



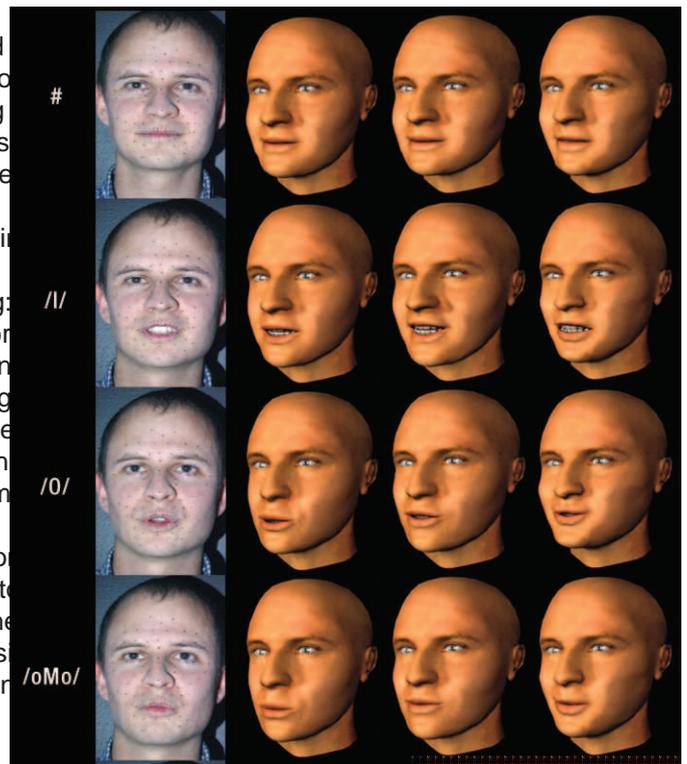
# AVATAR-BASED INTERACTIVE STORYTELLING A NEW CULTURAL HERITAGE TECHNOLOGY

**Stories About the Past** Storytelling is a familiar and effective way to convey information to a general audience, especially in the field of Cultural Heritage. Yet with the increasing use of standardized interactive applications in museums and historic sites, it is difficult to appeal to a wide range of visitor interests. This problem can be solved through the use of interactive storytelling which allows the visitor to choose from a large selection of subjects and themes to create a personalized "story", appropriate to his or her interests and the time available for the visit.

Presentation systems featuring interactive storytelling should be easy to update and maintain, without the expertise of technical specialists. Text-based interactive story telling applications, driven by a relatively simple XML or database application, allow museum and site staff to update the content by merely typing in texts.

Recorded narration is generally more effective than text in conveying information to the visitor but its use in interactive storytelling has a major drawback concerning updating: changing minor parts of the content requires major investments in time and money (studio recording session, editing, digitizing) which often results in discouraging frequent updates and jeopardizing the entire update process. By adding synthetic voice capabilities to the interactive storytelling system, this problem of updating time and expense can be effectively addressed. Text-to-voice translation software makes it possible to create narration from the keyboard. Simple software tools can be used to alter intonation or stress significant words, making the synthetic speech more lifelike. The sound files can be easily exchanged in the application and they can provide narration in several languages.

**Virtual Guide** An additional element can greatly enhance the effectiveness of an interactive storytelling system: the use of an avatar to serve as a personal guide and storyteller for each visitor. Interpretation specialists have long commented on the highly impersonal nature of the "disembodied" narrator voice. The use of an avatar (or multiple avatars) can provide a distinct point of view, attitude, and physical appearance to enhance effect of the interactively created story on the particular visitor or visitor group. And this element too can be integrated into a system that is easily updated. The site at Akrotiri, Greece — one of the most important and most well-preserved sites of the Minoan Civilization — will be



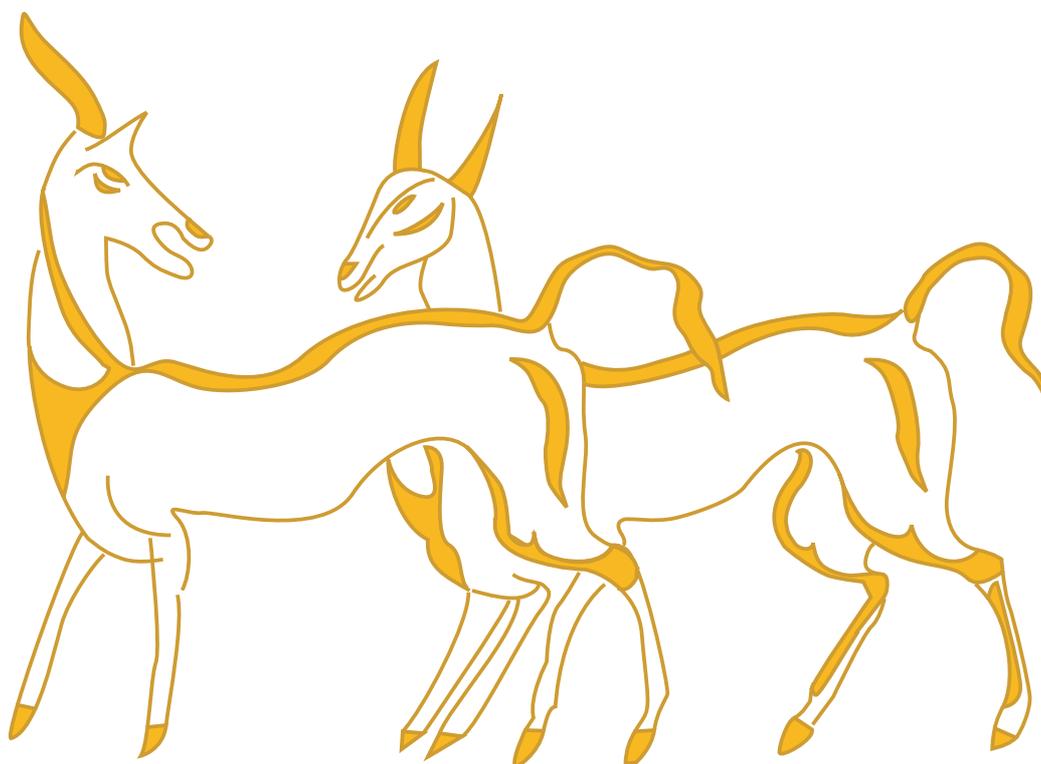
Digitalisation of a real person and his pronunciation of a set of phonemes yield a speaking avatar

reconstructions of the site—and to address (through alternative versions) still unresolved questions about the ancient inhabitants of the site—their dress, their behavior and their physical stature and appearance. Issues of alternative architectural reconstruction will also form a research priority for this showcase.

**T**echnical specifications The showcase application is based upon the iTimeScope 3 software, developed by the Ename Center and IBM, which is an Open Source XML and Java environment, build upon an Apache Tomcat server. Data entry for content specialists uses standardised forms to input texts and link images, animations and sounds. The text-to-speech software is provided by **SV**, a spin-off company of

**P**artners This showcase is being realised, with the support of the Archaeological Society at Athens and Professor Christos Doumas, director of the excavations at Akrotiri, by:

- The Ename Center for Public Archaeology and Heritage Presentation, Belgium
- ETH Zürich, Computer Vision Laboratory Switzerland
- MIRALab, University of Geneva, Switzerland



**è** 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 Science and 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:

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