

# SIF Infrastructure Specification Development, Review, Approval and Versioning Processes



[www.A4L.org](http://www.A4L.org)

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## Specification Process Overview

### I. The SIF Specification

The SIF Specification is THE technical blueprint for data interoperability in the educational marketplace. Over the past 25 years the Specification, both data model and infrastructures, have been maturing in order to meet the demands of the educational community. As demands constantly change in the world of educational data identification, management, movement and utilization, the blueprint has changed as well. All of the current Specifications can be found at <http://data.a4l.org/sif-specifications/>

The Access 4 Learning (A4L) Community's 'powered by SIF' Specifications, is made up of four different locales – Australia, New Zealand, North America, and the United Kingdom. SIF Specifications consist of the most complete educational Data Model and a common marketplace technology enabled Infrastructure. The global A4L Community has stewardship and ownership of the infrastructure while the four local communities retain stewardship and ownership of their locale-specific Data Model. This structure allows for “thinking globally but acting locally addressing specific marketplace needs”.

The most important aspect of the SIF Specification is its collaborative development by the entire membership and educational marketplace as a whole. This requires that the Staff and technical leadership have access to those pain points that YOU have in the management and usage of educational data. This process draft is for both the “SIF-savvy” and “SIF-newbies” to understand the current development process and how to get organizational needs inserted and addressed. The Specification development process is collaborative by nature – but the process is only as good as the input supplied by people like YOU!

### II. Role of the Submitter

There are various “input” opportunities to have additional data, functionality and features inserted into subsequent Specification releases – but both follow a very similar path. Any A4L Community member, or group of members, who feel the standard needs to address a new area can initiate the change process to:

| Modification                                                                 | Procedures                                                                                            |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Add additional features and functionalities to the SIF Infrastructure</b> | Utilize the Infrastructure Proposal Template (Appendix B) to clearly defining the Business/Use Cases. |

### **III. Role of the Staff**

The A4L Staff supports the needs of the Community and is the first step in getting identified needs into marketplace products via SIF Specification development. The Staff helps to identify where the “rubber meets the road” when it comes to standardizing a desired functionality extension or new feature needed by schools, states or other educational organizations. The Staff is the resource for the crafting of the various Templates and then passes them onto either the Local Technical Project Team/Advisory Committee or International Technical & Privacy Leadership Group to continue the approval process.

### **IV. Role of the International Technical & Privacy Leadership Group**

The International Technical & Privacy Leadership Group is made up of Technical Project Team/Advisory Committee leadership from all four A4L Communities (Australia, New Zealand, North America, and United Kingdom). They collect and review the Infrastructure features and functionality changes from submittals from the Staff in the SIF Specification review process. The International Technical & Privacy Leadership Group provides both a quality control mechanism and a resource to be used to guide requests through the object approval process. Their approval of a draft means that the draft goes to the Association Board of Directors to continue the approval process and the draft is posted on the Community Site for member access.

### **V. Role of the Association Board of Directors**

The Association Board of Directors reviews the proposal from the International Technical & Privacy Leadership Group for changes or additions to the Infrastructure functionalities to the currently approved Specification. The Association Board of Directors provides both a quality control mechanism and a resource to be used to guide requests through the approval process. Their approval of a draft means that it goes to the Membership to continue the approval process.

### **VI. Role of the A4L Community Members**

Community members play a critical role at both ends of the Specification Development Process, including: the initial requests that start the process and the final review, approval and publishing of the draft Specification.

## How Do You Get “Stuff” In the Pipeline?

### I. Submission

So you have a feature, functionality or even a specific object that you want to propose for inclusion in an upcoming version of the Specification? What exactly do you need to do?

### II. Process

The process is relatively straightforward.

- ✓ Complete the online [SIF Infrastructure Specification Extension form](#) and submit.
- ✓ Be available for any required follow up information on your proposal

Once the online form has been submitted, the Staff will present it to the International Technical & Privacy Leadership Group and/or Association Board for a first review on overall concept. If they (the International Technical & Privacy Leadership Group) deem the proposal worthy, the Staff will work with you to complete the detailed design. From that point forward, you are only required to make yourself available to provide any follow up information regarding your proposal, although you should certainly be monitoring the work to ensure that the final design provides a viable solution for the needs you identified and expressed in the original business case.

### III. Timelines

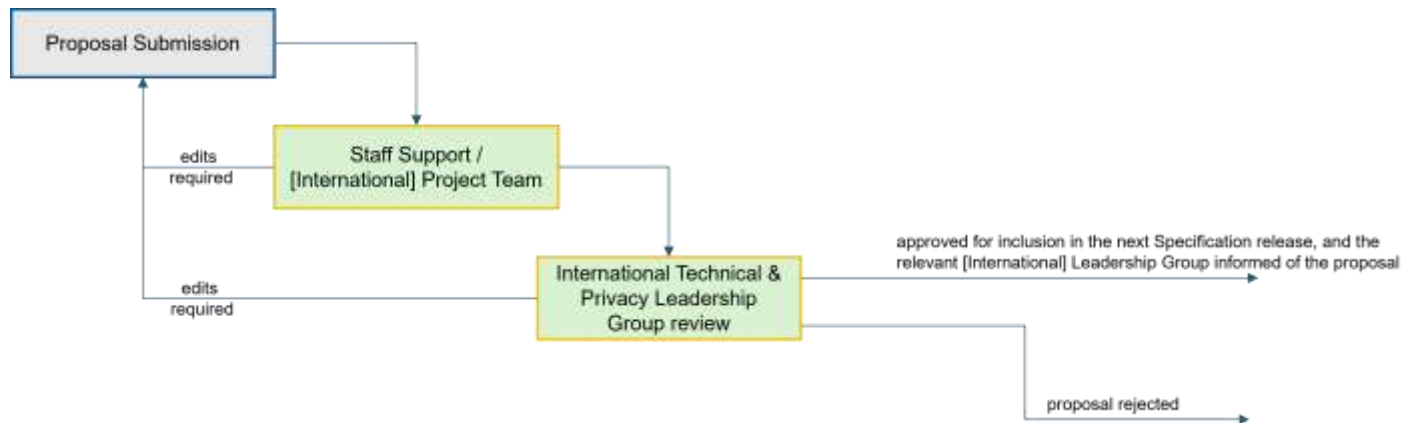
Each A4L Community may release an updated version of the Specification every 6-9 months. The timeline for the next release of the SIF Specifications is updated by Staff, and members can find relevant information on the Specification Development workgroup site(s).

That release timeline may look rather complex because it contains the necessary review cycles to maintain the existing quality of the SIF standard. It should also be remembered that the current process is designed to shield almost all of that complexity from the Submitter.

### IV. Acknowledgement

The entire A4L Community appreciates your commitment to education, and we want to ensure that a clear and open process exists for factoring your inputs and concerns into the SIF standard. We want to make sure that proposed changes are acknowledged and celebrated within the community – that means you!

## Proposal Submission Development and Approval Process



**Proposal:** The proposer completes the online Infrastructure Specification Extension Form and submits that to the A4L Staff.

**Staff / Technical Project Team Support:** The Staff/Technical Project Team works with the proposer to prepare the draft for successful Project Team review. The first step in the process is the Staff utilizes an agreed-upon rubric to continue to next steps, require edits, or deem the submission not ready at this time with available resources.

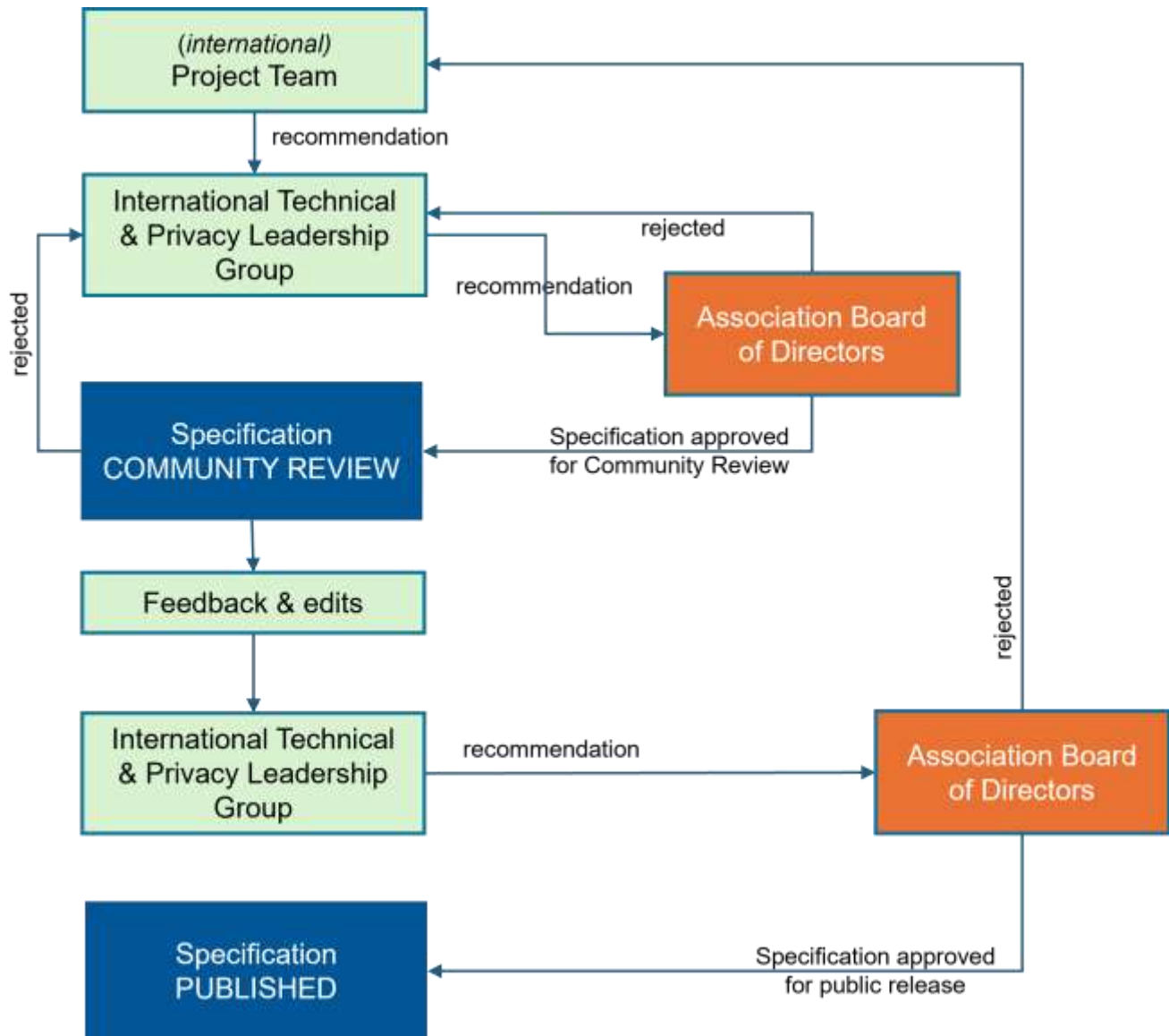
**Initial Technical Leadership Group Review:** The International Technical & Privacy Leadership Group reviews and discusses the value of the Business/Use Cases outlined in the Template. If the overarching concept is approved, the draft is sent to the Staff for completion including technical development.

**Proposal Finalization:** The Staff works with the proposer and other technical experts in the Community to complete the technical aspects of the proposal. The goal is to prepare a draft for the International Technical & Privacy Leadership Group to approve for inclusion in the next Specification release.

**Final Tech Project Team Review:** The International Technical & Privacy Leadership Group reviews and discusses the technical work done to support the originally approved Business/Use Cases. If approved, the draft will be incorporated into the next Specification release, and the relevant Project Team / Submitter informed of the progress.

If successful at each phase and the timing matches, the proposal will be included in the next release of the Implementation Specification. If the proposal is rejected, the A4L Staff / International Technical & Privacy Leadership Group will work with proposers on possible revisions for future submissions.

## Specification Development and Approval Process



**Technical Project Team review:** The international Project Team reviews and discusses the technical work done in a proposed Implementation Specification release. If approved, a final Proposal of the Specification release shall be passed to the International Technical & Privacy Leadership Group.

**Leadership Group review:** The International Technical & Privacy Leadership Group receives the completed proposal and reviews/discusses the technical work done in a proposed Implementation Specification release.

If APPROVED, a “delta” draft of the Specification release shall be passed to the Association Board of Directors with a RECOMMENDATION to publish into Community Review.

If REJECTED, the Specification will be sent back to the international Project Team with recommendations and edits for additional development/review.

**Association Board of Directors review:** The Association Board of Directors will review the recommendation from the International Technical & Privacy Leadership Group. Board members have access to the full draft if interested but will be provided with a high-level delta document of changes sufficient to make an informed vote.

If APPROVED, the Specification is put into a full Community Review.

**Community Review:** (min 2 weeks) The Community is notified that a Community Review is underway of the current draft. The review would be a full Community Review (ALL Community members) based on Infrastructure changes.

**Approval/Edits/Release** (Staff Support/Technical Project Team): After a formal Community review and vote, and if APPROVED, the draft is edited as necessary using the feedback and edits submitted by Community Members during review.

If REJECTED during Community Review, the Specification will be sent back to the International Technical & Privacy Leadership Group for additional development/review.

**International Technical & Privacy Leadership Group approval/recommendation** (1 week target): The International Technical & Privacy Leadership Group reviews and discusses feedback and edits received during Membership Review.

If APPROVED, the International Technical & Privacy Leadership Group will provide a RECOMMENDATION to the Association Board of Directors to publish the Specification to the marketplace.

If APPROVED, a “delta” draft of the Specification release shall be passed to the Association Board of Directors with a RECOMMENDATION to publish the Specification to the marketplace.

If REJECTED, the Specification will be sent back to the International Technical & Privacy Leadership Group with recommendations and edits for additional development/review.

**Association Board of Directors approval:** The Association Board of Directors will review the recommendation from the International Technical & Privacy Leadership Group. Board members have access to the full draft if interested but will be provided with a high-level delta document of changes sufficient to make an informed vote.

If APPROVED, the Specification is posted on the A4L website for the Community and the marketplace.

Should a Specification release be rejected, Staff will work with the international Project Team to address any issues raised. Once this is completed, it can be submitted again for the full review process.

## Specification Versioning Introduction

The Policy and Procedures Committee, in conjunction with the SIF Certification Group, has identified the need for a standard naming convention for future specifications produced by all Locales within the A4L Community. This document identifies the proposed naming policy and guidelines for Specification Version Numbers.

### Specification Version Numbers

Three period-delimited numbers comprise a Specification Version Number:

|                                                                     |   |                                                                                   |   |                                                        |
|---------------------------------------------------------------------|---|-----------------------------------------------------------------------------------|---|--------------------------------------------------------|
| <b>3</b>                                                            | . | <b>0</b>                                                                          | . | <b>1</b>                                               |
| <b>Major</b>                                                        |   | <b>Minor</b>                                                                      |   | <b>Revision</b>                                        |
| Incremented when significant changes are made to the specification. |   | Incremented when new functionality is added which may not be backward compatible. |   | Incremented when backward compatible changes are made. |

### Versioning Guidelines

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119<sup>1</sup>.

SIF terminology in this document follows the SIF Glossary of Terms.

1. A Specification Version Number CAN take the form X.Y.Z where X, Y, and Z are non-negative integers (whole numbers) and MUST NOT contain leading zeroes. X represents the Major version, Y represents the Minor version, and Z represents the Revision version. Each element MUST increase sequentially based on the guidelines defined within this document. For instance: 1.9.1 → 1.10 → 1.11.1.

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<sup>1</sup> RFC2119 Best Practices - <http://ietfreport.isoc.org/idref/rfc2119/>

2. Once a versioned specification (Specification Release) has been released, the contents of that version MUST NOT be modified. Any modifications MUST be released under a new Specification Version Number. Unless the modification is the correction of an error or update of documentation.
3. An instance of a Specification Version Number is the canonical identifier for a Specification Release. The manner in which the Specification Version Number increments after a given Specification Release depends on the type and relative magnitude of changes being proposed in the new release.
4. The Revision number (Z in x.y.Z | x >= 0) MUST be incremented when specification changes are limited to backward compatible changes. Backward compatible changes include the following:
  - a. New data object.
  - b. New optional data object element.
  - c. New optional utility service object element.
5. The Minor version number (Y in x.Y.z | x > 0) MUST be incremented if new functionality is added to the specification. It MUST be incremented if any aspect of the specification is marked as deprecated. It MUST be incremented if any aspect of the specification is not backward compatible<sup>2</sup>. It MAY be incremented if substantial new functionality or improvements are introduced. It MAY include changes that are categorized as "Revision" level magnitude. The Revision version MUST be reset to 0 when the Minor version is incremented. Changes requiring a Minor version increment include the following:
  - a. New mandatory data object element.
  - b. New mandatory utility service object element.
  - c. Deprecate data object element.
  - d. Deprecate data object.
  - e. Deprecate utility service object element.
  - f. Deprecate utility service object.
  - g. Remove deprecated data object element.

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<sup>2</sup> Backward compatible means any change that can be implemented by one participant (consumer, Environment, or service provider) without requiring changes by other participants to maintain the same level of interoperability.

- h. Remove deprecated data object.
  - i. Remove deprecated utility service object element.
  - j. Remove deprecated utility service object.
  - k. Add support for additional authentication methods.
  - l. Add support for additional TLS version.
  - m. Any changes concerning security.
  - n. Any optional to mandatory change.
  - o. Add support for additional payload representations.
6. The Major version number (X in X.y.z | X > 0) MUST be incremented if a significant change is introduced to the specification. It MAY include changes categorized as Minor and Revision level changes. The Revision and Minor version numbers MUST be reset to 0 when the Major version is incremented. Changes requiring a Major version increment include the following:
- a. Deprecate payload representation.
  - b. Remove deprecated payload representation.
  - c. Add support for a distinct data model namespace.
  - d. Replace (deprecate and remove) a locale data model.
  - e. Any significant change that requires the Major version to be incremented as deemed by the A4L Association Board for global specifications and Management Boards for locale data models.

Precedence refers to how versions are compared to each other when ordered. Precedence MUST be calculated by separating the version into major, minor, revision identifiers in that order. Precedence is determined by the first difference when comparing each of these identifiers from left to right as follows: Major, Minor, and Revision versions are always compared numerically. Example: 1.0.0 < 2.0.0 < 2.1.0 < 2.1.1.