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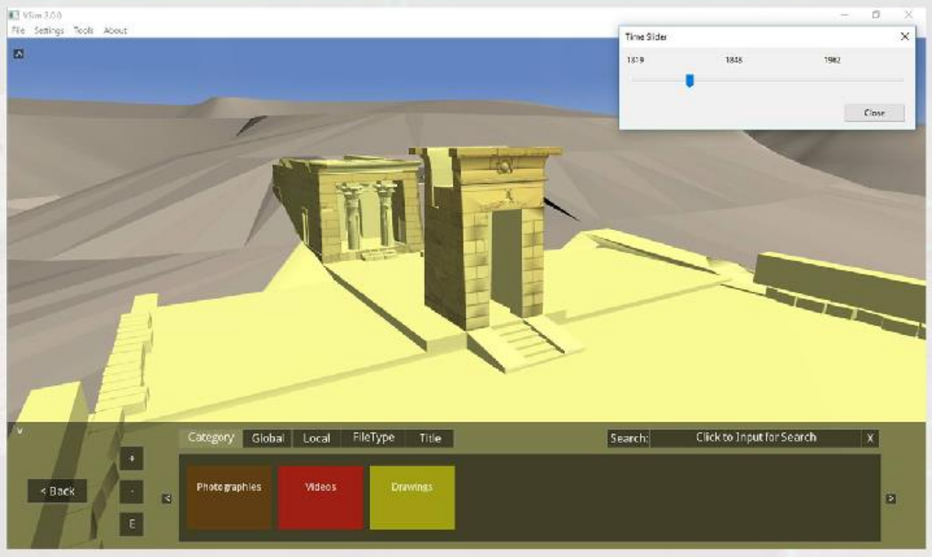
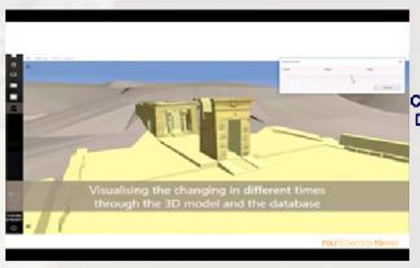
Large scale Cultural Heritage Ecosystem to create valorization strategies through a digital approach





3DVR Digital Nubia
Cultural Heritage in Context. Digital Technologies for the Humanities
POLITO_UCLA
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Digital Revolution has created new conditions for a better exploitation of Cultural Data and is pushing research projects where the sustainable development is driven by Cultural Heritage. In our research group at POLITO – by integrating competences on the Humanities together with competences on ICTs – we developed a new research approach for building a complete valorization/regeneration cycle of cultural heritage of a territory.

We're experiencing this strategy for particularly problematic large-scale CH ecosystem where the elements lost and the changes over the time disconnect inhabitants from their territory (H2020 SC5-21-2016-2017; e POLITO_UCLA, Digital Nubia, R.Tamborrino, W. Wendrich, 'Cultural heritage in context: the temples of Nubia, digital technologies and the future of conservation', Journal of the Institute of Conservation (Rouletge, UK) vol 40, 2, anniversary special issue, pp. 168-182).

We define ecosystem as a CH area including its tangible elements (e.g. buildings and other artifacts), intangible elements (including the links between tangible elements and the area) as well as the strategies for producing a sustainable development through the valorization of the CH area.

Beyond its integrity and its standing value, Cultural Heritage in fact is only ever partially preserved as its context is almost lost. This loss constitutes a lack of information that can create misunderstanding and prevents a full exploitation of cultural assets. In our project we aim to turn this lack of information into a strategy of valorisation, both by creating new knowledge perspectives, as well as by encouraging a participative and resilient CH.

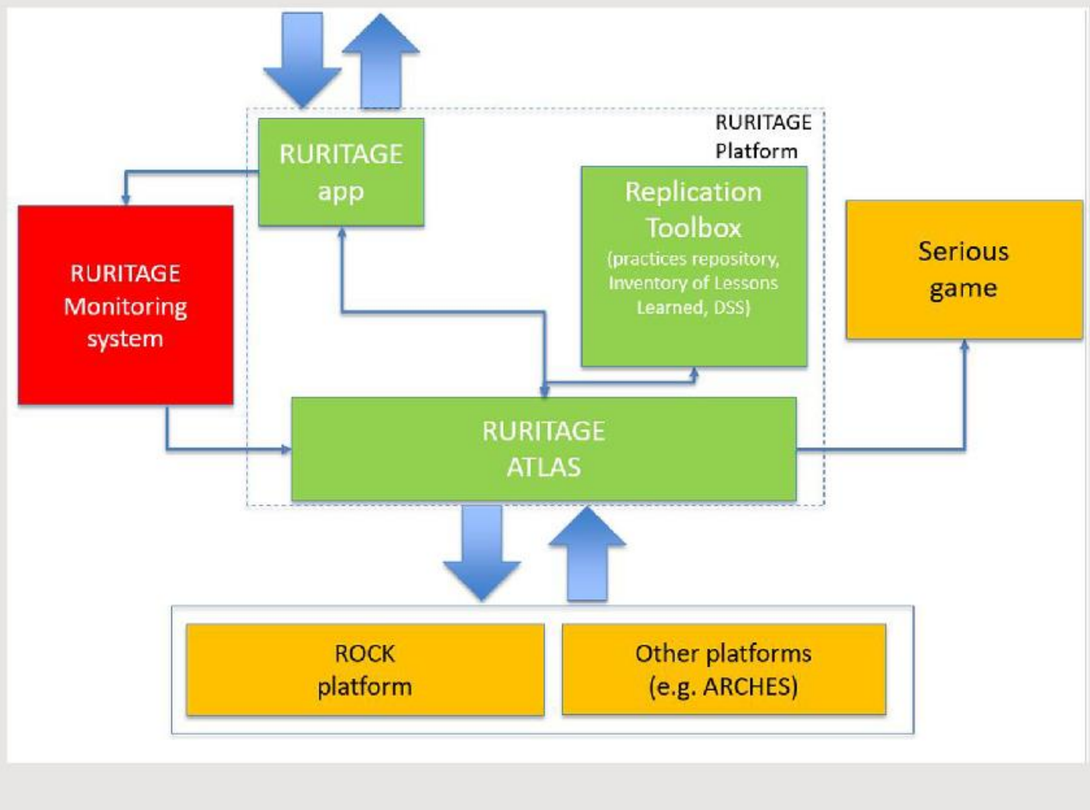
In the case of rural heritage the elements of the CH ecosystem are as complex as fable to be perceived. At the same time, the changes of land uses and pre-existing links between sites and inhabitants of the settings are essential to identify the richness of peculiarities of different rural areas.

In this context, digital systems are helpful not only to recover the lack of information but also to make these links visible, understandable and exploitable. Inhabitants can establish a new connection with the rural area in the context of the historical-cultural landscape, in the aim of recreating the "long and intimate relationship between peoples and their natural environment" (ref. UNESCO – Cultural landscapes).

In our project we link Historical and Topographical Data to CH through an ICT ecosystem platform and we use an approach that entails Digital Humanities methodologies for collecting and managing information, as well as creating narratives improving the understanding of cultural layers. The same ecosystem is available for support participation through collecting other kind of data. The total lost of Nubia temples, the moving of the Nubians from their villages to new settings, the change of the agriculture production of the area provide an extreme case study.

The project provides innovative cultural heritage products and services based on high specialised methodologies for creation, management, correlation, visualisation and interactions with the purpose of creating a cultural heritage enrichment cycle.

Inside the overall ecosystem, our research targets the development of tools and instruments for decision makers, correlating with business models and economic information.
A research challenge concerns the creation of exportable and adaptive ecosystems, where new data and new contexts can be integrated and managed with minimum effort.



H2020 "SC5-21-2016-2017" RURITAGE Cultural Heritage ECOSYSTEM

The competence of the grup are used to build a whole valorization/regeneration cycle of cultural heritage for valorization of a territory

Digital cultural heritage content
Tangible and intangible heritage correlationand representation
Digital history, narratives creation
Economic/business lines evaluation
Multicriteria analysis, decision support systems

Visualization/fruition/interaction skills
3D modelling and extraction
Digital tangible heritage representation
Digital building models
Building Information models
Augmented and virtual reality
Web-GIS and interactive maps

Web-oriented digital platforms
Software platforms for integration of heterogeneous data
Web-oriented infrastructures for data management
Context aware services-Ambient Intelligence- Smart Environments
IoT platforms-sensor data management, analysis, fusion

The group works on the various aspects of digital cultural content creation, management, correlation, visualisation and interaction, purpose of creating a cultural heritage enrichment cycle:

Extraction and organization of cultural heritage information of a given

Naratives for extraction of original, innovative cultural content matching tangible and intangible

in a heritage ecosystem platform able to capture and represent co-relations between tangible and non tangible cultural

Visualisation and interaction with the original content created