQ, SIF Certification Agreement AND covering email containing information relating to the original certified product (i.e. provide name and reference to the successful test results of the previously certified product, and affirm that the Solution Provider has granted permission for its test results to be referenced for the re-badged or OEM product) to testresults@sifassociation.org			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.

Checklist - Adding a Profile to a SIF Certified product

Product Name: _____

Profiles are added to a certified product and are renewed concurrently with the products certification to a SIF Implementation Specification. Since profiles have additional specific requirements, a separate CSQ is required when added a profile to your product.

Go to the [SIF Certification](#) page. Underneath the page title, click on 'More in this section...', then select 'SIF Certification Programs & Test Suites'. Then choose the relevant Test Suite.

Description	Due Date	By Whom	Completed Date
Complete CSQ			
Complete Test Harness			
Submit completed CSQ and Test Harness results (will be sent automatically on completion of Test Suite if selected)			
Go to the Online payment page and submit your payment. You will receive an email confirmation once payment has been processed.			
Send Payment confirmation email, including details of your product as requested, to Penny Murray .			

Please note: *The SIF Certification Program is only available to members of the Access 4 Learning (A4L) Community, formerly the SIF Association. Continued SIF Certification of your product is dependent on membership of the A4L Community.*

Glossary of Terms

Agent	The software component that ties a product to any SIF zone.
Applicant	The Solution Provider (i.e., vendor member) who is in the process of having a product certified.
Certification Agreement	The agreement between the applicant and the Certification Authority, which contains the legal commitment by the applicant to the conditions of the certification program.
Certification Authority	The SIF Association dba Access 4 Learning (A4L) Community is officially sanctioned as the Certification Authority.
Certification Authority Help Desk	More than one A4L Community staff member who has been tasked with responding to certification needs and opportunities.
Certification Register	A web-based record of all certified products, which is maintained by the Certification Authority.
Certification System Deficiency	An agreed error in the certification system, which is inhibiting the certification process.
Certified Product	A product or service that has successfully completed the certification process and for which the Solution Provider has been notified in writing by the Certification Authority that certification has been achieved for such product or service.
Conformance Requirements	A definition of what mandatory and optional behavior a product must implement in order to be considered conformant.
Conformance Statement	A declaration by the Solution Provider describing how the product meets the conformance requirements, including which optional features are supported. It also identifies the precise environment and software configuration in which conformance was tested.
Interpretation	Decision made by the A4L Community that elaborates or

	refines the meaning of a SIF Specification or a standard or specification referenced by a SIF Specification.
Object/Entity	A fundamental component of the SIF data model certification is being sought for.
OEMed product	A piece of application software that is similar to another except for its branding and provider.
Problem Report	A question of clarification, intent or correctness of the specification(s), test suites or certification system, which, if accepted by the A4L Community, will be resolved into an Interpretation, Test Suite Deficiency or Certification System Deficiency respectively.
Product Standard	The document in which conformance requirements are specified for a particular type of product, and against which products or services may be certified in the program. There will be one Product Standard for each type of product to be certified.
Re-Badged Product	A piece of application software that is similar to another except for its branding.
Reference Test Environment	The environment in which conformance was validated, which includes the identity of the version of the product or service that was tested and the release of the test suite used for conformance testing.
Registration Form	A form completed by the applicant to register a particular product for certification. The form contains information on the applicant and the product or service to be certified.
SIF Certification Logo	A4L Community's certification logo or other marks as designated from time to time by the A4L Community.
SIF-Enabled	This term is used in this document to describe a product that is not yet certified. It should not be used outside the A4L Community in place of SIF-Uncertified.
Solution Provider	A product vendor who is interested in, applying for certification in, or has certified a product in the SIF Certification Program. During the period in which a Solution Provider is going through the certification process to get a product certified, the Solution Provider is

	referred to as an applicant.
Specification Authority	A4L Community, which is responsible for developing, maintaining and interpreting the specification(s).
Test Result	The test harness output and associated analysis report. The output is a log of network events, which is parsed to determine if the claimed SIF Object support is present and conformant, to the extent that can be determined by means of network observation, thereby producing a “pass” or “non-pass” result for each claim.
Test Suite	A test harness authorized by the A4L Community for use in testing within the SIF Certification Program. A test suite in this context is comprised of an interworking harness, network event logging, and associated analysis tools.
Test Suite Deficiency	An agreed error in a test suite, which is causing it to produce an incorrect result code that impacts certification.
Test Suite Maintenance Authority	The organization(s) sanctioned by the A4L Community to maintain the test suites.
Trademark License Agreement	The agreement between the Solution Provider and the A4L Community, which contains the legal commitment by the Solution Provider to the conditions for use of the SIF Certification Logo.
Zone Integration Server (ZIS) / Middleware	The software that connects agents together for a specific data scope.