

SIF Data Model Specification Development, Review, Approval and Versioning Processes



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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 three 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
Add additional data objects or elements to the SIF Data Model	Utilize the Data Model Object Proposal Template (Appendix A) to 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 the locale Technical Project Team to continue the approval process.

IV. Role of the Local Technical Groups

The locale or international Leadership Group reviews the proposal from the locale Technical Project Team for changes or additions to the Data Model objects or functionalities to the currently approved Specification. The locale or international Leadership Group 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 the draft goes to the Membership to continue the approval process.

V. Role of the Locale or International Leadership Group

The locale or international Leadership Group reviews the proposal from the locale Technical Project Team for changes or additions to the Data Model objects or functionalities to the currently approved Specification. The locale or international Leadership Group 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 the draft 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: 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.

- ✓ Create a copy of the one of the identified Proposal Templates
- ✓ Complete Template sections 1 (Identification), 2 (Rationale/Business Case) and 3 (Use cases).
- ✓ Submit the partially completed Proposal Template to the Staff for Review
- ✓ Be available for any required follow up information on your proposal

Once the proposal contains all the required information, the Staff will present it to the locale Technical Project Team and/or locale or international Leadership Group for a first review on overall concept. If they (the Technical Project Team) 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

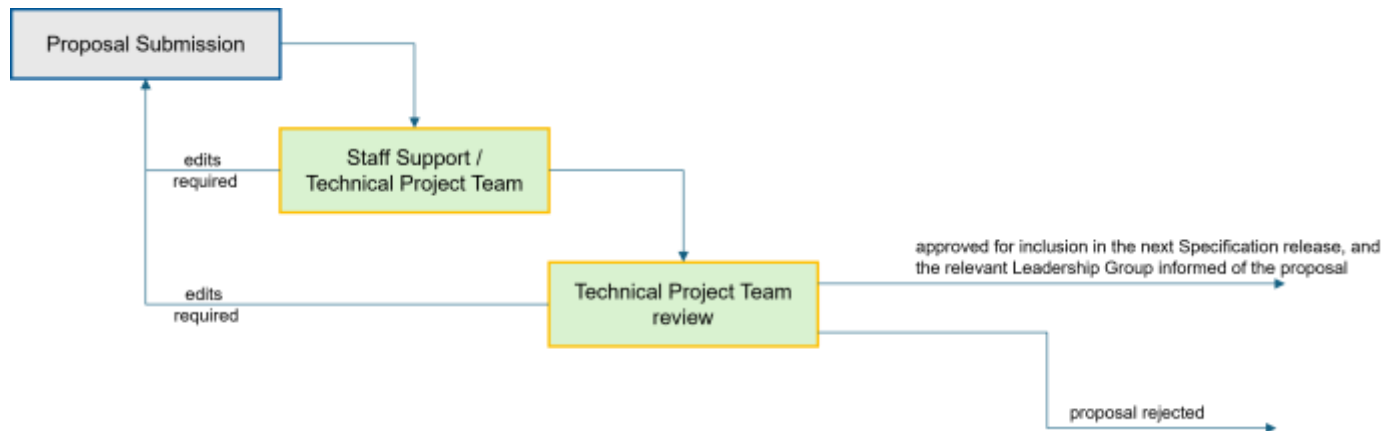
Each A4L Community may release an updated version of the Specification every year. The timeline for the next release of the SIF Specifications is updated by Staff, and members can find relevant information on the A4L Community Site.

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 first three (3) sections of the Data Model Template and submits that to the A4L Staff/Technical Project Team. The submissions are stressed to be Use and Business Case driven.

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.

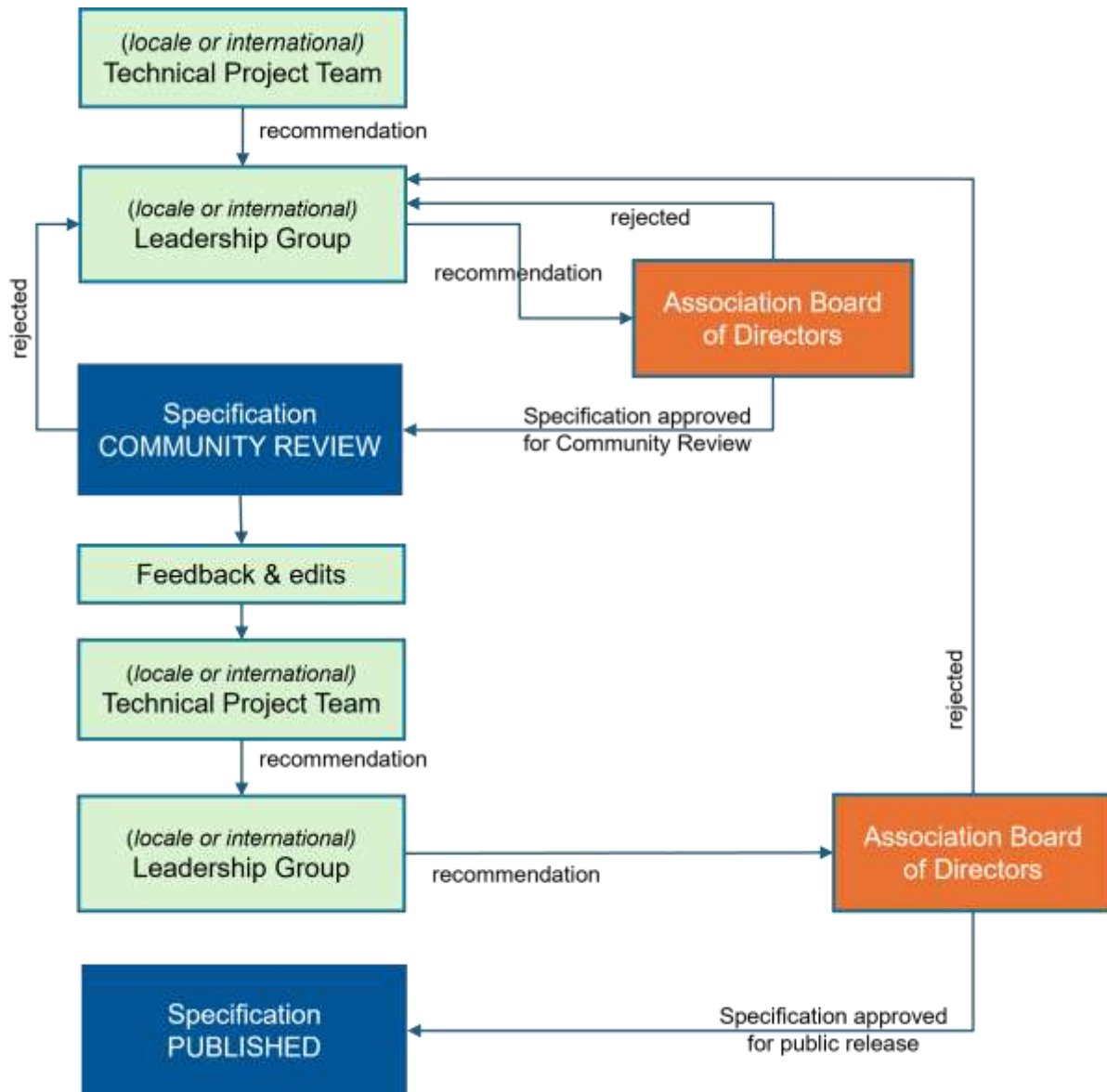
Initial Technical Project Team Review: The locale or international Technical Project Team reviews and discusses the value of the Business/Use Cases outlined in the Template. If the overarching concept is approved, the draft is sent to the Staff for completion including technical development.

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 locale or international Technical Project Team to approve for inclusion in the next Specification release.

Final Tech Project Team Review: The locale or international Technical Project Team 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 Leadership Group informed of the proposal.

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 / locale or international Technical Project Team will work with proposers on possible revisions for future submissions.

Specification Development and Approval Process



Technical Project Team review: The locale or international Technical Project Team reviews and 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 relevant Leadership Group with a RECOMMENDATION to publish into Community Review.

Leadership Group review: The locale or international Leadership Group receives advice regarding the Specification to be released. Leadership Group 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 locale or international Leadership Group will provide a RECOMMENDATION to the Association Board of Directors to publish into Community Review.

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 locale or international Technical 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 locale or international 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 locale or 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 locale Community review based on Data Model changes, and 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 locale or international Technical Project Team for additional development/review.

Technical Project Team approval/recommendation (1 week target): The locale or international Technical Project Team reviews and discusses feedback and edits received during Membership Review.

If APPROVED, a ‘recommendation for release’ is passed to the locale or international Leadership Group.

Leadership Group approval (1 week target): The locale or international Leadership Group, receives a “delta” draft and recommendation from the Technical Project Team regarding the Specification release. Board members will base their vote around the high-level recommendations of the Technical Project Team.

If APPROVED, the locale or international 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 locale or international Technical Project Team with recommendations and edits for additional development/review.

Association Board of Directors approval: The Association Board of Directors will review the recommendation from the locale or international 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 locale or international Technical 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:

3	.	0	.	1
Major		Minor		Revision
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 2119¹.

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 nonnegative 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.

¹ 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 | $x \geq 0$) **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 compatible². 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.

² 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 Leadership Groups 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.

Appendix A: Data Model Object Proposal Template

A detailed form encapsulating the information submitters need to effect change in the SIF Standard and the proposal approval milestones which must be accomplished.

A PDF version of the template is available [here](#).



TEMPLATE: SIF Data Model Specification Extension Proposal

Version 1.0, June 2024

This template should be used by individuals or Project Teams to submit (and later track the progress of) proposed extensions to the SIF Data Model Specification. These extensions can either be new data objects or revisions to the schema defining elements and / or attributes in existing ones.

It is designed to be a "living document" and contains two "status tracking" sections which should be maintained and updated as the change approval process for this extension evolves.

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Appendix B: NA Community specific additions

PAGE 6: Proposal Submission Development and Approval Process

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 Technical Advisory Committee (NA-TAC) to approve for inclusion in the next Specification release.

The Proposer/NA-TAC should check what is in, or being developed by CEDS to ensure:

- All elements have been checked against CEDS, and that the relevant IDs have been assigned to all elements,
- that the CEDS objects in the same 'domain' as the object/service being worked on have been checked to ensure no overlap or duplication,
- Confirmation that the controlled vocabulary matches CEDS, or provide adequate reasoning why this has not been done
 - If appropriate, a proposal should be developed and sent to CEDS development team for further discussion or inclusion, so that alignment can be maintained.

PAGE 6: Proposal Submission Development and Approval Process

Final NA-TAC Review: The NA-TAC 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.

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/NA-TAC will work with proposers on possible revisions for future submissions.

The NA-TAC must ensure that there is a transparent & open feedback loop with CEDS design team, so that issues can be identified – for example, when a proposed element does not work for the A4L Community - or when a new element has been identified. If appropriate, the NA-TAC must write a proposal enabling inclusion consideration from CEDS or suggest deprecating or removing an element from CEDS.