

CEN

CWA 14926

WORKSHOP

March 2004

AGREEMENT

ICS 03.180

English version

Guidelines for the production of learner information standards and specifications

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Ref. No.:CWA 14926:2004 D/E/F

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Foreword

This CEN Workshop Agreement (CWA) provides guidelines for the production of learner information standards and specifications.

In order to avoid European service providers having to develop their own line of services, platforms and courseware concepts in contradiction to International Standards to meet European requirements for privacy or security, the development of European profiles as part of future international standards is urgently required.

The decision for this work item was taken by the Learning Technologies Workshop meeting on 4-5 April 2002.

The work was split into the production of two complementary CWAs:

- Recommendations on a model for expressing learner competencies (this CWA).
- Guidelines for the production of learner information standards and specifications

The document has been developed through the collaboration of a number of contributing partners, representing a wide mix of interests, from universities to commercial companies representatives. The names of the individuals and their affiliations that have expressed support for this CWA is available from the CEN/ISSS Secretariat

This work relates closely to the Memorandum of Understanding on "Multimedia Access to Education and Training in Europe".

.The final review/endorsement round for this CWA was started on the 2003-09-22 and closed 2003-10-03.

The final text of this CWA was submitted to CEN for approval and publication in 2003-12-04.

Introduction

Colleagues within CEDEFOP are working to enhance a series of paper documents that lie within the Learner Profile domain. These include

- The European CV
- The European Certificate Supplement
- The Europass
- The Diploma Supplement

Colleagues in CETIS have proposed an application profile of a national document, the UK HE Transcript, with the specific intention that it should meet the requirements of the international Diploma Supplement.

The learner provides the European CV, but the other documents are provided by the bodies teaching or training the learner.

We propose that a Learner Profile should typically comprise these two elements, one owned by the learner, in which the learner provides a profile of him or her self; the other owned by the body teaching (or employing) the learner drawn from its records.

This would provide a broad frame work within which various different application profiles could be assembled and sent to different audiences.

One example of a Learner Profile is an application for a place in a technical school, college or university, which might comprise

- A letter of application (or application form) in which the learner explains his motivation, makes claims and provides evidence of achievement.
- A European CV
- A set of diplomas or more detailed 'transcripts' setting out formal qualifications, such as the European Certificate Supplement or the Diploma Supplement

In addition, the learner may provide a testimonial from a teacher (or ask a teacher to provide a reference the learner may not see). For example, a testimonial from a workplace supervisor may offer an opinion on how well a learner can exercise the competency which the learner claims he has developed at work and which qualifies him for a particular programme of study.

A profile in which a learner sets out his or her educational achievements should also include what he or she has learnt through experience, for example in employment. A testimonial, which the learner can read without special permission, belongs within this same Learner Profile Domain.

An individual will present different profiles of him or herself to different audiences.

In some cases the different documents making up the profile a learner wishes to present to an audience may best be packaged together. This requires the meta data to be integrated into the information model so that the data is secure and so that time-related information, identification information and privacy and data protection information are available for each and every element, either directly or through inheritance. An example of this approach is the application form which learners use to apply for study at a UK university which brings together several documents. It includes information about a Learner's qualifications (similar to the information in a Certificate Supplement), a personal statement (analogous to a European CV and owned by the learner) and a testimonial.

In other cases the different documents may best be communicated as separate packages, for example where an e-portfolio accompanies an application like the one outlined above.

Work in the UK by the CETIS Learner Information and Profiles Special Interest Group (LIPSIG) has highlighted the importance of defining the meta data required to support either approach taking specific account of the appropriate use of the data.

The documents making up a learner profile in common use within a member state frequently assume an understanding of the nature and status of the organisations the profile refers to which will not necessarily be

understood in other states. There is therefore a particular need to provide scaleable contextual information. This should cover both the general role of an organisation (for example with it specialises in vocational or academic study) and specific information (the subjects it teaches).

The work to be done on existing specifications to meet European requirements is quite large, and the authors of this CWA have decided to restrict the scope to a few main issues. Therefore, this CWA is made of several components, each addressing concretely a specific aspect of European needs (existing transparency models or specifications, multilinguality, vocabularies), which are based on work in progress in Europe.

1 Scope

This CWA addresses the development of data models, protocols and bindings that are capable of expressing specific European requirements and concerns for learner information.

The information specific to the expression of competencies is handled separately in the CWA learner competencies.

The work shall serve as input to ISO/IEC JTC 1 SC 36, its Working Group "Learner Information" and its ad-hoc WG "Management and Delivery of Learning, Education, and Training (MDLET)".

2 Normative References

This CEN Workshop Agreement incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications do not apply. However, parties to agreements based on this CWA are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

CWA 14590:2002 Description of Language Capabilities.

3 Terms and definitions, and abbreviations

3.1 Abbreviations

CEDEFOP European Centre for the development of vocational training

CETIS Centre for Educational Technology Interoperability Standards

IMS IMS Global Learning Consortium, Inc. (formerly termed Instructional Management Systems)

ISO/IEC JTC 1 SC 36 ISO/IEC JTC 1 Subcommittee 36 Information Technology for Learning, Education and Training

PAPI Private and Public Information

3.2 Terms and Definitions

Mapping

One to one identification of the elements of two data models.

Transcript

A Transcript may be defined as a formal statement setting out the detail of a learner's achievement provided by the institution making (or validating) the award. The Transcript therefore supplements the formal certificate which simply confirms that the award has been made.

European Diploma Supplement

The Diploma Supplement was introduced in 1988. It was intended as an addition to the original diploma and aims to provide a clear description of the nature, level, content and status of the study that was pursued and successfully completed by the holder of accompanying qualification. The supplement, in combination with the diploma itself, should enable the reader to make a judgement about the qualification. This can either be a higher educational institution that has to decide whether the award is appropriate for admission to a study programme, or for exemption from part of a programme, or an employer who needs to judge whether the award is a good preparation for a specific job. A uniform model for the Diploma Supplement was adopted in 1988. At a later stage it was decided that the model needed to be revised. A new diploma supplement of the European Commission, the Council of Europe and CEPES/UNESCO was tested in 1997-1998 during a pilot project involving universities from various participating states. It was also an important issue in the Phare Multi-Country Project 'Recognition of Higher Education Diplomas and Study Credit Points across borders'. It was expected that the new model would be formally adopted by the 3 organisations in 1999. A Student can ask the higher educational institution that awarded the original diploma to issue a Diploma Supplement, provided the institution offers this service.

European CV Format

The European curriculum vitae gives a comprehensive standardised overview of education attainments and work experience of an individual.

Certificate supplement

The certificate supplement contains a detailed description of the qualification acquired by the holder of a vocational certificate. It is issued by the awarding authorities

4 CWA components

After investigation of two data models allowing to express a learner profile, the IMS Learner Information Package, and the PAPI learner (and its successors), the project team decided to follow the position of the CETIS, representing UK Universities and colleges, and to endorse LIP as a normative basis for European e-learning standards. Therefore, this CWA is made of 5 elementary components building on LIP, aiming to match European needs and to improve interoperability between European transparency documents.

- integration of enhanced language capabilities description into LIP
 - mapping of the European Diploma supplement to LIP
 - mapping of the European transparency specifications to LIP
 - mapping of a national specification (UK HE transcript) to LIP
 - definition of the European needs for privacy

4.1 Integration of enhanced language capability into LIP

The CEN/ISSS WS-LT workshop worked on the best way to describe the language capabilities of the learner, and produced a CWA, which aims to accurately describe the communication type and the level of proficiency.

The following data model is therefore based on CWA 14590 "Description of Language Capabilities". It suggests the following enhancement of the LIP data element 3.3 Language. Note that the element 3.3.4.2 profnod (the type of proficiency) disappears.

Table 1 CWA 14590 Data Model

No	Name	Explanation	Reqd	Multiple	Type	Note
3.3	language	The language capabilities of the learner	O	n		A separate entry is used by language
3.3.1	typename	the type of language	O			
3.3.2	comment					
3.3.3	contentype					
3.3.4	proficiency		C		string	
3.3.4.1	langtype	the default language used for the language proficiency				
3.3.4.2	communicationdirection	The combination of this data element with the following describes all types of skills : for instance output+text=write	M		Vocabulary: input, output	

No	Name	Explanation	Reqd	Multiple	Type	Note
3.3.4.3	communication mode	The mode of communication	M		Vocabulary: Oral Text Other	Other could be braille, subtitles, close captioning, sign language
3.3.4.4	level	The level of proficiency	M		Vocabulary ¹ : None Basics Medium Good Excellent	None: if necessary to emphasise in particular cases Basics: skills to understand the general meaning of a text or to perform basic communication Medium: skills necessary to live without problems in a community using this language Good: able to discuss, understand newspaper or to write correct texts Excellent: perfect mastery in the language
3.3.5	Extension	The extension facility for the 'language' learner				

1 Can be mapped with the common reference levels elaborated in the Common European Framework : Basics=A1 or A2, Medium B1, Good B2, Excellent C1 or C2

4.2 European Diploma Supplement Mapping to IMS LIP

The signatories to the Bologna Declaration agreed to provide a European Diploma Supplement for students completing a qualification from 2008 on. This was intended to improve the recognition of qualifications and the mobility of students and workers across the European Education Area (EEA). A specification of the Diploma Supplement is provided at

<http://europa.eu.int/comm/education/recognition/dsen.pdf>

This CWA sets out a mapping of the European Diploma Supplement (DS) to an interoperability standard which offers a common means of exchanging data between institutions whatever specific software is used internally; IMS LIP 1.0. It comments on some of the issues required to conceive of the DS as an electronic document. It concentrates on the details of what a learner has studied and achieved.

Existing national Transcripts, such as the example discussed in the next CWA component, may contribute much of the information required by the DS. The Programme Details section of the Diploma Supplement (see 4.3 in table 2) is the location within which a key section of a Transcript of assessed achievement could nest. However, there are several ways in which the detailed structure of a programme of study could be expressed in LIP. The following mapping of the UK Transcript to LIP² employs an activity structure in which years of study (or levels) can be nested and which allows other learner owned records to be nested in another layer of <activity> (See table 2 and UK LP 1.1 section 2.6). This is well adapted to support the transfer or progression of a student from one academic programme to another since it sets out in detail the structure of the learning the student has undertaken.

Another way of expressing achievement within a Transcript, is through <competency>. This may be particularly useful to employers and professional bodies. <activity> and <competency> represent two complementary perspectives onto the same learning. The curriculum that a student has followed is often expressed in terms of both the academic structure and of 'learning outcomes' or competencies (for example Medicine) Again, an apprentice will undertake a series of tasks in order to acquire a set of competencies which may be expressed both as tasks completed and as competencies gained.³ Therefore, the Programme Details section of a Diploma Supplement might contain a statement of a student's achievement in terms of <activity>; or of <competency>; or of <activity> and <competency>.

Competencies may exist both within the Diploma Supplement and within the broader Learner Profile. The Diploma Supplement may state what competencies the student has acquired through study. The student may also wish to claim some further competencies within the student owned section of the Learner Profile, perhaps referring to a reference or testimonial or reference from an employer.⁴ Both activities and competencies will be defined by the curriculum, summarised on the Diploma Supplement in the *Information on the national Higher Education System*.

² To download the document see http://www.recordingachievement.org/downloads/Learner_Profile_V1.1.pdf The host site contains other information about UK activity in this area see <http://www.recordingachievement.org/>

³ Within the UK 'Programme Specifications' make the relevance of higher education to work clearer from both 'academic' and 'competency' perspectives http://dbweb.liv.ac.uk/ltsnpsc/briefing_papers/pdfs/progspec.pdf

⁴ The mapping of the Diploma Supplement to IMS is presented in the UK HE Transcript mapping which follows the Diploma Supplement. A further version, also covering learner owned records, will be published as UK Learner Profile 1.2 in November 2003.

Table 2 DS Mapping

DS Data Element	IMS LIP 1.0 Element	Comment
1 Information Identifying the Holder of the Qualification		
1.1 Family name(s)	<identification><name>	
1.2 Given name(s)	<identification><name>	
1.3 Date of Birth	<identification><demographics><date>	
1.4 Student identification number or code	<identification><demographics><uid>	An electronic DS may need to contain multiple UIDs. The UIDs will not be globally unique, but must be unique to the institution, or made to be unique (for example by concatenating the UID with the date of birth). Whatever the formal position, it cannot be assumed that one individual will be identified by only one UID within one institution's databases.
2 Information Identifying the Qualification		
2.1 Name of qualification and title conferred	<qcl><title> <activity><definition><description> <activity><learningactivityref>	An electronic DS probably requires 3 elements here; the name of the qualification; the title conferred and the ID of the programme leading to the qualification in the institution's database, defined according to national conventions, for example the UK HESA return.
2.2 Main field(s) of study for the qualification	<qcl><ext_qcl >	In some member states these data may be included in statistical returns to national bodies which may employ a vocabulary of subjects.
2.3 Name and status of Awarding Institution	<qcl><organization>	There is currently no space for noting details of the status of organisations in LIP. An extension is required to represent organisations, their status and characteristics, together with a globally unique UID for the institution, perhaps its URI.
2.4 Name and status of institution administering studies	<affiliation><organization>	Same comment as for Awarding Institution .

	DS Data Element	IMS LIP 1.0 Element	Comment
2.5	Language(s) of instruction/examination	<qcl><ext_qcl>	Multiple instances to cover language of instruction and assessment are required.
3	Information on the Level of the Qualification		
3.1	Level of qualification	<qcl><level>	It is not clear whether the DS also requires that the 'main fields of study' should be associated with level to cope with a position where a level 2 qualification includes several subjects completed at different levels.
3.2	Official length of programme	<qcl><ext_qcl >	
3.3	Access requirements(s)	<accessibility>	There are significant issues over ownership of these data.
4	Information on the Contents and Results gained		
4.1	Mode of study	<qcl><ext_qcl>	Vocabularies for this may exist in several European states.
4.2	Programme requirements	<qcl><ext_qcl >	
4.3	Programme Details	See Introduction	See Introduction.
4.4	Grading scheme and grade distribution guidance	<transcript><description> / <ext_learnerinfo>	
4.5	Overall classification of the qualification (in original language)	<qcl><level><level> OR <activity><evaluation><result><score>	While some classifications will be expressed through a term, such as 'merit', others may be an arithmetic score, sometimes similar to a Grade Point Average.
5	Information on the Function of the Qualification		
5.1	Access to further study	<activity><learningactivityref>	
5.2	Professional Status	<activity><evaluation>	

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	DS Data Element	IMS LIP 1.0 Element	Comment
6	Additional Information		
6.1	Additional information	<transcript><description> / ext_learnerinfo>	
6.2	Further information sources	<transcript><description> / ext_learnerinfo>	
7	Certification of the Supplement		The elements in this section are not relevant to an electronic document, but an alternative means of authenticating the information should be provided
7.1	Date	<qcl><date>	
7.2	Signature	<qcl><ext_qcl >	
7.3	Capacity	<qcl><ext_qcl >	
7.4	Official stamp or seal	<qcl><ext_qcl >	
8	Information on the national Higher Education System	<transcript><description> / <ext_learnerinfo>	

4.3 Mapping of European transparency specifications to LIP

4.3.1 General

The issues of recognition and transparency of qualifications constitute a focal point of collaboration between the Member States as the need for improving the effective mobility of students and workers across the European Education Area gets more and more imperative. Transparency of qualifications refers to the degree of visibility necessary to identify and compare the value and content of academic and vocational qualifications at national and international level i.e. to make national qualifications more visible and understandable to interested parties world-wide.

On this basis, several European activities have been launched in order to foment the implementation of common specifications of transparency instruments for use within the European community. These efforts have resulted in a series of specifications, including:

- The European Curriculum Vitae (European CV) [1], which intends to give a comprehensive standardised overview of education attainments and work experience of an individual. ECV is designed to provide information on work experience, education and training background, language competences and additional skills and competences acquired outside formal training schemes.
- The Certificate Supplement [2], which contains a detailed description of the qualification acquired by the holder of a vocational certificate. The Certificate Supplement is drawn up by the awarding authorities and provides information mainly on the skills and competences acquired by the holder of the certificate, the range of occupations accessible to the holder of the certificate, the awarding and accreditation bodies, the level of the certificate, the different ways of acquiring the certificate, the entry requirements and access opportunities to next level education and the web addresses of the national reference points¹.
- The Europass [3], which constitutes a method of recording the training carried out and skills acquired during a period of work experience, undertaken as part of an on-going training programme, in another European country. The Europass is designed to record the achievements of up to three separate work placements in another European country, sometimes referred to as a 'European Pathway'.
- The European Credit Transfer System (ECTS) [4], which specifies a way of measuring and comparing learning achievements, and transferring them from one institution to another.
- The European Computer Driving Licence (ECDL) [5], which provides a certification system that enables people to certify their competence in essential computer skills & knowledge.
- The EUROpean Employment Services Curriculum Vitae (EURES CV) [6] database, which has defined and implemented an CV information model based on the HR-XML Consortium specifications suite.

The above initiatives, as well as the terminology harmonisation efforts among the specifications, which has been recently initiated by the European Forum on Transparency of Vocational Qualifications, constitute major steps towards a pan-european, consistent framework for the description and recognition of academic and vocational qualifications.

At a technical level, it is clearly essential that the emerging European documents should be linked directly with learner information interoperability specifications in order to ensure transparent information exchange. Under this prism, the next section presents a mapping of the European CV information structure to the IMS LIP 1.0 standard [7], as part of the proposal for establishing an electronic Learner Profile for use within the EEA.

¹ In every Member State (UE and EEA), a national reference point gives access to information on the vocational education and training system.

4.3.2 Guidelines for mapping the European CV to IMS LIP 1.0

The European CV consists of 6 categories: Personal Information, Work Experience, Education and Training, Personal Skills and Competences, Additional Information and Annexes. For each of these categories, associated information can be accommodated in certain IMS LIP elements according to the following guidelines:

Guideline 1

Use the <identification> data structure in order to express the European CV Personal Information. In the case of 'Nationality', which is not explicitly expressed within <identification>, use the <ext_identification> element.

Table 4 European CV mapping

European CV Category	IMS LIP 1.0 Element	Value for typename
Personal Information		
Name	<identification><name>	
Address	<identification><demographics><date>	
Telephone	<identification><contactinfo><telephone>	
Fax	<identification><contactinfo><facsimile>	
E-mail	<identification><contactinfo><email>	
Nationality	<identification><ext_identification>	Nationality
Date of Birth	<identification><demographics><date>	

Guideline 2

Use the <activity> data structure for representing Work Experience instances.

As far as the employer and business group of information is concerned, the "IMS LIP Best practices & Implementation Guide – Advanced Example Lip Instances" [8] suggests that employer organisations are described within the <activity><description> element. However, in the European CV case there is a need for more detailed and structured descriptions holding details for the name, address, type/sector of the organisation.

This issue could be addressed by a recommendation for use of the <affiliation><organisation> element and the introduction of <relationship> instance in order to establish the relationship of each work activity to the corresponding organisation.

Another recommendation could refer to the introduction of the <organisation> sub-element to the <activity> core element, the same way it is used within <qcl>. This approach results to more effective structuring.

Table 5 European CV mapping

European CV Category	IMS LIP 1.0 Element	Value for typename
Work Experience		
Dates From To	<activity> <date> <date>	Work Start Finish
Name and address of employer	<activity><description> OR <affiliation><organisation> <relationship>	
Type of business or sector	OR <activity><organisation>	
Occupation or position held	<activity><description>	
Main activities and responsibilities	<activity> <activity></activity> ... <activity></activity> </activity>	

Guideline 3

Use the <qcl> data structure to describe the formal Education and Training qualifications.

For expressing the subjects/skills covered, one could refer to an externally defined transcript (<transcript><ext_exrefrecord>), provide a simple enumeration not adhering to formal classifications (<transcript><description>) as in "IMS LIP Best practices & Implementation Guide – Advanced Example Lip Instances", or describe the recorded achievements by using <activity> or <competency> elements.

Table 6 European CV mapping

European CV Category	IMS LIP 1.0 Element	Value for typename
Education and Training		
Dates From To	<qcl> <date> <date>	Start Finish
Name and type of organisation providing education and training	<qcl><organisation>	
Principal subjects/ occupational skills covered	<transcript><ext_exrefrecord> OR <transcript><description> OR <activity></competency>	
Title of qualification awarded	<qcl><title>	
Level in national classification	<qcl><level>	

Guideline 4

Use the <accessibility> data structure for describing language skills. The adoption of the enhanced language element based on the CWA 14590 Description of Language Capabilities [9] is strongly recommended.

Use the <competency> element to express Skills and Competences data. You can either provide identification information for an externally defined competency record (e.g. using the RDCEO specification [10]) or include an inline description. The <relationship> element can be used in addition, in cases where an association with some formal or informal training or work history (described in the <activity>) and formal awards (described in the <qcl>) needs to be expressed.

Use the <qcl> element to include Driving Licence(s) information.

Table 7 European CV mapping

European CV Category	IMS LIP 1.0 Element	Value for typename
Personal Skills and Competences		
Mother Tongue	<accessibility><language>	
Other Languages Reading skills Writing skills Verbal skills	<accessibility><language> <proficiency> <communicationdirection> <communicationmode> <level>	
Social skills and competences	<competency> <relationship>	
Organisational skills and competences	<competency> <relationship>	
Technical skills and competences	<competency> <relationship>	
Artistic skills and competences	<competency> <relationship>	
Other skills and competences	<competency> <relationship>	
Driving Licence(s)	<qcl>	

Guideline 5

Use the <ext_learnerinfo> to create any additional data structures needed for the support of the Additional Information and Annexes categories.

4.4 Mapping of a national specification (UK HE Transcript) to IMS LIP 1.0

This CWA component looks at a national document which will support, and be nested within, the Diploma Supplement. A student Transcript is *the public record of learning and academic achievement in higher education*. It provides the evidence that a learner has met the requirements for the specified HE award and information on learning and achievement in the chosen programme of study. From the outset, the CETIS team developing this mapping has seen its work as contributing to the international exchange of learner information. The data elements set out in Table 1 overlap the elements required for the Diploma Supplement, but each of the following tables cover data elements common to the Transcript and the Diploma Supplement.

Table 8 is an illustration of the way in which UK institutions would provide details of the programme that a student had followed for the Diploma Supplement, discussed in the previous CWA component. The final paragraph identifies the issues that still need to be addressed in order to produce scalable information explaining the nature and value of the components making up programmes of study to audiences in different member states.

4.4.1 Field Definitions for the UK HE Transcript

See Table 8. Entries in **bold** require the use of IMS LIP extension elements which should be defined in UK Learner Profile 1.2, scheduled for publication in November 2003.

Table 8 Correlation between field definitions for the UK HE Transcript and the IMS LIP Specification

Section	Transcript Data Element	IMS LIP Element
1	Name	<identification><formname>
	Date of Birth	<identification><demographics><date>
	Reference with issuing body	<identification><demographics><uid>
	HESA reference number	<identification><demographics><uid>
	Reference with awarding institution / body	<qcl><registrationno>
	Reference with institution delivering the programme	<affiliation><affiliationid>
2	Name of Qualification	<qcl><title>
	Level of Qualification in NQF	<qcl><level>
	Name of Awarding Institution	<qcl><organization>
	Name of institution delivering the programme	<affiliation><organization>
	Languages of instruction	<qcl><ext_qcl>
	Languages of assessment	<qcl><ext_qcl >
	Professional Body accreditation	<qcl><ext_qcl >

Section	Transcript Data Element	IMS LIP Element
	Statutory Regulatory Body recognition/approval	<qcl><ext_qcl >
3	Programme code	<activity><learningactivityref>
	Name of programme	<activity><definition><description>
	Module or unit study code	<activity><learningactivityref>
	Module or unit study title	<activity><definition><description>
	Number of credits for each module/unit	<activity><units>
	Date (year) in which credit awarded	<activity><date>
	Mark or grade for each module/unit	<activity><evaluation><result><score>
	Number of attempts for each module/unit (if >1)	<activity><evaluation><noofattempts>
4	Study Abroad	<activity>
	Work Placement	<activity>
	Work Experience	<activity>
	Accredited prior certificated and experiential learning	<qcl> / <activity>
	Accredited Key Skills	<competency><exrefrecord>
	Index to evidence of achievement within Progress File[2]	<activity><learningactivityref>
5	Overall credits achieved	<activity><units>
	Overall mark / grade	<activity><evaluation><result><score>
	Overall classification or performance indicator	<qcl><level><level>
	Professional / Statutory Body recognition	<activity><evaluation>
	Date of Award	<qcl><date>
6	Date of Issue	<learnerinformation><contentype>
	Telephone for validation	<qcl><ext_qcl> / <ext_learnerinfo>
7	Guidance on how to interpret the Transcript	<transcript><description> / <ext_learnerinfo>
	Information on the grading scheme	<transcript><description> / <ext_learnerinfo>
	Overview of the NQF	<transcript><description> / <ext_learnerinfo>
	Overview of the UK HE system	<transcript><description> / <ext_learnerinfo>

A more detailed description of the use of the IMS-LIP structures to represent the data elements of the proposed UK HE Transcript is presented in the following sections.

4.4.2 Transcript Section 1: Student

The information contained in this section of the Transcript can be represented using the Identification structure of the LIP specification as shown below. It is possible that there might be several institutions or bodies involved in conferring awards or delivering programmes, and the identification of the student with each of these bodies or institutions is most naturally done within the QCL and Affiliation structures of LIP. This is illustrated later.

Table 9 Showing the representation of part of Section 1 of the UK HE Transcript using the IMS-LIP Identification structure

```

<identification>
  <formname>
    <typename>
      <tysource sourcetype="List">
        Contact, Full, Alias, Maiden, Preferred, Former
      </tysource>
      <tyvalue>Full</tyvalue>
    </typename>
    <text>Gemma Jackson</text>
  </formname>
  <demographics>
    <date>
      <typename>
        <tysource sourcetype="List">
          Effective, Birth, Start, Finish, Expiry, Death, Update,
          Create, Renewal, Delete, Publish, Award, Enrol, Join
        </tysource>
        <tyvalue>Birth</tyvalue>
      </typename>
      <datetime>1977-10-03</datetime>
    </date>
  </demographics>
  <demographics>
    <typename>
      <tysource sourcetype="List">
        Issuer's reference, HESA reference
      </tysource>
      <tyvalue>Issuer's reference</tyvalue>
    </typename>
    <uid>99999999</uid>
  </demographics>
  <demographics>
    <typename>
      <tysource sourcetype="List">
        Issuer's reference, HESA reference
      </tysource>
      <tyvalue>HESA reference</tyvalue>
    </typename>
    <uid>88888888</uid>
  </demographics>
</identification>

```

Note the repetition of the demographics element to allow for two UIDs to identify the student.

4.4.3 The Qualification: Section 2 and parts of others

It is proposed that the QCL structure of the IMS-LIP specification be used to represent all of the information relating to the qualification itself, as distinguished from the educational programme in which the student was enrolled. While the majority of this information is in section 2, there is also information from section 1 (as indicated above) and section 5, as it is natural here to include the overall classification achieved along with the level of qualification. This is brought together in the example.

Table 10 Showing an XML example of the use of the QCL structure to hold information about a student's qualification or award

```

<qcl>...
  <title>BA(Hons) Human Geography with Physical Geography</title>
  <organization>...
    <description>
      <short>University of Leeds</short>
    </description>
  </organization>
  <registrationno>999999999</registrationno>
  <level>
    <text>NQF HE3</text>
    <level>
      <text>2.1</text>
    </level>
  </level>
</qcl>

```

Information relating to the institution delivering the programme logically needs to be kept elsewhere, as students can study for the same qualification in different institutions. We have agreed that the natural and appropriate place for this is the Affiliation structure.

Table 11 XML example of the use of the Affiliation structure to represent information relating the student to the organisation delivering the tuition

```

<affiliation>
  <affiliationID>777777777</affiliationID>
  <role>
    <typename>
      <tysource sourcetype="List">
        Student, Faculty, Staff, Alumni, ProspectiveStudent,
        Guest, Other, Administrator, Observer
      </tysource>
      <tyvalue>Student</tyvalue>
    </typename>
  </role>
  <organization>
    <typename>
      <tysource sourcetype="List">
        School, FEI, HEI, Professional, Governmental, Other
      </tysource>
      <tyvalue>HEI</tyvalue>
    </typename>
    <description>
      <short>York St John University College</short>
    </description>
  </organization>
</affiliation>

```

The QCL structure does not contain elements which can be used as a holder for overall marks or overall credits, both of which are required fields in the UK HE Transcript. It is proposed to use an instance of the Activity structure of the IMS-LIP specification to represent the overall programme of study in which the learner is involved. This model would result in the use of the QCL structure to hold the formal qualification (e.g. BA (Hons) Modern Literature [2:1]) and then the outermost Activity structure to hold programme level information which cannot be accommodated in the QCL structure.

4.4.4 Records of Learning and Achievement

It is therefore proposed that the structure of the record of learning and achievement is mapped entirely using the Activity structure of the IMS-LIP specification. The use of this structure allows us to nest the years (or levels) of study and their component modules in a logical structure which as well as coping with the data, also maps well to the structure of the printed Transcript. As the team goes on to map learner owned Personal Development Records for UK Learner Profile 1.2, another nested layer of <activity> can relate to other work carried out in completing a module. The use of the outermost layer of <activity> corresponding to the degree programme allows us to store information about overall credits/marks received, an element of the award which is not catered for within the QCL structure described in section 2.

Table 12 A schematic structure representing the student's records of learning and achievement, a key section of the Transcript for inclusion in the Diploma Supplement

<qcl> </qcl>	# overarching qualification (see section 2)
<activity>	# equating to full programme of study
<activity>	# equating to year 1
<activity> </activity>	# module 1
<activity> </activity>	# module 2
<activity> </activity>	# module 3
<activity> </activity>	# module 4
</activity>	
<activity>	# equating to year 2
<activity> </activity>	# module 1
<activity> </activity>	# module 2
<activity> </activity>	# module 3
<activity> </activity>	# module 4
</activity>	
<activity>	# equating to year 3
<activity> </activity>	# module 1
<activity>	# module 2
<activity> </activity>	# component of module 2
<activity> </activity>	# component of module 2
</activity>	
<activity> </activity>	# module 3
<activity> </activity>	# module 4
</activity>	
</activity>	

The electronic nature of the proposed records makes it possible, even when the records are transferred electronically between institutions, to refer directly into the information systems in the institutions which issued the electronic records or transcripts. In order to maximise the usefulness of this capability, there should be a "Programme Code" associated with the full programme of study, as this may well be more specific than the title of the programme alone, which may only be generally descriptive. This will mirror the use of "module or unit study codes".

4.4.5 Transcript Section 7: Explanatory information

This section of the UK national transcript needs to support the *Information on the national Higher Education System* section of the Diploma Supplement. A key need, especially for an international audience, is to be able to review and understand the components making up a programme of study; whether for a particular <activity> or <competency>. While the explanatory information contained within this section of the UK HE Transcript is not a part of students' individual records, it does have to be made available somewhere. This raises a larger concern over the relationship between Transcripts, student owned Personal Development Records and the curriculum, which in the UK is expressed by each University in a set of Programme Specifications. As an example of this relationship, consider the case of a student taking a BSc with a particular university, graduating in 1999. In 2000 the degree programme structure changes but the qualification name and level remain the same. If we wish to know what this student has done in their degree we will need to have a Transcript, linked to a PDR, linked to an archive copy of their degree programme specification, linked to an archive copy of their subject benchmark, linked to a description of the structure of UK qualifications at the time at which they undertook the degree.

4.5 Definition of the European need for privacy

This paper was intended as a starting point for a discussion of meta data from a UK perspective, although it does take some account of the wider needs of the community. It discusses a variety of documents in current use which lie within the Learner Profile domain, some of which may have parallels in other member states but no formal European equivalent. It concentrates on **privacy and ownership**, although this investigation raises other issues, for example for temporal meta data.

4.5.1 A set of questions for classifying the ownership of data within the Learner Profile domain

1. Who owns the data within the document, in this case the Diploma Supplement?
2. Who stores the data, and where are the data located?
3. What types of person may have access to the data and what is the appropriate use to which each type of person may put the data? (It may sometimes be useful also to specify inappropriate uses.)
4. Can all these types of person see the whole document, or are some types of person only able to see some of the data it contains? (In this case, please specify which types of data within the document particular types of person may see)
5. How may people outside the institution access the data within the document?
6. Are there other documents, owned by the learner, not the institution, which are typically provided alongside the Diploma Supplement in order to provide a fuller profile of the learner's other achievement aspirations etc.? If yes, please: -
 - Provide examples of the types of document which you provide
 - Please answer questions 1 through 5 for each type of document."

4.5.2 Categories of Use, Ownership and Privacy within the Learner Profile Domain

A single category of privacy and ownership may apply to all data within a learner information package, such as the Academic Transcript/DS. In other situations exceptions for individual elements may be made. Each Learner Information package should be accompanied by a simple statement as to whether a single category of privacy and ownership applies to all the data it contains (with a reference to a source of detailed information) or a warning should be given that several status apply to the data.

1. Outline Definition of the UK Transcript / Diploma Supplement

Owned by **The Institution Awarding the Qualification**

Kept by **The Institution or its agent**

Appropriate use To provide a definitive statement of the learner's academic achievement and current learning for: -

- the learner's personal reference and use (in particular formative use);
- the institution's staff and agents whose role includes providing advice or support to the learner or to manage the learner or his or her learning
- potential employers, clients, customers or other people, business and professional organisations who need to satisfy themselves of the learner's ability or potential to provide a particular service, or fulfil a particular role;
- educational, professional and business institutions who need to assess the extent to which the learner may benefit from further education training or professional development.
- the Institution's staff and agents to verify a claim made by a learner.

Privacy Available within the institution to those whose role requires them to support or manage the learner. Released to specific audiences outside the institution

1. At the request of the learner the whole document may be made available to another party subject to the recipients agreement that: -
 - the information will not be changed in any way and used solely for reference, or;
 - the individual or organisation formally contracts to use the information within a continuing record of achievement for the appropriate use defined in the statement covering 'continuing learner records'
2. Specific information within the Transcript/DS may be confirmed (or denied) by the awarding institution to an employer or other institution citing a specific claim made by the learner;
3. In certain circumstances specific information within the Transcript/DS may be released to organisations with a legal right to that information (e.g. the police)

General No Transcript/DS information will be released without a means by which its completeness and accuracy can be confirmed by the institution or its agent to any recipient to whom the information may have been forwarded.

Comment A 'Transcript/DS of Skills' setting out formally assessed achievement in terms of skills and knowledge has the same use, ownership and privacy as a Transcript/DS of achievement expressed in academic terms

2. Continuing Learner Record Definition

Comment An institution (or a partnership of institutions) may hold data about formally assessed achievement for which it is not the awarding body. Sections of this record would only conform to the Transcript/DS Definition of Use, Privacy and Ownership where the institution responsible for the award had supplied, or validated the data relating to the award.

A key issue is how far this non-Transcript/DS information needs to be validated in order to be used appropriately. An analogy may be the Learner Profile presented in an application to a UK university through the UK's central body managing applications, UCAS, on the basis of which an offer of a place is made, in which the qualifications listed will not generally have been validated.

Recommendations

- The individual data within a Continuing Learner Record should make clear whether or not data conform to the Transcript/DS Definition (i.e. have originated from or been validated by the awarding body)
- A means of expressing URIs within the referential contenttype should be developed in order that recipients may validate data for themselves.

Owned By An institution or group of institutions

Kept by An Institution or group of institutions or its agent

Appropriate Use

1. Within an institution or group of institutions for
 - the learner's personal reference and use (in particular formative use);
 - the institution's staff and agents whose role includes providing advice or support to the learner or to manage the learner or his or her learning
 - these same functions for staff and agents of partner institutions, where this has been agreed by the partners and by the learner on entering a partner institution
2. Data would be clearly marked wherever they did not provide a definitive statement of achievement conforming to the Transcript/DS definition, but might be provided as summary information which recipients would need to check for themselves to: -
 - potential employers, clients, customers or other people, business and professional organisations who seek an overview of the learner's ability or potential to provide a particular service, or fulfil a particular role;

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- educational, professional and business institutions who seek an overview of the extent to which the learner may benefit from further education training or professional development.

Privacy

Available within the institution to those whose role requires them to support or manage the learner. Released to specific audiences outside the institution at the Learner's request with a clear statement of the status of the data as set out above.

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