



Executive Summary

D3.1 – Identification of technologies & useful software

D3.1 gathered knowledge and references as to what technologies, algorithms and software may be reused, adapted or taken as a reference in the implementation of the modules that will be offered by the CrossCult platform to support the creation and execution of applications for all the targeted users. For each technology employed within the CrossCult project, an overview of relevant state-of-the-art and general uses is provided in D3.1, along with appropriate references. Moreover, the application of the technology in relationship with the CrossCult goals is explained, considering the requirements elicited for the four pilots in Deliverable D2.1 (*"Pilot specifications"*). Finally, each technology is accompanied by a table with software that can be used directly or indirectly in the project (considering functional requirements, non-functional ones and licenses) or simply acts as inspiration or reference for the expected outcomes of WP3.

Following the identified technologies of the CrossCult description of work, Deliverable 3.1 surveyed the state of the art and applicable software for five distinct tasks about technologies, accompanied by a sixth task on integration and testing. The topics covered by the deliverable were:

- **User modelling, recommendation and personalisation**, which surveyed ways of capturing, representing and managing information about individuals and groups, matching the information available about users, venues and context in order to deliver the most meaningful experiences and content.
- **Machine learning, semantic reasoning and crowdsourcing**, which considered the mechanisms are generally used to learn from large datasets, and evaluated which ones, would be feasible and appropriate for the data volumes and computational needs of CrossCult. The goals of this technological direction is to consolidate and enhance the CrossCult knowledge bases through the computational discovery of unknown associations between characters, events, cultural assets and venues within the same or different digital repositories.
- **Context mining and processing**, which focuses on the identification and processing of pieces of contextual information that may be used to maximise the value of the information delivered to the users. Topics along these technological directions included the use of open, structured data and geo-location.
- **Sporadic social networks and crowd management**, which surveyed ways in which software can detect and promote socialisation, group formation and communication. Especially important for CrossCult as a technological direction is the management of crowds in the venues, to avoid congestion points and ensure a good compromise between the users' expectations and the time required to see and interpret the items.

- **Visualization of associations and micro-augmentations**, which identified innovative ways of visualizing, through software, the associations among historical facts and pieces of cultural heritage.
- **Integration and alpha testing**, which looked at the tools and methodologies that may be applied to test the developed modules in controlled environments, prior to deploying the solutions in the venues and pilots of WP5.