

# Data Driven User Requirements Specification in UNITE Project

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## **Abstract**

This paper describes the process of user requirements specification in UNITE project. The main goal of the project is to develop an integrated system for authoring and delivery of high quality eLearning activities for the secondary school students. The UNITE system consists of three main components: 1) Software Platform – integrating state of the art learning management systems (LMS), content management systems (CMS), and mobile learning (mLearning) capabilities; 2) Pedagogical Framework – suggesting how to use the platform in most effective and pedagogically consistent ways in order to achieve educational goals; 3) Learning Scenarios – build upon pedagogical framework and actively utilizing the full potential of the eLearning platform in order to provide high quality learning experience for students.

The unique needs of the UNITE project demand a specification process that is capable to capture not only traditional software related user requirements but also pedagogical and learning scenario requirements, as well. Another important aspect of this process is that it is “data driven” reflecting the real needs of the users with their cultural, technological, and organizational specifics and diversity. So the “bottom-up” approach was chosen as only capable to address all these needs. An important implication from this choice is the extended amount of processing (filtering, arrangement, categorization) needed to analyze the requirements from different perspectives (user, expert, state-of-the-art, developer) and develop a sound user requirements specification for the project.

UNITE user requirements specification methodology was proposed including the following stages:

1. *Planning and preparation of materials for the UNITE user requirements specification process* - including the development of UNITE Concept Paper, Sample Scenarios, Glossary, Interview Guidelines, questionnaires, and other support materials;
2. *Conducting interviews with focused groups of potential users of the UNITE system* - by each partner visiting local UNITE school(s);
3. *Specification of draft user requirements* - per country (by the partners conducting the interviews), according to a proposed template;
4. *Processing, analysis, and synthesis of draft user requirements* - grouping similar requirements together (generalizing them when necessary), and dividing the candidate requirements in three main categories: *Conditions and Constraints* (describing the context of the system development), *General Goals*, and *Concrete User requirements*;
5. *Elaboration of the UNITE User Requirements Specification* - by domain experts;
6. *Processing and unification of different experts proposals*;
7. *Comparing the state-of-the-art findings with the User Requirements Specification*;
8. *Further processing and elaboration of User Requirements Specification* - done by the developer partners in the project, estimating the realization efforts and technological risks associated with each requirement;
9. *Processing and unification of different experts proposals* - development of the final version of the UNITE User Requirements Specification to be used in the design and development phases of the project.