SIF Change Proposal: Grading Assignment

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Version: v0.4
Date Submitted: August 2015

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Draft Specification Document Version Control

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<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Author/Organization:</th>
<th>Comments</th>
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<tbody>
<tr>
<td>V0.1</td>
<td>02/04/2015</td>
<td>Nick Nicholas/NSIP</td>
<td>Initial Document</td>
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<td>V0.2</td>
<td>05/04/2015</td>
<td>Nick Nicholas/NSIP</td>
<td>Mention Activity object</td>
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<td>V0.3</td>
<td>01/07/2015</td>
<td>Nick Nicholas/NSIP</td>
<td>Privacy Impact</td>
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Change Proposal

Rationale for Change

Several stakeholders are interested in using SIF to exchange marks for online classroom assessment. The current SIF-AU model includes only the Assessment* and SIF3Assessment* suite of objects, which are designed for summative assessment. These are large objects in a many-levelled hierarchy, and they are prohibitively cumbersome to use for formative assessment tasks such as online classroom assessment.

In order to address this need, this proposal adapts the GradingAssignment and GradingAssignmentScore objects from SIF-US. This is done in line with a general design principle of reusing objects that already exist in the SIF-US specification wherever possible, in order to keep the information models of the two locales aligned, and to benefit from the experience distilled in the SIF-US. Reusing these objects has the added benefit of providing encoding for more traditional assignments, should that prove useful in the Australian education market.

That said, the SIF-US objects have not been designed for online assessment, and their design has been somewhat simplified in this proposal, in order to keep the objects lightweight. In Classroom Assessment in particular, SIF is now competing with lightweight ad hoc reporting protocols using JSON; the SIF objects should not be substantially more complex than those JSON objects, and should in fact be straightforward to represent in JSON.

SIF-AU also contains the Activity object, which can specify an online activity. That object can be considered a rather heavier counterpart to the GradingAssignment object, containing such information as technical requirements, software requirements, activity time, and relevant learning resources. Moreover the Activity object does not address scoring: object design assumed that would be covered by the Assessment* suite of objects. The proposed pair of objects are more lightweight, and do not presuppose either a technical infrastructure (itself a rather 2000s view of the world), or a fixed timeframe: it is better suited to the more opportunistic use of online assessment resources.

Business Case

Interest in using SIF to exchange classroom assessment scores has been expressed to date by NSW DEC and ESA. NSW DEC has in fact piloted exchange of classroom assessment scores using the Assessment* objects in 2013 (with LearningPlanet), in the leadup to its current data hub activities. NSW DEC is intending to add exchange of classroom assessment scores to its data hub capabilities in the next few months, and requires SIF/XML for all data exchange; this makes adoption of the object time-critical.

ESA is proceeding with a project to exchange results from its Improve formative assessment tool with the LearningPlace environment in DET QLD. Improve already uses SIF for its provisioning of staff, students, and teaching groups, and is looking to use SIF to communicate results back to partners.

Time Line

This change will be in the SIF Implementation Specification (Australia) 1.4 timeline.

Potential Object Changes

<table>
<thead>
<tr>
<th>Proposed Data Object Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
</tr>
</tbody>
</table>

Page 2 of 6  Change Proposal and Plan
GradingAssignment | New object | Represent assignment (including classroom assessment task) in a lightweight generic form

GradingAssignment Score | New object | Represent result for assignment (including classroom assessment task) in a lightweight generic form

### Change Plan

### Object Dependencies and Relation Map
GradingAssignment optionally depends on TeachingGroup and SchoolInfo
GradingAssignmentScore depends on GradingAssignment and StudentPersonal

### Changes to Other Objects
There are no anticipated changes to other objects.

### Infrastructure Changes
There are no anticipated infrastructure changes

### Object Definitions

#### GradingAssignment
This is equivalent to the GradingAssignment object in SIF-US. The following simplifications have been made, in light of the use of the object for online assessment:

- Reference to SchoolInfo has been made optional. An online assessment task may have a description provided by the vendor independently of the school assigning it, and it may be desirable to compare student performance against the same task across multiple schools (as part of school authority analytics).
- Mandatory reference to GradingCategory as an object has been replaced by an optional GradingCategory label. The provider of the item may not have assigned an online assessment task a particular grading category. Maintaining a distinct object with three mandatory RefId references (SectionInfo, TermInfo, SchoolInfo) around a single free-form label is excessively cumbersome for the purposes this object will be put to.
- Mandatory reference to SectionInfo and TermInfo has been replaced by an optional reference to TeachingGroup. SectionInfo is absent from the SIF-AU specification. As with SchoolInfo, an online assessment task may have a description provided by the vendor independently of the teaching group assigning it, or the term during which it is assigned.
- Attributes except for the RefId have been made elements. SIF-AU does not have optional attributes, and avoiding attributes makes it easier to round-trip the object into JSON.
- In line with this, the DetailedDescription element is broken up into a DetailedDescriptionURL and a DetailedDescriptionBinary; the latter is dispreferred, particularly for online assessment.
- Because the RefID is in place, there is no need to treat a combination of external references as a foreign key for the object, as is done in the SIF-US spec with the object root attributes.
- MaxAttemptsAllowed has been added to the object from Activity; this is a constraint set by the school, that could conceivably be acted on by an assessment delivery platform, or vice versa.
### GradingAssignment

This object provides information about a particular assignment, allows applications to synchronize each other's assignment tables, gathers the definition for a GradingAssignmentScore object, etc.

<table>
<thead>
<tr>
<th>Object</th>
<th>Elements</th>
<th>Char</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>GradingAssignment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@</td>
<td>RefId</td>
<td>M</td>
<td>A GUID that identifies an instance of this object.</td>
<td>RefIdType</td>
</tr>
<tr>
<td></td>
<td>TeachingGroupRefId</td>
<td>O</td>
<td>The GUID for the TeachingGroup object in which this assignment has been set.</td>
<td>IdRefType</td>
</tr>
<tr>
<td></td>
<td>SchoolInfoRefId</td>
<td>O</td>
<td>The Id (GUID) that uniquely identifies the School in which this assignment has been set.</td>
<td>IdRefType</td>
</tr>
<tr>
<td></td>
<td>GradingCategory</td>
<td>O</td>
<td>A particular grading category for the assignment, used to provide grouping and type information.</td>
<td>xs:normalizedString</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>M</td>
<td>The text-based description of the assignment.</td>
<td>xs:normalizedString</td>
</tr>
<tr>
<td></td>
<td>PointsPossible</td>
<td>M</td>
<td>The points possible on the assignment.</td>
<td>xs:unsignedInt</td>
</tr>
<tr>
<td></td>
<td>CreateDate</td>
<td>O</td>
<td>Creation date of the assignment.</td>
<td>xs:dateTime</td>
</tr>
<tr>
<td></td>
<td>DueDate</td>
<td>O</td>
<td>Date the assignment is due.</td>
<td>xs:dateTime</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>O</td>
<td>The weight of the assignment.</td>
<td>xs:decimal</td>
</tr>
<tr>
<td></td>
<td>MaxAttemptsAllowed</td>
<td>O</td>
<td>How many attempts the student is allowed on the assignment (applicable particularly to online activities).</td>
<td>xs:integer</td>
</tr>
<tr>
<td></td>
<td>DetailedDescriptionURL</td>
<td>O</td>
<td>The location of the document that describes the assignment. If Type is PDF, this element will contain the Base64 encoding of the entire document. Preferred against DetailedDescriptionBinary for online assessment.</td>
<td>xs:anyURI</td>
</tr>
<tr>
<td></td>
<td>DetailedDescriptionBinary</td>
<td>O</td>
<td>The Base64 encoding of a document (e.g. PDF) describing the assignment.</td>
<td>xs:base64Binary</td>
</tr>
</tbody>
</table>

### Privacy Impact

- The object is treated as having equivalent sensitivity to AssessmentItem, and is flagged as LOW

### Issues

- All assessment described by GradingAssignment is assumed to have a numerical score, coded in PointsPossible, with the student's particular performance reported in GradingAssignmentScore. If a numerical score is not applicable, PointsPossible should be set to 0.
- GradingCategory is populated at the discretion of the school, and no codeset is prescribed for it.
- Would need confirmation that MaxAttemptsAllowed makes sense to include in this object—i.e. that online assessment vendors are likely to make use of it.
XML Example

```xml
<GradingAssignment RefId="359D75101AD0A9D7A8C3DA8D0A85103A2">
  <TeachingGroupRefId>D0A0A27AD0A8510AD9D75101A8C3DA39</TeachingGroupRefId>
  <SchoolInfoRefId>11737EA4301CADCA75C8721A7C46BDB</SchoolInfoRefId>
  <GradingCategory>Classroom Test</GradingCategory>
  <Description>Pop Quiz</Description>
  <PointsPossible>100</PointsPossible>
  <DueDate>2000-11-25</DueDate>
  <Weight>1.0</Weight>
  <DetailedDescriptionURL>http://www.assignmentinfo.com/assignment1.pdf</DetailedDescriptionURL>
</GradingAssignment>
```

Codesets
N/A

GradingAssignmentScore

This is equivalent to the GradingAssignmentScore object in SIF-US. The following simplifications have been made, in light of the use of the object for online assessment:

- Reference to SchoolInfo has been made optional. An online assessment task may have a description provided by the vendor independently of the school assigning it, and it may be desirable to compare student performance against the same task across multiple schools (as part of school authority analytics).
- Mandatory reference to SectionInfo has been replaced by an optional reference to TeachingGroup. SectionInfo is absent from the SIF-AU specification. As with SchoolInfo, an online assessment task may have a description provided by the vendor independently of the teaching group assigning it.
- It is desirable that the assessment system has ingested SIF RefIds for StudentPersonal, and can assign scores to students based on those StudentPersonal RefIds. However as is the case elsewhere in the SIF-AU specification, we recognise that the assessment system may not always have access to RefIds; so the local Id, rather than the RefId, is the mandatory student identifier.
- Attributes except for the RefId have been made elements. SIF-AU does not have optional attributes, and avoiding attributes makes it easier to round-trip the object into JSON.
- Because the RefID is in place, there is no need to treat a combination of external references as a foreign key for the object, as is done in the SIF-US spec with the object root attributes.

<table>
<thead>
<tr>
<th>Object</th>
<th>Elements</th>
<th>Char</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>GradingAssignmentScore</td>
<td>@ RefId</td>
<td>M</td>
<td>A GUID that identifies an instance of this object.</td>
<td>RefIdType</td>
</tr>
<tr>
<td></td>
<td>StudentPersonalRefId</td>
<td>O</td>
<td>The GUID for the student whose score this is.</td>
<td>IdRefType</td>
</tr>
<tr>
<td></td>
<td>StudentPersonalLocalId</td>
<td>M</td>
<td>The Local Id for the student whose score this is.</td>
<td>LocalId</td>
</tr>
<tr>
<td></td>
<td>TeachingGroupRefId</td>
<td>O</td>
<td>The GUID for the TeachingGroup object in which this assignment has been set.</td>
<td>IdRefType</td>
</tr>
<tr>
<td></td>
<td>SchoolInfoRefId</td>
<td>O</td>
<td>The Id (GUID) that uniquely identifies the School in which this assignment has</td>
<td>IdRefType</td>
</tr>
</tbody>
</table>
### Privacy Impact
- The object is treated as having equivalent sensitivity to StudentScoreSet, and is flagged as MEDIUM

### Issues
- The alternation of ScorePoints, ScorePercent and ScoreLetter is inherited from the SIF-US object; it makes sense for traditional assignments, but it complicates any translation to JSON, and it contradicts the presupposition of GradingAssignment that all such assignments have a numeric score. So for online assessment, and transport of the object in JSON, only ScorePoints should be used.

### XML Example
```xml
<GradingAssignmentScore RefId="359D75101AD0A9D7A8C3DAD0A85105D2">
  <StudentPersonalRefId>A75A00101A8C301D02E3A05B359D0A00</StudentPersonalRefId>
  <StudentPersonalLocalId>fred12</StudentPersonalLocalId>
  <TeachingGroupRefId>D0A0A27AD0A8510AD9D75101A8C3DA39</TeachingGroupRefId>
  <SchoolInfoRefId>11737EA4301CADA75C872147C46BDB</SchoolInfoRefId>
  <GradingAssignmentRefId>359D75101AD0A9D7A8C3DAD0A85105D2</GradingAssignmentRefId>
  <ScorePoints>45</ScorePoints>
</GradingAssignmentScore>
```

### Codesets
N/A