

ITRAIN: ONTOLOGY-BASED INTEGRATION OF INFORMATION AND METHODS IN COMPUTER-BASED TRAINING (CBT) AND IMMERSIVE TRAINING (IMT) FOR ASSEMBLY SIMULATIONS

ABSTRACT: Training for assembly simulations can be provided using a wide range of technologies – from a simple computer-based training (CBT) approach to a complex immersive training (IMT) approach. The CBT approach allows user interactions through traditional keyboard and mouse while the IMT approach immerses the user in a virtual environment for a more realistic experience. Typically, for a particular scenario, tools for each of these are developed completely independently. Consequently, there is much duplication of data and effort and a lack of synchronization between them.

In this paper, we focus on ontologies for the assembly simulation and training domain. Ontologies provide an opportunity to capture and manage common data and map concepts from one application to another in a logical and measured manner. Methods are developed to enable knowledge in these ontologies to be used and shared in a comprehensive and effective manner between CBT and IMT tools. Both tools are also well integrated with the Sharable Content Object Reference Model (SCORM) so that the progress during training can be recorded, tracked and evaluated by Learning Management System (LMS).