

BUILDING EPORTFOLIO APPLICATION PROFILES FOR EUROPASS CV AND INSURING CROSS INTEROPERABILITY

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ABSTRACT

Context

The Europass strategy driven by the Cedefop is a key issue for interoperability of learner's information across Europe. Unfortunately even if the Cedefop have produce some tools with dedicated XML Schemas to help implementation, for the moment these specifications are not based on existing and widely used standard like IMS LIP/ePortfolio or HR-XML.

A European project Telcert has produced in collaboration with IMS Europe a methodology and a set of tools that allows an application profile dedicated to a specific purpose or community to be built from an existing standard. The test system provided by this project already proved during the previous conference that it is now possible to do conformance test in order to help ePortfolio interoperability between systems.

Objectives

The objectives of the Telcert project until now have been oriented towards studying and check ing conformance in the field of eLearning only. In order to help cross interoperability between systems from Education to the labour market it is worth using this methodology and tools with the specifications in application in the two fields:

- Educational field using IMS ePortfolio and LIP specifications
- HR field using HR-XML SEP (Staffing Exchange Protocol) and especially the candidate standard.

The proposed paper outlines each main part of these two application profiles and the interoperability issues they are solving. The last section will introduce some guidelines and proposals to allow cross interoperability between these two application profiles.

Summary of results:

The main part will give information about the application profiling work:

- The methodology of application profiling and the Telcert toolset to do this work,
- The mapping between Europass CV model and existing HR-XML candidate and IMS eP/ LIP specifications elements including all extensions used
- An explanation of the competency management model supported in these application profiles in order to support external definition of competency like European language competencies using the European model with an XML representation using work done by IEEE LTSC RCD group (Reusable Competency Definition).

Conclusions and recommendations

This paper will finally gives some recommendations:

- In order to maximise interoperability between HR and eLearning systems based on these profiles with ePortfolio tools,

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- To build packages of full ePortfolio data using the Europortfolio Application profile based on IMS ePortfolio specifications with both HR-XML or IMS Lip based portfolio parts (like UK Leap)
- To work on a conformance program and certification process for Europass CV based on the Telcert Test System

1 Introduction

A computer understandable CV is one of the challenges to achieve the Lisbon 2010 objectives. The European Commission has mandated Cedefop to build a transparency framework for qualifications and competences: this is the Europass initiative [1]. Europass documents are

- Europass CV
- Europass Language Portfolio
- Europass Diploma Supplement (EDS)
- Europass Certificate Supplement (CDS)
- Europass Mobility Pass

After having initially designed a human readable information model, last year Cedefop proposed a new online tool developed internally to create Europass CVs using a machine readable binding (based on XML Schema). Compared with the initial paper version of Europass CV, this implementation suffers from gaps in the binding. For example, it is possible to add additional information or annexes to a Europass CV but there is no clear possibility to do this using the Cedefop Schema Binding. This implies the use of a specific online dedicated tool.

In the perspective of using ePortfolio systems to manage personal data, it might be better to be able to export parts of the user data in a package that would be an application profile of Europass CV. This should be done using existing specifications or *de facto* standards such as IMS LIP [2] and IMS ePortfolio [3] or/and HR-XML Candidate [4]. Additional benefits to this approach is that it would be possible, using IMS ePortfolio specifications, to use discrete parts of learner information (portfolio-parts) for several objectives (for example, sharing the name of the owner in both his/her Europass CV and his/her Europass Language Passport); it would also be possible to include multimedia files (text, images, videos...) in the zip package that the user would like to add to his CV, as annexes or additional information. Similarly, it would be possible to use the “Reflexion” element of ePortfolio specifications to reflect on the CV in order to establish communication channel between a candidate and a human resource manager. ‘Relationships’ can be established between different portfolio-parts in order to add semantics information. That would facilitate automatic computations, such as the dynamic transformation of ePortfolio according to the different perspectives and needs of a community. So it would be possible to build two application profiles of the Europass CV: one for the eLearning community using IMS LIP specifications and the other for the industry and human resources using HR-XML Candidate specifications.

To describe the process of the Europass CV application profiling, this paper will continue with an overview of the ePortfolio Europass application profile, following guidelines as defined by IMS [5] and CEN/ISSS WS LT [6]. For the IMS based Application Profile in section 3 we will explain how relationships and external vocabulary can be used to add new semantics information in order to facilitate the reuse of the information stored in the different instances of this application profile. In section 4 we will explain how to use HR-XML based Application Profile to reference external document and to include xml instances baed on this Application Profile in a ZIP file based on IMS ePortfolio Content Package specifications. Finally, section 5 and 6 will present information related to conformance testing, certification and further developments, linking this work on application profiling to the HR-XML Europass Working Group.

2 Building Application Profile using Telcert toolset

In order to build an Application Profile some rules should be followed in order to ease implementation and maximise the interoperability ability. The application profiles described below will respect requirements and recommendations from IMS Global as well as CEN ISSS WS LT. To build these Application Profiles and to ease conformance testing, the tools provided by the European project Telcert will be used. The “Schemaprof” tool to build the AP only store modifications regarding the base specifications used (these specification must be based on XML Schema). Then the “Schema Transform Tool” will generate a new set of derived schemas based on both the base specifications and the Application Profile modifications. The “CRT” (based on Reload) can use these derived schemas in order to build or reengineer xml content based on them. And finally the “Test Suite” can check conformance of XML instances based on these derived schemas and provided by implementers. This process is described below:

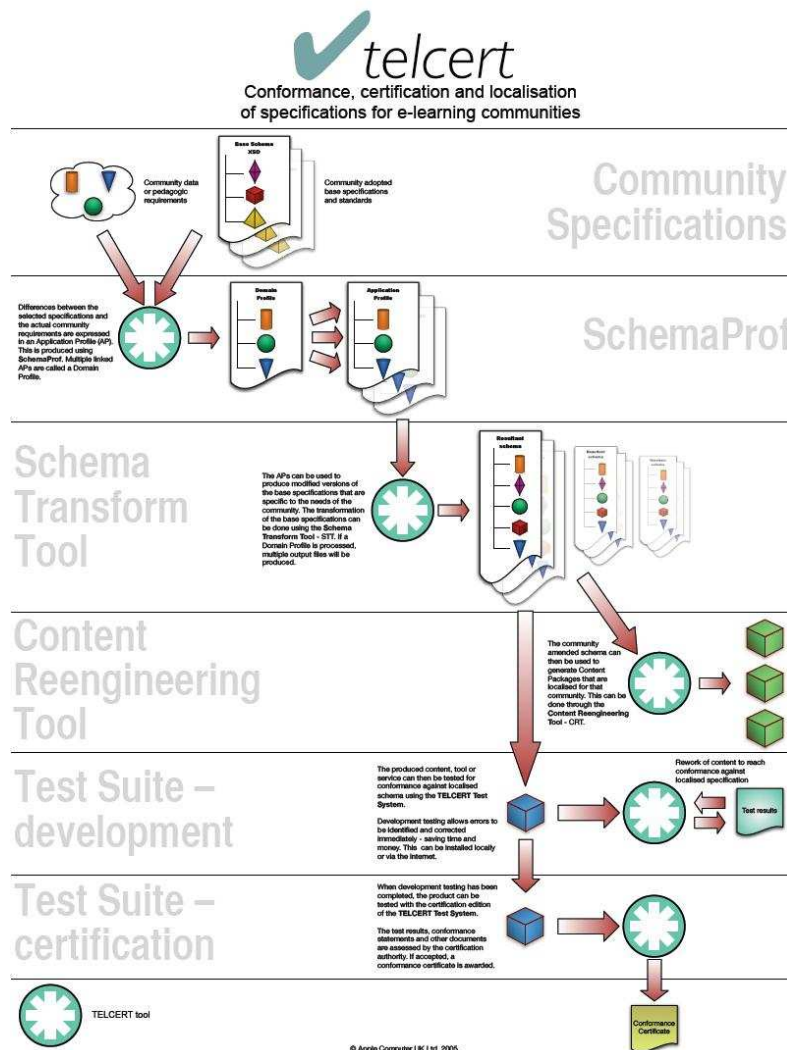


Figure 1. Telcert Flow to produce and use an Application Profile (copyright Apple UK, partner in the Telcert project)

3 Europass CV Application Profile using IMS specifications

First of all it is important to study all required elements regarding the base specifications (IMS LIP) to match Europass CV structure. We have done so by following the proposal from the CEN/ISSS WS LT CWA [7]; this mapping is presented in figure 1 below.

No	Name in Europass CV	IMS LIP element
1	Personal information	<identification>
1.1	Surname(s) / First name(s)	<identification><name><partname>
1.2	Address(es)	<identification><address>
1.3	Telephone(s)	<identification><contactinfo>
1.4	Fax(es)	<identification><contactinfo>
1.5	E-mail(s)	<identification><contactinfo>
1.6	Nationality(-ies)	<identification><demographics>
1.7	Date of birth	<identification><demographics>
1.8	Gender	<identification><demographics>
2	Desired employment / Occupational field	<goal>
2.1	Description	<goal><description>
3	Work experience	<activity> & <affiliation> & <relationship>
3.1	Dates	<activity><date>
3.2	Occupation or position held	<affiliation><role><description>
3.3	Main activities and responsibilities	<activity><definition><description>
3.4	Name and address of employer	<affiliation><organization><description>
3.5	Type of business or sector	<affiliation><classification>
4	Education and training	<qcb>
4.1	Dates	<qcb><date>
4.2	Title of qualification awarded	<qcb><title>
4.3	Principal subjects / occupational skills covered	<qcl><description> ³
4.4	Name and type of organization providing education and training	<qcb><organization><description>
4.5	Level in national or international classification	<qcb><level><text>
5	Personal skills and Competencies (language part)	TO INCLUDE LATER (extensions needed, maybe CEDEFOP Europass Language Portfolio Schema)
5.1	Mother tongue(s)	TO INCLUDE LATER
5.2	Other language(s)	TO INCLUDE LATER
6	Personal skills and Competencies (others parts)	<competency> & <qcb>
6.1	Social skills and competencies	<competency>
6.2	Organisational skills and competencies	<competency>
6.3	Technical skills and competencies	<competency>
6.4	Computer skills and competencies	<competency>
6.5	Artistic skills and competencies	<competency>
6.6	Others skills and competencies	<competency>
6.7	Driving licence(s)	<qcb>
7	Additional information	<reflexion>
7.1	Description	<reflexion><description>
8	Annexes	<reflexion>
8.1	Description	<reflexion><description>

Figure 2. Mapping between IMS LIP and Europass CV

Due to a depreciated element in IMS LIP (Accessibility) it has not been possible to use this depreciated element as proposed in the CEN CWA to map the Europass CV Language competencies. This point may need additional work.

3.1 Using “Reflexion” or “Assertion” elements to include external documents

To allow the inclusion of external multimedia document in the ‘additional information’ and ‘annexes’ part of the CV, the new ‘Reflexion’ or ‘Assertion’ elements from IMS ePortfolio specification can be used. So it will be possible to reference an external document using this element in conjunction with a “dedicated file” section of the associated “resource” in the IMS Manifest. The manifest.xml file is the entry point in the IMS specifications, it is based on the widely used IMS Content Packaging specifications (for example in Scorm or IMS Learning Design).

Here is an example of this kind of structure.

In the “PortfolioParts” section of the manifest:

```
<item identifier="ITEM-ADDINFO" identifierref="RES-REFLEX1">
  <title>Reflexion</title>
</item>
```

In the “Resources” section of the manifest:

```
<resource identifier="RES-REFLEX1" type="europasscvlip-Reflexion"
  href="Reflexion.xml">
  <file href="Reflexion.xml"/>
  <file href="mydiploma.pdf"/>
</resource>
```

And the associated Reflexion.xml instance:

```
<?xml version="1.0" encoding="UTF-8"?>
<reflexion ...">
  <lip:typename>
    <lip:tysource sourcetype="standard">
      http://www.eife-l.org/xsd/cv/VDEXEuropassCV.xml
    </lip:tysource>
    <lip:tyvalue>EuropassCV60</lip:tyvalue>
  </lip:typename>
  <lip:comment>Europass CV: Add info</lip:comment>
  <lip:description>
    <lip:short xml:lang="en">my Diploma</lip:short>
    <lip:full>
      <lip:media mediamode="Text" mimetype="" contentreftype="uri">
        mydiploma.pdf
      </lip:media>
    </lip:full>
  </lip:description>
</reflexion>
```

3.2 Describing semantic relations between portfolio parts in a simple CV e-portfolio package

In this Europass CV Application Profile, it is proposed to use the IMS LIP activity element with an Affiliation element to model the Work Experience. As these two elements are in different portfolio-parts of the manifest, it is important to use a *relationship section* in the portfolio manifest with a *relationship element* describing clearly their mutual relation.

Here is an example of such a manifest file:

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest...>
  <organizations default="RLD-73574572-orgal">
    <organization identifier="RLD-73574572-orgal">
      <title>cv388_Europass_CV_Teacher-Ireland</title>
      <item identifier="ITEM-PORTFOLIOPARTS-ROOT">
        <title>PortfolioParts</title>
        ...
        <item identifier="ITEM-456DA14D" identifierref="RES-PART3">
          <title>LIP-Activity</title>
        </item>
        <item identifier="ITEM-A44EA585" identifierref="RES-PART4">
```

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```
<title>LIP-Affiliation</title>
</item>
...
</item>
<item identifier="ITEM-RELATIONSHIPS-ROOT">
  <title>Relationships</title>
  <item identifier="ITEM-577DF155" identifierref="RES-REL1">
    <title>LIP-Relationship</title>
  </item>
</item>
</organization>
</organizations>
<resources>
...
  <resource identifier="RES-PART3" type="europasscvlip-Activity"
    href="LIP-Activity.xml">
    <file href="LIP-Activity.xml" />
  </resource>
  <resource identifier="RES-PART4" type="europasscvlip-Affiliation"
    href="LIP-Affiliation.xml">
    <file href="LIP-Affiliation.xml" />
  </resource>
  <resource identifier="RES-REL1" type="europasscvlip-Relationship"
    href="LIP-Relationship.xml">
    <file href="LIP-Relationship.xml" />
  </resource>
...
</resources>
</manifest>
```

The relationship description itself is declared in the xml files and used the “indexed” reference included in the activity.xml and affiliation.xml files.

Here is an example of such a relationship xml file:

```
<?xml version="1.0" encoding="UTF-8"?>
<learnerinformation ...>
  <relationship>
    <tuple>
      <tuplesource>
        <indexid>work1</indexid></tuplesource>
      <tuplrelation>
        <typename>
          <tyvalue>ispartof</tyvalue>
        </typename>
      </tuplrelation>
      <tupledest>
        <indexid>affiliation1</indexid>
      </tupledest>
    </tuple>
  </relationship>
</learnerinformation>
```

3.3 Describing semantic relations to use the same portfolio-part in a complex ePortfolio package including several ePortfolio using “Views”

This section illustrates how to use the “relationships” and “views” parts in a manifest, in order to declare that some of the portfolio-parts must be used to illustrate both the Europass CV and the Europass Language Passport.

The “Views” part in the manifest can be used with two main items, one for the Europass CV view and the other for the Europass Language Passport view. Each of these main items will include sub-items using reference to existing resources associated with portfolio-parts.

Here is an XML example of such a manifest:

```
...
<organization identifier = "ORG-4433B3DD">
  <title>MyEuropassPortfolio</title>
  <item identifier="ITEM-VIEWS-ROOT">
```

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```
<title>Views</title>
<item identifier="ITEM-VIEW-001">
  <title>Europass CurriculumVitae</title>
  <item identifier="ITEM-VIEW-011"
    identifierref="RES-PORTPART-001">
    <title>Personal Identification</title>
  </item>
  <item identifier="ITEM-VIEW-012"
    identifierref="RES-PORTPART-002">
    <title>Carrer Goal</title>
  </item>
  ...
</item>
<item identifier="ITEM-VIEW-002">
  <title>Europass Language Passport</title>
  <item identifier="ITEM-VIEW-021"
    identifierref="RES-PORTPART-001">
    <title>Personal Identification</title>
  </item>
  <item identifier="ITEM-VIEW-022"
    identifierref="RES-PORTPART-003">
    <title>English Language Assessment</title>
  </item>
  ...
</item>
<item identifier="ITEM-PORTFOLIOPARTS-ROOT">
  <title>PortfolioParts</title>
  <item identifier="ITEM-PART-001"
    identifierref="RES-PORTPART-001">
    <title>Identification</title>
  </item>
  <item identifier="ITEM-PART-002"
    identifierref="RES-PORTPART-002">
    <title>Goal</title>
  </item>
  ...
</item>
```

The same approach could be use to include also other Europass models (Diploma Supplement, Certificate Supplement, Mobility).

3.4 Transforming portfolio-parts for each portfolio views in a complex Europass e-portfolio package using “Presentations”

In the previous section 3.3 we explained that common elements (i.e. identification) could be used with several portfolio views. This might require some additional changes. For example an ‘identification’ element in a Europass CV includes the name, date of birth, address, telephone number and other fields but the ‘identification’ element in a Europass Language Passport only includes the name and the date of birth. So it would be possible to use in conjunction with a Portfolio Language Passport ‘View’ a dedicated ‘Presentation’ portfolio item which could reference XSL transformation files or other files related to presentation (like CSS files).

Here is the related information in a manifest:

```
...
<item identifier="ITEM-PRESENTATIONS-ROOT">
  <title>Presentations</title>
  <item identifier="ITEM-PRESENTATION-001"
    identifierref="RES-PRESENT-001">
    <title>Europass Language Passport</title>
  </item>
</item>
...
<resources>
  <resource identifier="RES-PRESENT-001" type="PresentationStyle">
    <file href = "identificationTransformation.xsl"/>
  </resource>
  ...
</resources>
```

4 Europass CV Application Profile using HR-XML SEP Candidate (work in progress)

The same kind of application profiling work has been done to map HR-XML SEP Candidate specifications with the Europass CV Model. It has started in collaboration with the European project KITE [8] and is actually still in progress and supported by the European HR-XML Europass Working Group [9].

In this first step the mapping is done using a single complete XML file to store all information related to a CV. In a second step it will be studied how to use this AP in an ePortfolio content package based on IMS ePortfolio specifications using several portfolio parts based on HR-XML CPO components. Here is the actual mapping:

No	Name in Europass CV	HR-XML Candidate element
1	Personal information	<CandidateProfile><PersonalData>
1.1	Surname(s) / First name(s)	<PersonName>
1.2	Address(es)	<ContactMethod><PostalAddress>
1.3	Telephone(s)	<ContactMethod><Telephone>
1.4	Fax(es)	<ContactMethod><Fax>
1.5	E-mail(s)	<ContactMethod><InternetEmailAddress>
1.6	Nationality(-ies)	<PersonDescriptors><DemographicDescriptors><Nationality>
1.7	Date of birth	<PersonDescriptors><BiologicalDescriptors><DateOfBirth>
1.8	Gender	<PersonDescriptors><BiologicalDescriptors><GenderCode>
2	Desired employment / Occupational field	<CandidateProfile><PreferredPosition>
2.1	Description	<PositionTitle>
3	Work experience	<CandidateProfile><EmploymentHistory>
3.1	Dates	<EmployerOrg><PositionHistory><StartDate> and <EmployerOrg><PositionHistory><EndDate>
3.2	Occupation or position held	<EmployerOrg><PositionHistory><Title>
3.3	Main activities and responsibilities	<EmployerOrg><PositionHistory><Description>
3.4	Name and address of employer	<EmployerOrgName> and <EmployerOrg><OrgName><OrganizationName> and <EmployerContactInfo><ContactMethod><PostalAddress>
3.5	Type of business or sector	<EmployerOrg><PositionHistory><OrgIndustry><IndustryDescription>
4	Education and training	<CandidateProfile><EducationHistory><SchoolOrInstitution>
4.1	Dates	<Degree><DatesOfAttendance><StartDate> and <Degree><DatesOfAttendance><EndDate>
4.2	Title of qualification awarded	<Degree><DegreeName>
4.3	Principal subjects / occupational skills covered	TODO
4.4	Name and type of organization providing education and training	<School> and <PostalAddress>
4.5	Level in national or international classification	TODO
5	Personal skills and Competencies (language part)	<CandidateProfile><UserArea><Competency> and <CandidateProfile><PersonalData><PersonDescriptors><DemographicDescriptors>
5.1	Mother tongue(s)	<CandidateProfile><PersonalData><PersonDescriptors><DemographicDescriptors><PrimaryLanguage>
5.2	Other language(s)	<CandidateProfile><UserArea><Competency>@name=Europass-LanguageSkills
6	Personal skills and Competencies (others parts)	<CandidateProfile><UserArea><Competency>@name=Europass-SkillsList
6.1	Social skills and competencies	<Competency>@name=social
6.2	Organisational skills and competencies	<Competency>@name=organizational
6.3	Technical skills and competencies	<Competency>@name=technical

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6.4	Computer skills and competencies	<Competency>@name=computer
6.5	Artistic skills and competencies	<Competency>@name=artistic
6.6	Others skills and competencies	<Competency>@name=others
6.7	Driving licence(s)	<Competency>@name=driving
7	Additional information	<CandidateProfile><UserArea><Comment>
7.1	Description	<CandidateProfile><UserArea><Comment>
8	Annexes	<CandidateProfile><SupportingMaterials>
8.1	Description	<Description> <AttachmentReference> <Link>

Figure 3. Mapping between HR-XML SEP Candidate and Europass CV

4.1 Reference to external online document

To support references to external document it is possible to use the HR-XML SupportingMaterials element. It is possible to use either “Link” or “AttachmentReference” sub-elements to refer to an external document. “Link” only allow to gives a URL while “AttachmentReference” have two additional optional attributes, ‘mimeType’ which can be use to give additional information about the type of the external resource and ‘context’ which can be use to gives reference to another existing element in the Candidate xml file using an xPath expression. This can be very useful for replacing the “relationship” element provided by IMS specifications in this case.

Here is an example of this kind of Candidate instance with a reference to one of the educational history element:

```
<?xml version="1.0" encoding="UTF-8"?>
<Candidate ...>
  <CandidateProfile xml:lang="en">
    ...
    <EducationHistory>
      <SchoolOrInstitution schoolType="university">
        <School type="degree">
          <SchoolName>University of Oxford</SchoolName>
        </School>
        <PostalAddress type="streetAddress">
          <CountryCode>EN</CountryCode>
          <Municipality>Oxford</Municipality>
        </PostalAddress>
        <Degree degreeType="Master">
          <DegreeName>MBA</DegreeName>
          <DatesOfAttendance>
            <StartDate>
              <AnyDate>1994-09-01</AnyDate>
            </StartDate>
            <EndDate>
              <AnyDate>1998-09-01</AnyDate>
            </EndDate>
          </DatesOfAttendance>
        </Degree>
      </SchoolOrInstitution>
    ...
  </EducationHistory>
  ...
  <SupportingMaterials>
    <AttachmentReference
      context="Candidate/CandidateProfile/EducationHistory/SchoolOrInstitution[1]
" mimeType="application/pdf">
      <a href="http://www.portfolio.org/myname/ressources/mytranscript.pdf">
        http://www.portfolio.org/myname/ressources/mytranscript.pdf
      </a>
    </AttachmentReference>
    <Description>Official Transcript</Description>
  </SupportingMaterials>
</CandidateProfile>
</Candidate>
```

4.2 Using IMS ePortfolio Content Packaging to package external documents

If you need to export a full package including your CV instance with your multimedia documents for ‘additional information’ and ‘annexes’ part of the CV, then it is possible to use the IMS content packaging part of the IMS ePortfolio specifications. The Europortfolio Content Package Application Profile include several new vocabulary items to identify a Europass CV based on other non IMS specifications like the HR-XML specs.

Here is an example of this kind of manifest:

```
<?xml version="1.0" encoding="UTF-8"?>
<manifest...>
  <organizations default="RLD-73574572-orgal">
    <organization identifier="RLD-73574572-orgal">
      <title>cv388_Europass_CV_Teacher-Ireland</title>
      <item identifier="ITEM-PORTFOLIOPARTS-ROOT">
        <title>PortfolioParts</title>
        <item identifier="ITEM-1" identifierref="RES-1">
          <title>HR-XML-CV</title>
        </item>
      </item>
    </organization>
  </organizations>
  <resources>
    <resource identifier="RES-1" type="europasscvhrxml-Candidate"
      href="myCV-HR-XML.xml">
      <file href="myCV-HR-XML.xml" />
      <file href="mydiploma.pdf" />
    </resource>
  </resources>
</manifest>
```

4.3 Referencing external competency definition using IEEE RCD / IMS RDCEO specifications

In order to add a basic semantic reference to Europass competencies (or other Competencies Taxonomy) it is useful to use existing proposal from IEEE LTSC RCD working group [10], the specifications provided by this working group are still in the draft stage but the schema used is based on IMS RDCEO specifications which are already in a final stable state. Even if the HR-XML specifications provide a useful “Competency” element, this element is normally planned to be used inside other elements (like ‘Employment History’) so it is needed to add a related namespace in the list of authorized namespace for the “Any” extension point provided by HR-XML specifications which is named UserArea.

Here is an example of this kind of Candidate instance with a reference to European Language Qualification Framework:

```
<?xml version="1.0" encoding="UTF-8"?>
<Candidate ...>
  <CandidateProfile xml:lang="en">
    ...
    <UserArea>
      <Competency description="CEF" name="Europass-LanguageSkills">
        <Competency description="" name="English" required="false">
          <Competency name="speaking">
            <CompetencyId description="CEF-Speaking-SpokenInteraction-A1"
id="CEF-Speaking-SpokenInteraction-A1.xml" idOwner="Europass" />
            <TaxonomyId id="CEF-Speaking-SpokenInteraction-A1"
description="CEF" idOwner="Europass" />
            <CompetencyEvidence dateOfIncident="2006-06-06">
              <StringValue description="Level: A1, A2, B1, B2, C1, C2"
maxValue="C2" minValue="A1">A1</StringValue>
            </CompetencyEvidence>
          </Competency>
        </Competency>
      </UserArea>
    </CandidateProfile>
  </Candidate>
```

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```
</Competency>
</Competency>
<Competency name="Europass-SkillsList">
  <Competency description="eLearning specifications"
name="technical"/>
</Competency>
</UserArea>
</CandidateProfile>
</Candidate>
```

And the associated “CEF-Speaking-SpokenInteraction-A1.xml” instance:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdceo xmlns="http://www.imsglobal.org/xsd/imsrdceo_rootv1p0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.imsglobal.org/xsd/imsrdceo_rootv1p0
imsrdceo_rootv1p0.xsd">
  <identifier>CEF-SpokenInteraction-A1</identifier>
  <title>
    <langstring>CEF-Speaking-SpokenInteraction-A1</langstring>
  </title>
  <description>
    <langstring>I can interact in a simple way provided the other person
is prepared to repeat or rephrase things at a slower rate of speech and
help me formulate what I'm trying to say. I can ask and answer simple
questions in areas of immediate need or on very familiar
topics.</langstring>
  </description>
</rdceo>
```

It is also possible to use this competency definition in an ePortfolio package based on IMS ePortfolio specification using the “competency” element even if the description won’t allow to include all the information available in an HR-XML Competency instance (like CompetencyEvidence with StringValue) it is therefore possible to use the sourcedid to do the reference on the external competency description and the ‘short’ description to define other part of this competency (like the language in case of European Language definition).

Here is an example of this kind of “competency” portfolio part instance with a reference to European Language Qualification Framework:

```
<competency>
  <contenttype>
    <referential>
      <sourcedid>
        <source>CEF</source>
        <id> CEF-Speaking-SpokenInteraction-A1.xml</id>
      </sourcedid>
    </referential>
    <description>
      <short xml:lang="en">English</short>
      <long xml:lang="en">European language competency in English</long>
    </description>
  </competency>
```

5 Conformance testing and certification

In order to be sure that interoperability can be maintained between different systems it is mandatory to check conformance regarding these application profiles and the base specifications. It is in fact often possible to have several interpretations when reading or implementing a specification. Conformance testing can help to solve these ambiguities in the specifications especially for the implementers. This is the first step to building a conformance and certification process. The other big step is to maintain support of the users and solution providers communities.

In case of Europass and ePortfolio community, EIFEL is leading a European-wide ePortfolio and Europass Readiness study [11].with support of main specifications bodies IMS Global and HR-XML as well as leading certification organisation like The OpenGroup. A part of this study will state if a certification process can take place for the European ePortfolio community. The TELCERT Test System could be used in this perspective to build a European ePortfolio Europass CV Interoperability Certification Programme.

6 Future Work and recommendations

It should be possible to use XSL transformation file to translate a Europass Portfolio Package using IMS eP/LIP AP in a Europass Portfolio Package using HR-XML Candidate AP and vice-versa. This would greatly increase the interoperability of Europass CV.

The HR-XML Candidate specifications are based on several simpler schemas (CPO) which can be compared to IMS LIP main sub-elements. Therefore it should be possible to consider each of them as portfolio-parts. Using the same 'Relationships' and 'Views' sections from the IMS e-portfolio specifications with a specific external vocabulary it might be possible to build a new application profile to construct portfolio packages of Europass data using HR-XML specifications as 'PortfolioParts'. This work has already started with a first proposal for a common ePortfolio Content Package Application Profile for Europortfolio community (including also vocabulary extensions to support other IMS Lip based AP like UK Leap).

An another main interesting area is to study how to use other useful standards for ensuring data privacy especially the Liberty Alliance Web Service Framework with a proposal for a new identity service interface specifications based on the HR-XML Europass CV application profile.

Most of this work will be available online in the Europass documentation section of EIFEL and Europortfolio community portal at: <http://www.eife-l.org/publications/europass>

Building Europass CV ePortfolio Application Profiles

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