

DIGITAL HERITAGE AND CULTURAL CONTENT
TOWARDS A EUROPEAN CULTURAL INFORMATION LANDSCAPE

Claude POLIART
Project Officer
European Commission
DG Information Society Unit D2
Mail: EUFO 1150
Rue Alcide de Gasperi
L-2920 Luxembourg

Office: Euroforum Building
10, rue Robert Stumper
L-2557 Luxembourg
Tel.: +352 4301 34226
Fax: +352 4301 33530
e-mail: Claude .poliart@cec.eu.int

Introduction to the 5th Framework Programme

The European Commission's 5th Framework Programme for Research and Technological Development, 1998-2002¹ is divided into five thematic and three horizontal programmes. The Information Society Technologies (IST) programme² is the largest of the thematic research and development programmes with a global budget of 3600 million Euro.

The main focus of the IST programme (1999 work programme) is on enhancing the user-friendliness of the information society: improving the accessibility, relevance and quality of public-services especially for the disabled and elderly; empowering citizens as employees, entrepreneurs and customer; facilitating creativity and access to learning; helping to develop a multi-lingual and multi-cultural information society; ensuring universally available access and the intuitiveness of next-generation interfaces; and encouraging design-for-all.

Multimedia content finds a central role in the IST programme. The objective here is to confirm Europe as a leading force in this field and enable it to realise the potential of its creativity and culture.

The Information Society Technologies Programme

The IST Programme brings together and extends the ACTS³, Esprit⁴ and Telematics Applications⁵ programmes to provide a single and integrated programme that reflects the convergence of information processing, communications and media technologies. The 1999 IST work programme is mainly composed of action lines dedicated to four IST Key Actions, complementing each other in their overall objective to enhance the user-friendliness of the Information Society. The four Key Actions and their budgets for the 5-year programme are:

Key Action	Title	Budget (M euro)
I.	Systems and services for the citizen	646
II	New methods of work and electronic commerce	547
III.	Multimedia content and tools	564
IV	Essential technologies and infrastructures	1363

In this context the focus of this paper is on cultural heritage in Key Action III.⁶

¹ Detailed information to be found on:

'Cordis', the Community Research and Development Information Service at <http://www.cordis.lu/>

'Europa', the European Union's server at <http://europa.eu.int/index-en.htm>,

'ISPO', the EC Information Society Promotion Office at <http://www.ispo.cec.be/>

² by Decision No 182/1999/EC of the European Parliament and of the Council of 22 December 1998, a specific programme on a user-friendly information society was adopted by Council Decision No 99/168/EC of 25 January 1999 (Official Journal L 64, 12/03/1999 p. 20 - 39)

³ see <http://www.infowin.org/ACTS/>

⁴ see <http://www.cordis.lu/esprit/home.html>

⁵ see <http://www.cordis.lu/telematics/home.html>

⁶ see <http://www.echo.lu/ist/ka3/>

Key Action III – Multimedia Content and Tools

This Key Action aims to improve the functionality, usability and acceptability of future information products and services, to enable linguistic and cultural diversity and contribute to the valorisation and exploitation of Europe's cultural patrimony, to stimulate creativity, and to enhance education and training systems for lifelong learning. Work covers new models, methods, technologies and systems for creating, processing, managing, networking, accessing and exploiting digital content, including audio-visual content. This Action Line integrates both applications-oriented research, focusing on publishing, audio-visual, culture, education and training and generic research in language and content technologies for all applications areas.

Digital heritage and cultural content is one of the five main areas for research and technological development and the aim is to expand the contribution of libraries, museums and archives to the emerging culture economy, and thus encompasses all aspects of economic, scientific and technological development. It is co-ordinated by the European Commission's Cultural Heritage Applications unit, DG XIII-E2⁷, in Luxembourg.

From 4th to 5th Framework Programme

Building on and bringing together and extending the activities under the former ACTS, ESPRIT and Telematics Applications programmes (all part of the 4th Framework Programme, 1994 -1998), the main objective of Key Action III is to improve information products and services in support of linguistic and cultural diversity and to enhance education and training systems for lifelong learning. Work in the area of cultural heritage will build on achievements under the Fourth Framework Programme addressing libraries, museums and related institutions⁸ and will attempt to encourage convergence in technical approaches and applications for the various cultural institutions and networked services.

A few successful examples of projects funded under the 4th Framework Programme are the AQUARELLE⁹ and CHILLIAS¹⁰ projects (both supported under the Telematics Applications Programme) and DELOS¹¹ (funded under ESPRIT). AQUARELLE, is an application designed to allow users to search a variety of cultural heritage databases on its international network via their own personal computers. CHILLIAS created a multimedia virtual simulation of a children's library on the WWW/Internet. The DELOS Working Group is part of the ERCIM Digital Library Initiative¹². Its objective is to promote research into the further development of digital library technologies, in particular to stimulate research activities in areas which are relevant for the efficient and cost-effective development of digital library systems, encourage collaboration between research teams working in the field of digital libraries, and establish links with on-going projects and activities in the field of digital libraries in industry and other public and private institutions.

A View of the Future

What is emerging as a focus for the future is to help create a European cultural information landscape by encouraging cultural memory organisations to participate in R&D actions providing innovative prototype networked services for both professional users and citizens. This future information landscape should be easy to identify, easy to access, and easy to navigate and should be extended to also encompass Europe's scientific and industrial heritage.

⁷ see <http://www.echo.lu/digicult/home.html>

⁸ see Background and discussion documents for archives, libraries and museums at <http://www.echo.lu/digicult/en/backgr/brainsto.html> and Contribution to discussions on RTD priorities for libraries, archives and museums at <http://www.echo.lu/digicult/en/backgr/libbrain.html>

⁹ see <http://aqua.inria.fr/>

¹⁰ see http://chilias.isegi.unl.pt/chilias_int/descript.htm#project

¹¹ see <http://www.iei.pi.cnr.it/DELOS/>

¹² see <http://www.ercim.org/>

Equally tomorrow's cultural content will be produced by generating new forms of digital media. What this cultural content will be, and how it will be created, managed, distributed and preserved remains uncertain and a fertile ground for future research and experimentation.

The key participants in future cultural heritage projects must be Europe's memory institutions, both public and private, with a particular focus on new alliances with technical and content-related partners.

Research Priorities¹³

In translating this embryonic vision of the future three research priorities have been identified, namely:

- Ensuring integrated access to collections and materials held in libraries, museums and archives
- Improving the operational efficiency of large-scale content holdings by means of powerful interfacing and management techniques
- Preserving and accessing multimedia content of various types, including electronic materials and surrogates of physical objects.

The Annual Work Programmes

The IST programme is a flexible framework where focus is built within distinctive annual work plans. For the 1999 work plan¹⁴, the research priorities are taken up in two main action lines:

Key Action III, Action Line 2.3, Access to scientific and cultural heritage - call for proposals was launched on 19 March 1999, closed on 16 June 1999

Key Action III, Action Line 2.4, Digital preservation of cultural heritage - call for proposals scheduled for 15 September 1999.

Action Line III.2.3 Access to scientific and cultural heritage

Objective: To improve access by citizens and by professionals to Europe's fast-growing science and culture knowledge base, through developing advanced systems and services supporting large-scale distributed, multi-disciplinary collections of cultural and scientific multi-media resources. The technological focus is on rich representations, powerful immersive features such as 3-D visualisation, real-time virtual object manipulation and group interactivity, whether for multimedia retrieval, virtual galleries, mass media events or audio-visual distribution. Work is expected to develop new mixed-economy models for exploitation, repackaging and re-use. Work should also address interoperable access to distributed resources, whether through cross-domain resource discovery, interfaces or new architectures and standards, or whether through digital archives integrating library and museum objects.

The focus of this Action Line concentrates on the development of technologies that will lead to what can be called in the broadest sense 'next generation Digital Libraries applications'. Generic models and techniques that facilitate access to distributed resources utilising standardised and automatically generated indexes, categories, making use of metadata and metadata generators and tools have already been identified as key research topics. On the content side the need for and development of new tools and advanced techniques to build virtual representations of collections found in large numbers of European cultural repositories is clearly emerging as a key issue. The overall trend is towards a wide range of networked services providing a new level of seamless and transparent access capability.

¹³ see background material/publications on metadata, digitalisation and preservation issues at <http://www.echo.lu/digicult/en/study.html>

¹⁴ see <http://www.cordis.lu/ist/wp.htm> (to download 1999 work programme)

Key issues in the projects launched at the first call¹⁵ are:

- interoperability, exchangeability, meta-data and common data models
- common and easy interfacing,
- multimedia data (with special attention to the visual content) search, retrieval and navigation on distributed sources,
- extended use and development of for instance XML/RDF, SGML and Z39.50 protocols and
- domain specific business and exploitation models.

Action Line III.2.4 Digital preservation of cultural heritage

Objective: To address new ways of representing, analysing, manipulating and managing different kinds of digital cultural objects from different media sources, with special attention given to surrogates of fragile physical objects. The work should focus on the sustainable development of valuable digital repositories in Europe's libraries, museums and archives. It should address the technical and organisational problems surrounding the viability of scaleable digital repositories, e.g. through test-bed creation for: long-term preservation and content management in distributed heterogeneous collections (e.g. provenance, authenticity, identification and links). Particular attention should be paid to long-term accessibility, both by citizens and for scientific analysis, and to quality, affordability and acceptability.

The foreseen developments here are expected to follow on the work launched under Action Line III.2.3, and thus contribute to the further development of the digital libraries concept and the virtual representations experiments. The key issues are on:

- strategies for long term development and maintenance of repositories and archives of valuable digital objects,
- preservation of content and context for both digitised collections of physical objects and digitally born ones,
- solutions that are scalable in both technical and organisational terms,
- cost effective quality services for all types of users and
- long term sustainable solutions for managing and preserving distributed digital collections.

For more information and details on contacts, have a look at the DigiCult web site at

<http://www.echo.lu/digicult/home.html>

¹⁵ see <http://www.echo.lu/digicult/en/fp5/mrchcall.html>