# Digital Layered Models of Architecture and Mural Paintings over Time

M. Guardia   P. Pogliani   G. Bordi   P. Charalambous
X. Pueyo   C. Andújar
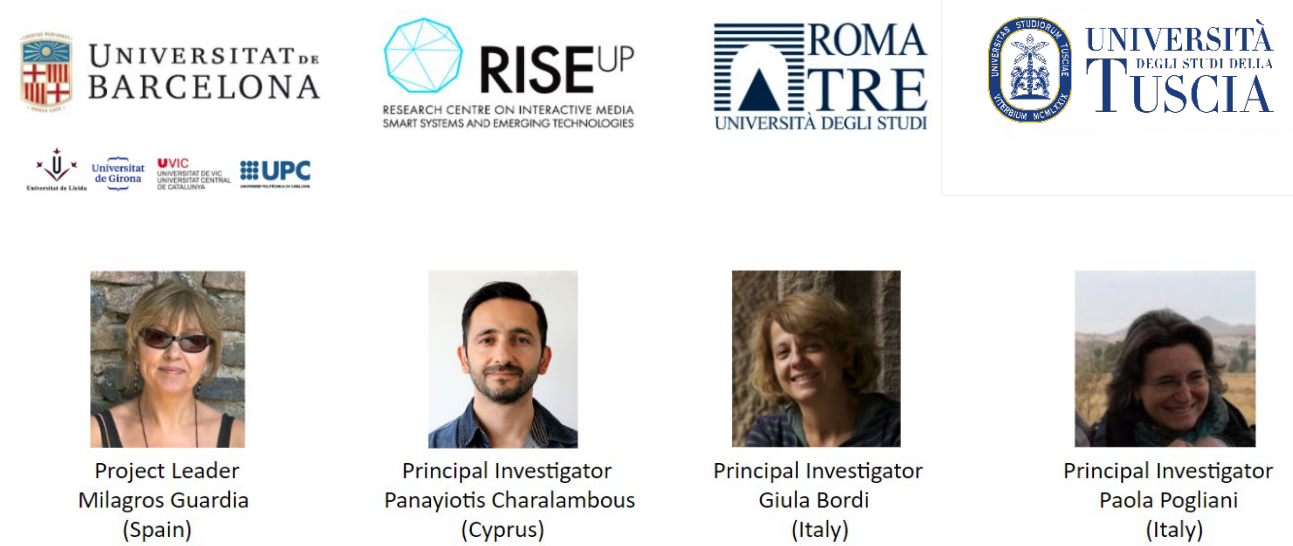
Univ. de Barcelona   Univ. degli Studi della Tuscia   Univ. degli Studi di Roma Tre   RISE   UdG   UPC

## Project goals

The project **Enhancement of Heritage Experiences: The Middle Ages. Digital Layered Models of Architecture and Mural Paintings over Time (EHEM)** aims to obtain virtual reconstructions of medieval artistic heritage - architecture with mural paintings- that are as close as possible to the original at different times, incorporating historical-artistic knowledge and the diachronic perspective of heritage, as an instrument for researchers, restorers and heritage curators and to improve the visitor's experiences.

## Consortium



Project Leader
Milagros Guardia
(Spain)

Principal Investigator
Panayiotis Charalambous
(Cyprus)

Principal Investigator
Giula Bordi
(Italy)

Principal Investigator
Paola Pogliani
(Italy)

## Project call

- The project was approved in the 2020 **JPICH call for Conservation, Protection and Use.**
- The Joint Programming Initiative on Cultural Heritage (JPICH) is one of the European Commission initiatives implementing the European Research Area (ERA).
- The main objective of JPICH is to promote the safeguarding of cultural heritage in its broader meaning including tangible, intangible and digital assets.
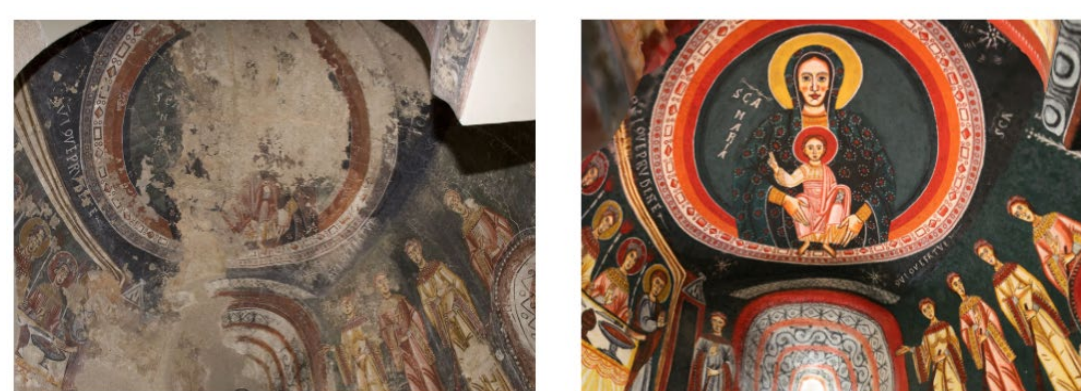
## Specific objectives

**Architecture** - Reach a real understanding of the construction of the buildings and its structural anomalies.



Source: Església de Sant Quirze de Pedret. Diputació de Barcelona.

## Specific objectives

**Paintings** - Solve chromatic problems derived from different restoration criteria and ageing processes, and digitally specify the original colouring of the paintings.
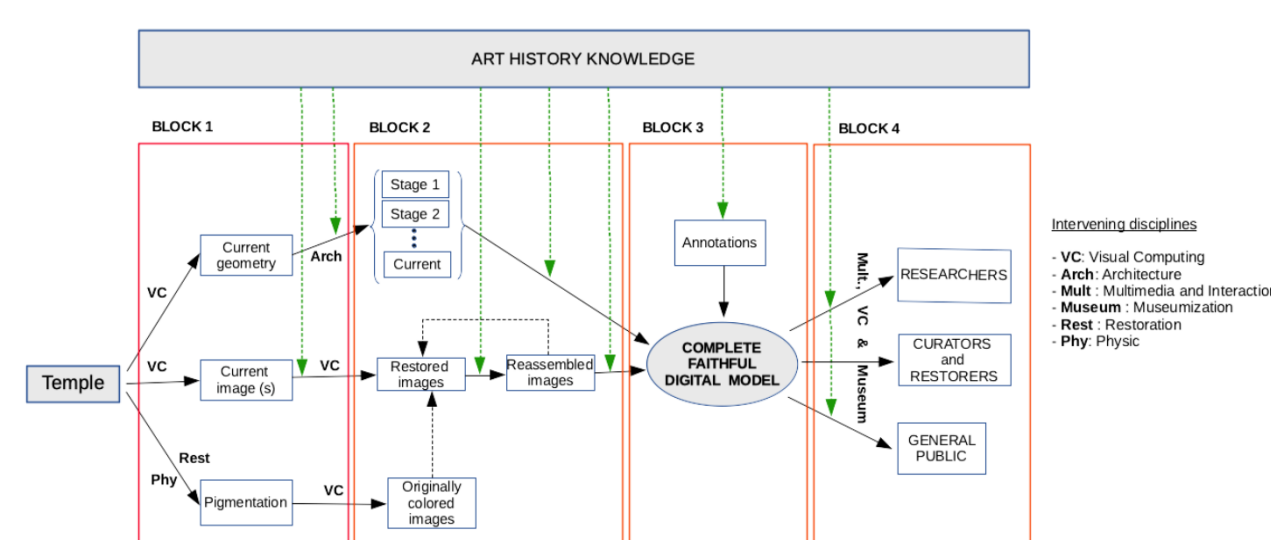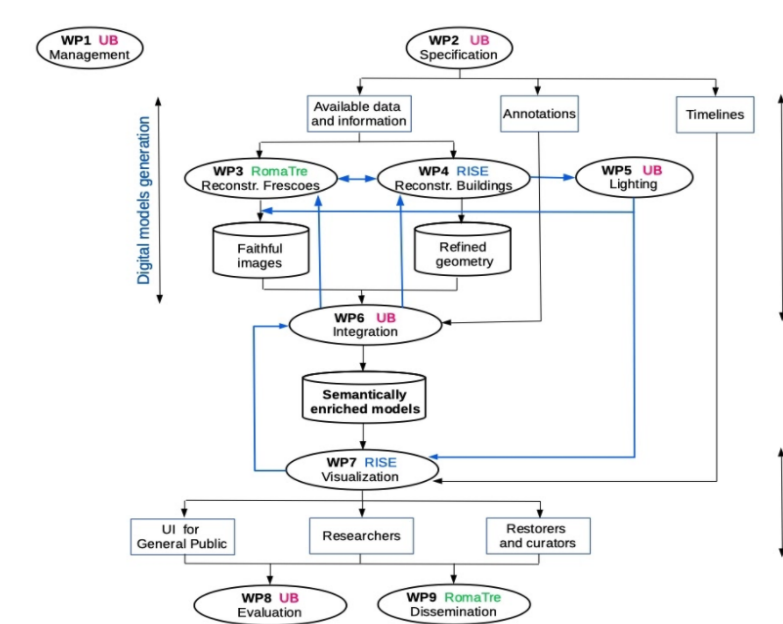


## Specific objectives

**Lighting** - Improve the analysis of natural lighting, and deal with artificial lighting by chandeliers or oil lamps.



## Methodology



## Work packages



## Keywords



## Case Studies

### Santa Maria Antiqua

The early medieval church of Santa Maria Antiqua in Rome (Italy), a mural palimpsest, consisting of up to ten layers of overlapping painted plasters, realised during a relatively short period of life, which also poses architectural challenges.





### Sant Quirze de Pedret

The hermitage of Sant Quirze de Pedret (Spain), with its complex architectural genesis from the tenth century, was decorated at two different times by superimposing a layer on the previous one. The discovery of its paintings, their removal and the transfer to two museums took place at two different moments and with different procedures.





### Agios Neophytos Monastery

The Engleistra or Place of Seclusion founded by Neophytos, whose oratory was excavated in the rock from a natural cave and was decorated, at different times during the Middle Ages, with Byzantine wall paintings. The extreme nature of the site and the irregular nature of the rocky surface constitute a fundamental challenge for their digital presentation.





Contact: milagrosguardia@ub.edu