

SERVICE ORIENTED ARCHITECTURE FOR THE IMPLEMENTATION OF DISTRIBUTED REPOSITORIES OF LEARNING OBJECTS

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ABSTRACT. Nowadays there are two key factors for e-learning implementation: the reusability of learning objects and the interoperability among the learning objects repositories. A learning object must be developed according to the standards like the ones established by IMS, ADL (SCORM) or IEEE (LOM) in order to obtain its complete reusability. It is possible to ensure that it can be integrated into any e-learning platform compatible with these standards, through its packing and description by metadata means. Later, it must be published in a repository guaranteeing its automatic location for the different types of users who can be implied in an educative process. This reusability will be complete if it is possible to discover among different repositories distributed over the Internet. This work presents a service-oriented architecture, which is implemented through Web services, for the universal discovery of learning objects stored in different repositories; this will allow to locate them independently of their physical location or storage technology.

Keywords: E-learning, Standards, Learning objects, Repository, SQI

1. **Introduction.** A repository or digital storage of educative elements is a collection of resources (learning objects) accessible through a communication network. It is not necessary to have a previous knowledge about the collection containing the structure of the resources or only the metadata describing them, together with a reference to locate it [1].

The aim of a repository is to facilitate the reusability of educational resources, providing access to the stored resources from learning management systems (LMS); learning content management system (LCMS); content portals (for an instance: searching systems of digital libraries, World Wide Web searching, etc.); or any application/software developed to access to learning objects.

Digital repositories, in the broadest sense, are used to store any sort of digital material. However, digital repositories for learning objects are much more complex in terms of what to store and how to do it. The purpose of a digital learning object repository is not just to store and distribute learning objects, but to allow them to be shared by different users and, above all, to make it easier to reuse them in different training activities (Figure 1). From the users' point of view, these repositories have the advantage of having access to the content stored in them. To make this possible, the content must be gathered through