



## Research intelligence - Far away, so close

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By Paul Jump

**Ongoing research can now be shared face-to-face in full digital detail across the globe. Paul Jump reports**

Roman slaves may have lived a dog's life, but surely few can have suffered being mistaken for an ox. This, however, was the posthumous fate that befell Carus of Frisia.

In the early years of the 20th century, the remains of a Roman tablet were found near the village of Tolsum in the Netherlands. The original translation, published in 1917, had it that the tablet was the contract for the sale of an ox. "But it mostly didn't make sense and even the original editor said he thought he hadn't read it all correctly," said Alan Bowman, director of the Centre for the Study of Ancient Documents (CSAD) at the University of Oxford.

The solution, years later, was to combine Professor Bowman's existing eSAD project, which uses sophisticated medical imaging to help decipher damaged or illegible documents, with a bespoke "virtual research environment" (VRE) developed by the Joint Information Systems Committee, the UK academy's IT development body, to allow researchers from across the world to work on the images.

"Effectively, the VRE is Skype, but on it you can have face-to-face conversations, point to images of the object and manipulate and annotate it as you go along," Professor Bowman explained. It also provides online access to dictionaries and reference books, and allows searches for information across differently distributed data sets, images and texts.

"It is like having a seminar but with someone several hundred miles away," he said.

In the case of the Roman tablet, Professor Bowman scanned it in Tolsum and collaborated with a Dutch researcher to interpret the text. They concluded that the contract was nothing to do with an ox, but was a legal notice for the repayment of a loan made by a slave, Carus.

"The content is not earth-shattering, but the intriguing thing is that it was found in Frisia, which was still only on the fringes of imperial control in AD29," Professor Bowman said. "It was surprising to find such a relatively sophisticated document there from that time: it would be like finding it north of Hadrian's Wall."

Frederique van Till, programme manager for VREs at Jisc, defined them as any bespoke digital application that helps researchers work collaboratively either within or across disciplinary boundaries. VREs have been funded by Jisc since 2004, but initial attempts to develop an all-purpose environment were soon abandoned in favour of projects relevant to different disciplines.

These schemes include the Virtual Environments for Research in Archaeology (Vera) system, which records when and where archaeological artefacts are dug up and allows remote experts to become involved at the dig phase, improving the accuracy of the data and speeding up its publication. Another is the Facebook-style myExperiment site, which allows researchers from different disciplines to exchange workflows and profiles.

"It allows them to learn new methods and even take their work into avenues that they would otherwise never have found," Ms van Till said.

### **Scratching an itch**

Jisc is funding a further 23 VRE projects. Some are generic, such as a project to allow cancer-imaging researchers and clinicians to share information, and another to integrate existing VREs. Others, known as "rapid innovation projects", offer researchers the chance to ask Jisc to help them "scratch an itch".

Examples of these include a system to enable academics to upload their papers automatically to institutional repositories, and another to organise information relevant to humanities researchers. A second round of such projects will be launched in the autumn.

Ms van Till's role is to disseminate the lessons learned from such projects. She said that viewing and annotation tools such as that used for the Tolsum tablet will be relevant to a broad range of humanities scholars. Professor Bowman himself is preparing to use the VRE to collaborate with researchers around the world on interpreting more than 150 objects he has scanned from the British Museum's collections.

Ms van Till said she hoped higher education institutions would allow their IT departments to work freely on developing new VREs - although she conceded that not every university was prepared to commit the necessary resources.

Her high-minded aim is "to show researchers we are all here for the same common goal: to improve the world" - and she is confident of success. She predicted that digital information-sharing will soon become so ingrained in research that the term "VRE" will become obsolete.

"We don't say: 'I am going to do some internetting,' because it has become so normal," she said. "Soon we will just call it 'collaboration'."

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