

Comparison of FAILTE resource Description Scheme with IMS Learning Resource Metadata Information Model

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Version: 1

Date: May 2001

General comments

“A suitable resource description will be devised, building on the descriptions currently in use by the projects and standards such as Dublin Core, IMS, and the IEEE Learning Object Model [9] and the RDN interoperability framework.”

FAILTE project proposal.

Probably makes sense only to use IMS for web-based resources.

We should only export data that we would make available in the searchable database, so need to check status of record and data protection status of personal information before exporting anything.

Currently refers to v1.1 of the IMS MIM, which (with a few minor changes) is equivalent to IEEE LOM v3.5.

1. FAILTE to IMS

Record ID

Can be exported as IMS 1.3: catalogue entry:
IMS 1.3.1: general.catalogue= FAILTE
IMS 1.3.2: general.entry = *record id*

Since we don't distinguish between the ID assigned to a resource by FAILTE and the ID of the FAILTE record, this can also be exported as the metadata.catalogentry.

Title

IMS1.2: general.title is of type LangString, which means that we have to record the language of the title. We will be OK so long as the titles are in English!

Alternative Title

No IMS equivalent. Which is a shame, we can work it into IMS 1.5: description, along the lines of "Also known as *Alternative Title*" appended to the end of the FAILTE Description, but we should beware that this doesn't create over-long descriptions.

Subject classification

Can be recorded as IMS 9: Classification
IMS 9.1: classification.purpose = Discipline
IMS 9.2.1: classificaiton.taxonpath.source = www.eevl.ac.uk
IMS 9.2.2.2: classificaiton.taxonpath.taxon.entry = *subject classification path*

If anyone takes advantage of the possibility of using DDC classification instead of EEVL subject headings then they will need to separate the code and the entry since these are recorded separately in IMS.

Main URL

If the resource is web-based can use the first occurrence of IMS 4.3: technical.location.

If the resource is not web-based, could use relation. For IMS this would be 7.1 relation.kind = IsReferencedBy; we can't use IMS:7.2.1 relation.resuource.identifier since this requires us to find an IMS unique ID for the web page but we could use IMS 7.2.2 relation.resuource.description to say something along the lines of "URL for further info on this CD-ROM is *main url*". However, for the time being we shall export only web-based resources so that we avoid this problem.

Secondary URLs

If the resource is web based up to seven of these can be recorded in IMS 4.3: technical.location. The additional information about the nature of the secondary URL (that it is a mirror site etc) should not be recorded.

Description

This can be recorded as IMS 1.5: general.description, although there may be some differences, for example, a FAILTE recorded may include information in the description that should properly belong in one of the IMS elements that we have not adopted.

HTML tags should be removed from the description (since the IMS description element in XML is, ultimately, of type PCDATA). In the case of hyperlink anchors the href can be transferred to a parenthesis after the link work, e.g. 'engineering courseware

database' can become 'engineering courseware database (<http://failte.ac.uk>)'. Other tags can be replaced by carriage returns or spaces as appropriate.

Rights: Cost of the resource

If this is known, then can set IMS 6.1: rights.cost (yes/no) and further details can be given in IMS 6.3: rights.description but suitably phrased (e.g. "Estimated minimum cost for providing resource to a class of 30 is approx. xx-yy GBP per student").

Rights: Conditions of use

Can be listed in IMS 6.3: rights.description

Awards

Cannot be encoded in IMS

Language

Same as IMS 1.4: general.language

Reference

This should be exported as IMS 7:relation, with IMS 7.1 relation.kind=IsReferencedBy however we cannot use IMS 7.2.1 relation.resource.identifier since to do so requires that we know the IMS ID of the related resources which at present are not defined. We use the IMS 7.2.2 relation.resource.description part of the relation to store the URL/Title of the reference.

Version

Same as IMS 2.1: lifecycle.version

Date of publication

Can be encoded as IMS 2.3.3 lifecycle.contribute.date where IMS 2.3.1 lifecycle.contribute.role = publisher..

Date modified

Can be encoded as IMS 2.3.3 lifecycle.contribute.date where IMS 2.3.1 lifecycle.contribute.role = author. If there is more than one author then the data should be associated with the one which came from the FAILTE creator.

The medium of the resource

Our current use of IMS 4.3: technical.location = URL assumes that the resource is web-based. May in the future export non-web based resource records in IMS, but only if someone asks us to.

Technical Requirements

IMS 4.4: technical.requirements is far more detailed and structured than we felt was necessary for FAILTE, as a result the FAILTE tech req's element is not IMS compatible.

Relationship between resources

This should be exported as IMS 7: relation, with the title, URL and catalogue entries of the related resource stored in IMS: 7.2.2 relation.resource.description (cannot use 7.2.1 since doing so requires that we know the IMS ID of the related resources).

Country of Origin

No IMS equivalent.

Catalogue

This is IMS 1.3: general.catalogentry with IMS 1.3.1: catalogue = catalogue scheme and IMS 1.3.2: entry = catalogue entry. IMS has a min-max value of 8, FAILTE allows an unlimited number of occurrences, but it is highly unlikely we shall ever have more than eight.

Contacts

We must not export contact details unless we have Data Protection clearance to do so (DP = granted)

If role= publisher, then the contact can be regarded as IMS 2.3.2: lifecycle.contribute.entity when IMS 2.3.1: lifecycle.contribute.role = publisher. Similarly role = creator / contributor correspond to IMS 2.3.1: lifecycle.contribute.role = author

Type of contact The vCard format allows Individual and/or organisation contact details to be interchanged, if there is no FN or N [personal name / full name] specified in the vCard then the contact details are those for the ORG[anisation] given.

Resource type

Corresponds to IMS 5.2: educational.learning resource type, we haven't use the best practice list for the types, but in this case I think that we are justified in exploiting the fact that it is an **open** vocabulary, since we think that our list is as good as the best practice list.

Educational description

Same as IMS 5.8: Educational.Description with the proviso that we might occasionally include info on some of the IMS elements that we haven't adopted in here, which isn't really what the IMS description elements are for.

Educational level

Complicated. This is best exported as IMS 9.2.2.2 classification.taxonpath.taxon.entry where IMS 9.1: classification.purpose = "Educational Level" and IMS 9.2.1: classification.taxonpath.source = FAILTE. We can use the value of Educational Level to set some of the other IMS elements:

- IMS 5.2 educational.learning context [ELC] can be set to "Higher Education" for all FAILTE resources
- ELC can be set to University First Cycle where level = foundation or introductory
- ELC can be set to University Second Cycle where level = intermediate or advanced
- ELC can be set to University Postgraduate where level = advanced

[you can have up to eight Learning Contexts in IMS]

Time to use the resource

This is equivalent to IMS 5.9 Educational.typical learning time, which is of type IMS:DateType, i.e. comprises two parts: 1) datetime in ISO8601 format, and 2) description which is a text string and is the part that we would use for the FAILTE data. We would have to translate the codes used when exporting them.

Interactivity type

This has elements of IMS Interactivity level as well as IMS Interactivity type.

If Interactivity type = Highly Interactive, then IMS 5.1: educational.interactivity type = Active and IMS 5.3:educational.interactivity level = 3

If Interactivity type = Interactive, then IMS 5.1:educational.interactivity type = Active and IMS 5.3:educational.interactivity level = 1

If Interactivity type = Expositive, then IMS 5.1:educational.interactivity type = Expositive and IMS 5.3:educational.interactivity level = 0

If Interactivity type = Unknown, the do not export this field.

The choice of 0,1,3 is somewhat arbitrary, but any “subjective” assessment to a five point scale (as recommended by IMS) will have similar problems. 0,1 and 3 represent “pessimistic” choices, in that a Highly interactive resource may justify a rating of 4, but we felt it better not to lead end users to over-expect.

Intended end user role

Same a IMS 5.1: educational.intended end user role if we substitute Teacher for Tutor when exporting (the difference is merely one of HE usage).

Tutor support documentation

No IMS equivalent, but this is a candidate for inclusion in IMS 8: Annotation.

Record contributors

For simplicity we currently regard FAILTE as the creator of all records.

We could use IMS 3.3: Metametadata.Contribute with IMS 3.3.1 Metametadata.Contribute.Role = creator and IMS 3.3.2 Metametadata.Contribute.entity = a vCard generated from the code of the **first** contributor. This vCard should include reference to the FAILTE project and the institution that where the contributor works. IMS recommends that there is only one creator, and doesn't suggest any alternative role suitable for subsequent contributors, but then, I don't think we need get too worried about listing everyone who contributed to a record.

Record validator

This not currently exported

We could use IMS 3.3: Metametadata.Contribute with IMS 3.3.1 Metametadata.Contribute.Role = validator and IMS 3.3.2 Metametadata.Contribute.entity = a vCard generated from the code of the contributor. This vCard should include reference to the FAILTE project and the institution that where the contributor works.

Date record entered

Use IMS 3.3.3: Metametadata.Contribute.date of the element which has IMS 3.3.1 (role) = creator.

Date to be reviewed

No IMS equivalent, no need to export—whichever receives the records should have their own policy on reviewing.

Date last reviewed

No IMS equivalent, no need to export unless we want to “sell” records on the basis of them being up to date.

Date last modified

This not currently exported.

There is no direct IMS equivalent, which relates to comment about no IMS role suitable for contributors other than creator. There is an argument that modification creates a new record so that this element should supersede "Date record entered" in IMS 3.3.3. but we don't record who made last modification so we couldn't update IMS 3.3.2. No need to export unless we want to show how up to date records are.

Language of metadata

IMS 3.5 metametadata.language.

Decision

Do not export if decision is not "Active".

Comments

Do not export—these comments may be private to the project team.

2. IMS to FAILTE

1 General

1.1 Identifier : reserved, do not use.

1.2 Title : use FAILTE the Title element

1.3 Catalogentry For the first occurrence we use FAILTE cataloguing of the resource, so:

1.3.1 Catalogue : is "FAILTE"

1.3.2 Entry : is the FAILTE Record ID.

Any occurrences of the FAILTE Catalogue element pairings of scheme and entry can be exported as subsequent "Catalogentry"s:

1.3.1 Catalogue : is FAILTE's catalogue scheme

1.3.2 Entry : is the FAILTE's catalogue entry.

1.4 Language : use the FAILTE Language element.

1.5 Description : this is the same as the FAILTE Description element, with the minor point that a FAILTE description may include some information which would properly belong in one of the IMS elements that FAILTE chose not to adopt.

1.6 Keywords : we have not used keywords in FAILTE.

1.7 Coverage : this is a concept that does not have obvious relevance to Engineering courseware. While a few resources might refer to a particular periods or locations (e.g. a tutorial based on the Tay bridge disaster) it is unlikely that engineering academics would ever seek find resources with a specific coverage.

1.8 Structure : it was felt that it would the difficulty of assessing this was not merited by the benefit gained by the end user. While some end users may have a preference for some type of structure we felt that this preference would be best exercised when they had selected a set of resources by other criteria (such as subject, educational level, cost ...) and could review these resources in depth to assess whether more subtle criteria like the approach taken, written style and accuracy of the material were met.

1.9 Aggregation Level : there is no equivalent in FAILTE. We felt that this would not tell the lecturer anything that "time to use the resource" did not imply.

2 Lifecycle

2.1 Version : this is the same as the FAILTE Version element.

2.2 Status : it was decided that this would not be a separate element in FAILTE

2.3 Contribute

2.3.1 Role : the role given in the FAILTE Contacts element can be used for some of these (Author and Publisher correspond to FAILTE Creator or Contributor and Publisher) the others (Initiator, Terminator, Validator, Editor, Graphical designer...) were considered to be of little interest to engineering academics even if it were possible to identify them.

2.3.2 Entity : Most of the contact details needed for the vCard here are available in the FAILTE Contacts element.

2.3.3 Date : the FAILTE Date-publication can be used here when 2.3.1 role is publisher; FAILTE Date-modified can be used when the role is Author.

3 Metametadata

3.1 Identifier : Reserved, not used.

3.2 Catalogentry : since we do not distinguish between the FAILTE ID of the resource and the FAILTE ID of the description of that resource in the database we can use the FAILTE ID here:

3.2.1 Catalogue : "FAILTE"

3.2.2 Entry : Record ID

3.3 Contribute : for the time being we are not exporting all of the information on who contributed to each record, for simplicity we are attributing all records to the FAILTE Project and giving the URL for further details:

3.3.1 Role : "creator"

3.3.2 Entity : ORG:FAILTE Project URL:<http://failte.ac.uk/>

3.3.3 Date : we are currently using the FAILTE's Date Entered element. Date last modified is another contender for use here, and would be especially appropriate if we were selling records and wanted to show that they were up to date.

We are not currently exporting information on record validation (which is the other Role for metadata contributors), the information is available in the FAILTE Record Validator and Date last reviewed elements if we chose to share this.

3.4 Metadatascheme : "IEEELOM:1.0" since this is what is in all the example files on the IMS site. It probably should be something else to reflect the fact that it is IMS 1.1/LOM3.5, but I can't find an example to show how this is declared.

3.5 Language : use the FAILTE Language of metadata element.

4 Technical

4.1 Format : it was felt that the use of MIME types to describe the format, where anything other than single file resources are described as multipart/mixed, would mean that most resources in FAILTE would not be described in a way that was helpful to our end users.

4.2 Size : this was decided to be too difficult to find and of too little use to merit inclusion in FAILTE

4.3 Location : the FAILTE URL element can be used here for web-based resources. Other resources are not currently included in IMS exports.

4.4 Requirements : FAILTE lists requirements in a less structured way than is required by IMS. This allows the cataloguer to use their judgement as to what is worth including in the resource descriptions.

4.5 Installation Remarks : No equivalent in FAILTE resource descriptions: we felt that the end users would be better to get this information from the suppliers of the software or from the FAILTE / EASEIT-Eng reviews and evaluation.

4.6 Other Platform Requirements : See note for 4.4.

4.7 Duration : We felt it unlikely that our end users would be interested in this and the typical learning time, and also that this element was less suited to the majority of resource described in FAILTE that cannot be "played at their intended speed"

5 Educational

5.1 Interactivity type : we found the division of interactivity type and interactivity level to be too confusing and reliant on a distinction that we felt our end users would not make. For this reason FAILTE's Interactivity type is different to that of IMS. However,

a resource that FAILTE describes as “Expositive” can be described in IMS as Expositive and one that FAILTE describes as “Interactive” or “Highly Interactive” can be described in IMS as “Interactive”.

5.2 Learning Resource type : the FAILTE Learning resource type uses a vocabulary which we think will be more suited to the resources we describe than the IMS best practice set which gives a stronger emphasis to smaller resources (for example we would probably not include a single table, figure or graph) than we felt was suited to our needs. Also we felt that some of the distinctions drawn in IMS, e.g. between “Figure” and “Diagram”, would not interest our users. However, since this element uses an open vocabulary, with the IMS set described as best practice, we decided to export the FAILTE Learning Resource Type here.

5.3 Interactivity level : See note for Interactivity type above. The implied correspondence between the FAILTE Interactivity types and the IMS Interactivity level is: Expositive \Rightarrow 0, Interactive \Rightarrow 1 and Highly Interactive \Rightarrow 3.

5.4 Semantic Density : we felt that it would take cataloguers too long and require specialized knowledge for them to make a judgement of semantic density.

5.5 Intended end user role : the FAILTE Intended end user role is identical to this if we replace “Tutor” with “Teacher”.

5.6 Learning Context : Due to the brief of the FAILTE projects all the resources we describe are suitable for use in “Higher Education”. Furthermore, the FAILTE Educational Level element can be used to add to this: if a resource is described in FAILTE as “foundation” or “Introductory” then we can assume it is suitable to “University first cycle”; “intermediate” materials can be assumed to be for “University second cycle”; and “advanced” materials can be taken as suitable for “University postgrade”.

5.7 Typical age range : we could use “adult” here but chose not to make any assumption about how old a university student would be.

5.8 Difficulty : since there is no way to link the difficulty to the classification of educational level, IMS offers no way round the problem of something that is suitable as a difficult resource for beginners being an easy resource for more advanced students.

5.9 Typical Learning time : The FAILTE estimate of the length of the resource in terms of whether it will make part of a lesson, a whole lesson, several lessons or a whole course is suitable for export in the Description part of the datatype datatype.

5.10 Description : this is the same as the FAILTE Description-educational, with the minor point that a FAILTE description may include some information which would properly belong in one of the IMS elements that FAILTE chose not to adopt.

5.11 Language : we have not drawn the distinction between the human language of the resource and the language spoken by the intended users of the resource since we felt that there would be few engineering resources which were written in one language but specifically intended for users of another. However, in order now to pass on misleading information should such a resource ever be found in FAILTE we chose not to export anything here.

6 Rights

6.1 Cost : the FAILTE Rights: Cost of the resource contains more information than this element requires, but is possible to reduce this to the yes/no required by IMS.

6.2 Copyright and other restrictions : in order to avoid giving false information here (and because of the few resources that really are copyright free) we decided not to use this element.

6.3 Description : the FAILTE Rights: Conditions of use can be used here.

7 Relation : the FAILTE Relationship between resources element is intended to be the same as this, though in practice we currently only use the “IsPartOf” relationship.

7.1 Kind : the relationship from FAILTE provides this information

7.2 Resource

7.2.1 Identifier : since this refers to the reserved IMS identifier, which is not yet available, we cannot use it.

7.2.2 Description : we currently use the FAILTE ID of the related resource and the FAILTE URL to point to a description of the related resource.

Furthermore, we can export information on reviews of the learning material stored in FAILTE’s Reference element by using the “IsReferencedBy” keyword:

7.1 Kind : “IsReferencedBy”

7.2 Resource

7.2.1 Identifier : since this refers to the reserved IMS identifier, which is not yet available, we cannot use this.

7.2.2 Description : we currently export the FAILTE reference element here

8 Annotation : we currently do not export the comments put into the FAILTE metametadata since they are intended primarily for communication within the project.

8.1 Person : not used

8.2 Date : not used

8.3 Description : not used

9 Classification : the FAILTE Subject classification and Educational Level elements can be exported here. For the Subjects:

9.1 Purpose : “Discipline”

9.2 Taxonpath : we are treating the EEVL subject classification as sufficiently important to be used without mapping to any other. If such a mapping is ever made it would be possible to use that as an alternative Taxonpath.

9.2.1 Source : “www.eevl.ac.uk”

9.2.2 Taxon : where there a resource has been classified under more than one heading this element is repeated.

9.2.2.1 id : not relevant to EEVL.

9.2.2.2 entry : the EEVL subject heading from the FAILTE Subject classification element.

9.3 Description : not used, we felt that this could not be separated from the general description without making cataloguing more difficult than it need be.

9.4 Keywords : not used, we felt this would make cataloguing too difficult.

For the FAILTE Educational Level element:

9.1 Purpose : “Educational Level”

9.2 Taxonpath : In the absence of anything better, we are using the FAILTE headings for educational level with the prefix UKHE:

9.2.1 Source : “failte.ac.uk”

9.2.2 Taxon : where there a resource has been classified under more than one heading this element is repeated.

9.2.2.1 id : not relevant to FAILTE.

9.2.2.2 entry : the FAILTE educational level heading with the prefix "UKHE:"

9.3 Description : not used, we felt that this could not be separated from the educational description without making cataloguing more difficult than it need be.

9.4 Keywords : not used, we felt this would make cataloguing too difficult.

3. Template for IMS Export

The following template is read by a Java program that interfaces to the FAILTE database and outputs the contents of the fields in that database into the content of the tags in the template. In order to specify which field is used where, first the table should be selected using a comment in the template of the form `<!--SQLtable:tb_input-->`, and then the field is selected by a reference to the field name prefixed with \$, e.g. `$input_idx0`. Any table that is opened must be closed with a comment of the form `<!--SQLtable:tb_input/-->`, and references to field names must be followed by a semi-colon (;) or an opening acute (<).

Further control is available through loops, and conditionals (if's and switches). For example the following code:

```
1. <!--SQLtable:input_catalogue-->
2. <!--loop-->
3.     <catalogentry>
4.         <catalogue>$cata_schemex4</catalogue>
5.         <entry>
6.             <langstring>$cata_entryx3</langstring>
7.         </entry>
8.     </catalogentry>
9. <!--loop/-->
10. <!--SQLtable:input_catalogue/-->
```

will cycle through Catalogue Scheme / entry pairs stored for that resource in the `input_catalogue` table.

Comments in the template are used to explain what the if and switch blocks do.

```
1. <?xml version="1.0" encoding="UTF-8"?>
2. <DOCTYPE record SYSTEM "http://www.imsproject.org/xml/IMS_METADATAv1p1.dtd" >
3. <!-- Uses Master DTD at IMS site. -->
4. <!-- NOTE Based on: This record is the XML binding of the IMS metadata. The IMS metadata
   uses the IEEE LTSC LOM v3.5. -->
5. <!-- 2000-05-11 T.D.Wason: Down-cased element names to lower case.-->
6. <!-- 2001-05-15 Phil Barker, added FAILTE coding to make this a template -->
7. <record xmlns="http://www.imsproject.org/metadata/">
8. <!--The IMS XML binding of Metadata; FAILTE Template -->
9. <!-- Copyright 2000 IMS Global Learning Consortium, Inc. -->
10. <metametadata>
11. <!--SQLtable:tb_input-->
12.     <catalogentry>
13.         <catalogue>FAILTE</catalogue>
14.         <entry>
15.             <langstring>$input_idx0</langstring><!-- lang attribute is optional.
   Default language of LANGSTRING is provided by METADATA.LANGUAGE. -->
16.             </entry>
17.         </catalogentry>
18.         <contribute>
19.             <role><!-- language of "en" provided for controlled and suggested vocabularies. -->
20.                 <langstring lang="en">creator</langstring>
21.             </role>
22.             <centity>
23.                 <vcard>
24. BEGIN:VCARD
25. ORG:FAILTE Project
26. URL:http://failte.ac.uk/
27. END:VCARD
28.                 </vcard>
29.             </centity>
30.             <date>
31.                 <datetime>$date_enterx0</datetime>
32.                 <description>
33.                     <langstring></langstring>
34.                 </description>
35.             </date>
36.         </contribute>
37.     </metametadata></metadatascheme>IEEELOM:1.0</metadatascheme>
```

```

38.     <language>$lang_metadatax2</language>
39. </metametadata>
40. <general>
41.     <title>
42.         <langstring>$titlex1</langstring>
43.     </title>
44.     <catalogentry>
45.         <catalogue>FAILTE</catalogue>
46.         <entry>
47.             <langstring>$input_idx0</langstring>
48.         </entry>
49.     </catalogentry>
50. </catalogentry>
51. <!--SQLtable:tb_input/-->
52. <!--SQLtable:input_catalogue-->
53. <!--loop-->
54.     <catalogentry>
55.         <catalogue>$cata_schemex4</catalogue>
56.         <entry>
57.             <langstring>$cata_entryx3</langstring>
58.         </entry>
59.     </catalogentry>
60. <!--loop/-->
61. <!--SQLtable:input_catalogue/-->
62. <!--SQLtable:tb_input-->
63.     <description>
64.         <langstring>$gen_descripx2</langstring>
65.     </description>
66.     <keywords>
67.         <langstring></langstring>
68.     </keywords>
69.     <coverage>
70.         <langstring></langstring>
71.     </coverage>
72.     <structure>
73.         <langstring lang="en"></langstring>
74.     </structure>
75.     <aggregationlevel/>
76. </general>
77. <lifecycle>
78.     <version>
79.         <langstring>$versionx2</langstring>
80.     </version>
81.     <status>
82.         <langstring lang="en"></langstring>
83.     </status>
84. <!--SQLtable:tb_input/-->
85. <!--loop-->
86.     <contribute>
87. <!--SQLtable:input_contacts-->
88.         <role>
89.             <langstring lang="en">$conta_typex2</langstring>
90.         </role>
91.         <centity><!-- Stub of a vCard entry with Formatted Name (FN) property -->
92.         <!--if agent_typex2 eq "individual" FN: is $namex3, ORG: is empty -->
93.         <!--if agent_typex2 neq "individual" FN: is empty, ORG: is $namex3-->
94.         <vcard>
95. BEGIN:VCARD
96. <!--if-->$agent_typex2="individual"
97. FN:$namex3 <!--true-->
98. ORG:$namex3 <!--false-->
99. <!--if/-->
100. ADR:$addressx4; <!--dummy-->
101. $ZIPx4; <!--dummy-->
102. $countryx4 <!--dummy-->
103. TEL;TYPE=VOICE:$phonex4 <!--dummy-->
104. TEL;TYPE=FAX:$faxx4 <!--dummy-->
105. EMAIL;INTERNET:$emailx3 <!--dummy-->
106. END:VCARD
107.         </vcard>
108.     </centity>
109. <!--SQLtable:input_contacts/-->

```

```

110.<!--SQLtable:tb_input-->
111.    <!--if conta_typed eq "publisher" use $date_publishx4 for datetime -->
112.    <!--if conta_typed eq "creator" use $date_modifyx4 for datetime-->
113.    <!--if conta_typed neq "publisher|creator" leave datetime empty-->
114.    <date>
115.        <!--switch-->${conta_typed}()
116.        <datetime>${date_publishx4}</datetime> <!--publisher-->
117.        <datetime>${date_modifyx4}</datetime> <!--creator-->
118.        <datetime></datetime> <!--default-->
119.    <!--switch/-->
120.    <description>
121.        <langstring></langstring>
122.    </description>
123. </date>
124.<!--SQLtable:tb_input/-->
125.    </contribute>
126.<!--loop/-->
127.    </lifecycle>
128.    <technical>
129.        <format>
130.            <langstring></langstring>
131.        </format>
132.        <size/>
133.<!--SQLtable:tb_input-->
134.    <location type="URI">${URLx1}</location><!--type of URI or TEXT-->
135.<!--loop-->
136.    <location type="URI">${second_URLx4}</location><!--type of URI or TEXT-->
137.<!--loop/-->
138.    <requirements>
139.        <type>
140.            <langstring lang="en"></langstring>
141.        </type>
142.        <name>
143.            <langstring></langstring>
144.        </name>
145.        <minimumversion/>
146.        <maximumversion/>
147.    </requirements>
148.    <installationremarks>
149.        <langstring></langstring>
150.    </installationremarks>
151.    <otherplatformrequirements>
152.        <langstring></langstring>
153.    </otherplatformrequirements>
154.    <duration>
155.        <datetime/>
156.        <description>
157.            <langstring></langstring>
158.        </description>
159.    </duration>
160.    </technical>
161.    <educational>
162.<!--if $interactivityx2 eq "Highly Interactive" then interactivitytype is "Active" and
interactivitylevel = "3"-->
163.<!--if $interactivityx2 eq "Interactive" then interactivitytype = "Active" and
interactivitylevel = "1"-->
164.<!--if $interactivityx2 eq "Expositive" then interactivitytype = "Expositive" and
interactivitylevel = "0"-->
165.<!--if $interactivityx2 eq "unknown" then interactivitytype = empty and interactivitylevel
= empty-->
166.    <interactivitytype>
167.        <!--switch-->${interactivityx2}()
168.        <langstring lang="en">Active</langstring> <!--Highly Interactive-->
169.        <langstring lang="en">Active</langstring> <!--Interactive-->
170.        <langstring lang="en">Expositive</langstring> <!--Expositive-->
171.        <langstring lang="en"></langstring> <!--default-->
172.    <!--switch/-->
173.    </interactivitytype>
174.    <learningresourcetype>
175.        <langstring lang="en">${r15esource_typed}</langstring>
176.    </learningresourcetype>
177.    <!--switch-->${interactivityx2}()

```

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178.         <interactivitylevel>3</interactivitylevel> <!--Highly Interactive-->
179.         <interactivitylevel>1</interactivitylevel> <!--Interactive-->
180.         <interactivitylevel>0</interactivitylevel> <!--Expositive-->
181.         <interactivitylevel></interactivitylevel> <!--default-->
182.     <!--switch/-->
183.     <semanticdensity/>
184. <!--if $e03nd_userx4 eq "tutor" then change it to "teacher"-->
185.     <intendedenduserrole>
186.     <!--if--> $e03nd_userx4="tutor"
187.         <langstring lang="en">teacher</langstring> <!--true-->
188.         <langstring lang="en">$e03nd_userx4</langstring> <!--false-->
189.     <!--if/-->
190.     </intendedenduserrole>
191.     <learningcontext>
192.         <langstring lang="en">Higher Education</langstring>
193.     </learningcontext>
194. <!--if $e06duca_levelx2 eq "foundation|introductory" then learningcontext = "University
    First Cycle"-->
195. <!--if $e06duca_levelx2 eq "intermediate|advanced" then learningcontext = "University
    Second cycle"-->
196. <!--if $e06duca_levelx2 eq "advanced" then learningcontext = "University Postgraduate"-->
197.     <learningcontext>
198.     <!--switch--> $e06duca_levelx2()
199.         <langstring lang="en">University First Cycle</langstring> <!--Foundation-->
200.         <langstring lang="en">University First Cycle</langstring> <!--Introductory-->
201.         <langstring lang="en">University Second Cycle</langstring> <!--Intermediate-->
202.         <langstring lang="en">University Postgrade</langstring> <!--Advanced-->
203.         <langstring lang="en">$e06duca_levelx2</langstring> <!--default-->
204.     <!--switch/-->
205.     </learningcontext>
206.     <typicalagerange>
207.         <langstring></langstring>
208.     </typicalagerange>
209.     <difficulty/>
210.     <typicallearningtime>
211.         <datetime/>
212.         <description>
213.             <langstring>$durationx4</langstring>
214.         </description>
215.     </typicallearningtime>
216.     <description>
217.         <langstring>$edu_descripx2</langstring>
218.     </description>
219.     <language/>
220. </educational>
221. <rights>
222.     <cost><!-- yes or no -->
223.     <!--switch--> $rights_costx2
224.         <langstring lang="en">no</langstring> <!--Free-->
225.         <langstring lang="en"></langstring> <!--Unknown-->
226.         <langstring lang="en">yes</langstring> <!--default-->
227.     <!--switch/-->
228.     </cost>
229.     <copyrightandotherrestrictions><!-- yes or no -->
230.         <langstring lang="en"></langstring>
231.     </copyrightandotherrestrictions>
232.     <description>
233.         <langstring>$rights_condx4</langstring>
234.     </description>
235. </rights>
236. <!--loop-->
237.     <relation>
238.         <kind>
239.             <langstring lang="en">isReferencedBy</langstring>
240.         </kind>
241.         <resource>
242.             <!--IDENTIFIER reserved for later use. Do not use.-->
243.             <description>
244.                 <langstring>Reviewed in $referencex4</langstring>
245.             </description>
246.         </resource>
247.     </relation>

```

```

248.<!--loop/-->
249.<!--SQLtable:tb_input/-->
250.<!--SQLtable:input_relations-->
251.<!--loop-->
252.    <relation>
253.        <kind>
254.            <langstring lang="en">$relationshipx4</langstring>
255.        </kind>
256.        <resource>
257.            <!--IDENTIFIER reserved for later use. Do not use.-->
258.            <description>
259.                <langstring>Failte resource ID $failte_relx3 (see
                http://failte.ac.uk)</langstring>
260.            </description>
261.        </resource>
262.    </relation>
263.<!--loop/-->
264.<!--SQLtable:input_relations/-->
265.    <annotation>
266.        <centity>
267.            <vcard/>
268.        </centity>
269.        <date>
270.            <datetime/>
271.            <description>
272.                <langstring></langstring>
273.            </description>
274.        </date>
275.        <description>
276.            <langstring></langstring>
277.        </description>
278.    </annotation>
279.<!--SQLtable:input_subjects-->
280.    <classification>
281.        <purpose>
282.            <langstring lang="en">Discipline</langstring>
283.        </purpose>
284.        <taxonpath>
285.            <source>www.eevl.ac.uk</source>
286.<!--loop-->
287.        <taxon>
288.            <id></id>
289.            <entry>
290.                <langstring>$headingsx2</langstring>
291.            </entry>
292.        </taxon>
293.<!--loop/-->
294.        </taxonpath>
295.        <description>
296.            <langstring></langstring>
297.        </description>
298.        <keywords>
299.            <langstring></langstring>
300.        </keywords>
301.    </classification>
302.<!--SQLtable:input_subjects/-->
303.<!--SQLtable:tb_input-->
304.<classification>
305.    <purpose>
306.        <langstring lang="en">Educational Level</langstring>
307.    </purpose>
308.    <taxonpath>
309.        <source>failte.ac.uk</source>
310.<!--loop-->
311.        <taxon>
312.            <id></id>
313.            <entry>
314.                <langstring>UKHE: $e06duca_levelx2</langstring>
315.            </entry>
316.        </taxon>
317.<!--loop/-->
318.        </taxonpath>

```

```
319.      <description>
320.          <langstring></langstring>
321.      </description>
322.      <keywords>
323.          <langstring></langstring>
324.      </keywords>
325.  </classification>
326.<!--SQLtable:tb_input/-->
327.</record>
```