BS 8581-2:2012

BSI Standards Publication

Exchanging course related information –

Part 2: Course advertising profile – Code of practice

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Contents

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This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 20, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2012. It was prepared by Panel IST/43/-/8, *UK adoption of EN 15981 (EuroLMAI), EN 15943 (CEF) and EN 15982 (MLO)*, under the authority of Technical Committee IST/43, *Information technology for learning, education and training*. A list of organizations represented on this committee can be obtained on request to its secretary.

Relationship with other publications

BS 8581-1 describes the structure of an XCRI-CAP1.2 XML document that conforms to BS EN 15982.

BS 8581-2 provides guidance and recommendations on how and when the elements and attributes described in BS 8581-1 are to be used.

Use of this document

As a code of practice, this part of BS 8581 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of BS 8581 is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard gives recommendations for applications that produce and aggregate XCRI-CAP documents.

This British Standard gives recommendations for:

- policy-makers prescribing a consistent approach for product advertisement to learning opportunity providers that conforms to BS EN 15982;
- decision-makers specifying or procuring software for advertising or aggregating information about learning opportunities in a format that conforms to BS EN 15982; and
- software developers writing code for advertising or aggregating information about learning opportunities in a format that conforms to BS EN 15982.

NOTE It is intended for use by producers and aggregators alike, in the dissemination of course information to prospective students.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publications

BS 8581-1:2012, *Exchanging course-related information – Part 1: Course advertising profile – Specification*

BS EN 15982, *Metadata for learning opportunities (MLO) – Advertising*

BS ISO 8601, *Data elements and interchange formats – Information interchange – Representation of dates and times*

3 Terms and definitions

For the purposes of this part of BS 8581, the terms and definitions from BS 8581-1:2012 and BS EN 15982 apply.

4 Conformance

*COMMENTARY ON CLAUSE **4***
There are two classes of application that can conform to this British Standard: a producer and an aggregator.

A *producer is a class of application that produces XCRI-CAP documents.* An *aggregator is a class of application that aggregates XCRI-CAP documents.*

Either or both classes can conform to this British Standard.

A **strictly conforming instance** is a set of structured information constituted only of elements and attributes, and fully qualified refinements of the elements defined in this British Standard.

A **fully qualified refinement** is an element that explicitly refines an element defined by this British Standard. A fully qualified refinement should be capable of being processed according to the semantics of the element it extends.

A **conforming instance** may contain additional elements and attributes not defined by this British Standard.

A **conforming producer** should be capable of generating and sharing strictly conforming instances.

A **conforming aggregator** should be capable of processing strictly conforming instances.

NOTE For more information on conformance wrapping see Annex A.

5 XCRI-CAP documents

A producer should use the catalog element as the top-level element for general purpose use.

NOTE This British Standard allows both provider and course as alternative top-level elements to enable REST-style operations to be supported.

6 Namespace

NOTE No guidance given.

7 Core elements

7.1 <catalog> element

7.1.1 @generated attribute

The producer should use both date and time in the @generated attribute, e.g. "2010-08-02T06:14:37Z".

Where a <catalog> element does not contain an @generated attribute, the aggregator may process the document as if it was generated at the time the catalog was obtained by the aggregator.

Where the value of the @generated attribute is not a valid date/time according to BS ISO 8601, it is in error and the aggregator should ignore this element.

7.2 <provider> element

7.2.1 Identifier

The producer should create <provider> elements with a default unique identifier formatted as a URL (e.g. "http://www.bolton.ac.uk/"). The producer may include additional identifiers in other formats, but they should be qualified using xsi:type to a specific identifier namespace, e.g. the UK provider reference number (UKPRN) within the UKRLP:UKPRN namespace. [1)]

*NOTE See BS 8581-1:2012, **8.4**, for more details.*

7.2.2 Title

The producer should include at least one <title> element for a provider; the title should be the trading name of the organization, see **8.5**.

[1)] This is a fictional example.

7.2.3 Type

Where the producer uses the <type> element for a provider, and where it is possible, the producer should refine this element using a vocabulary encoding scheme, see **8.2.1.2**.

7.2.4 URL

The producer should include one <url> element for each provider, which should include its homepage URL, or its application's microsite, in addition to its primary domain identifier (see **7.2.1**).

7.2.5 Course

The producer should include at least one course for a provider.

NOTE Where this British Standard is used to format course search results, the capability for supporting zero courses is offered.

7.3 <course> element

7.3.1 Identifier

The <course> element should have a unique identifier formatted as a URI (e.g. "http://www.bolton.ac.uk/courses/1"). Additional identifiers in other formats may be used, but they should be qualified using xsi:type to a specific identifier namespace, see **8.4** for further guidance.

7.3.2 Title

The producer should include at least one <title> element for each course.

7.3.3 Subject

The producer should include at least one <subject> element for each course, see **8.6** for further guidance.

7.3.4 Level

The producer should not use the <level> element; the aggregator should use the <qualification> element and <credit> element to assist discovery of courses by level.

7.3.5 Credit

The producer should use separate <credit> elements for describing the credits available under each scheme, e.g. CATS, ECTS.

7.3.6 Absence of image

Where a course does not contain an image, but its containing provider does, the aggregator should use the image of the provider when displaying the course.

7.4 <presentation> element

7.4.1 Determining uniqueness

Where a presentation does not contain an identifier, the aggregator may need to construct presentation identifiers. Presentations should use a URL-formatted

identifier where possible, following the scheme for the provider and course, e.g. “http://www.bolton.ac.uk/courses/1/2008-1”.

7.4.2 Absence of study mode and attendance

The aggregators should assume that the default value for studyMode is “Full time”, the default for attendanceMode is “Campus”, and the default for the <attendancePattern> element is “Not known”.

7.4.3 Start dates

The producer should include a <start> element even if there is no specific start date as this can still be used to describe the start details, see BS 8581-1:2012, **14.2**.

7.4.4 Duration

The producer should include a duration, or start and end dates, or both.

7.4.5 Absence of image

Where a presentation does not contain an image, but its containing course does, the aggregator should use the image of the course when displaying the presentation.

7.4.6 Absence of title

Where a presentation does not contain a title, but its containing course does, the aggregator should use the title of the course when displaying the presentation.

7.4.7 Absence of description

Where a presentation does not contain a description, but its containing course does, the aggregator should use the description of the course when displaying the presentation.

8 Common elements

8.1 General

8.1.1 <date> element

The producer should not use the <date> element, but where possible use the temporal elements defined in BS 8581-1:2012, **14.2**: <start>, <end>, <applyFrom>, and <applyUntil>.

8.1.2 <hasPart>/<isPartOf> element

The producer should not use these elements for general course advertising as there is no definition of their use in this British Standard.

NOTE 1 These elements are included for compatibility with BS EN 15982 and for use in extended profiles of BS 8581-1, which defines the semantics of these elements for other purposes.

NOTE 2 For further guidance on these elements see BS EN 15982.

8.1.3 <type> element

NOTE No guidance given.

8.2 <contributor> element

8.2.1 Refinements

8.2.1.1 General

The producer should use refinements of the <contributor> element, e.g. for the "presenter" or "lecturer" or other contributor type relevant to the type of course or presentation.

8.2.1.2 Element refinement

NOTE 1 This is the process of defining a sub-element of an existing element.

Element refinement should be used to enable specialization of elements while retaining strict conformance to the original element specification.The sub-element should be a semantic specialization of its super-element and should be able to be substituted with the super-element by implementations that do not implement the refinement.

NOTE 2 For example, the <engagement> element is defined within BS EN 15982 as describing the logistical means for individuals to engage in a presentation, including temporal, modal and spatial patterns of engagement and attendance. In BS EN 1581 this is refined by the specialized elements <studyMode>, <attendanceMode> and <attendancePattern>. As each of these elements is described as a refinement of <engagement>, an implementation of BS EN 15982 can process these elements as if they were <engagement> elements without reference to BS 8581-1. Each of the refinements defined in BS 8581-1 also has a recommended vocabulary encoding scheme.

Element refinement should be used where defining a subset of the meaning of an element, and also where constraining the set of possible values for the element using an encoding scheme.

NOTE 3 An encoding scheme is a set of rules that apply to the content of the element, either by how the content is structured (a syntax encoding scheme) or by enumerating the valid values (a vocabulary encoding scheme).

NOTE 4 For example, the <identifier> element is defined as an "unambiguous reference to the resource within a given context" and encompasses all types of identifier that may be used. This element can be refined with a sub-property for a particular type of identifier, e.g. <uri> can be defined as a refinement of <identifier>, which uses the syntax encoding scheme defined in IETF RFC 2396 [1].

8.2.1.3 Using element refinement in XML

NOTE 1 A number of refinements of BS EN 15982 elements are defined within BS 8581-1 using the BS 8581-1 namespace (see Table A.1 and Table A.2, where the relationship is "refined by").

Where required, implementations processing these elements should be capable of transforming the element into its super-element. For example, implementations should be able to transform <studyMode> elements into <engagement> elements to output data that strictly conforms to BS EN 15982.

Where using element refinements defined outside of the scope of this British Standard, the super-element should be used with an XML Schema Instance type attribute to indicate the refinement, e.g. where a <my:GUID> element refinement is used for <identifier>, it should be represented as follows:

<dc:identifier xsi:type="my:GUID">999-1234-321</dc:identifier>

NOTE 2 Where the aggregator is not aware of the my:GUID sub-element, it can ignore the @xsi:type attribute and treat the element as <identifier>. This is called "fallback to declared type", for further guidance see the W3C Example 24 *[2]. Where an aggregator is aware of the my:GUID definition, it can process the element accordingly.*

NOTE 3 When using xsi:type the XML document needs to declare both the XSI namespace and the namespace and prefix used by the refinement.

8.2.1.4 Element refinements versus extensions

Refinements should only be used where there is a clear super-element/sub-element relationship and, where appropriate, to enable the fallback behaviour to the super-element. Where this is not the case, implementers should define new elements as required.

NOTE 1 This allows the aggregator to ignore the element completely where it is unknown to them.

*NOTE 2 An extension means the instance is no longer strictly conforming, only conforming, see Clause **4**.*

8.2.2 Contact information

The producer should use the <location> element rather than the <contributor> element for general contact information.

8.3 <description> element

*NOTE No guidance given, see **14.2**.*

8.4 <identifier> element

8.4.1 Resolvable URLs

The producer should use URLs for identifiers that also resolve to human-readable content.

8.4.2 Third-party identifiers

The producer should use the <identifier> element with an encoding scheme to represent third-party identifiers; the producer should use dc:subject to represent third-party codes that refer to multiple objects (e.g. subject classification codes, provider type codes).

8.4.3 Multiple identifiers

Where the producer includes multiple <identifier> elements, these should be distinguished using element refinement.

8.5 <title> element

8.5.1 Localization

The producer should use the @xml:lang attribute to provide alternative language versions of a title; there should not be more than one occurrence of title per language tag.

8.5.2 Qualifications

In the <qualification> element, the producers should use the <title> element for the name of the qualifications; this should be as given by its awarding body.

8.6 <subject> element

8.6.1 Identifier

Where a subject has both a human-readable label and an identifier, the producer should use an @identifier attribute of the <subject> element for the identifier, and the text content of the <subject> element for the label, for example:

```
<dc:subject identifier="C1">Biology</dc:subject>
```

8.6.2 Localization

The producer should use an @xml:lang attribute to provide alternative language versions of a <subject> element.

8.6.3 Vocabularies

The producer should use vocabulary encoding schemes to include classification terms using the <subject> element.

NOTE Examples of vocabulary encoding schemes include JACS, LCSH, MESH; some of these are defined in the DCMI Terms specification [3].

8.6.4 Inheritance

The <subject> element and any refinements of it should be inheritable, see **14.3** for further guidance.

8.7 <type> element

NOTE No further guidance.

8.8 <url> element or <identifier> element

Where possible, the producer should use the <identifier> element with the default encoding type in addition to the <url> element. Also, the producer should use the <url> element when the resource cannot be given a dereferencable URL as an identifier [for example, a course description generated from within a content management system (CMS), or where the identifier is a uniform resource name (URN) or handle uri scheme (HDL)].

8.9 <image> element

NOTE For image size, the aggregator may choose to re-scale images.

8.9.1 Image format

The producer should offer images in standard formats, e.g. PNG, JPEG etc.

8.9.2 Accessibility

The producer should use the @alt attribute of the <image> element to provide a text equivalent for the image.

NOTE For further guidance see the W3C Techniques for WCAG 2.0 – H37 – Using alt attributes on img elements [4].

8.9.3 Inheritance

The <image> element and any refinements of it are inheritable, see **14.3** for further guidance.

8.10 <type> element

The producer should use the <type> element to provide additional information about the type of a resource. For example, in a <provider> element, <type> may be used to indicate the type of provider such as "university", "college", or "training provider".

9 Common descriptive elements

*NOTE The <course> and <presentation> elements may use any of the common descriptive elements, see **7.3** and **7.4** for guidelines on usage in each specific context.*

9.1 <abstract> element

9.1.1 Length

The aggregator should truncate the value of the <abstract> element if it exceeds 140 characters.

9.2 <applicationProcedure> element

NOTE No guidance given.

9.3 <assessment> element

NOTE No guidance given.

9.4 <learningOutcome> element

The <learningOutcome> element should be used for specific, individual, measurable learning outcomes. For general course aims, the <objective> element should be used.

9.5 <objective> element

The <objective> element should be used for the general aims of the course or presentation, and give an overview of the purpose of the course. For specific, individual, measurable learning outcomes, the <learningOutcome> element should be used.

9.6 <prerequisite> element

The <prerequisite> element should be used for general entry requirements for the course or presentation, e.g. details of formal and informal requirements for entry to the course offering.

9.7 <regulations> element

NOTE No guidance given.

9.8 Multiple descriptive elements for multilingual content

Where the producer includes equivalent information in multiple languages for a descriptive element, it should use multiple occurrence of the descriptive element. Each descriptive element should contain an @xml:lang attribute, which indicates the language of the text, for example:

```
<abstract xml:lang="en">This is a simple course</abstract>
<abstract xml:lang="de">Dies ist ein einfacher Kurs</abstract>
```

10 Elements used in the <provider> element

10.1 <location> element

10.1.1 Refinements

The producer may refine the address element using other schemes to create specific address components. Where using an alternative or additional encoding scheme, the scheme should be indicated using an @xsi:type attribute.

10.1.2 Document order

The aggregator should interpret any un-typed address elements in document order by default.

10.1.3 PO boxes

The producer should not use an address element for PO box information.

NOTE Users of this standard might wish to consider the desirability of using alternative content for this element, such as is given in UPU-S42 [5], BS EN 14142-1 and GEO-RSS [6].

11 Elements used in the course element

11.1 <qualification> element

11.1.1 identifier

Where possible, awarding bodies should use the permanent URLs for the qualifications they award as the identifiers; these can be difficult to collect, so internal identifiers may be used instead. The producer should also include an identifier that refines this element, where possible, to refer to an entry in a specific qualification framework, e.g. Qualification Accreditation Number (QAN).

11.1.2 <awardedBy> and <accreditedBy> elements

The producer should use the common name of the organization for the content of the <awardedBy> and <accreditedBy> elements.

11.1.3 absence of <awardedBy> or <accreditedBy> elements

Where a qualification does not contain an <awardedBy> and/or <accreditedBy> element, the aggregator should interpret this as meaning that the capability is provided by the <provider> element.

11.2 <credit> element

11.2.1 multiple credit schemes

The producer should use a separate <credit> element to represent the credits for each scheme.

11.2.2 <scheme> element

While a <scheme> element is optional, the scheme should be stated unless a default has been agreed between the producer and the aggregator.

12 Elements used in the <qualification> element

12.1 <abbr> element

NOTE No guidance given.

12.2 <educationLevel> element

NOTE 1 Levels of qualifications are usually expressed in the context of a qualification framework, for example the European Qualifications Framework [7]. Rather than use a single integer or text for the EducationLevel property, implementers are encouraged to make use of Uniform Resource Identifiers (as in IETF RFC 3986 [8]) to identify both the level of the qualification and the framework from which the level is derived. For example, CWA 16077 [9] defines EQF levels using the form http://purl.org/net/cm/terms/EQF#n, where n is the number of the EQF level.

NOTE 2 Other frameworks for which a standard URI is not defined may be represented using a similar convention, whereby the URL of the framework precedes the level value separated using a URI fragment identifier. For example, the following would represent level 5 of the Scottish Credit and Qualifications Framework: http://www.scqf.org.uk/#5.

12.3 <awardedBy> element

The producer should use the common name of the organization for the content of the <awardedBy> element.

12.4 <accreditedBy> element

The producer should use the common name of the organization for the content of the <accreditedBy> element.

13 Elements used in the presentation element

13.1 <start> element

NOTE No guidance given.

13.2 <end> element

NOTE No guidance given.

13.3 <duration> element

13.3.1 Use of the @interval attribute

While the <duration> element should contain a human-readable description of the duration of the learning opportunity, the @interval attribute may be used to provide a machine-readable equivalent. Where there is no direct machine-equivalent value (e.g. the duration is flexible), the producer should not include the @interval attribute.

13.4 <applyFrom> element

NOTE No guidance given.

13.5 <applyUntil> element

NOTE No guidance given.

13.6 <applyTo> element

NOTE No guidance given.

13.7 <engagement> element

13.7.1 Refinements

Where possible, the producer should use the <studyMode>, <attendanceMode> and <attendancePattern> elements instead of this element.

NOTE The <studyMode>, <attendanceMode> and <attendancePattern> elements are refinements of the <engagement> element.

13.8 <studyMode> element

Where applicable, the producer should use the following values for the <studyMode> element, with the two-letter code used in the @identifier attribute and the human-readable label in a natural language in the element content, see Table 1.

Table 1 **<studyMode> element**

Identifier	Label	Note
NK	Not known [DEFAULT]	Provider has not supplied the information
FL	Flexible	Full time or part time dependent on the learner
FT	Full time	Learning opportunity is the learner's main activity
PF	Part of a full time programme	Learning opportunity is a component of a set of learning opportunities that form the learner's main activity
PT	Part time	Learning opportunity is not the learner's main activity

NOTE These are mutually exclusive terms, so "full time" does not include "part of a full time programme".

13.9 <attendanceMode> element

Where applicable, the producer should use the following values for the <attendanceMode> element, with the two-letter code used in the @identifier attribute and the label in the element content, see Table 2.

Table 2 **<attendanceMode> element**

Identifier	Label
CM	Campus
DA	Distance with attendance
DS	Distance without attendance
NC	Face-to-face, non-campus
MM	Mixed mode
ON	Online (no attendance)
WB	Work-based
NOTE These are mutually exclusive terms, so "Campus" does not include "Work-based".	

13.10 <attendancePattern> element

Where applicable, the producer should use the following values for the <attendancePattern> element, with the two-letter code used in the @identifier attribute and the label in the element content, see Table 3.

Table 3 **<attendancePattern> element**

Identifier	Label
DT	Daytime
EV	Evening
TW	Twilight
DR	Day/Block release
WE	Weekend
CS	Customized

13.11 <languageOfInstruction> element

NOTE No guidance given.

13.12 <languageOfAssessment> element

NOTE No guidance given.

13.13 <places> element

NOTE No guidance given.

13.14 <cost> element

NOTE No guidance given.

13.15 <age> element

NOTE No guidance given.

13.16 <venue> element

13.16.1 Provider

The producer should use the <provider> element to describe the organization which acts as the venue provider. This may be a sub-organization of the provider of the presentation, such as a department or school, or it may be a third party or external organization.

13.16.2 Provider properties

When a <provider> element is used in a <venue> element, the producer should include only basic information about an organization, i.e. identifier, title, description, URL, image and location.

13.16.3 Location

When a <provider> element is used in a <venue> element, the producer should include a <location> element. The location should refer to the location of the presentation rather than the location of the provider.

14 Processing XCRI-CAP XML documents

14.1 Temporal elements

If a descriptive text element has an @href attribute, the producer should not include any text content or child elements.

If a descriptive text element has an @href attribute and the <description> element contains either text content or child elements, it is in error and the aggregator may ignore this element.

14.2 Descriptive text elements

14.2.1 Encoding schemes

Vocabularies for types of descriptive text elements should be used.

14.2.2 Use of images

Images should not be referenced in the descriptive text element by the producer as they are unlikely to be displayed by the aggregator; an image tag can be used to execute cross-site scripting (XSS) attacks. Any image should be provided separately using the <image> element.

14.2.3 Length

The aggregator may choose to truncate long descriptive text element content; a suggested maximum length is 4 000 characters.

14.2.4 Safe use of XHTML

See **A.1** for guidance.

14.2.5 Inheritance

Descriptive text elements and any refinements should be inheritable, see **14.3** for further guidance.

14.3 Inheritable elements

Inheritance should apply in refinements of elements, for example:

```
<course>
        ...
        <mlo:objective>This course is aimed at providing
        a basic competence in electrical engineering</
        mlo:objective>
        <presentation>
                <identifier>1</identifier>
                ...
        </presentation>
        <presentation>
                <identifier>2</identifier>
                <mlo:objective>This course is aimed at
                providing a basic competence in electrical
                engineering with the specific aim of progressing
                to a professional qualification</mlo:objective>
        </presentation>
</course>
```

The aggregator should interpret this as meaning:

- Presentation 1: objective – this course is aimed at providing a basic competence in electrical engineering; and
- Presentation 2: objective – this course is aimed at providing a basic competence in electrical engineering with the specific aim of progressing to a professional qualification.

Aggregators should use inheritance when interpreting XCRI-CAP documents.

Annex A (informative) XML schema

*COMMENTARY ON **ANNEX A***
Example schemas are available from Google code [10] or as a zipped file from the XCRI Knowledge Base [11].

A.1 Security considerations for XHTML content

The aggregator should process XHTML content in descriptive text elements to remove any potentially malicious markup or scripting.

NOTE 1 Descriptive text elements allow the delivery of XHTML. Many elements in these languages are considered "unsafe" in that they can open clients to one or more types of attack.

NOTE 2 The IMG, SCRIPT, EMBED, OBJECT, FRAME, FRAMESET, IFRAME, META and LINK elements in particular can be readily exploited and the aggregator may choose to remove them during processing. However, other elements might also have negative security properties. Attention is drawn to the security section of RFC 2854 [12] for guidance.

NOTE 3 XHTML can either directly contain or indirectly reference executable content.

A.2 Conformance to BS EN 15982

A.2.1 General

BS 8581 (both parts) is a conforming binding for BS EN 15982; it provides a binding for all the classes and properties defined in BS EN 15982, and also adds extensions. Any BS 8581 (both parts) XML document is also a conforming instance of BS EN 15982.

Table A.1 and Table A.2 show how BS EN 15982 classes and properties are related to BS 8581 (both parts) elements.

"Equivalent" indicates that XCRI defines an element in its own namespace that is semantically equivalent to the BS EN 15982 class or property. It can be considered a fully qualified refinement of the BS EN 15982 class or property (in most cases, the only difference is the label).

"Implemented by" indicates that the XCRI element is a direct implementation of the BS EN 15982 class or property using the BS EN 15982 namespace.

"Extension" indicates that the XCRI element is an extension of BS EN 15982 and does not directly map onto an existing BS EN 15982 property or class.

"Refined by" indicates that the XCRI element is a fully qualified refinement of the BS EN 15982 class or property.

Table A.1 **Mapping BS EN 15982 classes to XCRI elements**

BS EN 15982 class	Relationship	XCRI element	Conformance level
Learning opportunity specification	Equivalent	Course	Strictly conforming
Learning opportunity instance	Equivalent	Presentation	Strictly conforming
Learning opportunity provider	Equivalent	Provider	Strictly conforming

Table A.2 **Mapping BS EN 15982 properties to XCRI elements**

BS EN 15982 property	Relationship	XCRI element	Conformance level
contributor	Implemented by	contributor	Strictly conforming
date	Implemented by	date	Strictly conforming
date	Refined by	end	Strictly conforming
date	Refined by	applyFrom	Strictly conforming
date	Refined by	applyUntil	Strictly conforming
description	Implemented by	Description	Strictly conforming
identifier	Implemented by	identifier	Strictly conforming
subject	Implemented by	subject	Strictly conforming
title	Implemented by	title	Strictly conforming
type	Implemented by	type	Strictly conforming
url	Implemented by	url	Strictly conforming
hasPart	Implemented by	hasPart	Strictly conforming
location	Implemented by	location	Strictly conforming
offers	Equivalent	Elided by the containment of course elements in provider elements rather than by explicit association	Strictly conforming
specifies	Equivalent	Elided by the containment of presentation elements in course elements rather than by explicit association	Strictly conforming
qualification	Implemented by	qualification	Strictly conforming
credit	Implemented by	credit	Strictly conforming
level	Implemented by	level	Strictly conforming
offeredAt	Equivalent	venue	Strictly conforming
start	Implemented by	start	Strictly conforming
duration	Implemented by	duration	Strictly conforming
cost	Implemented by	cost	Strictly conforming
language of instruction	Implemented by	languageOfInstruction	Strictly conforming
prerequisite	Implemented by	prerequisite	Strictly conforming
places	Implemented by	places	Strictly conforming
engagement	Implemented by	engagement	Strictly conforming
engagement	Refined by	studyMode	Strictly conforming
engagement	Refined by	attendanceMode	Strictly conforming
engagement	Refined by	attendancePattern	Strictly conforming
objective	Implemented by	objective	Strictly conforming
assessment	Implemented by	assessment	Strictly conforming
N/A	Extension	languageOfAssessment	Conforming
N/A	Extension	applyTo	Conforming
N/A	Extension	Image	Conforming
N/A	Extension	Age	Conforming
N/A	Extension	Abstract	Conforming
N/A	Extension	applicationProcedure	Conforming
N/A	Extension	learningOutcome	Conforming
N/A	Extension	regulations	Conforming

A document conforming to BS 8581 (both parts) is already a conforming instance of BS EN 15982. The guidelines in **A.2.2** to **A.2.7** assist conversion of BS 8581 (both parts) documents to strictly conforming instances of BS EN 15982.

A.2.2 Equivalents

Elements identified as "equivalent" should be converted directly into their equivalent element in BS EN 15982, e.g. <xcri:venue> should be converted to <mlo:offeredAt>.

A.2.3 Refinements of <engagement>

Where converting a document from BS 8581 (both parts) to a strictly conforming instance of BS EN 15982, the <studyMode>, <attendanceMode> and <attendancePattern> elements should be treated as refinements of mlo:engagement.

A.2.4 Refinements of <date>

Where converting a document from BS 8581 (both parts) to a strictly conforming instance of BS EN 15982, the following elements should be treated as refinements of dc:date:

- <end>;
- <applyFrom>; and
- <applyUntil>.

A.2.5 Temporal elements

BS EN 15982 instances are expected to have temporal elements containing data in W3C DTF [13] format. Where converting a document from BS 8581 (both parts), the value of any @dtf attribute of these elements should be mapped to the content of the dc:date element. If there is no @dtf attribute, the text content of the XCRI element should be used.

A.2.6 Extensions

To convert a BS 8581-1 XML document to a strictly conforming instance of BS EN 15982, the following extensions should be omitted:

- languageOfAssessment;
- applyTo;
- image;
- age;
- abstract;
- applicationProcedure;
- learningOutcome; and
- regulations.

A.2.7 Descriptive text elements

The descriptive text elements in BS 8581-1 can contain XHTML content.

To convert to BS EN 15982 it might be necessary to "mark down" the content of these elements, e.g. by extracting the child text nodes and stripping out any XHTML tags.

A.3 Examples of implementation

Implementation has been trialled and supported through a number of JISC programmes focussing on higher education.

Project plans, case studies and reports can be found on the JISC website [14], [15].

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