Facilitating Access and Information to Learning and Teaching resources in Engineering

Draft Guidelines for FAILTE metadata.

Written by Jenny Slater
Completed on 24/11/00

Version Status
Stable draft of FAILTE metadata guidelines to be used in the development of draft FAILTE database (work package 3).

Along with the Selection Flow Chart, this is the deliverable from work package 2.

Version History
Previous version: Alpha Guidelines for FAILTE metadata (1/11/00)

Changes: Proof-read by Phil, most changes were to bring tables in main text into agreement with Appendix 1.
3.7 Description: max occurrence 'unlimited' changed to 1; datatype changed to text/html
3.8 Rights Cost...: Obligation 'optional' changed to mandatory, default = 0; 0 = unknown added to assigned values.
3.9 Rights Conditions...: maximum occurrence changed to 1
3.10 Awards: Obligation 'Optional' changed to Mandatory default = none specified; Assigned values, 'Scout Report Selection' added.
3.13 Version Datatype 'char(50) changed to char(20)
3.17 Technical Requirements Comment: default entry should be 'unknown'
3.18 Relationship...: Obligation for Relation-type 'mandatory' changed to optional; for Related-resource 'mandatory' changed to 'conditional: mandatory if relationship exists'
3.19 Country of Origin: Obligation 'optional' changed to 'mandatory, default = unknown'
3.20 Catalogue: Obligation for Catalogue-scheme 'mandatory' changed to 'optional'; for Catalogue-entry 'mandatory' changed to Conditional, mandatory if scheme recorded'
5.3 Educational Level: Unknown added to assigned values and made default.
5.5 Interactivity type: unknown added to assigned values and set as default
5.7 Tutor support...: Datatype 'set' changed to char(100) to allow explanation, maximum occurrence 'unlimited' changed to 1
6.1 Record contributors: comment changed to say that new contributor is added when they save a record (was 'added when they view a record')
6.4 Date to be Reviewed: description changed, review warning now triggered when date to be reviewed predates current date
6.7 Language of metadata: Default 'eng' specified
6.9 Comments: maximum occurrence 'unlimited' changed to 1.
Appendix 1: rows for rights-cost, educational level, awards, interactivity type, tutor support documentation, changed to reflect changes above; row added for Distributor in Contacts section.

Minor corrections to typo's etc.

Contents

Chapter 1: BACKGROUND

A database of computer-based learning and teaching resources in engineering is being built as part of the FAILTE project. FAILTE is building on previous work by three United Kingdom Higher Education projects within the engineering subject area. These are EEVL, LTSN Engineering and EASEIT-Eng. The database is to be used by academics and will be searchable online, via a World Wide Web interface, accessible from the EEVL and LTSN Engineering Web sites.

In order to build a database, it is necessary to consider what information will need to be stored within it. FAILTE will use metadata elements as the basis of database fields, to form resource records. Metadata is essentially information that describes resources: it attempts to address both bibliographic and data management needs.

The characteristics of the resources that will be described by FAILTE metadata elements have been chosen with certain purposes in mind. The metadata will be used to enable the management of the database; to describe resources to database end users; to provide access to the resources for the end users; and to enable a search function within the database. It is intended that the search function will help end users use the world wide web to locate electronic learning and teaching resources which suit their particular needs.

The concept of metadata grew out of the need to navigate the constantly expanding World Wide Web. Many different metadata schemes have developed to serve the resource description needs of various different communities. Standards have been and are being developed in order to provide a basis for interoperability of metadata on the Web. The FAILTE metadata scheme has been built around such standards.[1]

[1] A comparison of the FAILTE elements to those from other standards and metadata schemes is included in Appendix 2 of this report.

Chapter 2: INTRODUCTION

This document describes the finalised set of metadata elements for the FAILTE database. The characteristics of each element are described and compared to similar elements from other metadata schemes, particularly Dublin Core, IMS Learning Resource metadata and EEVL record fields. The FAILTE database is being built around the set of elements described in this document and the relationships between the information that the elements have been designed to represent. The database fields are to be based on the finalised set of metadata elements.

For each of the elements, draft guidelines for completing record entries for the database have been prepared, to help in the development of the database fields. The primary purpose of this document is to provide the database developer with information to be used in the construction of the database. These guidelines will be revised, since the full characteristics of each of the elements have not been finalised yet. Further research and experience of attempting to catalogue resources will allow the full development of the metadata elements and database fields to be completed. It is expected that this document will form the basis of a later guidelines document.

Other objectives of this document are to:

1. Describe the set of metadata elements that have been chosen, in comparison with existing metadata schemes and standards.
2. Give basic instructions as to how it is intended that the metadata will be recorded in the FAILTE database, which can be built on in the future.
3. Present a basis for discussion about the further development of the metadata elements.

In this report, the FAILTE metadata elements have been broken down into groups by type: General, Contacts, Pedagogical and Metametadata. This breakdown has little bearing on the structure of the database itself, but helps in the description of the concepts which the elements are intended to describe.

Chapter 3: GENERAL ELEMENTS

3.1 FAILTE ID

This element is essential to make every record unique. It will be a number generated automatically when a record is begun, and will be used for the identification of individual records. It is similar in function to a library accession number and relates to the IMS general.identifier; and is exported as the DC.Identifier or IMS catalogue-entry elements.

Name	FAILTE ID
Definition	A number given to the resource for the purposes of the database.
Obligation	Mandatory
Datatype	Integer
Assigned Values	Sequential numbers, unique to each record.
Maximum occurrence	1
Comment	Generated automatically by the database when records are begun.

Figure 3.1 Table to show the characteristics of the FAILTE ID element.

3.2 Title

This element is essential to any metadata record. It is included in both IMS core and Dublin Core as standard. The definition of the element to be used by FAILTE is taken from the Dublin Core element description. Guidelines for completing an entry for this element are adapted from the EEVL manual.

The title should be written in the case/mixture of cases in which it appears on the resource itself. Initial articles, ('the,' 'a,' 'an') should be removed from the title, except where the article is an integral part of the name.

Acronyms and abbreviations should be catalogued as Alternative titles, unless they are an integral part of the name of the organisation/service which people would expect to see, and which the organisation is commonly known by. In this case, the acronym should be bracketed and put after the full name.

Name	Title
Definition	"The name given to the resource" (DC).
Obligation	Mandatory
Datatype	Text
Assigned Values	Unspecified
Maximum occurrence	1
Comment	"Typically, a Title will be a name by which the resource is formally known." (DC) EEVL also comment that "This is the most common, complete title of the object…" Any acronyms or abbreviations will be expressed in full for this element.

Figure 3.2 Table to show the characteristics of the Title element.

3.3 Alternative titles

This element is not a core element of either IMS or the Dublin Core Metadata element set. However, it is used by EEVL, which is a project that FAILTE is closely tied to. It is also a recommended Dublin Core qualifier of the Title element. It is considered necessary for reasons of interoperability with EEVL and because it works within the Dublin Core standard. The inclusion of alternative titles in the FAILTE database is also intended to help the end user, who might know of a particular resource under a different name than the one that was given to the resource.

Name	Alternative titles
Definition	Any form of the title used as a substitute or alternative to the formal title of the resource.
Obligation	Optional
Datatype	Text
Assigned Values	Unspecified
Maximum occurrence	Unlimited
Comment	This element can include title abbreviations as well as translations and acronyms.

Figure 3.3 Table to show the characteristics of the Alternative Title element.

3.4 Subject classification

This element corresponds to the DC.Subject element. For this element, the Dublin Core Metadata Initiative (DCMI) state that:

> "Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme."

Schemes recommended by the DCMI as encoding schemes for their Subject element include:

- Library of Congress Subject Headings
- Dewey Decimal Classification
- Library of Congress Classification
- Universal Decimal Classification

The DC.Subject element has been broken down in FAILTE metadata, to allow for more than one scheme to be used in the classification of the resources in the FAILTE database. This will make it easier for FAILTE to share records, and to possibly expand into other subject areas in the future.

The EEVL subject headings will be used to classify the resources to be included in the FAILTE database. These headings are especially relevant to Engineering, and it is important to use a controlled vocabulary like the list of headings used by EEVL. The level of classification of the EEVL headings is also not so in-depth as to require an expert to select appropriate entries. This is important for FAILTE since it might not be maintained by those with experience in the classification of resources in the future. The close collaboration between FAILTE and EEVL also makes the sharing of subject headings expedient.

There is also a need to build in a way of specifying other classification schemes and entries, however. For this reason, the subject classification element will form an auxiliary table. This is described below in figure 3.5. The table allows the cataloguer to use other subject headings and classification schemes when creating a resource record. This will allow for the database to expand into other subject areas by using headings created for those subjects, and to build in different subject classification schemes.

It is recognised that it would be desirable for any expansion of FAILTE and for any databases based on FAILTE to use the same subject classification scheme throughout. It is hoped that the EEVL subject headings will form part of a larger set, which is to be formed from the subject headings used by the RDN gateways. At this stage, the future of FAILTE is not decided, and the elements have been designed to allow its continuation in as many different ways as possible.

Name	Subject Classification
Definition	"The topic of the content of the resource."(DC)
Obligation	See figure 3.5 below.
Datatype	See figure 3.5 below.
Assigned Values	See figure 3.5 below.
Maximum occurrence	5
Comment	This element will have a separate table of its own to be completed, which is described below.

Figure 3.4 Table to show the characteristics of the Subject Classification element.

	Additional Scheme	Additional entry	EEVL Subject headings
Datatype	Char(255)	Char (255)	Set
Obligation	Optional	Optional	Mandatory
Assigned values	Unspecified	Unspecified	To be chosen from EEVL guidelines.

Figure 3.5 Table to show further characteristics of the Subject Classification element.

3.5 Main URL

This element has been chosen for inclusion in the FAILTE metadata scheme in order that the end user can access the resource from its database record. It is also intended to provide a unique entry for the resource in the future since World Wide Web standards are evolving to make this possible.

The Dublin Core element DC.Identifier relates to this FAILTE metadata element when URLs are unique. The DCMI guidelines state that DC.Identifier is "An unambiguous reference to the resource within a given context." DCMI also comment that:

> "Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system."

The formal identification system recommended by DCMI is the Uniform Resource Identifier (URI), which is defined as:

> "A Unifying Syntax for the Expression of Names and Addresses of Objects on the Network as used in the World-Wide Web ." (rfc1630, quoted in "Identifying and describing Web resources at: http://www.elpub.org/html/webres.html)

Other definitions of the URI exist, but it is useful to note that the Uniform Resource Name (URN) makes up a significant part of the URI. The URN, along with the Persistent Uniform Resource Locator (PURL) is intended to provide a way of locating a resource, which is persistent even when the URL is not. The URN is also intended "to provide a globally unique, persistent identifier used for recognition, (and) for access to characteristics of the resource…" (rfc1737, quoted in "Identifying and describing Web resources at: http://www.elpub.org/html/webres.html)

The URI and the URN are not in common usage yet, and since FAILTE allocates its own identification numbers, there is no need for the identification aspect of these schemes. It is therefore intended that this element will be expressed as either a PURL where this is given for the resource, or the URL of the main site. Any mirror sites, or alternative URLs will be recorded as secondary URLs. (See below.)

It is expected that the URL will be the most common form of location identifier, although the fact that URLs do not remain stable means that it will be necessary to use software to check regularly that links from the database to the resources are current.

When a URL is entered by a cataloguer, the database will perform a check to ensure that the entry is at least 90% unique. If it is not, the record entry will still be permitted, but a warning will appear to the cataloguer. The cataloguer should then check the record of the resource that has a similar URL, to ensure that there is no duplication of records.

Name	URL
Definition	"A location or a method that resolves the location of the resource." (IMS)
Obligation	Mandatory
Datatype	Text char(255)
Assigned Values	Unspecified, although see below for desirable values.
Maximum occurrence	1
Comment	The main location of the resource either on the World Wide Web, or else the location of information about the resource available on the World Wide Web (where the resource is not Web based itself) will be given here. Alternative locations including any mirror sites are to be described separately. (See below.)

Figure 3.6 Table to show the characteristics of the URL element.

3.6 Secondary URLs

This element is included to allow for the recording of any alternative URLs for a resource. These might be discovered when a cataloguer attempts to create a new resource with an almost identical URL to one already catalogued, which the database will notice and inform the cataloguer. Alternative URLs might be provided by the site, alongside the PURL which will be recorded in the FAILTE database as the main URL. Other URLs could be provided for mirror sites, in which case the mirror site URLs will be recorded as secondary URLs.

The datatype chosen for the database allows the cataloguer to type in text as well as the URL, in order to allow for some description of what the alternative URL is.

Name	Secondary URLs
Definition	Any alternative location of the resource.
Obligation	Optional
Datatype	Char(500)
Assigned Values	Unspecified
Maximum occurrence	7
Comment	This element is to describe the location of any mirror Web sites, and/or any URL where both the URL and PURL have been provided.

Figure 3.7 Table to show the characteristics of the Secondary URLs element.

3.7 Description

The inclusion of this element is to provide a basic, textual description of each resource. Individual characteristics can be mentioned here. The element will be used as an introduction to the resource for the end user, since it will be displayed with the information about resources which is initially presented to the end user in the search results.

Both IMS and the DCMI have recommended the inclusion of a description element in metadata schemes. The only difference between the IMS 1.5 general.description element and the DC.Description element is in the wording of the definition. The definition used by FAILTE combines the IMS “textual description” and the Dublin Core “account,” but has removed the words “of the content of the resource” which are used by both schemes. This is because the FAILTE Description element is to include information on any relevant characteristics of the resource. Educational aspects of the resource will not be described here, however, since another element is to be used for the description of such characteristics.

In order to complete a description of a resource, a cataloguer should look at factors such as the content of the resource, any additional technical information which can be provided, and relevant information about the creators of the resource. The description is intended to be brief and should be original work. It may be based on existing descriptions of the resource, but these should be edited, to ensure that only information that is useful to FAILTE and its end users will be stored in the database. Advertising phrases should be avoided.

Name	Description
Definition	A textual description and general account of the resource.
Obligation	Mandatory
Datatype	Text/html
Assigned Values	Unspecified
Maximum occurrence	1
Comment	May be based on a Table of Contents, or an Abstract.

Figure 3.8 Table to show the characteristics of the Description element.

3.8 Rights: Cost of the resource

Both IMS core and Dublin Core allow for rights management information to be recorded, although this is one area where both bodies are developing their standards.

The cost of a resource is difficult to record and to describe to the end user because, where a charge is made, there is often more than one deal on offer, with different charging mechanisms. The different charging mechanisms also make it difficult to compare the costs involved with different resources

However, the intended end users of the database will want to know not only whether or not there is a cost involved in using a resource, but also whether that cost is a nominal fee, or a question of a substantial investment. It is therefore proposed that existing resources and their charging mechanisms will be studied in greater detail, and six categories of cost (plus one for when the cost is not known) will be formed, in order to indicate the minimum cost involved with using a resource.

Name	Rights-cost
Definition	Information about fees charged by those holding “rights in and over a resource.”(DC)
Obligation	Mandatory. Default = 0
Datatype	Enum
Assigned Values	1,2,3,4,5,6
Maximum occurrence	Unlimited
Comment	Provisional set to comprise: 0 = unknown, 1 = free, 2 = <20, 3 = 20-50, 4 = 50-100, 5 = 100-500, 6 = >500 [all values in pounds]. This set will need much work to develop it properly.

Figure 3.9 Table to show the characteristics of the Rights-cost element.

3.9 Rights: Conditions of use

This element has been included in order that conditions of use of resources can be recorded. It relates to the DC.Rights element, and to the IMS rights.description element, while EEVL have developed a Registration/Authentication field to record similar information. Copyright notices and Rights-management statements can be included here, as well as information about required registration or authentication to use the resource. Brief directions as to how the resource may be used should be given, with any warnings of how it may not be used. A hyperlink to information about such matters can be included. The contact details of any rights holders will be recorded separately as a Contact, although the rights holder contact information will be displayed to the end user alongside the two rights elements. (The FAILTE Contacts element is described below, in section 4.3 of this document.)

Name	Rights-conditions
Definition	Information about conditions of use stipulated by those holding "rights in and over a resource."(DC)
Obligation	Optional
Datatype	Text
Assigned Values	Unspecified
Maximum occurrence	1
Comment	

Figure 3.10 Table to show the characteristics of the Rights-conditions element.

3.10 Awards

This element was developed especially for FAILTE. End users of the database will be keen to know about independent approvals of the resource, since they indicate that the resource has been tried and tested. It is also anticipated that the accessibility of the resources to disabled users will be of importance to end users. One of the advantages of the World Wide Web is its potential accessibility to all. There are bodies who award their approval to Web resources, according to their accessibility to the disabled in particular. The most well known of these is the "Bobby" award which Web page developers can display on their sites after having them checked by the programme created by CAST, which "is an educational, not-for-profit organisation that uses technology to expand opportunities for all people, including those with disabilities." (http://www.cast.org/about/)

This issue is likely to become more prominent in the future, as pressure groups become more active. (ZDNet news: http://www.zdnet.com/zdnn/stories/news/0,4586,2505714-2,00.html)

Name	Awards
Definition	Awards of approval by external bodies.
Obligation	Mandatory. Default = None specified
Datatype	Set
Assigned Values	EASEIT-Eng, Bobby, EEVL Choice, UCISA, EASA, Scout Report Selection, None specified.
Maximum occurrence	Unlimited
Comment	Icons for the award schemes may also be displayed in resource records.

Figure 3.11 Table to show the characteristics of the Awards element

3.11 Language

An element to describe the language of a resource is included in both IMS and Dublin Core. Initially, the language of resources included in the FAILTE database will be English. This may change through time, however, and it is important that FAILTE should be able to cope with such diversification.

Thus the language of resources will be recorded and the default language will be English. A scrolling list will be created for cataloguers to select the language. The information will be stored in the database as a three letter, lower case code, in accordance with the ISO 639-2/B standard. This will enable the information to be easily be exported/imported in a standard, interoperable format.

Name	Language
Definition	The human language in which the resource is written.
Obligation	Mandatory
Datatype	Set
Assigned Values	English (eng), French (fre), German (ger), Japanese (jpn), Spanish (spa).
Maximum occurrence	Unlimited
Comment	Other languages may be added to the set in time.

Figure 3.12 Table to show the characteristics of the Language element.

3.12 Reference

This element has been created because it is felt that where further information about a resource is known to be available, it should be referenced. The FAILTE database records are not intended to provide an evaluation of resources, only to describe resources that are suitable for inclusion in the collection. Independent and commissioned evaluations of resources will be of use to the database end users, though. It is therefore proposed that an element should be created specifically to reference such information. This is a departure from DC and IMS standards, and the concept is not used by EEVL either, but it does suit the individual needs of the FAILTE project very well.

Name	Reference
Definition	Information on and hyperlinks to reviews of the resources, including reviews and evaluations provided by EASEIT-Eng.
Obligation	Optional
Datatype	Char (255)
Assigned Values	Unspecified
Maximum occurrence	Unlimited
Comment	The main URL or PURL of any web based evaluation will be given here. References will not be actively sought for inclusion in the database, but where authoritative evaluations of the resources are known of, they will be referenced here.

Figure 3.13 Table to show the characteristics of the Reference element.

3.13 Version

This element corresponds to the IMS Core element lifecycle.version. There is no DC equivalent, but it is important to differentiate between two different versions of a resource. The FAILTE database will record such information as a separate element in order that cataloguers should be reminded to include such information, to allow export in a form that can be used for IMS, and in order to prevent any overloading of the title field.

Name	Version
Definition	The version or edition of the resource.
Obligation	Optional
Datatype	Char (20)
Assigned Values	Unspecified
Maximum occurrence	1
Comment	

Figure 3.14 Table to show the characteristics of the Reference element.

3.14 Date of publication

This element is included to describe to the user how current the resource is. It corresponds to the Dublin Core element DC.Date with the refinement “Issued”. The IMS equivalent is lifecycle.contribute.date, when the lifecycle.contribute.role entry is “Publisher”.

The publication date of a resource will be important to users who need to find learning and teaching resources that deal with recent engineering developments, or changes in teaching styles.

Name	Date-published
Definition	The date on which the resource was published/created, if given.
Obligation	Optional
Datatype	Date
Assigned Values	Unspecified
Maximum occurrence	1
Comment	The date of publication of the version being catalogued will be recorded under this element, rather than original. The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 3.15 Table to show the characteristics of the Date-publication element.

3.15 Date modified

This element is also included to describe to the user how current the resource is. It corresponds to the DCMI refinement “Modified” of the element DC.Date. This element is intended to complement the Date-published element, in order that the end user will be aware of how up to date the resource is likely to be.

Name	Date-modified
Definition	The date on which the resource was last updated or modified, if given.
Obligation	Optional
Datatype	Date
Assigned Values	Unspecified
Maximum occurrence	1
Comment	The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 3.16 Table to show the characteristics of the Date-modified element.

3.16 The medium of the resource

This element corresponds to the DCMI qualifier “Medium” of the element DC.Format. It is intended to be used to indicate when a resource is not Web based in itself but available in another format, such as on CD-ROM.

The resource may be available in more than one medium, and if this is known by the cataloguer, the existence of related, non-Web based resources can be recorded here, in the form of a comma separated list of media in which the resource is available. The medium “Web-based” should always be recorded first, since this is the resource for which the record will have been created.

Name	Format-medium
Definition	The material or physical carrier of the resource.
Obligation	Mandatory Default = Web-based
Datatype	Set
Assigned Values	Web-based, Diskette, CD-ROM, Print, VHS, DVD.
Maximum occurrence	Unlimited
Comment	This element requires further development to make its contents intelligible to the end user.

Figure 3.17 Table to show the characteristics of the Format-medium element.

3.17 Technical Requirements

This corresponds to the IMS element 4.4 technical.requirements in its concept but not in its specification. It is included in the FAILTE set of metadata in order that if a resource requires specialist software, a particular platform or a certain specification of machine to use it, then this information can be recorded for the benefit of the end user. Some resources might only run on PCs, for example. Other resources might require a certain plugin to be installed in order for them to run.

Name	Technical-requirements
Definition	A description of any specific software requirements and/or required operating systems/browsers needed in order to access the resource.
Obligation	Mandatory
Datatype	Text
Assigned Values	Unspecified
Maximum occurrence	Unlimited
Comment	If there are no requirements stated by the resource, then the default entry of “none known” will be used, in order that the element should not be left blank. This will be represented to the user as a tick box to display to the user that there are no specific technical requirements of the resource.

Figure 3.18 Table to show the characteristics of the Technical-requirements element.

3.18 Relationship between resources

This concept is to describe a link between two resources included in the FAILTE database. An auxiliary table will be created to represent this information. Any number of pairs of entries in such an auxiliary table can be created for each record. Also, more than one resource might be related to the resource being catalogued in the same way. Hence the relation types need to be repeatable.

The description of the relationship will use the vocabulary recommended by the DCMI as a qualifier for the element DC.Relation, which is also recommended by IMS for its relation.kind element.

Name	**Relation-type**	**Related-resource**
Definition	The type of relationship which exists between two resources in the FAILTE database.	The FAILTE ID number of the related resource.
Obligation	Optional	Conditional: mandatory if relation-type exists
Datatype	Set	Integer
Assigned Values	Is Part Of	Unspecified
Maximum Occurrence	Unlimited	1 per instance of Relation-type element
Comments		To be linked to the record of the related resource.

Figure 3.19 Table to show the characteristics of the Date-publication element.

3.19 Country of origin

This element is included in order that users can identify whether the teaching style of the resource is likely to be in keeping with that of their own country or culture. It is also used by EEVL, and its inclusion in the FAILTE metadata set enhances the interoperability of the FAILTE database with EEVL. This is an element that is optional for the cataloguer to include information about, but it is especially recommended.

Name	Country of origin
Definition	The country in which the resource was created.
Obligation	Mandatory. Default = unknown
Datatype	Enum
Assigned Values	GB, US, FR, DE
Maximum occurrence	1
Comment	Further values will need to be added to the list of assigned values — EEVL have a list of countries, which might be used as the basis for FAILTE entries. Entries in the FAILTE database will be stored. (http://www.oasis-open.org/cover/country3166.html)

Figure 3.20 Table to show the characteristics of the Country of Origin element.

3.20 Catalogue

This element is included in order to record the catalogue number of the resource in other databases. An auxiliary table will be created, comprising the FAILTE ID number of the resource being described, a specified scheme for the catalogue entry, and the entry itself. Any number of pairs of entries in such an auxiliary table can be created for each record. The schemes which have so far been identified as necessary to specify are listed in Figure 3.21 below.

Name	**Catalogue-scheme**	**Catalogue-entry**
Definition	The name of the scheme by which identifying numbers are given.	The number which has been assigned to the resource by the scheme named in the Catalogue element.
Obligation	Optional	Conditional. If a scheme is recorded, then the entry is mandatory
Datatype	Set	Char (50)
Assigned Values	EEVL, EASEIT-Eng, ISBN	Unspecified
Maximum Occurrence	Unlimited	1 per Catalogue-scheme
Comments	Further assigned values will need to be chosen for this element.	To be linked to the external record of the resource.

Figure 3.21 Table to show the characteristics of the Catalogue element

Chapter 4: CONTACTS

Four separate elements have been created for contact information. No contact information will be stored in the FAILTE database or supplied to the end users until permission to do so has been obtained from the individual or organisation whose details might be included in the FAILTE database. The information will initially be entered into the database, however, in order that it can be used to ask for permission to store and display the details.

Contact information will be provided where possible because end users of the FAILTE database will want to know how they can gain access to the learning and teaching resources described in the database. End users will also want to know how the resources can be used and who to ask about the resource. The name of the entity responsible for the creation of the resource is not necessarily the most important information for the end user. Web based learning and teaching resources are not as easily identified by the name(s) of the creator(s) as printed information resources, the standards for the description of which have formed the basis of many other resource description schemes.

In order that the contact information provided by FAILTE should be of greatest use to the end user, the Creator's and Contributors' details will be recorded alongside those of the Publisher, and Rights holder. These roles might be played by separate entities, in which case the end user would need to contact the separate bodies for information about different needs. These elements are described below under separate headings.

Of all of the entities whose contact details will be stored, one key contact will be selected. This is to be the contact for FAILTE internal use, and the recommended contact for the end user. This is because there will be instances where a resource which has been created by an individual or group within a University will have been published by and will be owned by the University. However, enquiries may need to be directed to those involved in the creation and or maintenance of the resource.

4.1 Creator and Contributor

Creators and contributors to the creation of resources are to be described by FAILTE in order that people/organisations involved can be credited with their work, and in order that some contact details can be given. The concept of naming contributors is represented in both IMS core and Dublin Core, and in most of the other databases studied, although the names of this type of metadata element vary across different standards and databases. FAILTE varies in the way in which the contact details of contributors are to be tied to the names and roles of contributors.

It was decided that an adaptation of the Dublin Core elements of Creator and Contributor would be well suited to FAILTE's needs. The definitions of these elements have been adapted, and also the information to be stored for each entry has been altered. The comment attached to the DC.Creator element states that "Typically, the name of a Creator should be used to indicate the entity." A similar comment is attached to the DC.Contributor element. FAILTE does require that the names of the creator and contributors should be recorded, but also that any contact information which can be recorded should be included here. The tables below describe the characteristics of the FAILTE Creator and Contributor elements.

Name	Creator
Definition	The primary named entity responsible for the creation of a resource.
Obligation	Conditional
Datatype	Table: see figure 4.6 below
Assigned values	See figure 4.6 below
Maximum Occurrence	1
Comment	AACR2 Rules will be used for the representation of the name of the entity.

Figure 4.1 Table to display the properties of the Creator element.

Name	Contributor
Definition	A named entity or entities involved in the creation of a resource.
Obligation	Conditional
Datatype	Table: see figure 4.6 below
Assigned values	See figure 4.6 below
Maximum Occurrence	Unlimited
Comment	AACR2 Rules will be used for the representation of the name of the entity/entities.

Figure 4.2 Table to display the properties of the Contributor element.

4.2 Publisher

This element corresponds to DC.Publisher. It is included as a FAILTE element in order that the end user can find out contact information for the resource being described in the record. Characteristics of the element are described below.

Name	Publisher
Definition	“An entity responsible for making the resource available.” (DC)
Obligation	Conditional
Datatype	Table: see figure 4.6 below
Assigned values	See figure 4.6 below
Maximum Occurrence	Unlimited
Comment	An auxiliary table will be created to include any contact information. AACR2 Rules will be used for the representation of the name of the entity.

Figure 4.3 Table to display the properties of the Publisher element.

4.3 Rights-holder

This element is included to provide contact information for the owner of rights in and over the resource being described. Such information will be important to end users of the database who want more information about restrictions of use of the resource, and or who are keen to negotiate usage.

Name	Rights-holder
Definition	An entity holding rights in and over a resource.
Obligation	Conditional
Datatype	Table: see figure 4.6 below
Assigned values	See figure 4.6 below
Maximum Occurrence	Unlimited
Comment	An auxiliary table will be created to include any contact information. AACR2 Rules will be used for the representation of the name of the entity.

Figure 4.4 Table to display the properties of the Rights-holder element.

4.4 Distributor

This element is included to provide the end user with details, which can help them to obtain/gain access to the resource that is being described in the database record.

Name	Distributor
Definition	The supplier of the resource.
Obligation	Conditional
Datatype	Table: see figure 4.6 below
Assigned values	See figure 4.6 below
Maximum Occurrence	Unlimited
Comment	An auxiliary table will be created to include any contact information. AACR2 Rules will be used for the representation of the name of the entity.

Figure 4.5 Table to display the properties of the Distributor element.

	Name	Agent type	Address	Tel.	Fax.	e-mail	Data protection	FAILTE ID
Datatype	Char(255)	Set	Char(255)	Char(50)	Char(50)	Char(100)	Enum	Integer
Obligation	Mandatory	Optional	Optional	Optional	Optional	Optional	Mandatory	Mandat-ory
Assigned values	Unspecified	Individual, group, Commercial organisation, Educational institution.	Unspecified	Unspecified	Unspecified	Unspecified	OK/ Not OK	FAILTE ID numbers only.

Figure 4.6 Table to display the properties of the components of the Contact elements.

Chapter 5: PEDAGOGICAL

The elements listed below deal with the pedagogical aspects of the resources which are to be included in the FAILTE database. These elements have been chosen through studying the IMS set of educational elements, the recommendations of the DC Education Working party and EASEIT-Eng evaluation criteria, in particular. Also, examples of the type of resource which FAILTE will need to describe have been studied. Further research will be carried out into suitable taxonomies for the completion of the development of these elements.

5.1 Resource type

The Dublin Core Resource Type and Format Working Group has recommended a list of resource types for use with Dublin Core which do not really address the needs of the FAILTE database to categorise specifically pedagogical resources.

The FAILTE Resource type element was chosen to correspond to the IMS element 5.2 educational.learningresourcetype. The set of resource types recommended as best practice in the Final Specification of Version 1.1 of the IMS Learning Resource Metadata Information Model will be used as the basis of FAILTE database records. Other taxonomies of suitable terms to describe learning and teaching resource types will be investigated.

The purpose of the element is to indicate characteristics such as the mode of learning. More than one term may need to be expressed, since some resources include more than one mode of learning, or even more than one type or resources within a whole package.

Name	Resource type
Definition	The specific kind of resource, most dominant first (IMS).
Obligation	Mandatory
Datatype	Set
Assigned Values	Exercise, Simulation, Questionnaire, Diagram, Figure, Graph, Index, Slide, Table, Narrative Text, Exam, Experiment, ProblemStatement, SelfAssessment.
Maximum occurrence	As many times as there are options to be selected.
Comment	The set of assigned values will need to be altered as alternative resource type taxonomies will be considered.

Figure 5.1 Table to display the properties of the Resource type element.

5.2 Educational description

This element is to complement the Description element, but is intended to contain information about learning and teaching aspects of the resource which are not covered by any of the other elements. This element has been created in accordance with IMS which includes a description element in its educational section. IMS 5.10 educational.description is part of the Standard Extension Library of elements, rather than the set of core elements, but is considered to be important to FAILTE because of the nature of the resources which FAILTE will describe.

The reason for a separate description element is that it is anticipated that end users will be especially interested in the learning and teaching aspects of resources in the FAILTE database, which is a need that FAILTE is intended to address. Thus it is important to provide information on pedagogical characteristics of resources which can easily be identified and isolated.

Name	Description-educational
Definition	A textual account of educational aspects of the resource.
Obligation	Optional
Datatype	Text (Large element.)
Assigned Values	Unspecified
Maximum occurrence	Unlimited
Comment	

Figure 5.2 Table to display the properties of the Description-educational element.

5.3 Educational level

This element has been included in the FAILTE metadata set in order that end users will be able to see from the resources' records, what level of education the resources are intended to be used for. Educational level corresponds to the IMS 5.6 learning.context element in its concept, but not in its specification.

IMS educational elements are intended to describe learning and teaching resources for all sectors of education, while FAILTE is as yet intended only to include Higher Education (HE) resources. The IMS best practice list of terms to describe the learning context of resources is not specific within the HE sector. Since FAILTE is intended to serve the needs of the HE sector in particular, it was felt to be necessary to use a more specific set of terms to categorise the resources. The scope of each of the categories has yet to be defined.

Name	Educational level
Definition	Levels of HE that the resource is likely to be relevant to.
Obligation	Mandatory Default = unknown
Datatype	Set
Assigned Values	Foundation, Introductory, Intermediate, Advanced, General, Unknown.
Maximum occurrence	3
Comment	The may be expanded if FAILTE expands to include resources which cover other levels of education.

Figure 5.3 Table to display the properties of the Educational level element.

5.4 Time to use the resource

This element has been developed to describe an aspect of learning and teaching resources which is not described by any standards. The typical learning and teaching time period the resource is intended to cover will be recorded on a four point scale which is described below.

Name	Time
Definition	The size or duration of the resource.
Obligation	Optional
Datatype	Enum
Assigned Values	S, M, L, XL
Maximum occurrence	1
Comment	S = less than one lesson's worth (say 10-30 minutes) M = about a lesson's worth, or a single topic L = several lessons, covering several topics but not a complete module XL = enough material for a complete module

Figure 5.4 Table to display the properties of the Time element.

5.5 Interactivity type

This element corresponds to two of the IMS educational elements in the way in which it will be used for FAILTE. The type of interactivity will also be categorised by the level of interactivity in the way in which it is described. Expositive resources are those which do not involve any kind of feedback to the user which is dependent on the user's input. Thus resources which require the following of links cannot be classed as Interactive. The definitions of the terms which will be used to describe this concept, and the terms themselves are yet to be fully developed.

Name	Interactivity type
Definition	Whether the resource is designed for expositive or active learning activity. Further grading may be necessary here.
Obligation	Mandatory default = unknown
Datatype	Enum
Assigned Values	Highly Interactive, Interactive, Expositive, unknown
Maximum occurrence	1
Comment	To be selected from a box of between two and four possible entries. The default entry will be Interactive.

Figure 5.5 Table to display the properties of the Interactivity type element.

5.6 Intended end user role

This element is included as an IMS educational element. The intended end user's role is important information for the FAILTE database end user to know about each resource. Some learning and teaching resources are provided for the academic to incorporate into their own tutorials, while other resources are already fully formed for the student to learn from.

Name	Intended end user role
Definition	The normal user of the resource, such as the teacher, an author or the learner
Obligation	Optional
Datatype	Set
Assigned Values	Tutor, Author, Student
Maximum occurrence	Unlimited
Comment	The set is not yet defined. It is likely to alter.

Figure 5.6 Table to display the properties of the Intended end user role element.

5.7 Tutor support documentation

This element is being developed by the FAILTE project officer. It is intended to describe whether or not tutor support documentation has been provided for the resource, and if so, whether this is a weighty tome or a simple instructions leaflet. Some of the larger resources may be quite complicated, and the existence of support documentation could be of importance for the FAITLE database end user.

Name	Tutor support documentation
Definition	The existence and type of tutor support documentation available in conjunction with the resource itself.
Obligation	Optional
Datatype	Set
Assigned Values	Minimal, Comprehensive, Extensive
Maximum occurrence	Unlimited
Comment	The set is not yet fully defined. It is likely to alter.

Figure 5.7 Table to display the properties of the Tutor support documentation element.

5.8 Delivery environment

The educational environment in which the resource is intended to be used will be of interest to the end user, who may be looking for resources suited to a particular delivery environment, such as distance delivery.

Name	Delivery environment
Definition	The normal environment in which the resource is intended to be used.
Obligation	Optional
Datatype	Set
Assigned Values	Distance learning, Classroom ...
Maximum occurrence	Unlimited
Comment	The set is not yet defined. It will be developed further.

Figure 5.8 Table to display the properties of the Intended delivery environment element.

5.9 Replace/Augment

The way in which a learning and teaching resource is intended to be used within the educational context is potentially very important to the end user. This element will describe the type of ways in which the resource might be used by the FAILTE database end user.

Name	Replace/Augment
Definition	The intended purpose of the resource.
Obligation	Optional
Datatype	Set
Assigned Values	Lecture, tutorial, seminar, laboratory
Maximum occurrence	Unlimited
Comment	The set is not yet defined. It will be developed further.

Figure 5.9 Table to display the properties of the Replace/Augment element.

Chapter 6: METAMETADATA

The elements described below are included to aid in the management of the database. They were carefully chosen to cover as many different scenarios for the future of the FAILTE database as possible.

6.1 Record contributors

The EEVL records contain a field to record the contributors to a record, and the IMS 3.3 metametadata.contribute corresponds to this FAILTE element.

The recording of the names of record contributors is especially useful in a database that is contributed to by a number of people. It is anticipated that the FAILTE project might expand in the future, to involve more people than are currently involved. Also, even in the early stages of the database, more than one person might be involved in the creation of a FAILTE record, and these people may wish to contact each other during the creation of the record: this requires that the contributors' names should be recorded. This element will also be of use in the management of the database: if any persistent mistakes are found, they can be pointed out to the cataloguer(s), who might otherwise be unaware of the problem.

Name	Record contributors
Definition	The person/persons involved in the creation of the record.
Obligation	Mandatory
Datatype	Set
Assigned Values	JS, PB, FL, SC.
Maximum occurrence	Unlimited
Comment	Each time a person logs in and views a record in edit mode, their initials will be added to the record. If that person has already been recorded as being involved in the creation of the resource, however, then the initials will not be added again.

Figure 6.1 Table to show the characteristics of the Record contributors element.

6.2 Record validator

This element is not part of either IMS or DC, and neither is there a corresponding EEVL field. However, it is important for the individual needs of the FAILTE database. FAILTE records will all be checked by a validator before they can be made accessible to the end user of the database. It is anticipated that the function of a validator will be important in the future, when each record might be created by more than one individual. The record validator will add some cohesion to individual records and might also act as a trouble-shooter for describing characteristics that are awkward to catalogue.

Name	Record validator
Definition	The name of the person responsible for the final draft of the record.
Obligation	Optional
Datatype	Set
Assigned Values	Phil
Maximum occurrence	1
Comment	Only one individual will be able to validate a record before it is included into the database. The initials of the person who does this will automatically be inserted into the record in this field.

Figure 6.2 Table to show the characteristics of the Record validator element.

6.3 Date record entered

This element is included in IMS metadata as 3.3.3 metametadata.contribute.date. The date of the creation of a record is also recorded by the EEVL database. FAILTE metametadata will include this element, since it is important for the end user to know how current the information in the database record is.

Name	Date record entered
Definition	The date on which the record is entered into the database.
Obligation	Mandatory
Datatype	Date
Assigned Values	
Maximum occurrence	1
Comment	To be automatically generated, when the record is validated. The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 6.3 Table to show the characteristics of the Date record entered element.

6.4 Date to be reviewed

This element is based on the EEVL “To-be-reviewed date” field. It is important for the management of the FAILTE database where the “Date to be reviewed” entry pre-dates the current date, the records will be reviewed.

Name	Date to be reviewed
Definition	Date on which the resources is expected to require re-assessment.
Obligation	Mandatory
Datatype	Date
Assigned Values	Unspecified
Maximum occurrence	1
Comment	A default time period is to be used to set the date, possibly of 1 year, although it will be possible for this to be over-ridden by a manual entry. The default time period for the date to be reviewed has yet to be decided. The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 6.4 Table to show the characteristics of the Date to be reviewed element.

6.5 Date last reviewed

This element is based on the EEVL “Last reviewed date” field. The element will become a FAILTE database field that is maintained manually, since the database will not be able to make a distinction between when a record has been altered due to a comprehensive review or just modified.

The date of the last review of the record will also be of importance to the end user, by displaying how current the record is.

Name	Date last reviewed
Definition	Date on which the resource was last assessed.
Obligation	Optional
Datatype	Date
Assigned Values	Unspecified
Maximum occurrence	1
Comment	To be altered manually. The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 6.5 Table to show the characteristics of the Date last reviewed element.

6.6 Date last modified

The date of the last modification of the record will also be of importance to the end user, by displaying how current the record is. This element is included in FAILTE's set of metadata elements because it is anticipated that modifications will be made to the records, and that the fact that they have been made will be of relevance to the currency of the information given by the record.

Name	Date last modified
Definition	The date on which any modification to the record was made.
Obligation	Optional
Datatype	Date
Assigned Values	Unspecified
Maximum occurrence	1
Comment	This will be automatically completed when any alteration is made to an already validated record. The date will be recorded in the ISO 8601 format, e.g. 1982-08-13 (http://www.hut.fi/u/jkorpela/iso8601.html)

Figure 6.6 Table to show the characteristics of the Date last modified element.

6.7 Language of metadata

IMS Core metadata includes the element 3.5 metametadata.language, which corresponds to this element. To begin with, the language of metadata in FAILTE is likely to be English. However, the database might be expanded in the future, or the records might be exported. Therefore an indication of the language of the metadata is important.

For the sake of comprehension, only one language will be used to catalogue each resource in FAILTE records, except in cases where a quotation from the resource is made in another language. In such instances the human language of the metadata will not have been altered.

Name	Language of metadata
Definition	To indicate the human language of the metadata record.
Obligation	Mandatory
Datatype	Set
Assigned Values	eng
Maximum occurrence	1
Comment	The language will be expressed in accordance with the ISO 639-2 standard.

Figure 6.7 Table to show the characteristics of the Language of metadata element.

6.8 Decision

This element is based on the EEVL record template field of the same name. It is included here to aid in the management of the FAILTE database records. The decision to included the resource record, or to retain it for additional editing will be recorded, in order to allow more than one person to be involved in the creation of a resource. It will be possible to store records before they are completed, while marking them as incomplete, in order to prevent them from being accessible to the end user. In this way, records can be completed by more than one cataloguer.

It may also be necessary for the database to store information about a resource that has not been considered suitable for the FAILTE database, in order to indicate to other cataloguers why the resource is unsuitable. This facility will not be used extensively in the early lifetime of the database, but if FAILTE is to be continued, there may be more staff or volunteers involved in the creation of records, creating the need for such a facility.

The set of assigned values is the same as that used by EEVL.

Name	Decision
Definition	A representation of the status of the metadata record.
Obligation	Mandatory
Datatype	Enum
Assigned Values	Activated, Include, Pending, Don't Include.
Maximum occurrence	1
Comment	See EEVL manual for definitions of the set terms. (The definitions should be the most up to date available, as stipulated by EEVL.)

Figure 6.8 Table to show the characteristics of the Decision element.

6.9 Comments

Any comments that cataloguers might wish to attach to the record can be accommodated by this element. EEVL use a Comments field, so the interoperability of the two databases will be further enhanced by the incorporation of this concept.

An instance when this element will be useful is when a record is created by more than one person and the first cataloguer wishes to leave a message for subsequent cataloguers. Also, a cataloguer might want to leave a message to justify the Decision status of a particular record.

Name	Comments
Definition	Annotations made by cataloguers.
Obligation	Optional
Datatype	Text
Assigned Values	Unspecified
Maximum occurrence	Unlimited
Comment	This element is not intended to be made available to the end user.

Figure 6.9 Table to show the characteristics of the Comments element.

APPENDIX 1 – Summary of the basic characteristics of each of the elements described in this document.

FAILTE elements	DATATYPE	ASSIGNED VALUES	OBLIGATION
FAILTE ID	Integer	Sequential numbers, unique to each record.	Mandatory
Title	Text	Unspecified	Mandatory
Alternative title	Text	Unspecified	Optional
Subject classification	Table. See guidelines document.	See guidelines document.	See guidelines document.
URL	Char(255)	Ideally at least 90% unique.	Mandatory
Secondary URLs	Char (500)	Unspecified	Optional
Description	Text/html	Unspecified	Mandatory
Rights-cost	Enum	0=unknown, 1 = free, 2 = <20, 3 = 20-50, 4 = 50-100, 5 = 100-500, 6 = >500 [all values in pounds].	Mandatory. Default = 0
Rights-conditions	Text	Unspecified	Optional
Awards	Set	Easeit-Eng, Bobby, EEVL Choice, UCISA, EASA, Scout Report Selection, None specified.	Mandatory. Default = None specified
Language	Set	Three letter ISO639-2/B codes (http://lcweb.loc.gov/standards/iso639-2/). For this field we will need the option of adding others. Starting set: 'eng', 'fre', 'ger', 'jpn', 'spa'.	Mandatory. Default = eng
Reference	Char(255)	Unspecified	Optional
Version	Char(20)	Unspecified	Mandatory. Default = unspecified
Date-publication	Date	Unspecified	Optional
Date-modified	Date	Unspecified	Optional
Format-medium	Set	Web-based, Diskette, CD-ROM, Print, VHS, DVD.	Mandatory. Default = Web-based
Technical requirements	Text	Unspecified	Mandatory, Default = 'none known'
Relation	Table comprising 3 columns: FAILTE ID of the resource being described; Relationship, Set; and FAILTE ID of the resource which is related.	FAILTE ID numbers and Relationship Set values: IsPartOf,… More than one relationship may need to be described, and more than one number may apply to the same type of relationship.	Optional
Country of origin	Enum	ISO 3166-1993 (E) codes http://www.oasis-open.org/cover/country3166.html GB, US, FR, DE at top of list	Mandatory. Default = unknown
Catalogue	Table comprising FAILTE ID, and pairs of Catalogue-scheme, Enum and Catalogue-entry, Char(40)	Scheme: EEVL, EASEIT, ISBN, FAILTE Entry: unspecified	Scheme = Optional Entry = Conditional. If a scheme is recorded, then the entry is mandatory.

CONTACTS			
Creator	Table. See guidelines document.	Unspecified	See text of guidelines document.
Contributor	Table. See guidelines document.	Unspecified	See text of guidelines document.
Publisher	Table. See guidelines document.	Unspecified	See text of guidelines document.
Rights-holder	Table. See guidelines document.	Unspecified	See text of guidelines document.
Distributor	Table. See guidelines document.	Unspecified	See text of guidelines document.
PEDAGOGICAL			
Resource type	Set	Exercise, Simulation, Questionnaire, Diagram, Figure, Graph, Index, Slide, Table, Narrative Text, Exam, Experiment, ProblemStatement, SelfAssessment. (To allow for alteration/expansion.)	Mandatory. Default = Courseware/Training materials
Description-educational	Text	Unspecified	Optional
Educational level	Set	Foundation, Introductory, Intermediate, Advanced, General.	Mandatory. Default = other
Time	Enum	S = less than one lesson's worth (say 10-30 minutes) M = about a lesson's worth, or a single topic L = several lessons, covering several topics but not a complete module XL = enough material for a complete module	Optional
Interactivity type	Enum	Highly interactive, Interactive, Expositive, not known	Mandatory. Default = not known
Intended end user role	Set	Tutor, Author, Student	Optional
Tutor Support Documentation	char(100)	Minimal, Comprehensive, Extensive. + explanation	Optional
Delivery environment	Set	Distance learning, Classroom …	Optional
Replace/Augment	Set	Lecture, Tutorial, Seminar, Lab…	Optional
METAMETADATA			
Record contributors	Set	Jenny, Phil, Fiona, Santi. (Will need to be added to)	Mandatory
Record validator	Enum	Phil, Unvalidated	Mandatory. Default = Unvalidated
Date record entered	Date	Unspecified	Mandatory. To be automatically generated
Date to be reviewed	Date	Unspecified	Mandatory. To be automatically generated for one year after the record is entered, but a cataloguer can override it by entering

			an alternative date.
Date last reviewed	Date	Unspecified	Mandatory.
Date last modified	Date	Unspecified	Mandatory. To be automatically generated
Language of metadata	Enum	As for Language. (see above.)	Mandatory. Default = eng.
Decision	Enum	Activated, Include, Pending, Don't Include.	Mandatory
Comments	Text	Unspecified	Optional

APPENDIX 2 – Comparison of FAILTE metadata elements with IMS and DC elements, and EEVL fields.

FAILTE	**EEVL**	**IMS** (Core elements in bold)	**Dublin Core, Version 1.1**
FAILTE ID	Handle		
Title	Title	**1.2 general.title**	DC.Title
Alternative title	Alternative title		
Subject classification	Classification	**9.1 classification.purpose**	DC.Subject
URL	URL	**4.3 technical.location**	DC.Source
Secondary URLs		**4.3 technical.location**	DC.Source
Description	Description	**1.5 general.description**	DC.Description
Rights-cost		**6.1 rights.cost**	DC.Rights
Rights-conditions	Authentication/ Registration	**6.3 rights.descrption and 6.4 rights.copyright and other restrictions**	DC.Rights
Awards			
Language	Language	**1.4 general.language**	DC.Language
Reference			
Version		**2.1 lifecycle.version**	
Date-publication		**2.3.3 lifecycle.contribute.date (where IMS lifecycle.contribute.role =Publisher)**	DC.Date
Date-modified			DC.Date
Format-medium			DC.Format
Technical requirements		4.4 technical.requirements	DC.Format
Relation		7 relation	DC.Relation
Country of origin	Country of origin		
Catalogue	ISSN/ISBN	3.2 metametadata.catalogentry	DC.Identifier
CONTACTS			
Creator	Author	**2.3.1 lifecycle.contribute.role and 2.3.2 lifecycle.contribute.entity**	DC.Creator
Contributor	Author	**2.3.1 lifecycle.contribute.role and 2.3.2 lifecycle.contribute.entity**	DC.Contributor
Publisher		**2.3.1 lifecycle.contribute.role and 2.3.2 lifecycle.contribute.entity**	DC.Publisher
Distributor			
Rights-holder			
PEDAGOGICAL			
Description-educational		5.10 educational.description	
Educational level		5.6 learning.context	
Resource type	Resource type	5.2 educational.learningresourcetype	DC.Type
Time			
Interactivity type		5.1 educational.interactivitytype/5.3 educational.interactivitylevel	
Intended end user role		5.5 educational.intendedenduserrole	
Tutor Support Documentation			
Delivery environment			
Replace/Augment			

METAMETADATA			
Record contributors	Template creator	3.3 metametadata.contribute	
Record validator			
Date record entered	Date created	3.3.3 metametadata.contribute.date	
Date to be reviewed	To-be-reviewed date		
Date last reviewed	Last reviewed date		
Date last modified			
Language of metadata		**3.5 metametadata.language**	
Comments	Comments		
Decision	Decision		