

LexEVS 6.0 CTS2 Authoring 1 - Association Authoring Operation API

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Introduction

LexEVS CTS2 Code System Authoring API provides capability to author Code System and its contents.

Here are the authoring functions that can be performed on Associations in a Code System:

Create

This function provides capability to create:

- New Association
- Add Qualifiers to the Association
- Determine Source and Target Code Systems for the Association
- New Coding Scheme consisting of mappings of one system's concepts to another.
- New Mapping for an existing mapping scheme
- New Association for an existing coding scheme.

Status Change

This function provides capability to update Status attributes:

- Association Status

Interface

```
org.lexevs.cts2.LexEvsCTS2 cts2 = org.lexevs.cts2.LexEvsCTS2Impl.defaultInstance();
org.lexevs.cts2.author.AssociationAuthoringOperation associationAuthoring =
cts2.getAuthoringOperation().getAssociationAuthoringOperation();
```

Revision Information

Authoring requires information helping to determine whether the edited coding scheme element is new or revises an existing association. This requires not only a containing revision, but also a entry state object for each versionable element of the Association being created. A single object of each is passed into the association creating method providing mandatory information about this revision which in most use cases here is a new association.

org.LexGrid.versions.Revision

Revision object has following attributes:

- **java.lang.String changeAgent** - (Optional) The source that participated in this particular change.
- **java.lang.String changeInstruction** - (Optional) A human or machine readable set of instructions on how to apply this change.
- **java.lang.String revisionId** - (**Mandatory**) The unique identifier of this revision.
- **java.lang.Long editOrder** - (Optional) The relative order that this revision is to be applied if in a systemRelease.
- **java.util.Date revisionDate** - (Optional) The end date for which this version is operative (considered committed).
- **java.lang.String description** - (Optional) The description of the resource/change.
- **java.lang.String systemReleaseURI** - (Optional) The official URI of this release

org.LexGrid.versions.EntryState

- **java.lang.String containingRevision** - (**Mandatory**)The revision that contains this particular entry state change
- **private java.lang.Long relativeOrder** - (Optional)The relative order that this state change should be applied within the context of the containing revision
- **private org.LexGrid.versions.types.ChangeType changeType** - (Context determined. NEW for new association)The type of change that occurred between this state and the previous.
- **private java.lang.String prevRevision** - (Optional)The unique identifier of the state of this entry was at prior to this change.

Association Authoring Functions

Create Association Operations

```
createAssociation(boolean createMappingScheme, Revision revision, EntryState entryState,
AbsoluteCodingSchemeVersionReference mappingScheme, AbsoluteCodingSchemeVersionReference
sourceCodeSystemIdentifier, AbsoluteCodingSchemeVersionReference targetCodeSystemIdentifier, String
sourceConceptCodeIdentifier, String targetConceptCodeIdentifier, String relationsContainerName, String
associationType, AssociationQualification[] associationQualifiers)
```

Description:	Creates new Association
Input:	• boolean createMappingScheme - create a mapping coding scheme if one does not exist • org.LexGrid.versions.Revision revision - create a mapping coding scheme if one does not exist • org.LexGrid.versions.EntryState entryState - revision data container granular to the versionable class. • Aorg.LexGrid.LexBIG.DataModel.Core.AbsoluteCodingSchemeVersionReference mappingScheme - existing mapping scheme, required if adding mapped association • org.LexGrid.LexBIG.DataModel.Core.AbsoluteCodingSchemeVersionReference sourceCodeSystemIdentifier - minimum code system identification • org.LexGrid.LexBIG.DataModel.Core.AbsoluteCodingSchemeVersionReference targetCodeSystemIdentifier - minimum code system identification • java.lang.String sourceConceptCodeIdentifier - source concept code • java.lang.String targetConceptCodeIdentifier - target concept code • java.lang.String relationsContainerName - relations container identifier • java.lang.String associationType - association type identifier • org.LexGrid.relations.AssociationQualification[] associationQualifiers - qualifications to add to this association
Output:	org.LexGrid.relations.AssociationSource - Created Association Structure
Exception:	org.LexGrid.LexBIG.Exceptions.LBException

Sample
Call:

- Step 1: Create Revision Elements:

```
Revision revision = new Revision(); - initialize Revision object
revision.setChangeAgent("Mayo Foundation"); - Set the change agent if desired
Text changeInstructions = new Text(); - initialize Text Object
changeInstructions.setContent("To be applied at next source release"); - Define change
instructions if desired.
revision.setChangeInstructions(changeInstructions); - Set change instructions
revision.setEditOrder(new Long(1)); - Set edit order
EntityDescription entityDescription = new EntityDescription(); - Initialize EntityDescription
Object
entityDescription.setContent("TestCTS2AssociationRevision"); - Set content for this object
revision.setEntityDescription(entityDescription); - Set revision entityDescription

EntryState entryState = new EntryState(); - Initialize EntryStateObject
entryState.setChangeType(ChangeType.NEW); - This is a new association -- set ChangeType to "NEW"
entryState.setContainingRevision("FirstRevision_12_09_2010"); - Define the revision identifier
entryState.setRelativeOrder(new Long(1)); - Set relative order
```

- Step 2: Define a source scheme:

```
AbsoluteCodingSchemeVersionReference sourceCodeSystemIdentifier = new
AbsoluteCodingSchemeVersionReference();
sourceCodeSystemIdentifier.setCodingSchemeURN("http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.
owl#");
sourceCodeSystemIdentifier.setCodingSchemeVersion(10.10a);
```

- Step 3: Define a target scheme:

```
AbsoluteCodingSchemeVersionReference targetCodeSystemIdentifier = new
AbsoluteCodingSchemeVersionReference();
targetCodeSystemIdentifier.setCodingSchemeURN("urn:oid:2.16.840.1.113883.6.2");
targetCodeSystemIdentifier.setCodingSchemeVersion(200909);
```

- Step 4: Name the unique identifier of the source concept:

```
String sourceConceptCodeIdentifier = "C27469";
```

- Step 5: Name the unique identifier of the target concept:

```
String targetConceptCodeIdentifier = "199";
```

- Step 6: Identify or name a new relations container

```
String relationsContainerName = "relations";
```

- Step 7: Name the association

```
String associationType = "SY";
```

- Step 8: call create method to create the association:
*AssociationSource association = associationAuthoringOp.createAssociation(false, revision, entryState,
null, sourceCodeSystemIdentifier, targetCodeSystemIdentifier,
sourceConceptCodeIdentifier, targetConceptCodeIdentifier,
relationsContainerName, associationType, null);*

Update Association Operations

updateAssociationStatus(Revision revision, EntryState entryState, AbsoluteCodingSchemeVersionReference scheme, String relationsContainer, String associationName, String sourceCode, String sourceNamespace, String targetCode, String targetNamespace, String instanceId, String status, boolean isActive)

Description:

Updates Association Status

Input:	<code>org.LexGrid.versions.Revision revision</code> - create a mapping coding scheme if one does not exist <code>org.LexGrid.versions.EntryState entryState</code> - revision data container granular to the versionable class. <code>org.LexGrid.LexBIG.DataModel.Core.AbsoluteCodingSchemeVersionReference scheme</code> - Scheme targeted for update. <code>java.lang.String relationsContainerName</code> - relations container identifier <code>java.lang.String associationName</code> - association identifier <code>java.lang.String sourceCode</code> - source concept code <code>java.lang.String sourceNamespace</code> - code system identification <code>java.lang.String targetCode</code> - target concept code <code>java.lang.String targetNamespace</code> - minimum code system identification <code>java.lang.String instanceId</code> - instance identifier for the association <code>java.lang.String status</code> - Status designation can be user defined <code>boolean isActive</code> - flag for Active status
Output:	<i>boolean</i> - flag for successful update
Exception:	<i>org.LexGrid.LexBIG.Exceptions.LBException</i>
Sample Call:	- Step 1: Create Revision Elements: <pre>Revision revision = new Revision(); - initialize Revision object revision.setChangeAgent("Mayo Foundation"); - Set the change agent if desired Text changeInstructions = new Text(); - initialize Text Object changeInstructions.setContent("To be applied at next source release"); - Define change instructions if desired. revision.setChangeInstructions(changeInstructions); - Set change instructions revision.setEditOrder(new Long(1)); - Set edit order EntityDescription entityDescription = new EntityDescription(); - Initialize EntityDescription Object entityDescription.setContent("TestCTS2AssociationRevision"); - Set content for this object revision.setEntityDescription(entityDescription); - Set revision entityDescription EntryState entryState = new EntryState(); - Initialize EntryStateObject entryState.setChangeType(ChangeType.MODIFY); - Association is being revised. Set ChangeType to "MODIFY" entryState.setContainingRevision("FirstRevision_12_09_2010"); - Define the revision identifier entryState.setRelativeOrder(new Long(1)); - Set relative order</pre> - Step 2: Define the scheme for the association update: <pre>AbsoluteCodingSchemeVersionReference scheme = new AbsoluteCodingSchemeVersionReference(); scheme.setCodingSchemeURN("http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"); scheme.setCodingSchemeVersion(10.10a);</pre> - Step 3: Name the unique identifier of the source concept: <pre>String sourceCode = "C27469";</pre> - Step 4: Define the namespace of the source concept supported for this coding scheme <pre>String sourceNamespace = "NCI Thesaurus"</pre> - Step 5: Name the unique identifier of the target concept: <pre>String targetCode = "C27469";</pre> - Step 6: Identify or name a new relations container <pre>String relationsContainerName = "relations";</pre> - Step 7: Define the association <pre>String associationName = "Disease_Has_Abnormal_Cell";</pre> - Step 8: Identify the instance of this association to be updated. <pre>String instanceID = "instance001";</pre>

- *Step 9:* Define the new status

```
String status = "PENDING_RETIREMENT";
```

- *Step 10:* Set isActive flag if necessary

```
boolean isActive = false;
```

- *Step 11:* call create method to create the association:
AssociationSource association = associationAuthoringOp.updateAssociationStatus(revision, entryState,
scheme, relationsContainerName, associationName, sourceCode,
namespace, targetCode, namespace, instanceId, status,
isActive);