



# THE WHITE ROSE GRID

## e-Science Centre of Excellence

## Digital Curation and Long Term Digital Preservation at The University of Leeds

“Leeds has hosted a number of projects funded by the Joint Information Systems Committee (JISC)”

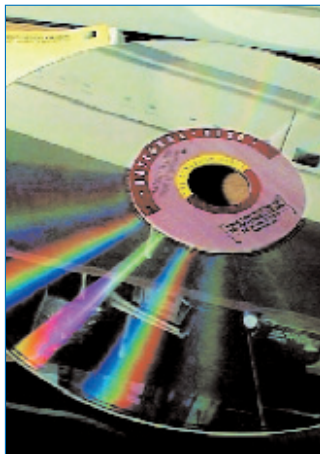


Figure 1: Doomsday video disc - picture produced by Leeds University Media Services

The University of Leeds has played a major role in the development of techniques for the preservation of digital materials in the long term. Leeds has hosted a number of projects funded by the Joint Information Systems Committee (JISC) including the Curl Exemplars in Digital ArchiveS (CEDARS) Project in 1997. Led by Leeds, CEDARS worked jointly with the Universities of Cambridge and Oxford. Leeds has continued to build on the experiences of CEDARS, developing a world class digital preservation team. In 1999, Leeds hosted the UK component of the CAMiLEON Project (Creative Archiving at Michigan and Leeds Emulating the Old on the New). This time, working with the University of Michigan on a project funded jointly by JISC and the National Science Foundation, CAMiLEON focused on the research and development of new digital preservation strategies, in particular emulation.

The CEDARS project addressed a number of issues facing those wishing to preserve digital data. Collection

management, intellectual property rights, cost models and all important technical solutions were explored. CEDARS developed a demonstrator archive illustrating how a digital repository could tackle the complex preservation issues of maintaining the ability to interpret and understand digital data over time. Embracing the OAIS (Open Archival Information System) model, CEDARS developed techniques for recording *Representation Information* necessary to render digital objects long after their original computer environments had become obsolete.

It is clear that the technique of software emulation was considered in a somewhat sceptical light at the time of the conception of the CAMiLEON project in 1999. While it was accepted that migration could be used to keep simple digital objects current, there were no practical solutions to the preservation of complex digital objects like computer software. Digital objects exist in thousands of different formats, many including interactive or



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executable elements. Rendering these objects, when the computer systems they are reliant upon disappear, is a massive problem. CAMiLEON tackled these issues head on, making a great deal of progress in identifying and addressing the practical problems facing digital repositories attempting to provide long-term digital preservation. Although these problems are technically solvable where money is no object, they are far from conquerable using existing techniques on a realistic budget.

CAMiLEON successfully researched, developed, implemented and tested new technical strategies for the economical preservation of digital materials. These individual preservation techniques fit into a broader strategy for the central development and maintenance of preservation tools for their use by many repositories. This overall strategy eliminates the wasteful redundancy of traditional preservation techniques, making real long-term digital preservation viable for the first time.

The project has developed a strategy for the implementation and maintenance over time of emulation systems for rendering digital objects. This strategy was practically tested with work on emulation of the 1970s George 3 system and the 1980s BBC Domesday Project, considered by

many as the classic example of software and data obsolescence.

CAMiLEON also devised a new and more efficient form of data migration. *Migration on Request* allows a more accurate and cost effective preservation strategy that can effectively work alongside emulation, offering an alternative form of rendering for the user.

The project developed techniques for Software Longevity which provide a framework within which software can be developed and then maintained economically over time in a process of software migration from platform to platform and language to language.

Leeds continues to play a major role in the digital curation field. It recently hosted the JISC funded Representation and Rendering Project, and continues to advise many institutions from around the world in digital preservation practice, including the British Library, the National Archives, the Massachusetts Institute of Technology and the Australian Ministry of Defence.

**Further Information:**

Contact:  
Mr Paul Wheatley,  
CAMiLEON Project,  
University of Leeds,  
email: p.r.wheatley@leeds.ac.uk  
The project's web page is at:  
<http://www.leeds.ac.uk/camileon>

