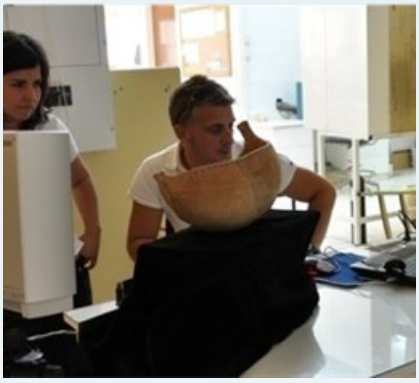
3D Scientific Visualization and Analysis

An innovative approach to Cultural Heritage Research, Conservation, Restoration and Public Dissemination



More Info

Related Projects:

EU funded:

V-MUST
FP7 - GA 270404

3DCOFORM
FP7 - GA 231809

3D-ICONS
ICT PSP - GA 297194

EMAP
CULTURE 537360

Key Partners:

- Cyprus Department of Antiquities;
- National Council of Research Italy (CNR -ISTI);
- Fraunhofer IGD;
- British Museum.

Selected Publications:

Hermon, S., 2012, Scientific Method, Chaîne Opératoire and Visualization - 3D Modelling as a Research Tool in Archaeology, in Beacham, R., Denard, H. (eds.), Paradata and Transparency in Virtual Heritage, Ashgate, London, pp. 13 – 22.

Looking at the past from a new dimension

3D scientific visualization is an efficient method of visualizing a large amount of heterogeneous data, thus enabling visual problem solving. Because it is possible to visualize concepts and ideas (translated into a quantifiable and measurable geometric language) and archaeological 'facts', visualization is an ideal means for validating hypotheses, running tests, performing predictions and simulating behavior under different circumstances and processes, over a given period. It enables the connection between the world based on our intuition, previous knowledge or imagination, and the 'world of science', that is what we observe, measure and quantify. It is also an ideal tool for analyzing virtually recreated cultural material in its presumed 'real' diachronic or chronologic context. It also allows a visual juxtaposition of the fragmentary archaeological evidence and the researcher's mental model of this reality with the reality virtually reconstructed.

In this sense, 3D scientific visualization serves as an interactive, multi-disciplinary research platform, where hypotheses regarding our reconstructed interpretation of the past may be validated. 3D modeling enables in-depth and accurate investigation of digital replicas of Cultural Heritage artifacts: surface analysis, geometry, shape and measurements.

The physical and digital infrastructure of this research group includes:

- A middle-range (0,2 m – 20 m), phase shift, hemispherical Surphaser 25HSX scanner, with 360° x 270° field of view
- Multi-Stripe Laser Triangulation Next Engine scanner for small objects
- Nikon D3X camera with a set of professional lens
- Set of professional photography equipment (tent, light sources, etc.)
- Open – source software for data processing
- 3D visualization systems

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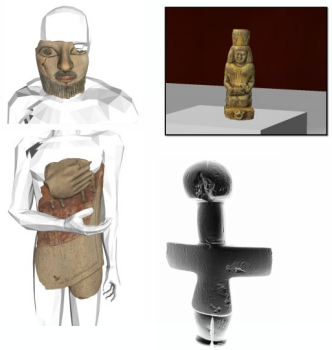

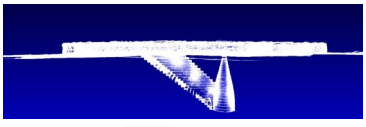

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