ASK-CDM-ECTS: A Tool for Facilitating Common European University Course Description towards Higher Education Integration

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Abstract

In this paper, we present ASK-CDM-ECTS, a web based authoring environment for describing higher education study programmes and courses, as well as their educational material, following an application profile of the Course Description Metadata Specification (CDM), namely, CDM-ECTS, that supports the specific requirements of the European Credit Transfer and Accumulation System (ECTS).

1. Introduction

During the past years a large number of European Union Member States have adopted the European Credit Transfer and Accumulation System (ECTS) as an accumulation credit system for their Higher Education (HE) Institutions [1].

ECTS has been developed to meet the need for a common description of European HE study programmes and courses, through (a) a commonly described information model for a certain HE educational institution and its study programmes and individual courses (that is the ECTS Information Package/Course Catalogue) and (b) a common method for allocating credits in recognition of successful competition of courses and study programmes.

To this end, an application profile of the Course Description Metadata (CDM) Specification, referred to as CDM-ECTS, has been developed to describe the particular elements of the ECTS Information Package/Course Catalogue [2]. The Course Description Metadata (CDM) Specification was initially developed in 2001 from the USIT XML Team of the University of Oslo for the Norwegian “eStandard” Project, under the Norway Opening Universities national initiative for change and innovation in Norwegian Higher Education. The main objective of CDM Specification is to provide formal descriptions for courses and their syllabus. It specifies the structure and semantics of the key concepts used in course descriptions. Both CDM and the CDM-ECTS Application Profile are also compatible with IEEE Learning Objects Metadata Standard (IEEE LOM) [3] and thus, they can be used to characterize with metadata the educational material of individual courses within different study programmes at various educational institutions.

The main advantages of this approach are [2, 4]:

- Facilitate description and exchange of information about courses.
- Facilitate standardization of courses’ descriptions
- Facilitate the establishment of national and international courses catalogues
- Facilitate the establishment of courses portals and other services helping students
- It can be used to describe all level of granularity of the university educational offer (curriculum, diploma, courses and courses’ educational material) as well as related pedagogical objectives, registration procedure, organization and contact details.
- It supports ECTS requirements
- It supports local and national specificities through specific “implementation profiles”
- It supports interoperability at system and data level

Despite the widespread adoption of ECTS and CDM, it appears that there exist no software tools that allow authoring and management of the ECTS information following CDM-ECTS application profile. Thus, in this paper, we present ASK-CDM-ECTS a web based authoring environment for describing higher education study programmes and courses, as well as, their educational material, following CDM-ECTS. The use of ASK-CDM-ECTS can facilitate HE students in searching and selecting educational institutions, study programmes and courses across
Europe, as well as to facilitate the HE administration officers and teaching staff in the process of transferring their learning achievements from one institution to another at European level.

2. ASK-CDM-ECTS: A Tool for facilitating Common European University Course Description

ASK-CDM-ECTS Tool\(^1\) is a web based tool facilitating the process of describing with ECTS compatible information, educational institutions, as well as, study programmes and courses following the CDM-ECTS application profile. ASK-CDM-ECTS Tool offers also the capability to search and retrieve ECTS-related information about all elements that have been stored using this environment.

ASK-CDM-ECTS attempts to target the following user groups:

- **Students**: who are interested to find information about (a) the educational institution that they are going to study, (b) the study programmes that a certain educational institution is offering, (c) the courses that a certain study programme contain (d) the educational material of a certain course syllabus

- **Course Lecturers**: who are interested (a) to find educational material for their courses, (b) to characterize with educational metadata their educational material, so as to make it searchable and retrievable by their colleagues or their students, (c) to find information about a certain educational institution or study programme

- **Course and Study Programme Metadata Authors**: that is, certified personnel (such as ECTS Coordinators in educational institutions), who are interested to describe courses of their study programmes following ECTS, so as to make them visible to potential students through the ASK-CDM-ECTS Environment.

The main functionalities of the ASK-CDM-ECTS tool can be summarized as follows:

- **Browse educational institutions and their study programmes**: The user of the ASK-CDM-ECTS Tool can browse the list of the available educational institutions and their study programmes and view ECTS related information about them (Figure 1).

- **Search for courses**: The user is able to search and view ECTS-related information for already stored courses of different study programmes offered by different educational institutions (Figure 2 and Figure 3).

- **Search for educational material**: the user is able to search, view and download educational material, which is used in syllabus of different courses that are stored to the tool.

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\(^1\) [http://www.ects.ask4research.info](http://www.ects.ask4research.info)
- Describe educational institutions, their study programmes and the courses they are offering following ECTS: authorized users can author information about an educational institution, its study programmes and their courses following ECTS rules (Figure 4).

![Figure 4. Describe an educational institution using ECTS information](image)

- Characterize with educational metadata educational material that is used in courses' syllabus: Course lecturers can characterize with metadata the education material that are using within their courses (Figure 5).

![Figure 5. Author Educational Metadata for Course's Educational Material](image)

- Export ECTS information of an educational institution, its study programmes and their courses to XML format following CDM Specification: The user can export ECTS-related information of an educational institution, its study programmes and their courses to XML format following the CDM-ECTS application profile, in order to inter-exchange this information with other CDM compatible systems.

- Export educational metadata of educational material to XML Format following IEEE LOM Standard: The user is able to export to XML format the metadata of the educational material that is used within a given courses following the IEEE LOM standard, in order to inter-exchange this educational material with other IEEE LOM compatible systems or other HE learning objects repositories.

3. Conclusions

In this paper we presented ASK-CDM-ECTS, a web based environment for authoring information about Higher Education institutions, their study programmes and their courses, following ECTS and exporting this information using the CDM-ECTS application profile. Despite the widespread adoption of ECTS by many European Higher Education Institutions, it appears that there exist no software tools that allow authoring and management of ECTS-related information compatible also with the CDM Specification. Nevertheless, such technological efforts are much needed to promote the wide adoption of ECTS among different European Higher Education institutions through HE web portals and federated search mechanisms. The use of ASK-CDM-ECTS can facilitate HE students in searching and selecting educational institutions, study programmes and courses across Europe, as well as to facilitate the HE administration officers and teaching staff in the process of transferring their learning achievements from one institution to another at European level.

4. References


