

**DRAFT**  
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# Aviation Industry Metadata Description

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## ABSTRACT

This document describes how to extend the IEEE Learning Object Metadata (LOM) Standard to include features which may be needed by the aviation and other communities.

The resulting data model and descriptive material constitute an AICC profile of the LOM.

## KEY WORDS

AGR	Metadata
AICC Recommendations	Profile
Collections	Obligations
Guidelines	Reuse
Learning Object	
LOM	

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# 1 Introduction

This document describes a metadata system adapted to aviation industry training.

A metadata system is a set of parameters associated with a learning object which enables a potential user to search for and evaluate that object. This information can also be used to track and organize the production process of the training courses.

It also enables, by using adapted search engines, to save time and energy (money) for training content producers, by facilitating the reusability of already existing training objects either directly (e.g. a photo) or for producing new products from older ones (e.g. updating of an assignable unit).

The learning objects which can have metadata associated with them may be of various granularity levels, from a simple photo to a big training program, but, in general, the smaller the objects, the higher the relative cost of creating metadata.

This metadata specification for the aviation industry is presented (mapped) and numbered according to the IEEE Learning Object Metadata (LOM) categories and data elements. All categories and data elements added by the AICC appear after the LOM categories and elements.

## 1.1 Purpose

The purpose of applying Meta-data is to enable discoverability of an object and to provide descriptive information about the object as a whole.

This profile is intended for general training needs and is non industry specific; however, it does include one additional category of elements targeted for the aviation industry.

The target audience of this profile is the designers, creators, training organizations and users of training content.

The purpose of AICC LOM profile is assist in describing objects to:

- Facilitate search
- Evaluate usability of an object
- Provide information on how to acquire an object
- Provide information on the use of a object
- Facilitate informed decisions about the usability/applicability of an object
- Facilitate the sharing and exchange of AICC objects by enabling the development of catalogs and inventories
- Facilitate the maintenance of AICC objects

## 1.2 Scope

The intent of this document is to provide an AICC profile of the *IEEE Standard for Learning Object Metadata (LOM)* and is designed to be an extension to the LOM.

This document provides additional elements and extended LOM vocabularies in the areas of Instructional Design specific terminology.

This document facilitates the formation of a schema, but does not include one.

Specific implementations of this metadata are outside the scope of this document.



### 1.3 This Document Relationship to LOM

This document contains a number of additions to the LOM. However, there is an attempt to make as few changes as possible. The result is that the LOM becomes a subset of the AICC profile. For instance, when LOM vocabularies are expanded, the original LOM vocabularies are kept unchanged. In forming the vocabulary tokens for the AICC additions, general rules were adopted:

- All tokens would be lower case

- All tokens would be one word, with underscores if necessary (no white space).

However, when LOM vocabulary tokens did not conform to the AICC general rules, the LOM vocabulary tokens were not changed.

Most of the additional data elements appear in the following categories

- Life Cycle

- Educational

- Objectives

- Applicability (new category)

- Collection (new category)

Additional data elements added by the AICC profile may be identified in one of two ways. First, the LOM data element number is identified as “none”, and second, frequently the element comment field indicates that the element is a unique AICC element.

## 1.4 Conformance Requirements

### 1.4.1 Metadata Instance

A conforming metadata instance includes one or more of the metadata elements defined in this specification. A conforming instance may also contain extended elements. The names of elements in a conforming instance shall be the same as the names defined in this document.

Additional data elements may appear in a conforming instance. These are referred to as extended elements. However, in order to maximize interoperability, extended data elements shall not replace or duplicate data elements defined in the AICC Profile structure. This means that an organization should not introduce new data elements with the same meaning as elements already defined in the AICC Profile.

Similarly, extended vocabularies shall not duplicate or replace vocabulary terms defined in the AICC Profile.

### 1.4.2 Metadata Tools

A conforming repository or search engine shall enable the storage, searching, or viewing of all data elements in this profile.

A conforming metadata creation tool shall allow the creation of values for every metadata element in this specification. In addition, it shall store or export all metadata using the data element names defined in this Profile.

## 2 Obligation

Mandatory and optional data elements may be determined by organizations and user groups. However, the AICC has a set of recommended obligations. The table below is separated into several columns. The metadata obligation shown in the recommended table depends on the aggregation level of the content object.

### 2.1 Obligation Table

In columns two through six, the following obligation symbols are used:

- “M” indicates that the element is Mandatory.
- “O” indicates that the element is Optional.
- “NU” Not used by AICC

The dark heading rows are used to separate the major categories - the highest level categories - in the LOM’s hierarchy of data elements. All Categories are lightly highlighted in gray. The major categories are those that appear first under the dark heading rows.

The angle brackets indicate categories and data elements that are in the LOM. Those without angle brackets are AICC additions.

Note: If the obligation M is defined for a category, then at least one of the data elements in that category must be mandatory.

Category/Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<general>	M	M	M	M	M
<identifier>	M	M	M	M	M
<catalog>	M	M	M	M	M
<entry>	M	M	M	M	M
<title>	M	M	M	M	M
<language>	O	O	O	O	O
<description>	O	O	O	M	M
<keyword>	M	M	M	O	O
<coverage>	O	O	O	O	O
<structure>	O	O	O	O	O
<aggregationLevel>	M	M	M	M	M
accessibility	O	O	O	O	O
<b>Element</b>	<b>Training Program</b>	<b>Structured Training Package</b>	<b>Assignable Unit</b>	<b>Launchable Resource</b>	<b>Asset</b>
<lifeCycle>	M	M	M	M	M
<version>	M	M	M	M	M
<status>	M	M	M	M	M
<contribute>	O	O	O	O	O
<role>	O	O	O	O	O
<entity>	O	O	O	O	O
<date>	O	O	O	O	O
Changes	O	O	O	O	O
Type	O	O	O	O	O
Date	O	O	O	O	O
Location	O	O	O	O	O
Reason	O	O	O	O	O
Means	O	O	O	O	O

Description	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<metaMetadata>	M	M	M	M	M
<identifier>	O	O	O	O	O
<catalog>	O	O	O	O	O
<entry>	O	O	O	O	O
<contribute>	O	O	O	O	O
<role>	O	O	O	O	O
<entity>	O	O	O	O	O
<date>	O	O	O	O	O
<metadataSchema>	M	M	M	M	M
<language>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<technical>	O	O	M	M	M
<format>	O	O	M	M	M
<size>	O	O	O	O	O
<location>	O	O	O	O	O
<requirement>	O	O	O	O	O
<orComposite>	O	O	O	O	O
<type>	O	O	O	O	O
<name>	O	O	O	O	O
<minimum-Version>	O	O	O	O	O
<maximum-Version>	O	O	O	O	O
<installationRemarks>	O	O	O	O	O
<otherPlatformRequirements>	O	O	O	O	O
<duration>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<educational>	O	O	O	O	O
<interactivityType>	O	O	O	O	O
<learningResourceType>	O	O	O	O	O
<interactivityLevel>	O	O	O	O	O
<semanticDensity>	NU	NU	NU	NU	NU
<intendedEndUserRole>	O	O	O	O	O
<context>	O	O	O	O	O
<typicalAgeRange>	NU	NU	NU	NU	NU
<difficulty>	O	O	O	O	O
<typicalLearningTime>	O	O	O	O	O
<description>	O	O	O	O	O
<language>	O	O	O	O	O
adaptability	O	O	O	O	O
assessmentType	O	O	O	O	O
instructionalDomain	O	O	O	O	O
conceptualPhilosophy	O	O	O	O	O
cognitiveTaxonomy	O	O	O	O	O
competencyLevel	O	O	O	O	O

instructionalContext	O	O	O	O	O
instructionalFeedbackLevel	O	O	O	O	O
instructionalStrategy	O	O	O	O	O
learningOutcomeType	O	O	O	O	O
objective	O	O	M	O	O
objectiveID	O	O	M	O	O
objectiveTitle	O	O	O	O	O
objectiveDescription	O	O	M	O	O
objectiveType	O	O	M	O	O
objectiveDomain	O	O	O	O	O
objectiveLevel	O	O	O	O	O
requiredTrainingResources	O	O	O	O	O
trainingEventReporting	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<rights>	O	O	O	O	O
<cost>	O	O	O	O	O
<copyrightAndOtherRestrictions>	M	M	M	M	M
<description>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<relation>	O	O	O	O	O
<kind>	O	O	O	O	O
<resource>	O	O	O	O	O
<identifier>	O	O	O	O	O
<catalog>	O	O	O	O	O
<entry>	O	O	O	O	O
<description>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<annotation>	O	O	O	O	O
<entity>	O	O	O	O	O
<date>	O	O	O	O	O
<description>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
<classification>	O	O	O	O	O
<purpose>	O	O	O	O	O
<taxonPath>	O	O	O	O	O
<source>	O	O	O	O	O
<taxon>	O	O	O	O	O
<id>	O	O	O	O	O
<entry>	O	O	O	O	O
<description>	O	O	O	O	O
<keyword>	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset

Applicability	O	O	O	O	O
Type	O	O	O	O	O
Entry	O	O	O	O	O
Element	Training Program	Structured Training Package	Assignable Unit	Launchable Resource	Asset
collection	O	O	O`	O	O
type	O	O	O`	O	O
members	O	O	O`	O	O
memberIdentifier	O	O	O`	O	O
memberTitle	O	O	O`	O	O
memberDescription	O	O	O`	O	O
memberNumber	O	O	O`	O	O
memberLocation	O	O	O`	O	O
memberObjective	O	O	O`	O	O

## 2.2 Obligation Attributes

It is frequently helpful to know the obligation requirements of metadata when it is being reviewed. However, because each organization and using group may have a different obligation table, it may be difficult to determine where the creator's obligation requirements can be found. In addition, when reviewing metadata from several sources, even knowing where all the obligation tables are, it becomes very cumbersome to look up the obligation of data elements of interest.

Therefore, the AICC offers another option for the determination of obligation level -- the obligation attribute. Each metadata element may have an attribute associated with it, describing the obligation of that element in that metadata instance.

There are three possible values that may be used to identify the obligation requirements for a given data element. If there is no obligation specifically identified for a data element, its obligation level is unknown. If it is important to determine the obligation level for an element without an attribute, the creating organization's obligation table must be consulted. The three obligation attributes are:

- M: mandatory
- O: optional
- NU: not used

For simple obligations, the attribute may be expressed in the metadata instance as obligation="Z", where Z represents the letters M, O, or NU.

There may be times when it is desirable to make an obligation depend upon the existence or value of another data element. These simple dependencies may be expressed as the following:

If X then the obligation of Y is Z.

X is a logical expression describing a controlling data element. Y is a category or data element. Z is the obligation identifier M, O or NU. If a value for X exists (i.e. X = any) or a specific value for X exists (eg. Technical.Format = video) then the Y obligation is Z.

Logic operators that may be used in the X expression are EQUALS (=), NOT (~) AND (+) and OR (|). The special word "any" may be used to indicate any value for X fulfills the obligation requirement. If there is no equal sign in the X expression, then "any" is assumed.

The obligation attribute appears in the Y data element in the form X:Z. A colon separates the conditional requirement from the resulting obligation.

## Examples

The data element General.Keyword is considered optional.  
This would result in the following attribute for General.Keyword:

```
<general>
  <keyword obligation="O">
    <string language="en">learning object</string>
    <string language="nl">leerobject</string>
    <string language="fr">objet d'apprentissage</string>
  </keyword>
  <keyword obligation="O">
    <string language="en">metadata</string>
    <string language="nl">metadata</string>
    <string language="fr">métadonnées</string>
  </keyword>
</general>
```

The data element General.Identifier is always required.  
This would result in the following attribute for General Identifier:

```
<general>
  <identifier obligation="M">
    <catalog>URI</catalog>
    <entry>http://www.adlnet.org/content/CO_01</entry>
  </identifier>
</general>
```

The data element is Educational.Objective ID  
Obligation attribute may be stated as follows:  
If Objective Title or Objective Description exists then Objective ID is Mandatory  
This would result in the following attribute for Objective ID

```
<objectiveId obligation="objectiveTitle | objectiveDescription: M">
132APU
</objectiveId>
```

The data element is Technical.Duration.  
The obligation attribute may be stated as follows:  
If the Technical.Format is video or audio, then duration is required.  
This would result in the following attribute for Technical.Duration

```
<technical>
  <duration obligation="technical.format=video | technical.format=audio: M">
    <!-- Movie will play for 1 hour and 30 minutes -->
    <duration>01:30:00</duration>
    <description obligation="O">
      <string language="en">Length of time to play movie</string>
    </description>
  </duration>
</technical>
```

### 3 Data Model Table

In the table below, the columns have the following information:

- Nr = IEEE LOM metadata identification number. Those categories and data elements without a number are those added by the AICC.
- Name = the LOM or AICC name for the data element or category.
- Size - the maximum number of times the element values or category may appear in the metadata instance.
- Data Type = the form of data that may be placed as a value in the data element.
- LOM :
  - same = AICC applies the metadata exactly in the same way as LOM
  - half = the application principle is the same but there are some differences concerning the definitions or the possible values
  - not used : AICC does not use the LOM metadata
  - additional : we have an additional information or vocabulary compared to LOM
  - new: a new element added by the AICC that is not in the LOM

Note: The light gray highlighting indicates a category.

Nr	Name	Size	Data type	LOM
1	General	1		
1.1	Identifier	10		
1.1.1	Catalog	1	CharacterString 1000	same
1.1.2	Entry	1	CharacterString 1000	same
1.2	Title	1	LangString 1000	same
1.3	Language	10	CharacterString 100	same
1.4	Description	10	LangString 2000	same
1.5	Keyword	10	LangString 1000	same
1.6	Coverage			not used
1.7	Structure			same
1.8	Aggregation level	1	Vocabulary	half
	Accessibility	1	Vocabulary	new
2	Life Cycle	1		
2.1	Version	1	LangString 50	same
2.2	Status	1	Vocabulary	same
2.3	Contribute	30		
2.3.1	Role	1	Vocabulary	additional
2.3.2	Entity	40	CharacterString 1000	same
2.3.3	Date	1	DateTime	same
	Changes	100		
	Type	1	Vocabulary	addition
	Location	1	CharacterString 100	addition
	Reason	1	Vocabulary	addition
	Means	1	Vocabulary	addition
	Description	1	CharacterString 200	addition
3	Meta-Metadata	1		
3.1	Identifier	10		
3.1.1	Catalog	1	CharacterString 1000	same
3.1.2	Entry	1	CharacterString 1000	same
3.2	Contribute	10		same
3.2.1	Role	1	Vocabulary	same

3.2.2	Entity	10	CharacterString 1000	same
3.2.3	Date	1	DateTime	same
3.3	Metadata Schema	10		same
3.4	Language	1	CharacterString 100	same
4	Technical	1		
4.1	Format	40	CharacterString 500	same
4.2	Size	1	CharacterString 30	same
4.3	Location	10	CharacterString 1000	same
4.4	Requirement	40		
4.4.1	OrComposite	40		
4.4.1.1	Type	1	Vocabulary	
4.4.1.2	Name	1	Vocabulary	
4.4.1.3	Minimum version	1	CharacterString 30	
4.4.1.4	Maximum version	1	CharacterString 30	
4.5	Installation remarks	1	LangString 1000	
4.6	Other platform requirements, in complement to 4.4	1	LangString 1000	
4.7	Duration	1	Duration	
5	Educational	100		
5.1	Interactivity type	1	Vocabulary	same
5.2	Learning resource type			additional
5.3	Interactivity level	1	Vocabulary	half
5.4	Semantic density			not used
5.5	Intended end user role	10	Vocabulary	half
5.6	Context	10	Vocabulary	half
5.7	Typical age range			not used
5.8	Difficulty	1	Vocabulary	same
5.9	Typical learning time	1	Duration	same
5.10	Description		LangString	same
5.11	Language	10	CharacterString	same
	Required Training Resources			new
	Objective			new
	Objective ID			new
	Objective title			new
	Objective description			new
	Objective type			new
	Objective domain			new
	Objective level			new
	Instructional strategy		Vocabulary	new
	Adaptability			new
	Instructional domain			new
	Conceptual Reference			
	Cognitive Taxonomy			
	Competency level			new
	Instructional feedback level			
	Training event reporting			
6	Rights	1		same
6.1	Cost	1	Vocabulary	same
6.2	Copyright and other restrictions	1	Vocabulary	same



6.3	Description	1	LangString	same
7	Relation	100		
7.1	Kind	1		half
7.2	Resource	1		same
7.2.1	Identifier	10		same
7.2.1.1	Catalog	1		same
7.2.1.2	Entry	1		same
7.2.2	Description	10	LangString SPM 1000	same
8	Annotation	30		same
8.1	Entity	1		same
8.2	Date	1	DateTime	same
8.3	Description	1	LangString	same
9	Classification	40		same
9.1	Purpose	1	Vocabulary	same
9.2	Taxon Path	15		same
9.2.1	Source	1	langString	same
9.2.2	Taxon	15		same
9.2.2.1	ID	1	CharacterString	same
9.2.2.2	Entry	1	LangString	same
9.3	Description	1	LangString	same
9.4	Keyword	40	LangString	same
	Applicability	10		new
	Type	1	Vocabulary	new
	Entry	1	CharacterString	new
	Changes	100		new
	Type	1	Vocabulary	new
	Date	1	DateTime	new
	Location	1	CharacterString	new
	Reason	1	Vocabulary	new
	Means	1	Vocabulary	new
	Description	1	CharacterString	
	Collection	1		new
	Type	1	Vocabulary	new
	Members	1000		new
	Member Identifier	1	CharacterString	new
	Member Title	1	CharacterString	new
	Member Type	1	Vocabulary	new
	Member Description	1	CharacterString	new
	Member Number	1	Integer	new
	Member Location	1	CharacterString	new
	Member Objective	1	CharacterString	new

## 4 Data Elements and Categories

The following categories and data elements are based on the IEEE LOM, a widely used international standard. The LOM number indicates the reference number in the LOM standards document version 1.0. When the LOM number is none, it indicates that the category or data element is an AICC creation augmenting the base LOM scheme.

Additionally, when AICC information has been used to augment the LOM data it has been highlighted in one way or another. For instance, a vocabulary list may include additional elements needed for the AICC. The LOM elements appear above the divider ---- LOM ----. The elements below the divider are added by the AICC requirements. The Comment space will frequently indicate any differences between the data element in the base LOM scheme and the AICC base scheme.

### 4.1 General

Label	General	LOM Number	1
Definition	This category groups the general information that describes this learning object as a whole.		
Data Type	Category	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;general&gt;     &lt;profile&gt; AICCV1.0 &lt;/profile&gt;     &lt;identifier&gt;       &lt;catalog&gt;URI&lt;/catalog&gt;       &lt;entry&gt;http://www.adlnet.org/content/CO_01&lt;/entry&gt;     &lt;/identifier&gt;     &lt;title&gt;       &lt;string language="en"&gt;Title for the learning object&lt;/string&gt;     &lt;/title&gt;     &lt;language&gt;en&lt;/language&gt;     &lt;description&gt;       &lt;string language="en"&gt;Textual description&lt;/string&gt;     &lt;/description&gt;     &lt;keyword&gt;       &lt;string language="en"&gt;learning object&lt;/string&gt;     &lt;/keyword&gt;     &lt;structure&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;atomic&lt;/value&gt;     &lt;/structure&gt;     &lt;aggregationLevel&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;3&lt;/value&gt;     &lt;/aggregationLevel&gt;   &lt;/general&gt; &lt;/aiccLom &gt; </pre>		

#### 4.1.1 Identifier

Label	General.Identifier	LOM Number	1.1
Definition	A globally unique label that identifies this learning object.		
Data Type	Category	Max Number of Occurrences	10
Values	None		
Comment	Identifier has 2 children: Entry and Title. Same as LOM.		

Examples	<pre>&lt; aiccLom &gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt;URI&lt;/catalog&gt;       &lt;entry&gt;http://www.adlnet.org/content/CO_01&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/ aiccLom &gt;</pre>
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#### 4.1.1.1.1 Catalog

Label	General.Identifier.Catalog	LOM Number	1.1.1
Definition	The name or designator of the identification or cataloging scheme for this entry.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values			
Comment	Identifies the world in which the Identifier Entry is unique. Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt;URI&lt;/catalog&gt;       &lt;entry&gt;http://www.adlnet.org/content/CO_01&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		
	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-F18E/F &lt;/catalog&gt;       &lt;entry&gt;YMQ16-A10&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		
	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-ALTEON &lt;/catalog&gt;       &lt;entry&gt;B17-623A&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		
	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-AIRBUS &lt;/catalog&gt;       &lt;entry&gt;A320-623A&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		

#### 4.1.1.1.2 Entry

Label	General.Identifier.Entry	LOM Number	1.1.2
Definition	The value of the identifier within the identification or cataloging scheme that designates or identifies this learning object.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values			
Comment	This is the unique identifier. I may be a file name or uri . Same as LOM.		

Examples	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-ALTEON &lt;/catalog&gt;       &lt;entry&gt; M17-A231-C12.2&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>
	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-AIRBUS &lt;/catalog&gt;       &lt;entry&gt; http://www.abcd.org/document/1234&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>

#### 4.1.2 Title

Label	General.Title	LOM Number	1.2
Definition	The value of the identifier within the identification or cataloging scheme that designates or identifies this learning object.		
Data Type	LangString 1000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;title&gt;       &lt;string language="en"&gt; Autoflight System Presentation     &lt;/string&gt;     &lt;/title&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		

#### 4.1.3 Language

Label	General.Language	LOM Number	1.3
Definition	The primary human language or languages used within this learning object to communicate to the intended user.		
Data Type	CharacterString 100	Max Number of Occurrences	10
Values	ISO 639:1988		
Comment	The ISO standard uses two letter designators for the basic language which may be followed by a two letter designator for the country in which the language is used. Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;general&gt;     &lt;language&gt;en&lt;/language&gt;     &lt;language&gt;fr-CA&lt;/language&gt;   &lt;/general&gt; &lt;/aiccLom&gt;</pre>		

#### 4.1.4 Description

Label	General.Description	LOM Number	1.4
Definition	A textual description of the content of this learning object.		
Data Type	LangString 2000	Max Number of Occurrences	10
Values			
Comment	Same as LOM.		

Examples	<pre> &lt;aiccLom&gt;   &lt;general&gt;     &lt;description&gt;       &lt;string language="en"&gt;         Textual description of the learning object       &lt;/string&gt;     &lt;/description&gt;   &lt;/general&gt; &lt;/aiccLom&gt; </pre>
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#### 4.1.5 Keyword

Label	General.Keyword	LOM Number	1.5
Definition	A keyword or phrase describing the topic of this learning object.		
Data Type	LangString 1000	Max Number of Occurrences	10
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;lom&gt;   &lt;general&gt;     &lt;keyword&gt;       &lt;string language="en"&gt;learning object&lt;/string&gt;       &lt;string language="nl"&gt;leerobject&lt;/string&gt;       &lt;string language="fr"&gt;objet d'apprentissage&lt;/string&gt;     &lt;/keyword&gt;     &lt;keyword&gt;       &lt;string language="en"&gt;metadata&lt;/string&gt;       &lt;string language="nl"&gt;metadata&lt;/string&gt;       &lt;string language="fr"&gt;métadonnées&lt;/string&gt;     &lt;/keyword&gt;   &lt;/general&gt; &lt;/lom&gt; </pre>		

#### 4.1.6 Coverage

Label	General.Coverage	LOM Number	1.6
Definition			
Data Type		Max Number of Occurrences	
Values			
Comment	Not used by AICC.		
Examples			

#### 4.1.7 Structure

Label	General.Structure	LOM Number	1.7
Definition	Underlying organizational structure of this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	
Values	Vocabulary Token	Description	
	atomic	an object that is indivisible in this context	
	collection	a set of objects with no specified relationship between them	
	networked	a set of objects with relationships that are unspecified	
	hierarchical	a set of objects whose relationships can be represented by a tree structure	
	linear	a set of objects that are fully ordered. Example: A set of objects that are connected by "previous" and "next" relationships.	
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;general&gt; </pre>		

	<pre> &lt;structure&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;atomic&lt;/value&gt; &lt;/structure&gt; &lt;/general&gt; &lt;/aiccLom&gt; </pre>
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#### 4.1.8 Aggregation Level

Label	General.AggregationLevel		LOM Number	1.8
Definition	The functional granularity of this learning object.			
Data Type	Vocabulary		Max Number of Occurrences	1
Values	Vocabulary Token		Description	
	1	asset	pieces of content or assessments that usually can't be used by themselves. Examples of assets include: Images, Animations, Text, Video, Questions, Templates, Smart Graphics, etc	
	2	launchable resource	a grouping of one or more assets bundled together for a single launchable resource, such as a web page (consisting of assets such as text, audio, and graphics).	
	3	au	a self-contained "chunk" of data consisting of one or more assets or launchable resources. An assignable unit is the first level of aggregated objects where assets are combined for a particular stand-alone purpose. An assignable unit is the lowest level that can communicate with an LMS.	
	4	package	a digital description of Assignable Units, Launchable Resources, and Assets, including off-line activities (simulator sessions, classroom sessions, etc.). Sequencing information and the structure may be hierarchical with many levels, or flat. A training package is comprised of learning activities on-line and offline, summary information, and assessment items.	
	5	program	a collection of structured training packages related to a specific syllabus, or curriculum. It includes a digital description of the structured training packages, as well as sequencing information for the structured training packages.	
Comment	The AICC uses the same vocabulary tokens (numbers) as LOM. However, the AICC adds another level (5) and defines the levels less generically than LOM.			
Examples	<pre> &lt;aiccLom&gt;   &lt;general&gt;     &lt;aggregationLevel&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;2&lt;/value&gt;     &lt;/aggregationLevel&gt;   &lt;/general&gt; &lt;/aiccLom&gt; </pre>			

#### 4.1.9 Accessibility

Label	General.Accessibility	LOM Number	none
Definition	Methodologies employed to develop content to be delivered to people with disabilities (e.g., color blind, vision impairment, blind, hard of hearing, deaf, cognitive impairment, neurological impairment, and speech impairment), dexterity impaired, cognitive impairment, hearing impaired).		

Data Type	Vocabulary	Max Number of Occurrences	7
Values	<ul style="list-style-type: none"> <li>• oversize_font,</li> <li>• deep_contrast,</li> <li>• user_preferences,</li> <li>• sticky_keys,</li> <li>• shortcut_keys</li> <li>• w3c_wai-a</li> <li>• w3c_wai-aa</li> <li>• w3c_wai-aaa</li> </ul>		
Comment	<p>Disabilities: color blind, vision impairment blind, hard of hearing, deaf, mobility impaired, cognitive impairment, neurological impairment, and speech impairment. The four principles of accessibility as defined by the World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI) and the Web Content Accessibility Guidelines (WCAG): are: 1) Content must be perceivable to each user. 2) User interface components in the content must be operable by each user. 3) Content and controls must be understandable to each user. 4) Content must be robust enough to work with current and future technologies. This methodology is usually based on the Section 508 Specifications</p>		
Examples	<p>Example of HTML markup for Level A conformance.</p> <pre>&lt;a href="http://www.w3.org/WAI/WCAG1A-Conformance"   title="Explanation of Level A Conformance"&gt;   &lt;img height="32" width="88"     src="http://www.w3.org/WAI/wcag1A"     alt="Level A conformance icon,     W3C-WAI Web Content Accessibility Guidelines 1.0"&gt; &lt;/a&gt;</pre>		
	<p>Example of HTML markup for Level double-A conformance.</p> <pre>&lt;a href="http://www.w3.org/WAI/WCAG1AA-Conformance"   title="Explanation of Level Double-A Conformance"&gt;   &lt;img height="32" width="88"     src="http://www.w3.org/WAI/wcag1AA"     alt="Level Double-A conformance icon,     W3C-WAI Web Content Accessibility Guidelines 1.0"&gt; &lt;/a&gt;</pre>		
	<p>Example of HTML markup for Level triple-A conformance.</p> <pre>&lt;a href="http://www.w3.org/WAI/WCAG1AAA-Conformance"   title="Explanation of Level Triple-A Conformance"&gt;   &lt;img height="32" width="88"     src="http://www.w3.org/WAI/wcag1AAA"     alt="Level Triple-A conformance icon,     W3C-WAI Web Content Accessibility Guidelines 1.0"&gt; &lt;/a&gt;</pre>		

## 4.2 Life Cycle

Label	LifeCycle	LOM Number	2
Definition	This category describes the history and current state of this learning object and those entities that have affected this learning object during its evolution.		
Data Type	Category	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre>&lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;version&gt;       &lt;string language="en"&gt;1.0 alpha&lt;/string&gt;     &lt;/version&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt;</pre>		

	<pre> &lt;/version&gt; &lt;status&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;final&lt;/value&gt; &lt;/status&gt; &lt;contribute&gt;   &lt;role&gt;     &lt;source&gt;LOMv1.0&lt;/source&gt;     &lt;value&gt;author&lt;/value&gt;   &lt;/role&gt; &lt;entity&gt;BEGIN:VCARD\nFN:Joe FridayEND:VCARD&lt;/entity&gt; &lt;date&gt;   &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;   &lt;description&gt;     &lt;string language="en"&gt;A description for the date&lt;/string&gt;   &lt;/description&gt; &lt;/date&gt; &lt;/contribute&gt; &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>
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#### 4.2.1 Version

Label	LifeCycle.Version	LOM Number	2.1
Definition	The edition of this learning object.		
Data Type	LangString 50	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;version&gt;       &lt;string language="en"&gt;1.0 alpha&lt;/string&gt;     &lt;/version&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		

#### 4.2.2 Status

Label	LifeCycle.Status	LOM Number	2.2
Definition	The edition of this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	draft	Component is in a draft state (as determined by the developer)	
	final	Component is in a final state (as determined by the developer)	
	revised	Component has been revised since the last version.	
	unavailable	Status information is unavailable.	
Comment	Same as LOM. Description provided by AICC.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;final&lt;/value&gt;     &lt;/status&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		



### 4.2.3 Contribute

Label	LifeCycle.Contribute	LOM Number	2.3
Definition	Those entities (people, organization...) that have contributed to the state of this learning object during its life cycle.		
Data Type	Category	Max Number of Occurrences	30
Values	None		
Comment	This category has 3 children to describe each contribution: Role, Entity, and Date. Up to 30 contributors can be described. Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;author&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe FridayEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;A description for the date&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		

#### 4.2.3.1 Role

Label	LifeCycle.Contribute.Role	LOM Number	2.3.1
Definition	Kind of contribution.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	author	A person or group that originates or creates the content	
	publisher	A person or group that disseminates or releases for distribution the content	
	unknown	The kind of contribution made by the entity is not known.	
	initiator	A person or group who facilitates the beginning of the content	
	terminator	A person or group who forms the ending of the content	
	validator	A person or group who verifies the content	
	editor	A person or group who alter, adapt, or refine the content	
	graphical designer	A person or group who uses software tools to create visual representations of an object	
	technical implementer	A person or group who adds technical features for the content	
	content provider	A person or group who makes the content available to users	
	educational validator	A person or group who verifies the educational effectiveness of the content	
	script writer	A person or group who writes the text of a production object such as audio or video	
	instructional designer	Designs instructional and cognitive strategies to support the core content of a learning object so that learning occurs.	
	subject matter expert	Person knowledgeable in the domain covered by the content.	
	developer	AICC addition: uses authoring tools to produce the final	

		deliverable.
	qa	AICC addition: Quality Assurance. A person or group who functionally or technically validates the content.
	content_designer	AICC addition: A person or group who creates the visual and behavioral representation of the training content
	media_developer	AICC addition: uses software tools to create various media types: graphics, 3D environments, animations, video, sound, etc.
	programmer	AICC addition: anyone who writes code.
Comment	The AICC vocabulary expands the LOM vocabulary with <i>developer</i> , <i>qa</i> , <i>content_designer</i> , <i>media_developer</i> , and <i>programmer</i> . All descriptions of any of the vocabulary elements are AICC additions to LOM.	
Examples	<pre>&lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;AICCV1.0&lt;/source&gt;         &lt;value&gt;author&lt;/value&gt;       &lt;/role&gt;     &lt;/contribute&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt;</pre>	

#### 4.2.3.2 Entity

Label	LifeCycle.Contribute.Entity	LOM Number	2.3.2
Definition	The identification of and information about entities (people, organizations) contributing to this learning object.		
Data Type	CharacterString 1000	Max Number of Occurrences	40
Values			
Comment	If their contribution was on the same date, up to 40 people or organizations can be identified as having the same role in the creation of the learning object.		
Examples	<pre>&lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;author&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;Joe Fred Biggs&lt;/entity&gt;       &lt;entity&gt;Pierre Cottlemyer&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;A description for the date&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt;</pre>		

#### 4.2.3.3 Date

Label	LifeCycle.Contribute.Date	LOM Number	2.3.3
Definition	The date of the contribution.		
Data Type	DateTime	Max Number of Occurrences	1
Values	DateTime consists of two elements, a date-time and a description.		

Comment	Same as SCORM.
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;author&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe AuthorEND:VCARD&lt;/entity&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Mary AuthorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the author finished authoring the component.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>

#### 4.2.4 Changes

Label	LifeCycle.Changes	LOM Number	none
Definition	Identification of what is different in the revised object.		
Data Type	Category	Max Number of Occurrences	1000
Values	None		
Comment	AICC addition.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; au &lt;/type&gt;         &lt;date&gt; 2006-09-15 &lt;/date&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;means&gt; change &lt;/means&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		

##### 4.2.4.1 Type

Label	LifeCycle.Changes.Type	LOM Number	none
Definition	Category of the object being changed. Level of aggregation or more specific type.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	question	A single assessment item.	
	smart_graphic	An illustration whose appearance can be changed	

		programmatically.
	template	Something that establishes or serves as a pattern
	text	Printed or written matter
	graphic	An illustration or photograph
	animation	A motion sequence generated artificially.
	video	A motion sequence recorded from reality.
	audio	sound recording
	other_asset	pieces of content or assessments that usually can't be used by themselves. Excludes the specific asset types listed above.
	launchable	a grouping of one or more assets bundled together for a single launchable resource, such as a web page (consisting of assets such as text, audio, and graphics).
	au	a self-contained "chunk" of data consisting of one or more assets or launchable resources. An assignable unit is the first level of aggregated objects where assets are combined for a particular stand-alone purpose. An assignable unit is the lowest level that can communicate with an LMS.
	package	a digital description of Assignable Units, Launchable Resources, and Assets, including off-line activities (simulator sessions, classroom sessions, etc.). Sequencing information and the structure may be hierarchical with many levels, or flat. A training package is comprised of learning activities on-line and offline, summary information, and assessment items.
	program	a collection of structured training packages related to a specific syllabus, or curriculum. It includes a digital description of the structured training packages, as well as sequencing information for the structured training packages.
Comment	AICC addition. Note that the aggregation level of the object to which this metadata applies may be different than the aggregation level of the object which changed. For instance, the metadata may be about a course, but the object that changed was an assignable unit.	
Examples	<pre> &lt;aicclom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICCv1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; au &lt;/type&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aicclom&gt; </pre>	

#### 4.2.4.2 Date

Label	Changes.Date	LOM Number	none
Definition	Date that this change was completed.		
Data Type	Date	Max Number of Occurrences	1
Values	Date in the format YYYY-MM-DD.		
Comment			

Examples	
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#### 4.2.4.3 Location

Label	LifeCycle.Changes.Location	LOM Number	none
Definition	Indication of where in the object the change occurred.		
Data Type	Character string 100	Max Number of Occurrences	1
Values	None		
Comment	AICC addition.		
Examples	<pre> &lt;aicclom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICcv1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; au &lt;/type&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aicclom&gt; </pre>		

#### 4.2.4.4 Reason

Label	LifeCycle.Changes.Reason	LOM Number	none
Definition	Why the change was made.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	technical	Technical changes were made in the subject covered by the learning object.	
	correction	A mistake was detected and corrected in the earlier version of the object.	
	improvement	The change enhances the learning object in some way.	
Comment	AICC addition.		
Examples	<pre> &lt;aicclom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICcv1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; assignable unit &lt;/type&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aicclom&gt; </pre>		

## 4.2.4.5 Means

Label	LifeCycle.Changes.Means	LOM Number	none
Definition	How the change was made.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	addition	Something was added to the learning object.	
	deletion	Something was subtracted from the learning object.	
	change	Something is different in the learning object.	
Comment	AICC addition.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; assignable unit &lt;/type&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;means&gt; change &lt;/means&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		

## 4.2.4.6 Description

Label	LifeCycle.Changes.Description	LOM Number	none
Definition	More information about the change.		
Data Type	Character string 200	Max Number of Occurrences	1
Values	None		
Comment	AICC addition.		
Examples	<pre> &lt;aiccLom&gt;   &lt;lifeCycle&gt;     &lt;status&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;revised&lt;/value&gt;     &lt;/status&gt;     &lt;changes&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;change&gt;         &lt;type&gt; assignable unit &lt;/type&gt;         &lt;location&gt; frame 16 &lt;/location&gt;         &lt;reason&gt; correction &lt;/reason&gt;         &lt;description&gt; Corrected spelling error. &lt;/description&gt;       &lt;/change&gt;     &lt;/changes&gt;   &lt;/lifeCycle&gt; &lt;/aiccLom&gt; </pre>		

### 4.3 Meta Metadata

Label	MetaMetadata	LOM Number	3
Definition	This category describes the metadata record itself, not the learning object.		
Data Type	Category	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;identifier&gt;       &lt;catalog&gt;URI&lt;/catalog&gt;       &lt;entry&gt;http://www.aicc.org&lt;/entry&gt;     &lt;/identifier&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;creator&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe Metadata CreatorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the creator finished authoring the metadata.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;     &lt;metadataSchema&gt;LOMv1.0&lt;/metadataSchema&gt;     &lt;metadataSchema&gt;AICCV1.0&lt;/metadataSchema&gt;     &lt;language&gt;en&lt;/language&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

#### 4.3.1 Identifier

Label	MetaMetadata.Identifier	LOM Number	3.1
Definition	A globally unique label that identifies this metadata record.		
Data Type	Category	Max Number of Occurrences	10
Values	None		
Comment	This category has 2 children to describe each contribution: Catalog and Entry. Up to 10 identifiers can be described. Same as LOM. The common practice in the aviation industry is to identify a label that is unique to the domain specified in Catalog.		
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;identifier&gt;       &lt;catalog&gt;URI&lt;/catalog&gt;       &lt;entry&gt;http://www.aicc.org&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

##### 4.3.1.1 Catalog

Label	MetaMetadata.Identifier.Catalog	LOM Number	3.1.1
Definition	The name or designator of the identification or cataloging scheme for this entry.		
Data Type	CharacterString 1000	Max Number of Occurrences	1

Values	
Comment	Identifies the world in which the Identifier Entry is unique. Same as LOM.
Examples	<pre>&lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-F18E/F &lt;/catalog&gt;       &lt;entry&gt; M17-A231-C12.2&lt;/entry&gt;     &lt;/identifier&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt;</pre>

#### 4.3.1.2 Entry

Label	MetaMetadata.Identifier.Entry	LOM Number	3.1.2
Definition	The value of the identifier within the identification or cataloging scheme that designates or identifies this metadata record.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values			
Comment	This is the unique identifier. Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;identifier&gt;       &lt;catalog&gt; AICC-AIRBUS &lt;/catalog&gt;       &lt;entry&gt; APU17M &lt;/entry&gt;     &lt;/identifier&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt;</pre>		

#### 4.3.2 Contribute

Label	MetaMetadata.Contribute	LOM Number	3.2
Definition	Those entities (people, organization...) that have contributed to the state of this metadata instance during its life cycle.		
Data Type	Category	Max Number of Occurrences	10
Values	None		
Comment	This category has 3 children to describe each contribution: Role, Entity, and Date. Up to 10 contributors can be described. Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;creator&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe Metadata CreatorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the creator             finished authoring the metadata.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt;</pre>		



**4.3.2.1 Role**

Label	MetaMetadata.Contribute.Role	LOM Number	3.2.1
Definition	Kind of contribution.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Creator Validator		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;creator&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe Metadata CreatorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the creator finished authoring the metadata.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

**4.3.2.2 Entity**

Label	MetaMetadata.Contribute.Entity	LOM Number	3.2.2
Definition	The identification of and information about entities (people, organizations) contributing to this metadata instance.		
Data Type	CharacterString 1000	Max Number of Occurrences	10
Values			
Comment	If their contribution was on the same date, up to 10 people or organizations can be identified as having the same role in the creation of the metadata instance. The CharacterString may or may not represent a valid vCard.		
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;creator&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe Metadata CreatorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-12&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the creator finished authoring the metadata.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

**4.3.2.3 Date**

Label	MetaMetadata.Contribute.Date	LOM Number	3.2.3
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Definition	The date of the contribution.		
Data Type	DateTime	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;contribute&gt;       &lt;role&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;creator&lt;/value&gt;       &lt;/role&gt;       &lt;entity&gt;BEGIN:VCARD\nFN:Joe Metadata CreatorEND:VCARD&lt;/entity&gt;       &lt;date&gt;         &lt;dateTime&gt;2002-12-16&lt;/dateTime&gt;         &lt;description&gt;           &lt;string language="en"&gt;This date represents the date the creator finished authoring the metadata.&lt;/string&gt;         &lt;/description&gt;       &lt;/date&gt;     &lt;/contribute&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

#### 4.3.3 Metadata Schema

Label	MetaMetadata.MetadataSchema	LOM Number	3.3
Definition	The name and version of the authoritative specification used to create this metadata instance.		
Data Type	CharacterString 1000	Max Number of Occurrences	10
Values			
Comment	Same as LOM. Identifies the profile that was used for the metadata instance.		
Examples	<pre> &lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;!-- Mandatory Element/Values for all SCORM 1.3 Meta-data instances --&gt;     &lt;metadataSchema&gt;LOMv1.0&lt;/metadataSchema&gt;     &lt;metadataSchema&gt;AICCV1.0&lt;/metadataSchema&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt; </pre>		

#### 4.3.4 Language

Label	MetaMetadata.Language	LOM Number	3.4
Definition	Language of this metadata instance.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values	ISO 639:1988		
Comment	<p>The ISO standard uses two letter designators for the basic language which may be followed by a three letter designator for the country in which the language is used. Same as LOM.</p> <p>This value represents the default language for all LangStrings. If a value for this data element is not present in a meta-data instance, then there is no default language for LangString values. If this value is provided it is not necessary to indicate a language value for LangString elements.</p>		

Examples	<pre>&lt;aiccLom&gt;   &lt;metaMetadata&gt;     &lt;language&gt;en&lt;/language&gt;   &lt;/metaMetadata&gt; &lt;/aiccLom&gt;</pre>
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## 4.4 Technical

Label	Technical	LOM Number	4
Definition	This category describes the technical requirements and characteristics of this learning object.		
Data Type	Category	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;format&gt;text/html&lt;/format&gt;     &lt;size&gt;1024&lt;/size&gt;     &lt;location&gt;Lesson01/Module01/Resources/SCO01.htm&lt;/location&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;ms-internet explorer&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;     &lt;installationRemarks&gt;       &lt;string language="en"&gt;This activity requires the client browser to have a Macromedia Flash plugin installed.&lt;/string&gt;     &lt;/installationRemarks&gt;     &lt;otherPlatformRequirements&gt;       &lt;string language="en"&gt;Sound card, Min. RAM: 16Mb, Video card and display: at least 800 X 600 pixels x 256 colors&lt;/string&gt;     &lt;/otherPlatformRequirements&gt;     &lt;duration&gt;       &lt;duration&gt;00:35:15&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Length of time to play simulation&lt;/string&gt;       &lt;/description&gt;     &lt;/duration&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

### 4.4.1 Format

Label	Technical.Format	LOM Number	4.1
Definition	Technical datatype(s) (of all the components of) this learning object.		
Data Type	CharacterString 500	Max Number of Occurrences	40
Values	MIME types based on IANA registration (see RFC2048:1996). Up to 40 different types may be listed for a learning object.		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;format&gt;video/mpeg&lt;/format&gt; </pre>		

	<pre>&lt;format&gt;text/html&lt;/format&gt; &lt;/technical&gt; &lt;/aiccLom&gt;</pre>
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#### 4.4.2 Size

Label	Technical.Size	LOM Number	4.2
Definition	The size of the digital learning object in bytes.		
Data Type	CharacterString 30	Max Number of Occurrences	1
Values	A string which may be converted to an integer number.		
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt; &lt;technical&gt;   &lt;size&gt;345&lt;/size&gt; &lt;/technical&gt; &lt;/aiccLom&gt;</pre>		

#### 4.4.3 Location

Label	Technical.Location	LOM Number	4.3
Definition	A string that is used to access to this learning object.		
Data Type	CharacterString 1000	Max Number of Occurrences	10
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt; &lt;technical&gt;   &lt;location&gt;http://www.adlnet.org/content/Asset.jpg&lt;/location&gt; &lt;/technical&gt; &lt;/aiccLom&gt;</pre>		

#### 4.4.4 Requirement

Label	Technical.Requirement	LOM Number	4.4
Definition	The technical capabilities necessary for using this learning object.		
Data Type	Category	Max Number of Occurrences	40
Values	None		
Comment	A list of requirements, all of which are required to enable the use of the learning object. Each requirement in the list has at least one "orComposite." If there is only one set of orComposite elements, then that is a requirement. But if there are several alternatives for that requirement, then the list of orComposites is a sublist any one of whose members could satisfy that requirement. Same as LOM.		
Examples	<pre>&lt;aiccLom&gt; &lt;technical&gt;   &lt;requirement&gt;     &lt;orComposite&gt;       &lt;type&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;browser&lt;/value&gt;       &lt;/type&gt;       &lt;name&gt;         &lt;source&gt;LOMv1.0&lt;/source&gt;         &lt;value&gt;ms-internet explorer&lt;/value&gt;       &lt;/name&gt;       &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;       &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;     &lt;/orComposite&gt;   &lt;/requirement&gt; &lt;/technical&gt;</pre>		

	</aiccLom>
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#### 4.4.4.1 OrComposite

Label	Technical.OrComposite	LOM Number	4.4.1
Definition	Multiple requirement grouped with the logical connector OR.		
Data Type	Category	Max Number of Occurrences	40
Values	None		
Comment	A list of technical requirements, any one of which may be used to enable the use of the learning object. This category has four children which may be used to describe each requirement. Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;ms-internet explorer&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;netscape communicator&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;4.7.9&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;5.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

#### 4.4.4.1.1 Type

Label	Technical.OrComposite.Type	LOM Number	4.4.1.1
Definition	The technology required to use this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Operating system Browser		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

	<pre> &lt;/type&gt; &lt;name&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;ms-internet explorer&lt;/value&gt; &lt;/name&gt; &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt; &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt; &lt;/orComposite&gt; &lt;/requirement&gt; &lt;/technical&gt; &lt;/aiccLom&gt; </pre>
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**4.4.4.1.2 Name**

Label	Technical.OrComposite.Name	LOM Number	4.4.1.2
Definition	Name of the required technology to use this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	<p>If requirement.orComposite.type = "operating system"</p> <ul style="list-style-type: none"> <li>pc-dos</li> <li>ms-windows</li> <li>macos</li> <li>unix</li> <li>multi-os</li> <li>none</li> <li>other</li> </ul> <p>If requirement.orComposite.type = "browser"</p> <ul style="list-style-type: none"> <li>any</li> <li>netscape</li> <li>communicator</li> <li>mozilla</li> <li>ms-internet_explorer</li> <li>opera</li> <li>firefox</li> <li>amaya</li> <li>other</li> <li>none</li> </ul>		
Comment	AICC modification to vocabulary by addition of other, mozilla, and firefox.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;ms-internet explorer&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

**4.4.4.1.3 Minimum Version**

Label	Technical.OrComposite.MinimumVersion	LOM Number	4.4.1.3
Definition	Lowest possible version of the required technology to use this learning object.		
Data Type	CharacterString 30	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;ms-internet explorer&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

**4.4.4.1.4 Maximum Version**

Label	technical.orComposite.maximumVersion	LOM Number	4.4.1.4
Definition	Lowest possible version of the required technology to use this learning object.		
Data Type	CharacterString 30	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;technical&gt;     &lt;requirement&gt;       &lt;orComposite&gt;         &lt;type&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;browser&lt;/value&gt;         &lt;/type&gt;         &lt;name&gt;           &lt;source&gt;LOMv1.0&lt;/source&gt;           &lt;value&gt;ms-internet explorer&lt;/value&gt;         &lt;/name&gt;         &lt;minimumVersion&gt;5.0&lt;/minimumVersion&gt;         &lt;maximumVersion&gt;6.0&lt;/maximumVersion&gt;       &lt;/orComposite&gt;     &lt;/requirement&gt;   &lt;/technical&gt; &lt;/aiccLom&gt; </pre>		

**4.4.5 Installation Remarks**

Label	technical.installationRemarks	LOM Number	4.5
Definition	Description of how to install this learning object		
Data Type	LangString 1000	Max Number of Occurrences	1



Values	
Comment	Same as LOM.
Examples	<pre>&lt;aiccLom&gt;   &lt;technical&gt;     &lt;installationRemarks&gt;       &lt;string language="en"&gt;This activity requires the client browser to have a       Macromedia Flash plugin installed.&lt;/string&gt;     &lt;/installationRemarks&gt;   &lt;/technical&gt; &lt;/aiccLom&gt;</pre>

#### 4.4.6 Other Platform Requirements

Label	technical.otherPlatformRequirements	LOM Number	4.6
Definition	Information about software and hardware requirements		
Data Type	LangString 1000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;technical&gt;     &lt;otherPlatformRequirements&gt;       &lt;string language="en"&gt; Sound card, Min. RAM 32Mb, Resolution min       1024x768, Min 256 colors &lt;/string&gt;     &lt;/otherPlatformRequirements&gt;   &lt;/technical&gt; &lt;/aiccLom&gt;</pre>		

#### 4.4.7 Duration

Label	technical.duration	LOM Number	4.7
Definition	Time a continuous learning object takes when played at intended speed		
Data Type	TimeSpan	Max Number of Occurrences	1
Values			
Comment	Same as LOM except for datatype of AICC CMI TimeSpan instead of ISO duration.		
Examples	<pre>&lt;aiccLom&gt;   &lt;technical&gt;     &lt;duration&gt;       &lt;!-- Movie will play for 1 hour and 30 minutes --&gt;       &lt;duration&gt;01:30:00&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Length of time to play movie&lt;/string&gt;       &lt;/description&gt;     &lt;/duration&gt;   &lt;/technical&gt; &lt;/aiccLom&gt;</pre>		

## 4.5 Educational

Label	Educational	LOM Number	5
Definition	This category describes the key educational or pedagogic characteristics of this learning object.		
Data Type	Category	Max Number of Occurrences	100
Values			
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;narrative text&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt;     &lt;intendedEndUserRole&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;learner&lt;/value&gt;     &lt;/intendedEndUserRole&gt;     &lt;difficulty&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;easy&lt;/value&gt;     &lt;/difficulty&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>		

### 4.5.1 Interactivity Type

Label	Educational.InteractivityType	LOM Number	5.1
Definition	<p>The flow of interaction between this resource and the intended user.</p> <p>---- LOM ----</p> <p>The interactivity type identifies the predominant mode of learning that is supported by the learning object.</p>		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	active	Active learning is learning by doing. This type is supported by content	

		that directly induces productive action by the learner. An active learning object prompts the learner for semantically meaningful input or for some other kind of productive action or decision, not necessarily performed within the learning object's framework. Active documents include simulations, questionnaires, and exercises.
	expositive	Expositive learning is passive learning. This occurs when the learner's job mainly consists of absorbing the content exposed to him (generally through text, images or sound). An expositive learning object displays information but does not prompt the learner for any semantically meaningful input. Expositive documents include essays, video clips, all kinds of graphical material, and hypertext documents.
	mixed	Mixed corresponds to a learning resource with both active and expositive segments in it.
Comment	Same as LOM with augmented definition and vocabulary descriptions.	
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;narrative text&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt;     &lt;intendedEndUserRole&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;learner&lt;/value&gt;     &lt;/intendedEndUserRole&gt;     &lt;difficulty&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;easy&lt;/value&gt;     &lt;/difficulty&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>	

#### 4.5.2 Learning Resource Type

Label	Educational.LearningResourceType	LOM Number	5.2
Definition	Specific kind of learning object.		
Data Type	Vocabulary	Max Number of Occurrences	10

Values	Vocabulary Tokens	Description
	exercise	A maneuver, operation, or drill carried out for training and discipline
	simulation	Training Activity that replicates real life situations in an artificial environment. Students perform as if the activities were occurring in real life.
	questionnaire	A set of questions that are not used as a performance evaluation for a learner.
	diagram	A drawing that shows arrangement and relations
	figure	A diagram or pictorial illustration
	graph	A collection of coordinates to satisfy a given relation
	index	A list of some specified data (as author, subject, or keyword)
	slide	An illustration or photograph on a transparent medium that may be projected onto a screen for viewing.
	table	A systematic arrangement of data usually in rows and columns for ready reference
	narrative text	The textual representation of an event or story
	exam	A collection of assessment items which are used to determine a learner's proficiency.
	experiment	An operation or procedure carried out under controlled conditions.
	problem statement	
	self assessment	A set of questions used by a learner to determine his own level of performance.
	lecture	A discourse given before an audience or class for instruction
	collection	A set of objects with no specified relationship between them.
	question	An assessment item. A unit of assessment.
	example	One that is representative of all of a group or type
	lesson	A unit of instruction of arbitrary length and size.
	video	A motion sequence recorded from reality.
	animation	A motion sequence generated artificially.
	audio	Sound recording
	graphic	An illustration or photograph.
	question_bank	A collection of questions any one or more of which may be used to populate exams.
Comment	AICC added definitions to vocabulary elements. AICC added collection, question, example, lesson, video, animation, audio, graphic, question_bank to the vocabulary.	
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;AICCv1.0&lt;/source&gt;       &lt;value&gt;example&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt; </pre>	

	<pre> &lt;intendedEndUserRole&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;learner&lt;/value&gt; &lt;/intendedEndUserRole&gt; &lt;difficulty&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;easy&lt;/value&gt; &lt;/difficulty&gt; &lt;typicalLearningTime&gt;   &lt;duration&gt;PT1H30M&lt;/duration&gt;   &lt;description&gt;     &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;   &lt;/description&gt; &lt;/typicalLearningTime&gt; &lt;language&gt;en-US&lt;/language&gt; &lt;/educational&gt; &lt;/aicclom&gt; </pre>
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#### 4.5.3 Interactivity Level

Label	Educational.InteractivityLevel		LOM Number	5.3
Definition	<p>This element shall define the degree of interactivity between the end user and this resource.</p> <p>---- LOM ----</p> <p>The degree of interactivity that characterizes this learning object. Interactivity in this context refers to the degree to which the learner can influence the aspect or behavior of the learning object .</p>			
Data Type	Vocabulary		Max Number of Occurrences	1
Values	Vocabulary Tokens	Description		
	none	<p>Simple delivery of information to students. The student acts solely as the receiver of information.</p> <ul style="list-style-type: none"> <li>• syllabus, class notes, assignments, etc.</li> <li>• allows for material delivery locally or at a distance;</li> <li>• all web courses implemented at this level.</li> </ul>		
	very low	<p>Provision of pre-defined links for students to explore. The student makes simple responses to instructional cues.</p> <ul style="list-style-type: none"> <li>• outside resources related to current topic;</li> <li>• simple exploration of outside sites; required instructional activities at specified sites.</li> </ul>		
	low	<p>Involves computer mediated communication. The student makes a variety of responses using varied techniques in response to instructional cues.</p> <ul style="list-style-type: none"> <li>• primarily text-based interaction;</li> <li>• on-line interaction between students and instructor;</li> <li>• asynchronous communication:</li> <li>• use of listservs and newsgroups;</li> <li>• synchronous communication</li> <li>• internet Relay Chat (IRC)</li> </ul>		
	medium	<p>Self-contained instructional modules available on WWW. The student makes a variety of responses using varied techniques in response to instructional cues.</p> <ul style="list-style-type: none"> <li>• web-based course management tools;</li> <li>• available for individual access or downloading;</li> <li>• use of authoring systems with WWW.</li> </ul>		

	high	<p>Student synthesis and creation of WWW resources; Instructor provides some instruction on HTML tools. The student makes a variety of responses using varied techniques in response to instructional cues.</p> <ul style="list-style-type: none"> <li>• student creation options;</li> <li>• individual representation of course information;</li> <li>• location of external course-related resources.</li> </ul>
	very high	<p>Text-based and visual instructional environments accessible simultaneously by multiple users. The student is directly involved in a life-like set of complex cues and responses.</p> <ul style="list-style-type: none"> <li>• expands the level of potential interaction;</li> <li>• allows for manipulation of instructional variables;</li> <li>• simulations on the web;</li> <li>• virtual reality</li> </ul>
Comment	<p>AICC provided descriptions and added "none" to the LOM vocabulary. Note that feedback and interactivity are two different concepts. For example, a free-play simulation could be very interactive, with no instructional feedback.</p>	
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;narrative text&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt;     &lt;intendedEndUserRole&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;learner&lt;/value&gt;     &lt;/intendedEndUserRole&gt;     &lt;difficulty&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;easy&lt;/value&gt;     &lt;/difficulty&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the         activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>	

**4.5.4 Semantic Density**

Label	Educational.InteractivityLevel	LOM Number	5.4
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Definition	
Data Type	Max Number of Occurrences 1
Values	
Comment	Not Used by the AICC.
Examples	

#### 4.5.5 Intended End User Role

Label	Educational.IntendedEndUserRole	LOM Number	5.5
Definition	Principal user(s) for which this resource was designed, most dominant first.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	teacher	uses the object to educate	
	trainer	AICC addition: uses the object to conduct instruction for a particular skill or knowledge	
	author	A person or group that originates or creates the content.	
	learner	a learner can fulfill two roles as an end user: 1) a recipient of packaged learning events; and 2) an end user of an object(s) whereas the learner is responsible to self-identify skills and respective objects that they need to master for a specific learning event. In this role the Learner will search on metadata (e.g., skill level, interactivity level, learning outcome, assessment, etc.) to assist them in identifying the objects that they need in order to build and sequence their learning event.	
	manager	oversees the development process, life-cycle maintenance, acquisition, and/or delivery of an object(s).	
	instructional_designer	AICC addition: designs instructional and cognitive strategies to support the core content of a learning object so that learning occurs.	
	developer	AICC addition: uses authoring tools to produce the final deliverable.	
	media_developer	AICC addition: uses software tools to create various media types: graphics, 3D environments, animations, video, sound, etc.	
	programmer	AICC addition: anyone who writes code.	
	technical_writer	AICC addition: creates or publishes the technical content for a learning object.	
Comment	<p>This is different than an audience. An audience analysis is an ISD function that determines the characteristics of the average learner consuming the instructional content; whereas the intended end user is the person(s) using the reusable object for a specific purpose. The user may be a learner in the case of an assignable unit, but an author or developer may use an asset when developing courseware and a manager may use the courseware syllabus for documentation purposes.</p> <p>AICC added <i>trainer</i>, <i>instructional_designer</i>, <i>developer</i>, <i>media_developer</i>, <i>programmer</i>, and <i>technical_writer</i> to the vocabulary.</p>		
Examples	<pre>&lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;</pre>		

	<pre> &lt;learningResourceType&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;narrative text&lt;/value&gt; &lt;/learningResourceType&gt; &lt;interactivityLevel&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;very low&lt;/value&gt; &lt;/interactivityLevel&gt; &lt;intendedEndUserRole&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;learner&lt;/value&gt; &lt;/intendedEndUserRole&gt; &lt;difficulty&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;easy&lt;/value&gt; &lt;/difficulty&gt; &lt;typicalLearningTime&gt;   &lt;duration&gt;PT1H30M&lt;/duration&gt;   &lt;description&gt;     &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;   &lt;/description&gt; &lt;/typicalLearningTime&gt; &lt;language&gt;en-US&lt;/language&gt; &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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#### 4.5.6 Context

Label	Educational.Context	LOM Number	5.6
Definition	The principal environment within which the learning and use of this resource is intended to take place.		
Data Type		Max Number of Occurrences	10
Values			
Comment	Not used by the AICC. See the AICC element Instructional Context		
Examples			

#### 4.5.7 Typical Age Range

Label	Educational.TypicalAgeRange	LOM Number	5.7
Definition			
Data Type		Max Number of Occurrences	
Values			
Comment	Not Used by the AICC.		
Examples			

#### 4.5.8 Difficulty

Label	Educational.Difficulty	LOM Number	5.8
Definition	This element defines how hard it is to work through this resource for the typical target audience. ---- LOM ---- How hard the content is to master for the intended learner.		
Data Type	Vocabulary	Max Number of Occurrences	1



Values	very easy easy medium difficult very difficult
Comment	Same as LOM. Vocabulary is designed to define a range from very easy to very difficult
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;narrative text&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt;     &lt;intendedEndUserRole&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;learner&lt;/value&gt;     &lt;/intendedEndUserRole&gt;     &lt;difficulty&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;easy&lt;/value&gt;     &lt;/difficulty&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>

**4.5.9 Typical Learning Time**

Label	Educational.TypicalLearningTime	LOM Number	5.9
Definition	Approximate or typical time it takes to work with this resource. ---- LOM ---- The Typical Learning Time defines the approximate or typical time it takes to master this learning object for the intended audience.		
Data Type	Duration	Max Number of Occurrences	1
Values			
Comment	Same as LOM with enhanced definition.		

Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;narrative text&lt;/value&gt;     &lt;/learningResourceType&gt;     &lt;interactivityLevel&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;very low&lt;/value&gt;     &lt;/interactivityLevel&gt;     &lt;intendedEndUserRole&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;learner&lt;/value&gt;     &lt;/intendedEndUserRole&gt;     &lt;difficulty&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;easy&lt;/value&gt;     &lt;/difficulty&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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**4.5.10 Description**

Label	Educational.Description	LOM Number	5.10
Definition	Comments on how this learning object is to be used. ---- LOM ---- Comments on how this resource is to be used in an educational/training point.		
Data Type	LangString 1000	Max Number of Occurrences	10
Values			
Comment	Same as LOM with enhanced definition.		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt; </pre>		

	<pre> &lt;learningResourceType&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;narrative text&lt;/value&gt; &lt;/learningResourceType&gt; &lt;interactivityLevel&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;very low&lt;/value&gt; &lt;/interactivityLevel&gt; &lt;intendedEndUserRole&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;learner&lt;/value&gt; &lt;/intendedEndUserRole&gt; &lt;difficulty&gt;   &lt;source&gt;LOMv1.0&lt;/source&gt;   &lt;value&gt;easy&lt;/value&gt; &lt;/difficulty&gt; &lt;typicalLearningTime&gt;   &lt;duration&gt;PT1H30M&lt;/duration&gt;   &lt;description&gt;     &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;   &lt;/description&gt; &lt;/typicalLearningTime&gt; &lt;description&gt;   &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt; &lt;/description&gt;   &lt;language&gt;en-US&lt;/language&gt; &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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**4.5.11 Language**

Label	Educational.Language	LOM Number	5.11
Definition	<p>The human language used by the typical intended user of this learning object.  ---- LOM ----  The human language used by the typical intended user of the resource. "None" is an acceptable value.</p>		
Data Type	CharacterString 1000	Max Number of Occurrences	10
Values	LangCode		
Comment	Same as LOM with expanded definition.		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;language&gt; en &lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>		
	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt; </pre>		

	<pre> &lt;language&gt;en-US&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;language&gt;en-GB&lt;/language&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>

#### 4.5.12 Adaptability

Label	Educational.Adaptability	LOM Number	none
Definition	The capacity for the content to adapt to the learner or the platform.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	None	Learning object provides same instruction to all students on a single platform.	
	learning_style	Learning object is able to provide different instruction on the same subject, depending on the learning style of the student.	
	competency_level	Learning object is able to provide different instruction based on the student's competency level.	
	preferences	Learning object is able to change different aspects of the instruction based on the student's preferences.	
	accessibility	Learning object is able to change different aspects of the presentation modality depending on the students accessibility requirements.	
	delivery_platform	(Hardware/software): Learning object is able to operate on different operating systems, or different browsers, or different CPU's and provide the same learning experience.	
	learner_progress	Learning object is able to provide different instruction based on student performance.	
	demographics	Learning object is able to provide different instruction based on demographics of the student.	
	other		
Comment	<p>Aspects of adaptability include</p> <p>Displaying learner information (e.g., user name, company/group name),</p> <p>Displaying different look &amp; feel based on Company/Group/Demographic, adaptation to learner style (e.g., visual, auditory, hands on), adaptation to prior knowledge (e.g., expert/proficient/average/below average);</p> <p>Ability to provide sources of new instructional content based on the learner progress/results; Ability for the content to adapt itself to the platform it is delivered to (e.g., PC LMS, PC CD-Rom, PDA)</p>		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;interactivityType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;mixed&lt;/value&gt;     &lt;/interactivityType&gt;     &lt;learningResourceType&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;figure&lt;/value&gt;     &lt;/learningResourceType&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>		

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  <value>narrative text</value>
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  <value>delivery_platform</value>
</adaptability>
</educational>
</aiccLom>

```

**4.5.13 Assessment Type**

Label	Educational.AessmentType	LOM Number	none
Definition	In order to effectively measure the mastery of an objective, the assessment evaluates the skill, knowledge, or attitude behavior of the objective. The type of assessment used directly relates to the criterion component of the objective.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	performance_testing	Instead of selecting a written answer, student must perform a task or action.	
	multiple_choice	A question with a limited number of predefined responses from which the student may select. Each response is numbered or lettered. One or more responses may be correct for this type of interaction.	
	fill_in_the_blank	A question with a simple one or few-word answer. The answer/response is not predefined, but must be created by the student (as opposed to selected). There is only one possible correct response for this type of interaction.	

	true_false	A question with only two possible responses (true or false). There is only one possible correct response for this type of interaction.
	matching	A question with one or two sets (or lists) of items. Two or more of the members of these sets are related. Answering the question requires finding and matching related members on different sets or lists.
	sequencing	In a sequencing question, the student is required to identify a logical order for the members of a set or list. For instance, he or she may be asked to place a series of events in chronological order. Or the student may be asked to rank a group of items by the order of their importance. One or more responses may be correct for this type of interaction.
	likert	A Likert question offers the student a group of alternatives on a continuum. The response is generally based on the student's opinion or attitude. Typical scales are as follows: From strongly agree to strongly disagree. From way too much to way too little. From understands completely to do not understand at all. There is no "correct answer" for Likert type interactions. There is only one response.
	numeric	A numeric value with or without a decimal point is required in answering the question. The correct answer may be a single number within a range of numbers.
	long_fill_in	The interaction requires the learner to supply a response in the form of a long string of characters. Typically, the correct response is a sentence, paragraph or short composition, but long composition forms are also possible. Typically the interaction is presented as an examination statement the learner must analyze and respond to by creating a written answer of a specified length, such as a short or long essay.
	other	Question that does not fit into one of the above categories.
Comment	AICC addition.	
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;typicalLearningTime&gt;       &lt;duration&gt;PT1H30M&lt;/duration&gt;       &lt;description&gt;         &lt;string language="en"&gt;Average length of time to experience the activity.&lt;/string&gt;       &lt;/description&gt;     &lt;/typicalLearningTime&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;language&gt;en-US&lt;/language&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt; </pre>	

	<pre> &lt;/educational&gt; &lt;/aiccLom&gt;                 </pre>
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**4.5.14 Instructional Domain**

Label	Educational.Instructional Domain	LOM Number	none
Definition	The Instructional Domain element describes the "kind" of topic addressed by the learning object.		
Data Type	Category	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;language&gt;en-US&lt;/language&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;   &lt;/educational&gt; &lt;/aiccLom&gt;                 </pre>		

**4.5.14.1 Conceptual Reference**

Label	Educational.Conceptual Reference	LOM Number	none
Definition	The person who's educational philosophy has guided the construction of the learning object.		
Data Type		Max Number of Occurrences	
Values	Conceptual Reference	Description	
	bloom	Benjamin Bloom	
	merrill	David Merrill	
	clark	Ruth Clark	
Comment	These education specialists have developed common classification schemes for learning objectives. Identification of a cognitive domain can help in the choice of design or assessment strategies. For example, the type of test one would choose to assess knowledge is different than the type of test used to assess a skill that requires analysis.		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals                 </pre>		

	<pre> responsible for implementing Java&lt;/string&gt; &lt;/description&gt; &lt;language&gt;en-US&lt;/language&gt; &lt;adaptability&gt;   &lt;source&gt;AICCV1.0&lt;/source&gt;   &lt;value&gt;learning_style&lt;/value&gt;   &lt;value&gt;delivery_platform&lt;/value&gt; &lt;/adaptability&gt; &lt;assessmentType&gt;   &lt;source&gt;AICCV1.0&lt;/source&gt;   &lt;value&gt; multiple_choice &lt;/value&gt;   &lt;value&gt; fill_in_the_blank &lt;/value&gt; &lt;/assessmentType&gt; &lt;instructionalDomain&gt;   &lt;source&gt;AICCV1.0&lt;/source&gt;   &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;   &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt; &lt;/instructionalDomain&gt; &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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#### 4.5.14.2 Cognitive Taxonomy

Label	Cognitive Taxonomy	LOM Number	none
Definition	The topics making up the taxonomies of different educational philosophies.		
Data Type	Vocabulary	Max Number of Occurrences	
Values	Vocabulary	Description	
	If the taxonomy is Bloom's:		
	knowledge	Verbs: Define, memorize, name, recall, repeat	
	comprehension	Verbs: Describe, discuss, explain, express, identify, locate, recognize, report, restate, review, tell.	
	application	Verbs: Apply, calculate, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, translate, use.	
	analysis	Verbs: Analyze, compare, contrast, debate, diagram, differentiate, distinguish, examine, inspect, inventory, relate, solve, question.	
	synthesis	Verbs: Arrange, assemble, collect, compose, construct, create, design, formulate, manage, organize, plan, prepare, propose, reorganize, set up.	
	evaluation	Verbs: Appraise, assess, choose, conclude, discriminate. estimate, evaluate, judge. justify, measure, rate, revise, score, select, value.	
	If the taxonomy is Merrill's:		
	remember	The learner is required to search and recall from memory a particular item of information (can be equated to Blooms at Knowledge and Comprehension)	
	use	The learner must directly apply the information to a specific case (can be equated to Blooms at Application and higher) more granular.??	
	find	(Generalization) The learner uses the information to derive a new abstraction (concepts, principles, etc.).	
	If the taxonomy is Clark's		
	concept	Used to teach a group of objects, symbols, ideas, or events that, 1) are designated by a single word or term, 2) share a common feature, 3) Vary on irrelevant features.	
	fact	Used to teach unique, specific, one-of-a-kind pieces of information. Facts are presented as statements, data, or pictures of specific objects.	



	procedure	Used to teach a procedure performed on the job. In order to be successful, the procedures must be clear and must provide job-based practice for transfer to the job. Specifically: 1) A procedure is a sequential set of steps to be followed by one individual to accomplish a task or make decisions, 2) A procedure lists directions for procedural tasks, 3) Actions within a procedure must be done the same way each time (within a given situation).
	process	Used to teach how a system works. Helpful in supporting underlying job tasks, providing motivation, and ensuring overall quality of job performance. A process can be defined as, 1) a flow of events that describes how something works 2) not a task to be done by one person, 3) a task that involves many persons or organizations, 4) mechanical, business, or scientific.
	principle	Used when you need to create a job task that requires judgment, or when guidelines must be applied to a job situation.
Comment	User may define or use other taxonomies	
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;language&gt;en-US&lt;/language&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;b&gt;cognitiveTaxonomy&lt;/b&gt; procedure &lt;/b&gt;&lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>	

**4.5.15 Competency Level**

Label	Educational.CompetencyLevel	LOM Number	none
Definition	A broad statement describing ability a person must have to utilize the Learning Object.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	0	No Experience	
	1	Novice	
	2	Apprentice	
	3	Journeyman	
	4	Expert	
Comment	Competencies are often categorized and scales are applied to show levels of ability. For example, a taxi cab driver must have the competency to drive a car, but each cab driver has their own level of competence. This competency has many factors		

	<p>including behavioral properties in the form of skill, knowledge and attitude. The cab driver must have the skill to operate the car, the knowledge of traffic laws, and the attitude to operate the car safely.</p> <p>The vocabulary tokens are numerals. The description is AICC recommended practice, but other descriptions may be used for different aviation domains.</p>
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;language&gt;en-US&lt;/language&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>

**4.5.16 Instructional Context**

Label	Educational.InstructionalContext	LOM Number	none
Definition	The Physical Characteristics of a training event that affect and are affected by the learning that takes place (location of training, means of delivery, adaptability to simulate workplace, learning site constraints).		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	simulation	Training Activity that replicates real life situations in an artificial environment. Students perform as if the activities were occurring in real life.	
	performance_support	Training Information and assistance that is delivered to the student as work is being performed in a real life situation.	
	on-the-job	Training Activities take place in a real life situation and provide for learning through experience.	
	classroom	Training Activities that occur in a place designed for group instruction.	
	individual_study	Training Activities that occur when a student works in isolation from other students and instructors.	
	actual_equipment	Training Activities that occur on or with an actual piece of	

		equipment.
	team	Training Activities that occur with a small group of students working on a common task: example flight crew
	facility	Training Activities that occur in a specific physical environment for specific training: For example survival training in Desert, Swimming pool, Gymnasium.
	tutoring	One-on-one, person-to-person training activities.
	other	
	All vocabulary tokens shall be accompanied by a mode of "online" or "offline".	
Comment		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;language&gt;en-US&lt;/language&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;     &lt;instructionalContext&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; simulation &lt;/value&gt;     &lt;/instructionalContext&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>	

#### 4.5.17 Instructional Events

Label	Educational.InstructionalStrategy	LOM Number	none
Definition	A specific instructional technique matched to the kind of cognitive process required for a particular learning outcome. The learning events as defined by Robert Gagne, are organized as a hierarchy, and the events define the instructional sequence (e.g. in a lesson). Reference: Gagne, R. (1985). The Conditions of Learning (4th ed.). New York: Holt, Rinehart & Winston .		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	Cognitive (internal) Process

	attention	Gaining attention	reception
	informing	Informing the student of objectives	expectancy
	recall	stimulating recall of prior learning	retrieval
	stimulus	presenting the stimulus	selective perception
	guidance	providing learning guidance	semantic encoding
	performance	eliciting performance	responding
	feedback	providing feedback	reinforcement
	assessing	assessing performance	retrieval
	retention	enhancing retention and transfer	generalization
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;     &lt;instructionalContext&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; simulation &lt;/value&gt;     &lt;/instructionalContext&gt;     &lt;instructionalEvents&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; attention &lt;/value&gt;       &lt;value&gt; feedback &lt;/value&gt;     &lt;/instructionalEvents&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>		

**4.5.18 Instructional Feedback Level**

Label	Educational.InstructionalFeedbackLevel		LOM Number	none
Definition	The information and recommendations provided as a purposeful communication to a learner about his/her performance based on the actions of the learner. The results of that learner's evaluation designed to help the learner improve his/her performance and make decisions concerning development and improvement.			
Data Type	Vocabulary		Max Number of Occurrences	10
Values	Vocabulary Token	Meaning	Description	
	0	No feedback	No feedback is provided. There may be a demonstration that requires no user response. For example, in a course where the screen is explaining something and the learner must simply pay attention.	
	1	Correct/incorrect - system response	The system responds either only when the learner takes the correct action – for example the screen changes, or both when the learner takes the correct action or the incorrect action. In the latter case the system reports back that the action was correct or incorrect (right or wrong). The learner receives no other information. The learner is not allowed to retry.	
	2	Guidance	<u>Retry Only</u> The learner is told that the original response is incorrect. Then, the learner is given another opportunity to try a different answer. No further guidance regarding the desired response is provided. <u>Retry w/Guidance</u> The learner is given feedback stating why their original answer was incorrect. Then, they are allowed to answer the question again. <u>No Retry w/Guidance</u> The learner is given some feedback on why their original answer was wrong or the learner is presented with information on the right answer. The learner is not allowed to try the question again. Such a screen is typically used for assessment items.	
	3	Diagnostic feedback	At this level a greater amount of guidance is given to the learner. For example, the feedback might be, "If you had taken [this] action, [this] would have happened." The learner may or may not be allowed to try again.	
	4	Multiple path feedback	At this level feedback recognizes alternative correct responses. For example, the feedback might be, "That is one correct one way of doing it. Now, try again by using the File menu." In this type of feedback, there is always more than one response provided in the course construction. However, the response given to the learner depends on how the interaction was answered. The learner may be told that the answer or action was incorrect, or the learner may be given credit (or at least not penalized) for taking a possible alternative action. Though not the originally intended action, their method of solving the problem was also correct. This is recognized, and the learner is asked to try again.	
Comment	Note that feedback and interactivity are two different concepts. For example, a free-play simulation could be very interactive, with no instructional feedback.			

Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;description&gt;       &lt;string language="en"&gt;This course is designed for IT professionals responsible for implementing Java&lt;/string&gt;     &lt;/description&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;     &lt;instructionalContext&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; simulation &lt;/value&gt;     &lt;/instructionalContext&gt;     &lt;instructionalEvents&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; attention &lt;/value&gt;       &lt;value&gt; feedback &lt;/value&gt;     &lt;/instructionalEvents&gt;     &lt;instructionalFeedbackLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/instructionalFeedbackLevel&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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#### 4.5.19 Instructional Strategy

Label	Educational.InstructionalStrategy	LOM Number	none
Definition	A tool or technique used in a learning object to provide an optimal learning experience. The nature of the expected learning outcome, the planned assessment type, and the student's learning style / familiarity with the topic are all factors in determining an instructional strategy.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	repetition	Teaching points appear more than once in learning object. Often restated so that the point is not an exact copy of itself.	
	drill	Drill and practice: Series of questions or exercises provided about the teaching points. Questions/exercises are normally repeated until answered or performed correctly. Normally more than one	

		question or exercise on each teaching point.
	example	Example/non example: Series of graphics or statements illustrating concepts. Learner learns to identify which are relevant to concept being learned and which are not relevant
	analogy	Statement illustrating concept of the teaching point by comparing it to an example or similar concept.
	illustrations	Graphics illustrating the teaching points.
	apprenticeship	Cognitive apprenticeship: Use of simulations that represent real-world activities which would approximate those encountered in an apprenticeship.
	lecture	Audio or text of audio descriptions of the teaching points.
	cooperative	Cooperative learning: Peer group discussions and/or exercises regarding the teaching points.
	demonstration	Presentation of the steps in a performance oriented task.
	guided_simulation	Simulation of task in which the learner is provided feedback to facilitate the performance of the steps correctly.
	lock_step_simulation	Simulation of task in which the learner must perform the steps in the correct sequence.
	free_play_simulation	Simulation in which the learner may perform any steps, correct or incorrect and the simulation will respond as the device being simulated would respond in the real world. No feedback is provided to the learner.
	discovery	Discovery Learning: Providing the learner the opportunity to work with a simulation or real-world situation. Normally the learner will be given goals with the opportunity to learn from his activities on how to accomplish the goals.
	other	
Comment		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;     &lt;instructionalContext&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; simulation &lt;/value&gt;     &lt;/instructionalContext&gt;     &lt;instructionalEvents&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt; </pre>	

	<pre>           &lt;value&gt; attention &lt;/value&gt;           &lt;value&gt; feedback &lt;/value&gt;         &lt;/instructionalEvents&gt;       &lt;instructionalFeedbackLevel&gt;         &lt;source&gt; AICCV1.0 &lt;/source&gt;         &lt;value&gt; 3 &lt;/value&gt;       &lt;/instructionalFeedbackLevel&gt;       &lt;instructionalStrategy&gt;         &lt;source&gt; AICCV1.0 &lt;/source&gt;         &lt;value&gt; guided_simulation &lt;/value&gt;       &lt;/instructionalStrategy&gt;     &lt;/educational&gt;   &lt;/aiccLom&gt; </pre>
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#### 4.5.20 Learning Outcome Type

Label	Educational.Learning Outcome Type		LOM Number	none
Definition	A classification of learning outcomes that is based on the category and instantiation of the expected change in knowledge, skills, and/or attitudes in the learner.			
Data Type	Vocabulary	Max Number of Occurrences	10	
Values	Vocabulary Token	Description		
	verbal	Verbal Information: Recalling or recognizing facts, lists, names other information.		
	discrimination	Intellectual Skill: Differentiating between examples and non-examples of concepts.		
	concrete	Concrete Concepts: Intellectual Skill: Classifying things into categories based on physical characteristics.		
	defined	Defined concept: Intellectual Skill: Classifying previously unencountered things or ideas based on definitions.		
	rule_using	Intellectual Skill: Using known rules to predict or control events, or follow prescribed sequence of event <ul style="list-style-type: none"> <li>• relational rules – predict, explain or control circumstances based on known rules</li> <li>• procedural rules – perform steps in a particular order</li> </ul>		
	problem_solving	Intellectual Skill: (high-order rule learning) Selecting from a number of possible rules and applying them to solve a previously unencountered problem.		
	cognitive_strategies	The student manages his own learning.		
	psychomotor	Coordinated muscular movements.		
	attitudes	Influence the learner's performance by modifying mental state, affecting motivation, confidence, trust, etc		
Comment	Learning outcomes can generally be classified as knowledge, skill, or attitude. This vocabulary is a more refined version of these three categories.			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;adaptability&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt;learning_style&lt;/value&gt;       &lt;value&gt;delivery_platform&lt;/value&gt;     &lt;/adaptability&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt; </pre>			



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**4.5.21 Objectives**

Label	Educational.Objectives	LOM Number	none
Definition	Objectives are the measurable outcome of instruction for a given task.		
Data Type	Category	Max Number of Occurrences	1000
Values	none		
Comment	Objectives are statements that often contain at least three components: performance, condition, and criterion. Performance is what task will be performed, condition is what is available to perform the task, and criterion is the measurement of mastery of the task. For example, "Given the proper equipment, remove a tire from an A330 aircraft with only 1 instructor assist" or "Given multiple choice questions, select answers that describe the steps to remove a tire from an A330 aircraft with 80% accuracy".		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt; </pre>		

	<pre> &lt;domain&gt; psychomotor &lt;domain&gt; &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt; &lt;/objective&gt; &lt;/objectives&gt; &lt;/educational&gt; &lt;/aicclom&gt; </pre>
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## 4.5.21.1 ID

Label	Educational.Objectives.Objective ID	LOM Number	none
Definition	Unique label that identifies the objective and may indicate its relationship to other objectives.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre> &lt;aicclom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aicclom&gt; </pre>		

## 4.5.21.2 Objective Title

Label	Educational.Objectives.Objective Title	LOM Number	none
Definition	Name given the objective by the creating organization.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre> &lt;aicclom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aicclom&gt; </pre>		

## 4.5.21.3 Objective Description

Label	Educational.Objectives.Objective Description	LOM Number	none
Definition	Textual definition of the objective.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values			
Comment	Objective descriptions normally have three parts, a statement of the conditions in which an activity is to be performed, a description of the activity, and a standard of performance for the successful completion of the activity.  These are frequently referred to as condition, statement, and standard.		
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without <b>cracking the bolt.</b> &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aicclom&gt; </pre>		

## 4.5.21.4 Objective Type

Label	Educational.Objectives.Objective Type	LOM Number	none
Definition	Approximate purpose of the objective.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	enabling	Concise statements of the expectations of student performance and might be considered steps in accomplishing the terminal objective.	
	terminal	The Terminal Learning Objectives (TLO) is a statement of the expectations of student performance at the end a specific lesson or unit.	
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aicclom&gt; </pre>		

## 4.5.21.5 Objective Domain

Label	Educational.Objectives.Objective Domain	LOM Number	none
Definition	The area of human behavior or cognition targeted by the objective.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	affective	The goal of the objective is to influence an individual's attitudes, beliefs and feelings.	
	cognitive	The goal of the objective is to influence an individual's understanding or knowledge about a subject.	
	psychomotor	The goal of the objective is to influence an individual's ability or skill in performing a task, such as putting an aircraft through a flight maneuver. Robert Mager suggests a basic three part approach to writing out a performance objective: <ol style="list-style-type: none"> <li>1. Establish the conditions under which the task will be performed.</li> <li>2. Describe the task to be performed.</li> <li>3. Identify the standard to which it is to be performed.</li> </ol>	
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>		

## 4.5.21.6 Objective Domain Level

Label	Educational.Objectives.Objective Domain Level	LOM Number	none
Definition	The levels used to refine the description of an objective are dependent upon the domain of the objective. For example, level 3 is different for an Affective objective than a Psychomotor objective.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	<b>Affective Domain - 5 Levels</b> David Krathwohl has developed a five level taxonomy that can be used to identify desired learning outcomes:		
	receiving	1. refers to the student's willingness to attend to particular phenomena of stimuli (classroom activities, textbook, music, etc.). From an instructional standpoint, it is concerned with getting, holding, and directing the student's attention.	
	responding	2. refers to active participation on the part of the student. At this level he or she not only attends to a particular phenomenon but also reacts to it in some way.	

	valuing	3. is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the simpler acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group).
	organization	4. is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values.
	characterization	5. by a value or value set. The individual has a value system that has controlled his or her behavior for a sufficiently long time for him or her to develop a characteristic "life-style." Thus the behavior is pervasive, consistent, and predictable.
	<b>Cognitive Domain - 6 Levels</b> There are six levels of learning defined in Bloom's Taxonomy with each level becoming more complex and showing a greater depth of understanding:	
	knowledge	1. of terminology; specific facts; ways and means of dealing with specifics (conventions, trends and sequences, classifications and categories, criteria, methodology); universals and abstractions in a field (principles and generalizations, theories and structures): Knowledge is (here) defined as the remembering (recalling) of appropriate, previously learned information.
	comprehension	2. Grasping (understanding) the meaning of informational materials.
	application	3. The use of previously learned information in new and concrete situations to solve problems that have single or best answers.
	analysis	4. The breaking down of informational materials into their component parts, examining (and trying to understand the organizational structure of) such information to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations.
	synthesis	5. Creatively or divergently applying prior knowledge and skills to produce a new or original whole.
	evaluation	6. Judging the value of material based on personal values/opinions, resulting in an end product, with a given purpose, without real right or wrong answers.
	<b>Psychomotor Domain - 5 Levels</b> R. H. Dave has developed a five level taxonomy commonly used to described the degree of skill attainment:	
	imitation	1. Observes and patterns behavior after someone else. Performance may be of low quality.
	manipulation	2. Performs skill according to instruction rather than observation.
	develop_ precision	3. Reproduces a skill with accuracy, proportion and exactness; usually performed independently of original source.
	articulation	4. Combines more than one skill in a sequence, achieving harmony and internal consistency.
	naturalization	5. Has a high level of performance. Performance becomes automatic. Completes one or more skills with ease. Creativity is based on highly developed skills.

Comment	The definition of specific levels may vary from one community of practice to another. However, a recommended practice for the aviation community is to use the definitions above for the domains identified.
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;objectives&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;objective&gt;         &lt;id&gt; 234.3.2 &lt;/id&gt;         &lt;title&gt; Nut Cracking &lt;/title&gt;         &lt;description&gt; Given a nut and a cracker, crack the nut without cracking the bolt. &lt;/description&gt;         &lt;type&gt; enabling &lt;type&gt;         &lt;domain&gt; psychomotor &lt;domain&gt;         &lt;domainLevel&gt; develop_precision &lt;domainLevel&gt;       &lt;/objective&gt;     &lt;/objectives&gt;   &lt;/educational&gt; &lt;/aiccLom&gt; </pre>

**4.5.22 Required Training Resources**

Label	Educational.RequiredTrainingResources	LOM Number	none
Definition	Identifies any training resources required by the learning object.		
Data Type	CharacterString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt;     &lt;/instructionalDomain&gt;     &lt;competencyLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/competencyLevel&gt;     &lt;instructionalContext&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; simulation &lt;/value&gt;     &lt;/instructionalContext&gt;     &lt;instructionalFeedbackLevel&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; 3 &lt;/value&gt;     &lt;/instructionalFeedbackLevel&gt;     &lt;instructionalStrategy&gt;       &lt;source&gt; AICCV1.0 &lt;/source&gt;       &lt;value&gt; guided_simulation &lt;/value&gt;     &lt;/instructionalStrategy&gt;     &lt;requiredTrainingResources&gt; </pre>		

	<pre> &lt;source&gt; AICCV1.0 &lt;/source&gt; &lt;value&gt; 777 FMS Desktop Simulation &lt;/value&gt; &lt;/requiredTrainingResources&gt; &lt;/educational&gt; &lt;/aiccLom&gt; </pre>
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#### 4.5.23 Training Event Reporting

Label	Educational.TrainingEventReporting	LOM Number	none
Definition	The mechanism used with a learning object to place a record of a student's performance in an LMS or TMS system.		
Data Type	Vocabulary	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	manual	A person enters the performance information using a standard workstation computer. Normally this is done after the student's performance.	
	auto_manual	A person enters the performance information with a special input device, while observing student performance. An example would be the use of a handheld wireless device used by an instructor in a simulator to record a student's demonstrated skill as he performs.	
	automatic	The student uses a computer for training. The computer program automatically records and reports the performance during (or after) the session. There are several standards for reporting student performance, so this category may be further subdivided to indicate the type of reporting standard used.	
	scorm_v1.2	An API is used to report information as described in the SCORM versions 1.2 document.	
	scorm_v2004	An API is used to report information as described in the SCORM 2004 document.	
	aicc_hacp	HTTP communication is used to report data as described in the AICC CMI Guidelines version 4.0.	
	aicc_api	An API is used to report information as described in the AICC CMI Guidelines version 4.0.	
	aicc_file	File-based communication is used to report data as described in the AICC CMI Guidelines version 4.0.	
	ieee_api	The IEEE standard for API communication (version 1.0) is used along with the IEEE data model for communication (version 1.0).	
	other	A unique mechanism, or a standard not described above is used for reporting data to the LMS.	
	none	Some training events (or learning objects) do not generate performance records. Nonetheless, a student is still expected to complete the event. (Examples would be to watch a video, or read a chapter in a book.)	
Comment			
Examples	<pre> &lt;aiccLom&gt;   &lt;educational&gt;     &lt;assessmentType&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;value&gt; multiple_choice &lt;/value&gt;       &lt;value&gt; fill_in_the_blank &lt;/value&gt;     &lt;/assessmentType&gt;     &lt;instructionalDomain&gt;       &lt;source&gt;AICCV1.0&lt;/source&gt;       &lt;conceptualReference&gt; merrill &lt;/conceptualReference&gt;       &lt;cognitiveTaxonomy&gt; procedure &lt;/cognitiveTaxonomy&gt; </pre>		

	<pre>&lt;/instructionalDomain&gt; &lt;instructionalContext&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;value&gt; simulation &lt;/value&gt; &lt;/instructionalContext&gt; &lt;instructionalFeedbackLevel&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;value&gt; 3 &lt;/value&gt; &lt;/instructionalFeedbackLevel&gt; &lt;instructionalStrategy&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;value&gt; guided_simulation &lt;/value&gt; &lt;/instructionalStrategy&gt; &lt;requiredTrainingResources&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;value&gt; 777 FMS Desktop Simulation &lt;/value&gt; &lt;/requiredTrainingResources&gt; &lt;trainingEventReporting&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;value&gt; AICC API &lt;/value&gt; &lt;/trainingEventReporting&gt; &lt;/educational&gt; &lt;/aiccLom&gt;</pre>
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## 4.6 Rights

Label	Rights	LOM Number	6
Definition	This category describes the intellectual property rights and conditions of use of this learning object.		
Data Type	Category	Max Number of Occurrences	1
Values	none		
Comment	NOTE: The intent is to reuse results of ongoing work in the Intellectual Property Rights and e-commerce communities. This Category currently provides the absolute minimum level of detail only.  Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;rights&gt;     &lt;cost&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/cost&gt;     &lt;copyrightAndOtherRestrictions&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/copyrightAndOtherRestrictions&gt;     &lt;description&gt;       &lt;string language="en"&gt;For additional information or questions regarding copyright, distribution and reproduction, contact Joe Developer at joe_developer@someorganization.org&lt;/string&gt;     &lt;/description&gt;   &lt;/rights&gt; &lt;/aiccLom&gt; </pre>		

### 4.6.1 Cost

Label	Rights.Cost	LOM Number	6.1
Definition	Whether use of this learning object requires payment.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	yes no		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;rights&gt;     &lt;cost&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/cost&gt;     &lt;copyrightAndOtherRestrictions&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/copyrightAndOtherRestrictions&gt;     &lt;description&gt;       &lt;string language="en"&gt;For additional information or questions regarding copyright, distribution and reproduction, contact Joe Developer at joe_developer@someorganization.org&lt;/string&gt;     &lt;/description&gt;   &lt;/rights&gt; &lt;/aiccLom&gt; </pre>		

#### 4.6.2 Copyright and Other Restrictions

Label	Rights.CopyrightandOtherRestrictions	LOM Number	6.2
Definition	Whether copyright and other restrictions apply to use of this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	yes no		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;rights&gt;     &lt;cost&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/cost&gt;     &lt;copyrightAndOtherRestrictions&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/copyrightAndOtherRestrictions&gt;     &lt;description&gt;       &lt;string language="en"&gt;For additional information or questions regarding copyright, distribution and reproduction, contact Joe Developer at joe_developer@someorganization.org&lt;/string&gt;     &lt;/description&gt;   &lt;/rights&gt; &lt;/aiccLom&gt; </pre>		

#### 4.6.3 Description

Label	Rights.Description	LOM Number	6.3
Definition	Comments on the conditions of use of this learning object.		
Data Type	LangString 1000	Max Number of Occurrences	1
Values	yes no		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;rights&gt;     &lt;cost&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/cost&gt;     &lt;copyrightAndOtherRestrictions&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;yes&lt;/value&gt;     &lt;/copyrightAndOtherRestrictions&gt;     &lt;description&gt;       &lt;string language="en"&gt;For additional information or questions regarding copyright, distribution and reproduction, contact Joe Developer at joe_developer@someorganization.org&lt;/string&gt;     &lt;/description&gt;   &lt;/rights&gt; &lt;/aiccLom&gt; </pre>		

## 4.7 Relation

Label	Relation	LOM Number	7
Definition	This category defines the relationship between this learning object and other learning objects, if any.		
Data Type	Category	Max Number of Occurrences	100
Values	none		
Comment	NOTE: To define multiple relationships there may be multiple instances of this category. If there is more than one target learning object, then each target shall have a new relationship instance.  Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;       &lt;description&gt;         &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;       &lt;/description&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>		

### 4.7.1 Kind

Label	Relation.Kind	LOM Number	7.1
Definition	Nature of the relationship between this learning object and the target learning object identified by 7.2.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	ispartof	This object is part of the resource identified by 7.2.	
	haspart	This object has part of the resource identified by 7.2.	
	isversionof	This object is version of the resource identified by 7.2.	
	hasversion	This object has version of the resource identified by 7.2.	
	isformatof	This object is format of the resource identified by 7.2.	
	hasformat	This object has format of the resource identified by 7.2.	
	references	This object references the resource identified by 7.2.	
	isreferencedby	This object is referenced by resource identified by 7.2.	
	isbasedon	This object is based on resource identified by 7.2.	
	isbasisfor	This object is basis for the resource identified by 7.2.	
	requires	This object requires the resource identified by 7.2.	
	isrequiredby	This object is required by the resource identified by 7.2.	
	enriches	This object AICC addition: This object enriches the resource identified by 7.2.	
	represents	This object AICC addition: This object represents the resource identified by 7.2.	
Comment	LOM vocabulary is based on Dublin Core.		

Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;       &lt;description&gt;         &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;       &lt;/description&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>
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#### 4.7.2 Resource

Label	Relation.Resource	LOM Number	7.2
Definition	The target learning object that this relationship references.		
Data Type	Category	Max Number of Occurrences	1
Values	none		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;       &lt;description&gt;         &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;       &lt;/description&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>		

##### 4.7.2.1 Identifier

Label	Relation.Resource.Identifier	LOM Number	7.2.1
Definition	A globally unique label that identifies the target learning object.		
Data Type	Category	Max Number of Occurrences	10
Values	none		
Comment	<p>There may be as many as 10 resources that have the same relationship to the learning object.</p> <p>Same as LOM.</p>		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt; </pre>		

	<pre> &lt;value&gt;isbasedon&lt;/value&gt; &lt;/kind&gt; &lt;resource&gt;   &lt;identifier&gt;     &lt;catalog&gt;URN&lt;/catalog&gt;     &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;   &lt;/identifier&gt;   &lt;description&gt;     &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;   &lt;/description&gt; &lt;/resource&gt; &lt;/relation&gt; &lt;/aiccLom&gt; </pre>
--	---

#### 4.7.2.1.1 Catalog

Label	Relation.Resource.Identifier.Catalog	LOM Number	7.2.1.1
Definition	The name or designator of the identification or cataloging scheme for this entry.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values	none		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;       &lt;description&gt;         &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;       &lt;/description&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>		

#### 4.7.2.1.2 Entry

Label	Relation.Resource.Identifier.Catalog	LOM Number	7.2.1.1
Definition	The value of the identifier within the identification or cataloging scheme that designates or identifies this learning object.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values	none		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>		

	<pre> &lt;/identifier&gt; &lt;description&gt;   &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt; &lt;/description&gt; &lt;/resource&gt; &lt;/relation&gt; &lt;/aiccLom&gt; </pre>
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**4.7.2.2 Description**

Label	Relation.Resource.Description	LOM Number	7.2.2
Definition	Description of the target learning object.		
Data Type	LangString 1000	Max Number of Occurrences	10
Values			
Comment	<p>There may be as many as 10 resources that have the same relationship to the learning object.</p> <p>Same as LOM.</p>		
Examples	<pre> &lt;aiccLom&gt;   &lt;relation&gt;     &lt;kind&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;isbasedon&lt;/value&gt;     &lt;/kind&gt;     &lt;resource&gt;       &lt;identifier&gt;         &lt;catalog&gt;URN&lt;/catalog&gt;         &lt;entry&gt;urn:ADL:1234-45FD&lt;/entry&gt;       &lt;/identifier&gt;       &lt;description&gt;         &lt;string language="en"&gt;Microsoft MSCE&lt;/string&gt;       &lt;/description&gt;     &lt;/resource&gt;   &lt;/relation&gt; &lt;/aiccLom&gt; </pre>		

## 4.8 Annotation

Label	Annotation	LOM Number	8
Definition	<p>This category provides comments on the educational use of this learning object, and information on when and by whom the comments were created.</p> <p>This category enables educators to share their assessments of learning objects, suggestions for use etc...</p>		
Data Type	Category	Max Number of Occurrences	30
Values	none		
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;annotation&gt;     &lt;entity&gt;BEGIN:VCARD\nFN:Joe AuthorEND:VCARD&lt;/entity&gt;     &lt;date&gt;       &lt;dateTime&gt;2001-07-30T10:14:35.5+01:00&lt;/dateTime&gt;       &lt;description&gt;         &lt;string language="en"&gt;Date and time annotation was created&lt;/string&gt;       &lt;/description&gt;     &lt;/date&gt;     &lt;description&gt;Learners will need to understand the fundamentals of     Windows programming in order to grasp the concepts described in this     learning.&lt;/description&gt;   &lt;/annotation&gt; &lt;/aiccLom&gt;</pre>		

### 4.8.1 Entity

Label	Annotation.Entity	LOM Number	8.1
Definition	Entity (people, organization,...) that created this annotation.		
Data Type	CharacterString 1000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;annotation&gt;     &lt;entity&gt;BEGIN:VCARD\nFN:Joe AuthorEND:VCARD&lt;/entity&gt;     &lt;date&gt;       &lt;dateTime&gt;2001-07-30T10:14:35.5+01:00&lt;/dateTime&gt;       &lt;description&gt;         &lt;string language="en"&gt;Date and time annotation was created&lt;/string&gt;       &lt;/description&gt;     &lt;/date&gt;     &lt;description&gt;Learners will need to understand the fundamentals of Windows     programming in order to grasp the concepts described in this learning.&lt;/description&gt;   &lt;/annotation&gt; &lt;/aiccLom&gt;</pre>		

### 4.8.2 Date

Label	Annotation.Date	LOM Number	8.2
Definition	Date that this annotation was created.		
Data Type	DateTime	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt;   &lt;annotation&gt;     &lt;entity&gt;BEGIN:VCARD\nFN:Joe AuthorEND:VCARD&lt;/entity&gt;</pre>		

	<pre> &lt;date&gt;   &lt;dateTime&gt;2001-07-30T10:14:35.5+01:00&lt;/dateTime&gt;   &lt;description&gt;     &lt;string language="en"&gt;Date and time annotation was created&lt;/string&gt;   &lt;/description&gt; &lt;/date&gt; &lt;description&gt;Learners will need to understand the fundamentals of Windows programming in order to grasp the concepts described in this learning.&lt;/description&gt; &lt;/annotation&gt; &lt;/aiccLom&gt; </pre>
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#### 4.8.3 Description

Label	Annotation.Description	LOM Number	8.3
Definition	The content of this annotation.		
Data Type	LangString 1000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;annotation&gt;     &lt;entity&gt;BEGIN:VCARD\nFN:Joe AuthorEND:VCARD&lt;/entity&gt;     &lt;date&gt;       &lt;dateTime&gt;2001-07-30T10:14:35.5+01:00&lt;/dateTime&gt;       &lt;description&gt;         &lt;string language="en"&gt;Date and time annotation was created&lt;/string&gt;       &lt;/description&gt;     &lt;/date&gt;     &lt;description&gt;<b>Learners will need to understand the fundamentals of Windows programming in order to grasp the concepts described in this learning.&lt;/description&gt;</b>   &lt;/annotation&gt; &lt;/aiccLom&gt; </pre>		



## 4.9 Classification

Label	Classification	LOM Number	9
Definition	<p>This category describes where this learning object falls within a particular classification system.</p> <p>To define multiple classifications, there may be multiple instances of this category.</p>		
Data Type	Category	Max Number of Occurrences	40
Values	none		
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt;     &lt;/description&gt;     &lt;keyword&gt;       &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;     &lt;/keyword&gt;   &lt;/classification&gt; &lt;/aiccLom&gt; </pre>		

## 4.9.1 Purpose

Label	Classification.Purpose	LOM Number	9.1
Definition	The purpose of classifying this learning object.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	discipline		
	idea		
	prerequisite		
	objective	Statements that often contain at least three components: performance, condition, and criterion.	
	accessibility	Methodologies employed to develop content to be delivered to people with disabilities	
	restrictions		
	educational level		
	skill level		
	security level		
	competency		
Comment	Same as LOM with AICC vocabulary description additions.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;   &lt;taxonPath&gt;     &lt;source&gt;       &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;     &lt;/source&gt;     &lt;taxon&gt;       &lt;id&gt;I&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A.3&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A.3.a&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;   &lt;/taxonPath&gt; </pre>		

	<pre> &lt;description&gt;   &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM   Content Package&lt;/string&gt; &lt;/description&gt; &lt;keyword&gt;   &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt; &lt;/keyword&gt; &lt;/classification&gt; &lt;/aiccLom&gt; </pre>
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#### 4.9.2 Taxon Path

Label	Classification.TaxonPath	LOM Number	9.2
Definition	<p>A taxonomic path in a specific classification system. Each succeeding level is a refinement in the definition of the preceding level.</p> <p>There may be different paths, in the same or different classifications, which describe the same characteristics.</p>		
Data Type	Category	Max Number of Occurrences	15
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt; </pre>		

	<pre> &lt;description&gt;   &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM   Content Package&lt;/string&gt; &lt;/description&gt; &lt;keyword&gt;   &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt; &lt;/keyword&gt; &lt;/classification&gt; &lt;/aicclom&gt; </pre>
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4.9.2.1 Source

Label	Classification.TaxonPath.Source	LOM Number	9.2.1
Definition	<p>The name of the classification system.</p> <p>This data element may use any recognized "official" taxonomy or any user-defined taxonomy.</p>		
Data Type	LangString 1000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aicclom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM </pre>		

	<pre>Content Package&lt;/string&gt; &lt;/description&gt; &lt;keyword&gt;   &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt; &lt;/keyword&gt; &lt;/classification&gt; &lt;/aiccLom&gt;</pre>
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#### 4.9.2.2 Taxon

Label	Classification.TaxonPath.Taxon	LOM Number	9.2.2
Definition	<p>A particular term within a taxonomy. A taxon is a node that has a defined label or term. A taxon may also have an alphanumeric designation or identifier for standardized reference. Either or both the label and the entry may be used to designate a particular Taxon.</p> <p>An ordered list of taxons creates a taxonomic path, i.e. "taxonomic stairway"; this is a path from a more general to more specific entry in a classification.</p>		
Data Type	Category	Max Number of Occurrences	15
Values			
Comment	Same as LOM.		
Examples	<pre>&lt;aiccLom&gt; &lt;classification&gt;   &lt;purpose&gt;     &lt;source&gt;LOMv1.0&lt;/source&gt;     &lt;value&gt;skill level&lt;/value&gt;   &lt;/purpose&gt;   &lt;taxonPath&gt;     &lt;source&gt;       &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;     &lt;/source&gt;     &lt;taxon&gt;       &lt;id&gt;I&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A.3&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;     &lt;taxon&gt;       &lt;id&gt;I.A.3.a&lt;/id&gt;       &lt;entry&gt;         &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;       &lt;/entry&gt;     &lt;/taxon&gt;   &lt;/taxonPath&gt; &lt;/description&gt;</pre>		

	<pre> &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt; &lt;/description&gt; &lt;keyword&gt;   &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt; &lt;/keyword&gt; &lt;/classification&gt; &lt;/aiccLom&gt; </pre>
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#### 4.9.2.2.1 ID

Label	Classification.TaxonPath.Taxon.Id	LOM Number	9.2.2.1
Definition	The identifier of the taxon, such as a number or letter combination provided by the source of the taxonomy.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt;     &lt;/description&gt; </pre>		

	<pre> &lt;keyword&gt;   &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt; &lt;/keyword&gt; &lt;/classification&gt; &lt;/aiccLom&gt; </pre>
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#### 4.9.2.2.2 Entry

Label	Classification.TaxonPath.Taxon.Entry	LOM Number	9.2.2.2
Definition	The Textual label of the taxon.		
Data Type	LangString 500	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt;     &lt;/description&gt;     &lt;keyword&gt;       &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;     &lt;/keyword&gt;   &lt;/classification&gt; </pre>		

	</aiccLom>
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#### 4.9.3 Description

Label	Classification.Description	LOM Number	9.3
Definition	Description of the learning object relative to the stated Classification.Purpose of this specific classification, such as discipline, idea, skill level, educational objective, etc.		
Data Type	LangString 2000	Max Number of Occurrences	1
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt;     &lt;/description&gt;     &lt;keyword&gt;       &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;     &lt;/keyword&gt;   &lt;/classification&gt; &lt;/aiccLom&gt; </pre>		



## 4.9.4 Keyword

Label	Classification.Keyword	LOM Number	9.4
Definition	Keywords and phrases descriptive of the learning object relative to the stated Classification.Purpose of this specific classification, such as accessibility, security level, etc., most relevant first.		
Data Type	LangString 1000	Max Number of Occurrences	40
Values			
Comment	Same as LOM.		
Examples	<pre> &lt;aiccLom&gt;   &lt;classification&gt;     &lt;purpose&gt;       &lt;source&gt;LOMv1.0&lt;/source&gt;       &lt;value&gt;skill level&lt;/value&gt;     &lt;/purpose&gt;     &lt;taxonPath&gt;       &lt;source&gt;         &lt;string language="en-US"&gt;ADL SCORM Concepts&lt;/string&gt;       &lt;/source&gt;       &lt;taxon&gt;         &lt;id&gt;I&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Aggregation Model&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Content Packaging Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Resource Fundamentals&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;       &lt;taxon&gt;         &lt;id&gt;I.A.3.a&lt;/id&gt;         &lt;entry&gt;           &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;         &lt;/entry&gt;       &lt;/taxon&gt;     &lt;/taxonPath&gt;     &lt;description&gt;       &lt;string language="en-US"&gt;Describing and packaging SCOs in a SCORM Content Package&lt;/string&gt;     &lt;/description&gt;     &lt;keyword&gt;       &lt;string language="en-US"&gt;Packaging SCOs&lt;/string&gt;     &lt;/keyword&gt;   &lt;/classification&gt; &lt;/aiccLom&gt; </pre>		

## 4.10 Applicability

Label	Applicability	LOM Number	none
Definition	<p>This category describes the learning object's relationship to physical objects or concepts that may or may not be other learning objects.</p> <p>To define multiple applicability's, there may be multiple instances of entries in this category.</p>		
Data Type	Category	Max Number of Occurrences	1
Values	none		
Comment			
Examples	<pre>&lt;aiccLom&gt;   &lt;applicability&gt;     &lt;source&gt; AICCV1.0 &lt;/source&gt;     &lt;audience&gt; flight_crew &lt;/audience&gt;     &lt;aircraftFamily&gt; B757 &lt;/aircraftFamily&gt;     &lt;aircraftFamily&gt; B767 &lt;/aircraftFamily&gt;   &lt;/applicability&gt; &lt;/aiccLom&gt;</pre>		
	<pre>&lt;aiccLom&gt;   &lt;applicability&gt;     &lt;source&gt; AICCV1.0 &lt;/source&gt;     &lt;audience&gt; engineering &lt;/audience&gt;     &lt;audience&gt; dispatcher &lt;/audience&gt;     &lt;aircraftFamily&gt; A320 &lt;/aircraftFamily&gt;     &lt;engineType&gt; PW6000 &lt;/engineType&gt;   &lt;/applicability&gt; &lt;/aiccLom&gt;</pre>		
	<pre>&lt;aiccLom&gt;   &lt;applicability&gt;     &lt;source&gt; AICCV1.0 &lt;/source&gt;     &lt;audience&gt; flight_crew &lt;/audience&gt;     &lt;aircraftFamily&gt; A310 &lt;/aircraftFamily&gt;     &lt;units&gt; kilograms &lt;/units&gt;     &lt;units&gt; feet &lt;/units&gt;     &lt;flightPhase&gt; Taxi Out and Takeoff &lt;/flightPhase&gt;   &lt;/applicability&gt; &lt;/aiccLom&gt;</pre>		

### 4.10.1 Audience

Label	Applicability.Audience	LOM Number	none
Definition	Profiles or general categories that define groups of personnel enrolled in aviation training content. Each group has common demographic, education, jobs/roles, certification and learning capability characteristics that are different than other groups.		
Data Type	LangString 100	Max Number of Occurrences	10
Values	Vocabulary Token	Description	
	flight_crew		
	cabin_crew		
	aircraft_maintenance		
	ground_operations		
	dispatcher		
	atc	Air Traffic Controller	
	air_marshall		
	engineering		

	performance	
	structure	
	any	
	other	An intended audience not listed in the tokens above.
Comment		
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt; &lt;/applicability&gt;</pre>	

#### 4.10.2 Aircraft Family

Label	Applicability.Aircraft Family	LOM Number	none
Definition	A grouping of aircraft types.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; B757 &lt;/aircraftFamily&gt;   &lt;aircraftFamily&gt; B767 &lt;/aircraftFamily&gt; &lt;/applicability&gt;</pre>		

#### 4.10.3 Aircraft Name

Label	Applicability.Aircraft Name	LOM Number	none
Definition	Members of an aircraft family for which the learning object is appropriate.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment	If a learning object is not applicable to an entire aircraft family, then the specific members of the family to which the learning object is appropriate may be listed.		
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; B737 &lt;/aircraftFamily&gt;   &lt;aircraftName&gt; 737-700 &lt;/aircraftName&gt;   &lt;aircraftName&gt; 737-800 &lt;/aircraftName&gt;   &lt;aircraftName&gt; 737-900 &lt;/aircraftName&gt; &lt;/applicability&gt;</pre>		

#### 4.10.4 Aircraft Identification

Label	Applicability.Aircraft Identification	LOM Number	none
Definition	Unique identifier for a specific airplane or group of airplanes associated with this learning object.		
Data Type	LangString 100	Max Number of Occurrences	40
Values			
Comment			
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; B737 &lt;/aircraftFamily&gt;   &lt;aircraftIdentification&gt; block 340 - 356 &lt;/aircraftIdentification&gt;</pre>		

	</applicability>
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#### 4.10.5 ATA Identification

Label	Applicability.ATA Identification	LOM Number	none
Definition	The Air Transport Association identifies subjects for maintenance manual chapters, sections, and subsections. This element reflects the subject in the learning object by indicating the chapter and optionally the section and subsections to which it applies.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; B737 &lt;/aircraftFamily&gt;   &lt;ataIdentification&gt; 24.02 &lt;/ataIdentification&gt; &lt;/applicability&gt;</pre>		

#### 4.10.6 Engine Type

Label	Applicability.ApplicabilityEntry	LOM Number	none
Definition	If the learning object applies to an airplane engine, the identification of which engine is appropriate for the learning object.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; A320 &lt;/aircraftFamily&gt;   &lt;engineType&gt; PW6000 &lt;/engineType&gt; &lt;/applicability&gt;</pre>		

#### 4.10.7 Units

Label	Applicability.Units	LOM Number	none
Definition	Units indicated on instruments. Metric or English. Pounds, kilograms, feet, meters, etc.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre>&lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; A310 &lt;/aircraftFamily&gt;   &lt;units&gt; kilograms &lt;/units&gt;   &lt;units&gt; feet &lt;/units&gt; &lt;/applicability&gt;</pre>		

#### 4.10.8 Aircraft Zone

Label	Applicability.Aircraft Zone	LOM Number	none
Definition	Indication of where on the aircraft the learning object is appropriate.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			

Examples	<pre> &lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; A310 &lt;/aircraftFamily&gt;   &lt;units&gt; kilograms &lt;/units&gt;   &lt;units&gt; feet &lt;/units&gt;   &lt;aircraftZone&gt; forward nose wheel well &lt;/aircraftZone&gt; &lt;/applicability&gt; </pre>
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#### 4.10.9 Flight Phase

Label	Applicability.Flight Phase	LOM Number	none
Definition	Where in the phases of a typical flight the learning object applies.		
Data Type	LangString 100	Max Number of Occurrences	10
Values			
Comment			
Examples	<pre> &lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; A310 &lt;/aircraftFamily&gt;   &lt;units&gt; kilograms &lt;/units&gt;   &lt;units&gt; feet &lt;/units&gt;   &lt;flightPhase&gt; Taxi Out and Takeoff &lt;/flightPhase&gt; &lt;/applicability&gt; </pre>		

#### 4.10.10 Effectivity

Label	Applicability.Effectivity	LOM Number	none
Definition	An indication of engineering modifications in airplanes associated with this learning object.		
Data Type	LangString 100	Max Number of Occurrences	100
Values			
Comment			
Examples	<pre> &lt;applicability&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;audience&gt; engineering &lt;/audience&gt;   &lt;audience&gt; dispatcher &lt;/audience&gt;   &lt;aircraftFamily&gt; A310 &lt;/aircraftFamily&gt;   &lt;units&gt; kilograms &lt;/units&gt;   &lt;flightPhase&gt; Taxi Out and Takeoff &lt;/flightPhase&gt;   &lt;effectivity&gt; Smiths FMS &lt;/effectivity&gt; &lt;/applicability&gt; </pre>		

### 4.11 Collection

Label	Collection	LOM Number	none
Definition	This category describes a set of objects with no specified relationship between them. If a learning object contains collections, these data elements may be used to describe them.		
Data Type	Category	Max Number of Occurrences	1
Values	none		

Comment	<p>Because only a single collection may be described in a metadata instance, General.Title, General.Description, etc. may be used to describe the collection as a whole. This category is used primarily to describe the members of the collection.</p> <p>Collections may contain one or more of the following</p> <ul style="list-style-type: none"> <li>Other collections</li> <li>Specific members (Which may be members of other collections also)</li> <li>Randomly selected members of other collections</li> </ul>
Examples	<pre> &lt;aiccLom&gt;   &lt;collection&gt;     &lt;source&gt; AICCV1.0 &lt;/source&gt;     &lt;collectionType&gt; mixed &lt;/collectionType&gt;     &lt;members&gt;       &lt;member&gt;         &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;         &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;         &lt;memberType&gt; question &lt;/memberType&gt;         &lt;memberDescription&gt;           &lt;string language="en"&gt;This is the first question on performing the before start checklist.&lt;/string&gt;         &lt;/memberDescription&gt;         &lt;memberLocation&gt;           http://www.boeing.com/questionbanks/MDO_01         &lt;/memberLocation&gt;       &lt;/member&gt;       &lt;member&gt;         &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;         &lt;memberTitle&gt; Takeoff &lt;/memberTitle&gt;         &lt;memberType&gt; collection &lt;/memberType&gt;         &lt;memberDescription&gt;           &lt;string language="en"&gt;This is collection of 23 questions on the subject of airplane takeoff.&lt;/string&gt;         &lt;/memberDescription&gt;         &lt;memberNumber&gt; 8 &lt;/memberNumber&gt;         &lt;!-- This member is another collection, of which 8 members           shall be chosen at random to become additional members           of this collection --&gt;       &lt;/member&gt;       &lt;memberLocation&gt;         http://www.airbus.com/questionbanks/A320X15m1       &lt;/memberLocation&gt;     &lt;/members&gt;   &lt;/collection&gt; &lt;/aiccLom&gt; </pre>

#### 4.11.1 Type

Label	Collection.Type	LOM Number	none
Definition	This field indicates whether all members of the collection are the same Learning Resource Type. If they are, the collection type is "uniform" or homogeneous; otherwise it is "mixed" or heterogeneous.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	uniform	All the learning objects in the group are the same resource type	
	mixed	All the learning objects in the group are not the same resource type	

Comment	
Examples	<pre>&lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; uniform &lt;/collectionType&gt; &lt;/collection&gt;</pre>

#### 4.11.2 Members

Label	Collection	LOM Number	none
Definition	This category identifies the members of the collection with critical characteristics of each member.		
Data Type	Category	Max Number of Occurrences	1000
Values	none		
Comment			
Examples			

##### 4.11.2.1 Member Identifier

Label	Collection.Member Identifier	LOM Number	none
Definition	A label of the collection member that is unique at least within the collection.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre>&lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; uniform &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt;</pre>		

##### 4.11.2.2 Member Title

Label	Collection.Member Title	LOM Number	none
Definition	A name for a member of the collection.		
Data Type	CharacterString 100	Max Number of Occurrences	1
Values			
Comment			
Examples	<pre>&lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Uniform &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Taxi in and Park 16 &lt;/memberTitle&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt;</pre>		

## 4.11.2.3 Member Type

Label	Collection.Member Type	LOM Number	none
Definition	The learning resource category to which the member belongs.		
Data Type	Vocabulary	Max Number of Occurrences	1
Values	Vocabulary Token	Description	
	exercise	A maneuver, operation, or drill carried out for training and discipline	
	simulation	Training Activity that replicates real life situations in an artificial environment. Students perform as if the activities were occurring in real life.	
	questionnaire	A set of questions that are not used as a performance evaluation for a learner.	
	diagram	A drawing that shows arrangement and relations	
	figure	A diagram or pictorial illustration	
	graph	A collection of coordinates to satisfy a given relation	
	index	A list of some specified data (as author, subject, or keyword)	
	slide	An illustration or photograph on a transparent medium that may be projected onto a screen for viewing.	
	table	A systematic arrangement of data usually in rows and columns for ready reference	
	narrative	The textual representation of an event or story	
	exam	A collection of assessment items which are used to determine a learner's proficiency.	
	experiment	An operation or procedure carried out under controlled conditions.	
	problem_statement		
	self_assessment	A set of questions used by a learner to determine his own level of performance.	
	lecture	A discourse given before an audience or class for instruction	
	collection	A set of objects with no specified relationship between them.	
	question	An assessment item. A unit of assessment.	
	example	One that is representative of all of a group or type	
	lesson	A unit of instruction of arbitrary length and size.	
	video	A motion sequence recorded from reality.	
	animation	A motion sequence generated artificially.	
	audio	Sound recording	
	graphic	An illustration or photograph	
	question	A single assessment item.	
	question_bank	A collection of questions any one or more of which may be used to populate exams.	
	smart_graphic	An illustration whose appearance can be changed programmatically.	
	template	Something that establishes or serves as a pattern.	
Comment	Notice that this element is more important in a mixed collection than in a uniform one. A recommended practice for uniform collections is to use General.Structure to indicate the learning object is a collection. Then, Educational.Learning Resource Type may be used to indicate the type of the members (such as video, graph, or slide).		
Examples	<pre> &lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Uniform &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;     &lt;/member&gt;   &lt;/members&gt; </pre>		



	<pre>       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Taxi in and Park 16 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt; </pre>
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#### 4.11.2.4 Member Description

Label	Collection.Member Description	LOM Number	none
Definition	Information to aid understanding, interpretation, and use of the member of the collection.		
Data Type	LangString 1000	Max Number of Occurrences	1
Values			
Comment	.		
Examples	<pre> &lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Uniform &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is the first question on performing the before start checklist.&lt;/string&gt;       &lt;/memberDescription&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Taxi in and Park 16 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is the sixteenth question on the subject of taxiing into a gate position.&lt;/string&gt;       &lt;/memberDescription&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt; </pre>		

#### 4.11.2.5 Member Number

Label	Collection.Member Number	LOM Number	none
Definition	The Number field is only necessary if the member is another collection. Number is the number of members of the other collection that should be considered a part of the current collection.		
Data Type	Integer	Max Number of Occurrences	1
Values			
Comment	<p>The number indicates either</p> <ol style="list-style-type: none"> <li>1. The number of randomly selected members of the outside collection that should be considered a member of the current collection, or</li> <li>2. The total number of members in the outside collection.</li> </ol>		

Examples	<pre> &lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Mixed &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is the first question on performing the before start checklist.&lt;/string&gt;       &lt;/memberDescription&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Takeoff &lt;/memberTitle&gt;       &lt;memberType&gt; collection &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is collection of 23 questions on the subject of airplane takeoff.&lt;/string&gt;       &lt;/memberDescription&gt;       &lt;memberNumber&gt; 8 &lt;/memberNumber&gt;       &lt;!-- This member is another collection, of which 8 members shall be chosen at random to become a part of this collection --&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt; </pre>
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4.11.2.6 Member Location

Label	Collection.Member Location	LOM Number	none
Definition	Frequently all the members of a collection will be in the same location. However, the members of the collection might be in several different locations. This is most likely to be true when there is a "mixed" collection or when members of a collection include other collections. The Location element allows the specification of a different URL for each member of the collection.		
Data Type	Integer	Max Number of Occurrences	1
Values			
Comment			

Examples	<pre> &lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Mixed &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is the first question on performing the before start checklist.&lt;/string&gt;       &lt;/memberDescription&gt;       &lt;memberLocation&gt;         http://www.boeing.com/questionbanks/MDO_01       &lt;/memberLocation&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Takeoff &lt;/memberTitle&gt;       &lt;memberType&gt; collection &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is collection of 23 questions on the subject of airplane takeoff.&lt;/string&gt;       &lt;/memberDescription&gt;       &lt;memberNumber&gt; 8 &lt;/memberNumber&gt;       &lt;!-- This member is another collection, of which 8 members         shall be chosen at random to become additional members         of this collection --&gt;       &lt;memberLocation&gt;         http://www.airbus.com/questionbanks/A320X15m1       &lt;/memberLocation&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt; </pre>
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**4.11.2.7 Member Objective**

Label	Collection.Member Objective	LOM Number	none
Definition	Members of a collection may be associated with one or more objectives. This element allows the identifier of the associated objective to be listed.		
Data Type	CharacterString 1000	Max Number of Occurrences	10
Values			
Comment			

Examples	<pre> &lt;collection&gt;   &lt;source&gt; AICCV1.0 &lt;/source&gt;   &lt;collectionType&gt; Mixed &lt;/collectionType&gt;   &lt;members&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; M16.A123 &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Before Start Checklist 1 &lt;/memberTitle&gt;       &lt;memberType&gt; question &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is the first question on performing the before start checklist.&lt;/string&gt;       &lt;/memberDescription&gt;       &lt;memberLocation&gt;         http://www.boeing.com/questionbanks/MDO_01       &lt;/memberLocation&gt;       &lt;memberObjective&gt; B717XMC83q18 &lt;/memberObjective&gt;     &lt;/member&gt;     &lt;member&gt;       &lt;memberIdentifier&gt; Q1642SMR &lt;/memberIdentifier&gt;       &lt;memberTitle&gt; Takeoff &lt;/memberTitle&gt;       &lt;memberType&gt; collection &lt;/memberType&gt;       &lt;memberDescription&gt;         &lt;string language="en"&gt;This is collection of 23 questions on the subject of airplane takeoff.&lt;/string&gt;       &lt;/memberDescription&gt;       &lt;memberNumber&gt; 8 &lt;/memberNumber&gt;       &lt;!-- This member is another collection, of which 8 members         shall be chosen at random to become additional members         of this collection --&gt;       &lt;memberLocation&gt;         http://www.airbus.com/questionbanks/A320X15m1       &lt;/memberLocation&gt;       &lt;memberObjective&gt; A123C16MX1 &lt;/memberObjective&gt;     &lt;/member&gt;   &lt;/members&gt; &lt;/collection&gt; </pre>
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## 5 Glossary

### **Aggregation Levels**

The functional granularity of a learning object.

### **AGR**

AICC Guidelines and Recommendations. A document recommending the use of a practice or specification to the aviation community. AGR 0XX recommends the use of this Profile specification.

### **Asset**

Pieces of content or assessments that usually can't be used or launched for training by themselves. Examples of assets include: Images, Animations, Text, Video, Questions, Templates, and Smart Graphics.

### **Assignable Unit**

A self-contained "chunk" of data consisting of one or more assets or launchable resources. An assignable unit is the first level of aggregated objects where assets are combined for a particular stand-alone purpose. An assignable unit is the lowest level that can communicate with an LMS.

### **Collection**

"The term "collection" can be applied to any aggregation of physical or digital items. Those items may be of any type, so examples might include aggregations of natural objects, created objects, "born-digital" items, digital surrogates of physical items, and the catalogues of such collections (as aggregations of metadata records). The criteria for aggregation may vary: e.g. by location, by type or form of the items, by provenance of the items, by source or ownership, and so on. Collections may contain any number of items and may have varying levels of permanence."

The Dublin Core Group. (<http://www.ukoln.ac.uk>)

### **Conformance**

Adherence to a specified set of criteria for use of a standard or specification.

### **Extended Elements**

AICC Profile data elements that have been added to the LOM data elements. May also refer to Data elements that are added to the list of data elements in the AICC Profile.

### **Extended Vocabulary**

AICC Profile vocabulary terms that have been added to the LOM data element vocabularies. May also refer to Terms that are added to the list of terms in an AICC data element vocabulary.

### **Launchable Resource**

A grouping of one or more assets bundled together for a single launchable resource, such as a web page (consisting of assets such as text, audio, and graphics).

### **Learning Object**

Any resource that can be reused to support learning. The term "learning objects" generally applies to educational materials designed and created in small chunks for the purpose of maximizing the number of learning situations in which the resource can be utilized.

### **LOM**

Learning Object Metadata standard created by the IEEE (Institute of Electrical and Electronic Engineers) LTSC (Learning Technology Standards Committee). Document 1484.12.1 dated 2002.

### **Object**

A single, identifiable unit or entity. An object can also include other smaller objects. Objects can be used in a training context to support learning.

**Profile**

In this document, a metadata schema based on another conceptual data schema. In this case the AICC Profile is based on the IEEE LOM.

**Repository**

Software for storing, retrieving, and exporting metadata information. A data storage system for content metadata which may also include content.

**Structured Training Package**

A digital description of Assignable Units, Launchable Resources, and Assets, including off-line activities (simulator sessions, classroom sessions, etc.). Sequencing information and the structure may be hierarchical with many levels, or flat. A training package is comprised of learning activities on-line and offline, summary information, and assessment items.

**Taxonomy**

A classification of things and concepts, or the principles underlying the classification.

**Training Program**

A level of aggregation defined by AICC. It is a collection of structured training packages related to a specific syllabus, or curriculum. It includes a description of the structured training packages, as well as sequencing information for the structured training packages.

## 6 Bibliography

Standard for Learning Object Metadata from IEEE, document 1484.12.1 dated 2002.  
DELS White Paper AICC

SCORM 2004 Content Aggregation Model version 1.3.1.

## 7 Data types definitions

TBC from IEEE LOM