

MULTIMODAL INTERFACE FOR SAFE PRESENTATION OF VALUABLE OBJECTS

Exhibited Artifacts: Access and Information

Many objects of art have an exceptional value, due to their uniqueness, exceptional craftsmanship, precious materials, historical significance — or, usually, a combination of several of these factors.

Safely and effectively exhibiting such objects is always a challenge. On one hand, the museum wants to make the object as visible and accessible as possible to the public, while on the other, its access must necessarily also be restricted due to security factors and the object's fragility.

In addition, specially exhibited objects contain a wealth of information such as symbolic or historical significance, which is not always apparent to the eye. Considering the costs that are involved in transporting, displaying, safeguarding and maintaining the object, and the finite number of visitors who will view it on display, the number of people and amount of information conveyed about the object is quite small. The potential audience is much wider and the range of information that is linked to the object can be greatly expanded through the use of digital technology.

The goal of this showcase is to create a presentation methodology that provides a viable alternative to displaying valuable original objects, yet provides a way of offering nearly unrestricted "virtual" access and provides a compelling and innovative way to tell the story of the object for a general audience.



The interactive replica

Exploration through Touch The showcase is based upon a replica of the object which serves as the interface to explore the object. Through the use of an orientation sensor integrated in the replica, the object can be visualised on a computer screen in precise coordination with the angle it is held or rotated by the visitor/user. In this way, the user feels the shape and details of the object and sees the virtual representation of the object in the screen, behaving exactly the same way as the replica. By adding touch sensors to the surface of the replica in significant areas of interest, the user can explore the meaning of the object. Touching a selected feature on the surface of the replica brings up a story on the screen that explains some facet of the meaning and history of the object. For example, if the object bears an inscription, the user can learn what it means, and what message lies behind it, by simply touching the text. This tactile interface allows visitors to experience and explore the object in an exciting and innovative way — that would certainly not be possible with the original artifact.

This methodology is suitable for single visitors or families, but also for guided groups, as the visualisation of the object does not require any special equipment or glasses. As duplication of the object is easy and inexpensive, copies of the virtual object can be shown at multiple locations in one exhibition or at multiple exhibitions at the same time.



The real ivory artifact



The virtual model

Technical Specifications The application is based upon the ARCO software of the University of Sussex, and a concept developed by the Ename Center. The replica is made through stereo lithography of a 3D model of the object, obtained by laser scanning. EPFL and the Ename Center create the 3D stories with virtual reconstructions of the Ename abbey and its inhabitants. The visualisation of the object is done through the most recent 3D flat screen visualisation techniques.

Partners This showcase uses a rare carved ivory head for an abbot's ceremonial staff from the end of the eleventh or beginning of the twelfth century, displayed in the Provincial Archaeological Museum in Ename, Belgium, and is being realised by:

- ▶ The Ename Center for Public Archaeology and Heritage Presentation, Belgium
- ▶ EPFL (Polytechnical University of Lausanne), Virtual Reality Lab, Switzerland
- ▶ University of Sussex, UK



Interested?

Are you interested in this showcase? Do you think that this approach can help you in creating effective Cultural Heritage presentation projects or can be integrated in new research projects? Please contact Heidi Tency (heidi.tency@enamecenter.org) of the Ename Center at +32 55 232445.

EPOCH is a Network of Excellence on Intelligent Cultural Heritage within the IST (Information Society Technologies) section of the Sixth Framework Programme of the European Commission. EPOCH showcases demonstrate innovative solutions and technological integration for target application areas in the Cultural Heritage domain. As they are created with real world content, they stimulate creative thinking about the use of the technologies in Cultural Heritage, and are used to validate new technological approaches with key stakeholders in the Cultural Heritage domain. For more details, visit the project web site:

www.epoch-net.org

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