



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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Version Control

Version	Date	Author/Organization	Comments

1. Identification

Proposed Extension Name	
Submitted by (Project Team or Individual)	
Date of initial submittal	
What existing SIF object(s) if any will be affected?	
What is the name of any new object(s)?	

Status Tracker Phase 1: Documentation and Approval

The steps in this initial phase document the proposed extensions to the SIF Data Model to the point where they can be reviewed and approved by the Technical Project Team/Advisory Committee as deserving of further effort. Completion of the detailed design and evaluation of the dependencies and migration impacts are left until Phase II.

Template Section	Initial Draft Completed (Owner / Date)	Reviewed (R) or Accepted (A) (Owner / Date)	Comments
Rationale and Business Case		Technical Project Team (A) Date:	
Use Case(s)		Project Team (R) Date:	
Proposal approval		Technical Project Team (A) Date:	

2. Proposal

This section should be completed by the “Proposal Champion”. A champion is usually one of the authors of the business case (although it may be A4L Staff). This individual is responsible for driving the proposal through the qualification and acceptance cycle.

The following two subsections must be completed before the process can begin.

2.1. Business Case

Provide a specific example of an example where the additional information defined in this proposal will be used in one or more educational processes

It should focus exclusively on the business problem to be solved and avoid proposing solutions.

2.2. Rationale for Extension

Explain the rationale for the proposed extension to the SIF Data Model:

- *What are the problems / limitations to be addressed?*
- *What is the additional information required?*

3. Use Cases

The proposal champion or the assigned project team must provide one or more high-level use cases illustrating the interactions between “actors” (typically applications) that become possible if this proposal is adopted and successfully implemented. Use one copy of the form below for each.

Use Case Title:

Type (Mandatory or Optional)	
SIF Version	
Summary Description	
Actors: Requesting Adapter Responding Adapter	
Preconditions	
Main Sequence of Events / Action Steps	
Alternative Sequence of Events / Action Steps	
Post Conditions	
SIF Mandatory Objects	
SIF Optional Objects	
Open Issues	

Status Tracker Phase 2: Execution of Proposed Changes

At this point the initial Data Model extension proposal has been accepted by the Tech Board and is either in the object pipeline, or being fast-tracked. The following sections have to be completed and (where indicated) reviewed and approved before this proposal can be reflected in the SIF specification.

Template Section	Initial Draft Completed (Owner / Date)	Reviewed (R) or Accepted (A) (Owner / Date)	Comments
Dependencies	Project Team / Staff Date:	Internal Project Team review	
Object Definition Table	Project Team Date:	Technical Project Team (R) Date:	
Migration Plan	Staff / Project Team Date:	Technical Project Team (A) Date:	Tech PT Approval is part of SIF Release cycle
Sample XML	Staff / Project Team Date:	Optional	Generally provided as part of published specification

4. Impact Assessment

This section is the first to consider the actual implementation which will address the use cases previously identified. It requires assessing the impacts to both the existing objects and infrastructure, and to previously deployed applications. It would normally be produced by the Project Team (new or existing) assigned to this data model extension by the Technical Project Team/Advisory Committee at the time this proposal was approved.

In cases where a legacy object (one with no owning Project Team), is being changed, the task of assessing impact may be assigned to a Staff member to drive its completion.

The following two subsections must be completed.

4.1. Object Dependencies and Relationships

Identify any existing entities in applicable standards

Proposed new Element or Attribute	Object & Entity dependency (Element, Attribute, Type)	Relationship / Reason	Name of Standard referenced

4.2. Infrastructure / International Dependencies and Relationships

Identify any dependencies on infrastructure technologies and / or deliverables from the International Technical & Privacy Leadership Group (ITP-LG) which are planned for a future release.

This could include requiring or relying on specific functionality from one or more of the following:

- Transport (ex: SOAP conventions)
- SIS Functional Profiles
- Identity Management Profiles
- Global Data Model Metadata
- Central Administration or Smart Zone
- Zone Services (ex: Assessment)

Proposed new Object, Element or Attribute	Infrastructure or International technology dependency	Specifics of dependency

5. Detailed Design

Place the detailed element by element, attribute by attribute breakdown of the Data Model Extension here. This work is normally done by members of the assigned Project Team.

The values of the “Char” column include one or more of the following:

- **M – Mandatory.** Item must appear in every Add Event and Response message for the object
- **R – Required.** Item must either appear in an Add Event or eventually be included in a Change Event.
- **S – Supported.** Item may or may not appear in any message relating to the object. However, if its value is supplied / available, it must be included by the sender in Event and Response messages.
- **C – Conditional.** Item is required if the included conditions are satisfied
- **I – Immutable.** Item value cannot be changed once supplied.
- **U – Unique.** Item value is unique from all other objects containing that item (ex: RefId)
- **O – Optional.** Item may or may not appear in any message relating to the object. It need not be supported by the sender

The “type” of each item is either an XML type (ex: integer) or a named SIF Global Type.

XML Facets can help to further define the value of an item. These can include length, range, and per-type value restrictions. They should be specified if known.

Fill out a separate copy of the following table for each affected new or existing SIF object.

Object Name: _____

Element (E) or Attribute (A)	Char	Description (including type and associated XML facets)

6. Migration Plan (for proposed changes to existing objects only)

One of the mandatory components of every Data Model Change proposal is the Migration Plan. This section describes the impact of the proposed change to legacy SIF Zones and the techniques, best practices and deployment guidelines designed to minimize that impact. It is normally filled out in coordination with SIF Staff or an experienced SIF Data Modeler.

All migration plans have the same overarching goal: allow an existing SIF Zone to migrate to the new change incrementally ... by changing only one component at a time while maintaining at least the previous level of functionality, and “breaking” nothing in the process.

Several common strategies (in order of desirability) are:

1. Add new elements rather than modify old ones

This places a requirement on new adapters to support duplicate entries in order to maintain backwards compatibility with adapters conforming to earlier versions of the standard. To use this strategy, there must be a clear mapping provided for adapter writers to utilize. This would include mapping any new code set values to the collection of previously existing ones.

2. Constrain the impact to the broker

In this case the broker will transparently “bridge” between adapters supporting this change and earlier versions. To use this strategy, there must be a clear mapping provided for broker vendors to utilize, and at least two vendors must “sign off” on this section of the proposal.

3. Reduce the impact

This approach is effective for changing only those parts of the SIF specification which have been minimally adopted. Start by mapping the set of changed elements against the CSQ matrices to determine the number of existing SIF-certified applications that will be affected. Work with SIF Staff to alert impacted vendors (those with certified, and where known, uncertified products) and identify the number of sites which will be affected. Depending upon the size of the impact, the change may be accepted for a minor release.

4. Extended Elements

Use the extended element construct to add the new changes. This has the advantage that it standardizes how the functionality will be introduced but suffers from the disadvantage that conformance to the changes cannot be easily verified, and a further change will be required when moving forward to the next major release. It is the least desirable way to introduce changes into a minor release, and a strong justification for this approach should be prepared.

5. Wait until the next major release

Defer the proposed change until the next major release because a clear incremental migration strategy for it cannot be constructed.

Migration Plan:

Using the above techniques or alternative ones, specify the recommended series of incremental component upgrades or deployments (of application, adapter or broker) which must be performed before the data model changes introduced by this proposal can be successfully incorporated into an existing SIF Zone.

Component Replaced	Increased Functionality (if any)	Effect on Legacy components (if any)

7. Issues

List any issues surrounding this proposal which the reviewers or approvers may need to consider.

8. XML and/or JSON Example(s)

One or more examples of XML/JSON instances representing the items in the proposed extension should be placed here, as part of work done during the detailed design process.