

The following tables were edited by Dr Bernard Smith, DG Information Society of the European Commission - and are introduced and illustrated in Dr Smith's paper (*European Policies and the Preservation of Digital Cultural Heritage*, p.85).

TABLE I
MAJOR EUROPEAN UNION COUNCIL RESOLUTIONS IN THE CULTURAL DOMAIN (FROM 2000)

<p>OJ C 193/1 of 11.7.2000 on the Conservation and Enhancement of European Cinema Heritage. Calls for co-operation on restoration and conservation (using digital technology), the exchange of good practice (European guidelines are mentioned), and the networking of European archival databases (possibly for education and scientific purposes).</p>
<p>OJ C 73/6 of 6.3.2001 on Architectural Quality in Urban and Rural Environments. In addition to stressing the cultural and social importance of architecture, the resolution noted the importance of research in the fields of architectural heritage and the built, spatial and social environment.</p>
<p>OJ C 32/1 of 5.2.2002 on Culture and the Knowledge Society. Calls for digitisation and work on interoperability, multilingualism, training, and the exchange of good practices. The need to encourage "quality initiatives" is explicitly mentioned, as is the need to ensure that citizens can access cultural information by the most advanced technological means possible.</p>
<p>OJ C 32/2 of 5.2.2002 on the Role of Culture in the Development of the European Union. Stresses the need to develop cultural cooperation, European artistic creativity and cultural exchanges, and with a view to assessing the Articles on Culture in the present Treaty.</p>
<p>OJ C 162/4 of 6.7.2002 on Preserving Tomorrow's Memory - preserving digital content for future generations. Calls for co-operation between Member States, support for custodial organisations, and the examination of new "organisational structures and technical standards needed to support stable and compatible networks of trusted preservation repositories". In addition the needs for more research, technology trials and experimental large-scale applications was explicitly mentioned.</p>

<p>OJ C 13/5 of 18.1.2003 on European Cooperation in the Field of Culture: European added value and mobility of persons and circulation of works in the cultural sector. Calls on a series of actions, and in particular those that address, reach and benefit the European citizen.</p>
<p>OJ C 39/5 of 18.2.2003 on “eAccessibility” - improving the access of people with disabilities to the knowledge-based society. Calls for a major package of accessibility related actions, including the development of new technologies for delivering eAccessibility, a portal on the issues, the development of standards and the use of WAI guidelines, and educative and informative measures. Persuasive instruments and/or legislative measures, including an “eAccessibility mark” and the harmonisation of Member State accessibility criteria, are also mentioned.</p>
<p>OJ C 113/2 of 13.5.2003 on Archives in the Member States. Calls for concrete action on prevention of physical damage to archives and collaboration on authenticity, long-term preservation and availability of electronic documents and archives.</p>
<p>11332/03 AUDIO 13 dated 16 July 2003 on the Deposit of Cinematographic Works. Draft Council Resolution looking to put into place efficient deposit systems (or other equally effective measures) for audio-visual heritage. It also stresses that the works should be available for educational or research use on a non-commercial basis, whilst respecting intellectual property rights. The exchange of good practices is the third point.</p>
<p>11590/03 CULT 44 dated 24 July 2003 on Museums (title under discussion). Draft Council Resolution on co-operation between museums, calls for co-ordination in research and training, in the protection of heritage, on documentation, inventory and digitisation of collections, and on the conservation of collections.</p>

TABLE II
USEFUL EUROPEAN DOCUMENTS (POST 2000) AND
WEB SITES CONCERNING CULTURAL HERITAGE

Draft Report on Cultural Industries of the European Parliament (2002/2127(INI)) of the 4 June 2003 (www.europarl.eu.int/meetdocs/committees/cult/cult20030707/499292en.pdf), prepared by Myrsini Zorba. The latest draft calls for a map of European cultural industries and a European Commission Green Paper on the topic. The issue of the inadequacy of cultural statistic in Europe is mentioned several times. The report also calls for an increased research capability in the area of culture, and a stronger link between culture, education and training.

Communication on Certain Legal Aspects Relating to Cinematographic and other Audiovisual Works COM(2001) 534 final of 26.09.2001 ([www.europarl.eu.int/meetdocs/committees/cult/20020417/com\(01\)0534_en.pdf](http://www.europarl.eu.int/meetdocs/committees/cult/20020417/com(01)0534_en.pdf)). And draft report on the same subject prepared by Luckas Vander Taelen (2002/2035(COS)) of the 2nd of April 2003 (www.europarl.eu.int/meetdocs/committees/cult/20020603/462575en.pdf). The Communication notes the consensus on the need to preserve and safeguard Europe's audiovisual heritage. The issues of legal deposit, the creation of a registration scheme, and right-holders databases are discussed. The latest draft report stresses the need for compulsory legal deposit and a set of basic procedures to protect audiovisual heritage. In addition it calls for a co-financing measure to digitise audiovisual archives.

Cultural Policies in the EU Member States is a European Parliament report from 2001 (doc. EDUC 107A EN), available on www.europarl.eu.int/estudies by selecting "education and culture". The report collected information from Member States, and offered suggestions on European culture and art in the 21st century. The first part of the report presents, for each EU Member State, the principles, decision-making approach, funding models, fiscal policies, the role of the private sector, and the support for creativity. The second part offers opinions for the future from selected artists.

Cultural Industries and Employment in the Countries of the EU is a European Parliament study from 1999 (doc. PE 167.889) available on www.europarl.eu.int/estudies and select "education

and culture". The report suggests that public authorities create jobs and strengthen community building through the exploitation of Europe's cultural wealth. It proposes a revival and redefinition of cultural tourism as a basis for innovative measures linked to new technologies and the media. It notes that public authorities do not exploit their local culture, and that equally un-integrated cultural tourism could damage a region's socio-economic balance. The initial focus should be interactive cultural activities on "high culture" tourist sites, e.g. archaeology sites, monuments, etc...

DigiCult (www.cordis.lu/ist/ka3/digicult/home.html) is the site describing all the activities of the culture unit in the Information Society Technologies programme. It provides information on all the projects funded, as well as on eEurope digitisation, etc.. The eCulture newsletter archive is also on the same site (www.cordis.lu/ist/ka3/digicult/newsletter.htm#newsletter).

With the introduction of the new 6th Framework Programme you can expect the site to go through a major face-lift and reorganisation in the coming months.

Culture in the European Union (europa.eu.int/comm/culture/eac/index_en.html) is the central policy site for cultural issues in the EU. It covers the work of the programme Culture2000, the cultural capitals of Europe and general support issues for cultural organisations. It houses the Culture2000 newsletter and the culture portal.

City of Tomorrow and Cultural Heritage (www.cordis.lu/eesd/ka4/home.html) covers physical protection and conservation issues funded under the previous Fifth R&D Framework Programme. It lists 34 projects on topics such as combating decay and corrosion, restoration of stone, laser cleaning, paper restoration, and microclimate monitoring.

Fact Sheets (www.europarl.eu.int/factsheets) offer EU policy descriptions for R&D, tourism, culture, the audiovisual industry, telecommunications.

Council of Europe has a rich Web site dedicated to cultural co-operation, which covers policies, assistance and development programmes, etc. (www.coe.int/t/e/Culture%5Fco-operation/). One interesting link is to a compendium of cultural policies in Europe (www.culturalpolicies.net). A series of studies are also presented on issues such as digital culture, on the educational and cultural potential of new information technologies, and public access and freedom of expression. Concerning cultural heritage, mention is

made of the EU-funded HEREIN project (www.european-heritage.net) that focused on built heritage, including the digitisation of cultural property.

Mention is made elsewhere of a Draft European Convention of the Council of Europe that will call for compulsory legal deposit of “moving image material forming part of its audio-visual heritage and having been produced or co-produced in the territory of the Party concerned”.

TABLE III STATUS OF DIGITISATION IN EUROPE (2003)

The below table contains a personal extraction of the most salient points taken from the 2003 progress report on digitisation in Europe (www.minervaeurope.org/publications/globalreport.htm), updated with information from the National Representative Group (NRG) meeting held in Corfu, Greece (www.minervaeurope.org/structure/nrg/documents/corfu.pdf).

The NRG (<http://www.minervaeurope.org/structure/nrg.htm>) can be contacted to obtain further information on policy developments in their respective countries.

Austria - In the past no formally established coordination network existed for digitisation in Austria, however there is now a national coordination platform with a focus on digitisation, research, and ebusiness. A new eCulture Austria site (www.efit.at/eculture) now exists. There is no national inventory of existing or on-going digitisation, however there are centres of competence and good practices, e.g. the National Library, and in the major universities.

Belgium - Belgium is characterised by the fact that the different Communities (Flemish, French, German and Federal) have specific competences in the cultural domain. No large-scale national digitisation programme exists, however the different Communities support several large digitisation projects. The Flemish Community collects and lists the complete range of museums, archives and cultural heritage in Flanders (www.museumsite.be and www.okvweb.org), and is developing a culture and tourism site (www.culturenet.be not operational) and a portal for exhibitions and museums (www.erfgoedweekend.be). They have also opened a site on policy and practice on digitisation (www.vlaanderen.be/cultuur/digitaal) and have completed a study on the relationship

between education and museums. The French Community has performed a study on inventory building, has digitised numerous collections (www.cfwb.be), and is building a Walloon museum portal. A digitisation study was completed for Federal Scientific Institutions and the Royal Film Archives, and a funding plan is being considered for the 10 sites of “priceless indivisible heritage”, e.g. State Archives, Royal Library, Royal Museums of Fine Arts, Film Archives, etc.. There is a “Belgian Art Links and Tools” site (balat.kikirpa.be/web/index-fr.html), and five new federal digitisation projects are being launched, ranging from the ethnomusicological sound archives of the Royal Museum of Central Africa through to Belgian penal statistics. A Federal portal on digital heritage is planned for September 2003. The Belgian Presidency sponsored the Council Resolution on “Culture and the Knowledge Society” (OJ C 32/1 of 5.2.2002).

Denmark - The primary culture portal is Culturenet Denmark (www.kulturnet.dk). The Ministry of culture has made digitisation and digital content creation one of its priorities, and a national digitisation strategy is being prepared. Culturenet Denmark lists all existing and on-going digitisation projects and the Danish Cultural Heritage Agency (www.kuas.dk) has become a competence centre for digitisation. All the different State institutions, Libraries, Film Institute, public broadcasters, etc., are active in digitisation, and the Danish Library Agency has recently commissioned a report on digitisation policy for research libraries. New digitisation resources are now being allocated from the 3G licence sales. A national policy for preservation of digital memory has been presented and debated in Parliament, and the report is available in Danish from Ms. Ea Gallt Sørensen (egs@kum.dk). A research report on the topic of digital preservation was recently completed. It is agreed that the Copyright Act will be changed and that resources will be provided to cultural institutions for primary digital preservation. During the recent Danish Presidency an expert meeting was held on the topic of long-term digital preservation (www.kum.dk/sw5047.asp).

Finland - There now exists a set of national and regional policies on digitisation (www.minedu.fi/minedu/fidigi/nationalpages-1-fin.html). No up-to-date list of digitisation projects exists, however a central data management centre has been established to provide future coordination. The aim is to create a “Finnish Museums Online”. A tradition of institutional cooperation does exist

in Finland as can be seen through projects such as Muisti (www.lib.helsinki.fi/memory/etusivue.html) and the National Arts Register (at www.fng.fi). Recently it was stated that a new copyright law will be discussed which would enable broader digitisation without copyright fees.

France - In 1996 France launched a national digitisation programme (€2.6 million funding for 2003). This complements the activities of the national institutions (Le Louvre, the National Library, the National Institute for Audiovisual Archives, and the work of the Ministry of Research in opening a portal to humanities reviews, e.g. “La revue de l’art”, etc.). Substantial results have been obtained with more than 2 million images and 2,000 hours of sound recordings digitised and made available in large collections such as Joconde (www.culture.fr/documentation/ccmf/pres.htm) and Mémoire (www.culture.fr/documentation/memoire/pres.htm). The national directory of digitised collections is being revised (www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm), and a new version of the national portal www.culture.fr is now available. Considerable experience and expertise exists in the French institutions, e.g. see www.louvre.edu for a site designed for school use and www.culture.fr/culture/arnat/fr/index.htm for a complete list of collections. A portal for sound heritage has been opened (catalogue.cdmc.asso.fr/CDMC/) and an open source tool is also available to help publish sound archives in the MPEG7 format. Major Web exhibitions were opened recently on Victor Hugo (www.victorhugo2002.culture.fr) and on the XVIIth century composer Marc Antoine Charpentier (www.charpentier.culture.fr). Also a Franco-Belgian site on the organ has just opened (www.organs.european-heritage.net). The National Archives and the Federation of Genealogy has opened a portal on genealogic information (www.genefede.org/daf). The National Library (www.bnf.fr) has completed a study on audience and usage of the Gallica digital library. In 2002 Bruno Ory-Lavollée published a major report on digitisation of heritage as part of culture policy, and a policy document on digitisation was also published. The National Archive has published a guide on the preservation of digital data. Recently it was announced that a new programme is planned for the digitisation of major French monuments in 3D. France has an excellent series of publications covering the cultural domain, e.g. “La Lettre d’Information” of the French Ministry of Culture and

“chroniques” of the National Library.

Germany - Germany has a highly decentralised structure of political responsibilities where culture issues are the prerogative of the 16 Bundesländer. As such Germany does not have an overall national strategy for digitisation but works through different plans and project frameworks. It is for this reason that EUBAM (www.eubam.de) has been so valuable in acting as a focal point for cultural digitisation in the EU context, and in bringing together actors from archives, museums and libraries. Despite this, digitisation work started as early as 1977 with the creation of an art and social history collection (www.fotomr.uni.marburg.de) and, more recently, of the nation-wide digital library catalogue (www.ubka.uni-karlsruhe.de/kvk.html) and the virtual art history catalogue (www.ubka.uni-karlsruhe.de/vk_kunst.html). A recent initiative concerns a portal for museums, archives and libraries (www.bamportal.de) and the “digital library forum” (www.dl-forum.de), bringing together information on digitisation projects and programmes run by the Federal Ministry of Education and Research. In terms of bringing together cultural offerings a new portal is under construction: www.kulturportal.de. Germany has three recognised centres of digitisation expertise, namely in Munich (www.bsb.muenchen.de/mdz/) and Göttingen (gdz.sub.uni-goettingen.de), as well as the Archive School in Marburg. Very recently a number of new Federal projects have been launched in the general field of long-term archiving. It should also be noted that the German Research Council is planning to benchmark past digitisation projects.

Greece - Culture remains strongly associated with tangible heritage almost as an integral part of Greek national identity. However, the national profile (www.hdpweb.org) also shows that there is a digitisation network and a national digitisation committee. The Web sites lists 46 digitisation projects in Greece, covering both technological developments as well as actual digitisation campaigns (15 projects are recognised as significant). They also host a questionnaire to capture new project information. During the Hellenic Presidency, a benchmarking questionnaire was tested and the initial results help understand better the role that such an approach could have. In terms of competence centres, both the high Performance Information Systems Laboratory (<http://www.hpclab.ceid.upatras.gr/en/home.html>) and the Centre for Cultural Informatics

(www.ics.forth.gr/isl/cci.html) are recognised leaders in their fields.

Ireland - Ireland has recently launched a Web site that will provide pointers to digitised assets and guidelines and standards being used (www.askaboutireland.ie and www.askaboutireland.com). The national profile also covers the Irish digitisation initiative database as well as best practice guidelines. Past activities have been project based, e.g. information on natural and built heritage (www.heritagedata.ie) or assets of the National Library (www.nli.ie). A new strategy for public libraries is expected in September 2003. Plans are advanced for the incoming Irish Presidency, where a “back-to-basics” review will be made of progress in Europe to date.

Italy - As in many other EU countries, many Italian cultural institutions are under the responsibility of regional authorities, however there is a national commission for the harmonisation of policies and programmes on digitisation, and 3 working parties on Web site quality, benchmarking and good practice, and metadata and inventories. The national profile (www.librari.beniculturali.it/coord_digit/nationalpages-3-it.html) offers quite a complete overview of the work in Italy. The Italian authorities have been active in digitisation and today there are 6 major national initiatives. This ranges from the general catalogue (www.iccd.beniculturali.it/progetti/index.html) and photographic library (www.fototeca.iccd.beniculturali.it), to the focus on the preservation and management of cultural heritage with the risk map of Italy (www.uni.net/aec/riskmap/english.htm). There is also a €15 million digitisation project of the archives of the Senate and Chamber of Deputies. There is increasing interest concerning services for the recovery of stolen art goods. There does not appear to be a central inventory of cultural heritage in Italy, although there is much activity in metadata standards and a strong cooperation with the French Ministry of Culture has emerged on this issue. There is considerable digitisation expertise in Italy, starting with the cataloguing institutions (e.g. www.iccu.sbn.it), as well as in specific institutions, e.g. the Uffizi (www.uffizi.firenze.it/Dta/daddi-eng.html), and organisations, e.g. Alinari (www.alinari.com/). There is a particularly strong tradition in Italy of archaeology and physical restoration. www.culturalweb.it is an online cultural daily paper prepared by the Italian Ministry of Culture. Recently it has been decided to start a €17 million project to build an Italian cultural portal. Under the Ital-

ian Presidency a meeting is planned on “The Future of digital Memory” in Florence, 16-17 Oct. 2003. In Parma there will be a major event on “Quality for Cultural Web Sites: Online Cultural Heritage for Research, Education and Cultural Tourism Communities”, 20-21 November 2003 (www.minervaeurope.org/events/parma/parmaconference.htm). And in Naples there will be conference on “Territorial Information Systems for the Conservation, Preservation and Management of Cultural Heritage”.

Luxembourg - There is no national coordination network in place, however there are active national institutions, namely the National Museums of History and Art (www.mnha.lu) and Natural History (www.mnhn.lu), the Public Records Office (www.etat.lu/AN/), and the National Library (www.BnL.lu). This last institution cooperates with the Swiss, French, German and British Libraries. Digitisation priorities are in the National Audio-visual Centre and with the European Navigator on the history of the construction of Europe (www.enafree.lu).

Netherlands - The national profile and main initiatives, including those started under the 2001-2004 National Policy Document on Culture, can be found on www.cultuurtechnologie.net. A policy document of digitisation was debated in Parliament in 2002 (www.cultuurtechnologie.net/policy27may2002.htm) and digitisation will be included in the national cultural policy (2005-2008), with a particular emphasis on regulation and coordination on national and international digitisation standards. There is a shift of focus away from the individual use of specific collection and towards a more holistic view of a network of interacting collections. However, it is still true that digitisation has not been fully integrated into the information management systems of the institutions. There are several on-going projects, such as the Memory of the Netherlands (<http://www.geheugenvannederland.nl/gvnnl/all/index.cfm/language/en>). The opportunity to adopt Napster-like services for cultural heritage was studied in 2003. A number of centres of advice on digitisation exist in the Netherlands, and the Royal Library is recognised as a leader in developing long-term digital preservation policies and services. A large national research programme (€61 million), called the “Digital Production Line”, has been launched - covering preservation, IPR, metadata, interoperability, knowledge management, and navigation and presentation issues ([www.nwo.nl/NWOHome.nsf/pages/NWOP_5M2GN6/\\$file/Di](http://www.nwo.nl/NWOHome.nsf/pages/NWOP_5M2GN6/$file/Di)

gitalProductionLine%20(def).pdf?openelement)

Portugal - There is an Information Society National Plan that includes a government portal (www.portugal.gov.pt/SiteEntry), as well as a Culture portal. All information concerning the inventory of digitised material in Portuguese museums is on www.matriz.net.ipmuseus.pt. The Portuguese Institute of Museums not only provides public access but also acts as a content and online service provider (www.ipmuseus.pt). The National Archaeological Museum (www.mnarqueologia-ipmuseus.pt) won a “Web Art d’Or 2002” for its Web site. Immovable heritage is being encoded using a geographic information system and maps and images are available for Lisbon, Santarém, Faro, Rávira, Évora and Beja (www.ippar.pt/patrimonio/patrimonio.html). The National Library (www.bn.pt) provides access to Portuguese book heritage (aref.bn.pt) and is completing a digital libraries project (bnd.bn.pt), involving a €1 million investment in services and equipment. The National Archives (www.iantt.pt) has an on-going digitisation programme on “church memories” from 1758.

Spain - A major Spanish programme called Patrimonio.es has been launched to digitise, preserve, disseminate and exploit cultural heritage, and by the end of 2003 www.patrimonio.es will become the portal for digitised cultural, scientific and natural heritage. The first steps are benchmarking past digitisation projects and the creation of a Digital Heritage Inventory (more than 165 digitisation projects have been identified so far). The virtual library of Miguel de Cervantes (cervantesvirtual.com/index.shtml) in the university of Alicante is recognised as a centre of excellence for building digital libraries, and the Spanish State Archives have already digitised more than 12 million images. Virtual visits of several well-known Spanish monuments have been prepared. Three new pilot projects have been launched with the Spanish Film Institute, the National Library, and the Museo del Prado and Museo Cerralbo. Under the Spanish Presidency, the Council Resolution on *Preserving Tomorrow’s Memory - preserving digital content for future generations* was passed (OJ C 162/4 of 6.7.2002).

Sweden - There has been increasing pressure to see Sweden’s cultural institutions working more closely together (www.kultur.nu is seen as an entry point to Swedish culture), and national plans on digitisation, collection building, and long-term preservation were

proposed. Several sources of digitised material already exist with the national archive (www.ra.se), “Images of Swedish Heritage” (www.raa.se/kmb/indexe.asp), and the Swedish land survey (www.lantmateriet.se). No national guidelines or recommended standards exist, however many of the larger institutions are very experienced in digitisation projects. In a reassessment of the tasks of the Royal Library, digitisation is likely to play an important role, and a national plan for the digitisation of printed texts is envisaged. A joint work between museums, libraries and archives called “Image databases and digitisation” was recently concluded (an executive summary can be found at abm.kb.se, with a series of commonly agreed recommendations on policies, standards, data elements and authority file structures. A state enquiry on archival issues concluded that much work is urgently needed on long-term digital preservation, and a project has been launched to create a competence centre on digital preservation.

United Kingdom - The United Kingdom has an active policy concerning digitisation and online access, with the creation of Culture Online (www.cultureonline.gov.uk). The national profile and a set of good practice projects can be found on the People’s Network Web site (www.peoplesnetwork.gov.uk), and numerous different programmes have funded digitisation campaigns, e.g. see the list of projects funded by the Research Libraries Support Programme (www.rslp.ac.uk). Recently, an €81 million programme of digitisation of learning resources has been launched, with the portal www.enrichUK.net containing information on the 150 project already launched (there were a set of mandatory guidelines and technical standards on www.peoplesnetwork.gov.uk/content/technical.asp). A single quality-assured portal is planned for school learning resources (www.curriculumonline.gov.uk) and €140 million has been allocated for schools to purchase resources through the portal. In addition, a Culture Online funding of €17 million has been allocated for 20-40 projects with a focus on individual creativity and the use of digital TV, Internet, mobile phones, etc.. The Collection Description Framework is being used to record collection-level descriptions for all English museums (www.cornucopia.org.uk). A test of DC.Culture is on going with three museums (Fitzwilliam Museum, Norfolk Museums Service, and the Tank Museum) from www.24hourmuseum.org.uk. The Joint Information Services Committee (JISC) was awarded €14

million for 8 new further and higher education digitisation projects (topics cover official publications through to new archives). A Digital Preservation Coalition (www.dpconline.org) has been established with a focus on research and implementation of digital preservation solutions. There is an increasing focus on bringing different types of institutions together to provide a collective reply to user expectations, and on the importance of cultural resources for education.

TABLE IV
RECENT PROJECTS ACTIVE IN THE CULTURAL
HERITAGE DOMAIN (OR DIRECTLY RELATED)

Basic information on projects being funded can be found on www.cordis.lu/ist/ka3/digicult. Check out the eCulture newsletter at www.cordis.lu/ist/ka3/digicult/newsletter.htm. Additional information on specific projects can be found in the “ezine” archive of www.cultivate-int.org. DigiCult forum www.digicult.info provides a newsletter and technology watch.

NEW RESEARCH PROJECTS (UNDER NEGOTIATION)

BRICKS (under negotiation) - This is a major research initiative (“integrated project”) on digital libraries. It brings together 25 European partners around the concept of a BRICKS factory for European Digital Memory. Topics covered include service discovery, decentralised metadata storage, content and metadata management, indexing, collection management, search and browsing, query personalisation, heterogeneous metadata and ontologies, annotation, user authentication, decentralised rights management, trust models, decentralised public key infrastructures and distributed certification. Four application areas are: reconstruction of knowledge for professional users on archaeological sites, management services for small and medium sized museums, support for real and virtual exhibitions (i.e. Vienna 1945-55), and a scriptorium for accessing rare, distributed, digital texts. The project already includes Ministerial organisations in Italy, Belgium and the UK, as well as prestigious collections such as the Museum of Cycladic Art in Athens, the Austrian National Library in Vienna, the Uffizi Gallery in Florence, and the Vatican Secret Archives. In addition, the initial BRICKS user community includes interested par-

ties from Japan, Israel, South Africa, Norway as well as UNESCO, the site of Pompeii, the Fitzwilliam Museum in Cambridge, UK, etc..

Project leader: Nucci@eng.it

PRESTOSPACE (under negotiation) - This is a major research initiative (“integrated project”) on audio-visual archive preservation. It brings together 37 European partners around the concept of a preservation factory. Topics covered include preservation information systems (playback devices, robotics and automation, media condition assessment), restoration integration and evaluation (restoration tools, algorithms, and sub-systems), storage and archive management (technologies, preservation and access planning, preservation management tools), metadata access and delivery (discovery, public access, delivery formats), systems architecture, and user requirements. This project builds on the work of PRESTO (presto.joanneum.ac.at), BRAVA (brava.ina.fr) and DIAMANT (diamant.joanneum.at). The project already brings together the archives of French Institut National de l’Audiovisuel (INA), the British Broadcast Corporation (BBC), Radiotelevisione Italiana (RAI), the Netherlands Institute for Sound and Vision (B&G), and the Austrian Radio & Television Archives (ORF). These archives will contribute ~2.5 million hours of audio-radio material, 1.4 million hours of music, and ~2 million hours of TV material.

Project leader: dteruggi@ina.fr

TNT (under negotiation) - This is a new focused research project to develop a visual simulation engine for 3D objects and a visualisation and collaborative real-time exploration service for viewing digital models of artefacts, sensors scans and scientific data. It will test a service for pre-history data for professionals (e.g. Neanderthal Species), as well as an archaeology channel (Internet and mobile) for popular science, culture and tourism. It targets a substantial reduction (>25%) in the cost of service building. The project brings together the Neanderthal man collections of 4 European natural history museums. These institutions are active in 3D scanning of fossils and artefacts, and are visited by >2 million people annually. At the end of the project >300 Neanderthals and their sites will be accessible in 3D.

Project leader: steffen.kirchner@artcom.de

AGAMEMNON (under negotiation) - This is a new focused research project to develop site visit possibilities using 3G, e.g. on an archaeological site. It will integrate visitor profiling, dynamic route

(re-)scheduling, voice and speech dialogue, etc., in to a cost-effective package for small museums and sites. It will allow on-site visitor flow control, site maintenance, security and damage checks, as well as analysing visitor behaviour and expectations. It will use imaging matching to determine user location and attention focus. It targets a 50% cost reduction in creating personalised site visits, as well as a 25% increase in revenue from site visits. The system should be able to track the position of 500 concurrent users and re-schedule visitor paths through 50 different locations within 2 seconds. The new technology will be tested in Paestum in Italy and Mycene in Greece, and later at Pompeii.

Project leader: salvatore.virtuoso@txt.it

ON-GOING RESEARCH PROJECTS

ARCO (Augmented Representation of Cultural Objects) - This is a research project to develop technologies for museums to create, manipulate, manage and present 3D objects in virtual exhibitions. Topics covered include virtual models and scenes (object modeller based upon stereo photogrammetry, and a 3D interactive tool for model refinement and rendering), management of virtual object collections, and virtual exhibition creation. London's Victoria and Albert Museum and the Sussex Archaeological Society in the UK are test sites. A prototype was presented at COMDEX Fall 2002 in Las Vegas, USA.

Project coordinator: M.White@sussex.ac.uk

Web address: www.arco-web.org

CHIMER (Children's Heritage Interactive Models for Evolving Repositories) - This is a research project on how children learn how to obtain information, how they can pass information on to other children, and how information can be made usable and appealing. The focus is on understanding and demonstrating how children can use new technologies to document items of cultural interest in their local communities. Topics covered include an evolving digital archive, e-maps, GPS and location-based services, mobile portals, and the cognitive principles behind learning. Local sites are in England, Spain, Czech Republic, Germany, the Netherlands, and Lithuania.

Project coordinator: j.spee@bedrijfsregion.nl

Web site: www.chimer.org

CHLT (Cultural Heritage Language Technologies) - This a small research project on creating computational tools for the study of early modern Latin, classical Greek, and Old Norse texts in the form of a distributed digital library. It provides generic tools for multi-

lingual information retrieval, concept identification and visualisation, vocabulary analysis and syntactic parsing. It is a partnership between 5 European and 4 US research teams, where the NSF funds the US teams. The project builds on a well-established cooperation between the teams, and brings together the Linda Hall history of science collection, the Perseus Greek and Roman collections, the STOA Neolatin texts, and the Newton Manuscripts project.

Project coordinator: d.iorizzo@ic.ac.uk

Web site: www.chlt.org

CHIPHER (Enabling Communities of Interest Promoting Heritage of European Regions) - This is a research project on the ways to create cultural forums that allow the active construction of narratives with and across digital content. The CHIPHER toolbox consists of ontology-driven tools for dynamic narrative presentation, discovery tools, tools for creating personal and shared spaces, and language technologies and templates for contextualising media. Four test forums are planned for Irish cultural and natural heritage, Nordic heritage and storytelling, shared heritage of Central Europe, and technical innovation centred on Bletchley Park in the UK (already running).

Project coordinator: z.zdrahal@open.ac.uk

Web site: www.chipherweb.open.ac.uk

COINE (Cultural Objects in Networked Environments) - This is a research project that aims to provide tools to create structured Web environments (capture, store, describe, locate, link, and maintain digital objects in “digital spaces”) that permit people to tell their own stories.

Project coordinator: p.brophy@mmu.ac.uk

Web site: www.uoc.edu/in3/coine

DHX (Digital Artistic and Ecological Heritage Exchange) - This is a research project about establishing a networked virtual reality infrastructure and content development environment for museums and cyber theatres. This is a distributed infrastructure for globally shared immersive experiences. It uses Europe’s high-bandwidth infrastructure (GEANT) to interconnect large-screen presentation facilities for virtual shared exportation, virtual sight-seeing, and remote education.

Project coordinator: martin.goebel@imk.fhg.de

Web site: www.eurasian-dhx.org

MEMORIAL (Digital Document Workbench for Personal Records) - This is a research project on retrieving information in per-

sonal records. It involves scanning with special optical filters, improved image processing and pattern recognition, and a workbench to produce highly interactive, editable and linkable documents suitable to create Web-based virtual memorial services. The test material are files on prisoners in Nazi concentration camps, and the work also encompasses the social, ethical and legal issues around creating digital libraries of genocide information.

Project coordinator: geschke@zfb.com

Web site: www.memorialweb.net

MULTIMOD (Simulation of Multiple Medical Imaging Modalities) - This is a research project on visualisation and interaction with data relating to musculo-skeletal structures, with a focus on relevance to task rather than realism of imaging. The focus is on integrating real and synthetic data in a single visualisation environment, the integration of static medical images with movement data, the integration of diagnosis with computer simulations, and 3D and time-based presentations for the non-expert user. Four demonstrators are planned in the medical field - knee operations, hip replacements, skeletal reconstruction, and knee anatomy for teaching. This is seen as a special case of a digital library, but one that stresses future visualisation and simulation functionalities.

Project coordinator: c.zannoni@cinca.it

Web site: www.techno.ior.it/multimod

OMNIPAPER (Smart Access to European Newspapers) - This is a research project on ways to enhance multilingual access to different types of distributed information resources in a self-learning environment. It will create a blueprint for knowledge retrieval, and test it is a newspaper prototype. Topic maps will be used to create cross archive searching and navigation, and provide users with a single view of a "virtual super archive". In addition, the navigational and search behaviour of users will be tracked to enhance the quality and relevance of retrieval.

Project coordinator: met.lenaers@lrd.kuleuven.ac.be

Web site: www.omnipaper.org

ORIEL (Online Research Information Environment for the Life Sciences) - This is a large digital libraries research project on ways to integrate and exploit large-complex and disparate digital resources, using life-science data as an example. The aim is to understand how to handle the exponentially growing mass of genomic sequence-related information. The focus is on integrating analysis tools with databases and bibliographic data, literature analysis tools, mining

tools that help interpret, integrate and visualise genomic information, and new ways to stimulate user interaction (e.g. collaborative browsing and creation and editing of ontologies are initial targets). The project includes the major partners of the European Molecular Biology Laboratory. An ontology editor and organiser tool have recently been placed in the public domain.

Project coordinator: les.grivell@embo.org

Web site: www.oriel.org

PUREFORM (The Museum of Pure Form) - This is a research project on the way to build a virtual gallery of digitised sculptures where the visitor can interact and feel the physical contact (sight and touch) with 3D models of statues and other art forms. The focus is on integrating 3D acquisition and both virtual reality and haptic interfaces, and testing with demanding geometries, e.g. medieval and contemporary sculptures. Actual long-term exhibitions are planned in both the Galician Centre for Contemporary Art in Spain and in the Museum of the Cathedral in Pisa.

Project coordinator: bergamasco@sss.up.it

Web site: www.pureform.org

VIHAP3D (Virtual Heritage: high-quality 3D acquisition and presentation) - This is a research project on developing new computer graphic tools for 3D scanning (including texture and reflection characteristics), post-processing on low-cost platforms, and presentation and navigation in collections of 3D objects. Exhibitions are planned that display real objects alongside 3D models.

Project coordinator: hpseidel@mpi-sb.mpg.de

Web site: www.vihap3d.org

VITRA (Veridical Imaging of Transmissive and Reflective Artefacts) - This is a research project on new ways to collect, store and visualise architectural details of historic buildings, in particular stained glass windows, frescos, mosaics and decorative mouldings. A robot platform will ensure “in situ” capture of colorimetrically accurate images of both reflective and transmissive surfaces. Six German churches and three English churches are test sites.

Project coordinator: l.w.macdonald@colour.derby.ac.uk

Web site: www.vitra.org

VS (Virtual Showcases presenting Hybrid Exhibits) - This is a research project on the creation of hybrid (mixed, real and virtual) exhibits inside a “traditional” showcase environment. The objective is to combine the real and virtual objects in such a way as to create a 3D hybrid object. Several people should be able to observe and in-

teract with the hybrid object. Topics covered include the use of spatial augmented reality, the authoring and management of mixed-reality content, interaction techniques and advance rendering techniques. The challenge is to create an acceptable aesthetic and technical solution that can be integrated into an established museum context and be accessible to all types of users. Test museums are from Germany, Austria and Portugal.

Project coordinator: joerg.voskamp@rostock.igd.fhg.de

Web site: www.virtualshowcases.com

NEW NETWORKING PROJECTS (UNDER NEGOTIATION)

DELOS (under negotiation) - This is a large-scale “network of excellence” working in the field of digital libraries. It builds on the work of a past network (see delos-noe.iri.pi.cnr.it) and is focused on a series of joint EU-NSF working groups and a 10-year grand challenge. It brings together >100 researchers in 40 different European teams. Topics covered include architectures, access and personalisation, audio-visual and non-traditional objects, user interfaces and visualisation, knowledge extraction and semantic interoperability, preservation, and evaluation. It will continue the successful European Digital Libraries conference series (e.g. www.ecdl2003.org), as well as a series of summer schools. In the first 18-months a complete test suite and metrics for Digital Libraries will be provided, including INEX for XML retrieval (qmir.dcs.qmw.ac.uk/INEX) and CLEF for cross-language information retrieval (clef.iei.pi.cnr.it:2002). A formal framework for user descriptions will be developed as well as toolkits for user profiling, personalisation, and user-centred testing. Demonstrators of audio-visual interfaces are planned. A virtual D-Lib centre will be created starting with ISTI-CNR in Pisa, UKORN in Bath, and NetLab in Lund.

Project coordinator: bruno.le_dantec@ercim.org and technical coordinator: costantino.thanos@isti.cnr.it

TTEACH/TECHNE (under negotiation - provision title) - This is a large-scale “network of excellence” working at the interface between new technologies and heritage sites and visitor experiences. It is a new network and brings ~400 researchers in >80 European teams. The focus is on the application of digital technologies for archaeological research and presentation at museums, monuments and historical sites. Topics covered include field recording and data cap-

ture, data organisation, provenance and standards, reconstruction and visualisation, heritage education and communication, and the sustainability of heritage projects. In the first 18-months demonstration projects could include underwater archaeology, augmented reality, interactive storytelling, virtual exhibitions, and multi-lingual and multi-channel presentation and visitor guides. It will continue the Virtual Reality, Archaeology, and Cultural Heritage conference series (e.g. www.eg.org/Events/VAST2001) and participate in Computer Applications in Archaeology (www.caaconference.org).

Project leader: D.Arnold@brighton.ac.uk

MINERVA (an extension MINERVAplus for Europe's New Accession States (NAS) is also under negotiation) - This is a thematic network of Member State Ministries responsible for digitisation of cultural and scientific content. The focus is on establishing national profiles, good practices and guidelines, benchmarking policies and practices, inventories and resource discovery, training, quality of content, and digital preservation. The initial network brought together authorities from 7 Member States. The MINERVAplus extends the network to another 5 Member States and 8 other countries, many being New Accession States (NAS). This network supports the work of a National Representative Group (NRG) created to be guardians of the Lund Principles, and an Action Plan that defines how and why Member States should work together (www.cordis.lu/ist/ka3/digicult/eeurope-overview.htm). A major report on progress in the Member States is available (www.minervaeurope.org/publications/globalreport.htm). In addition, MINERVA has issued for comment a good practice handbook and a handbook on quality in public cultural applications.

Project leader: Rcaffo@beniculturali.it

Web site: www.minervaeurope.org

CALIMERA (under negotiation) - This action is focused on smaller, often local, cultural institutions and their need to develop new strategies based on emerging technologies. It brings together 39 partners over 34 different countries, with a particular focus on local cultural institutions in both Europe's New Accession States (NAS) and the Balkan States. Specific topics include business models and research needs for building local services, evaluate the usability of new technologies and their potential impact on local services, training guidelines, and publish best practice guidelines and policy ground rules. A national and local policy report will be presented. It builds on the success of PULMAN (www.pulman

web.org). PULMAN published 20 different guidelines (social policy, management and technical) in 29 different languages).

Project leader: ana.runkel@cm-lisboa.pt

ON-GOING NETWORKING PROJECTS

ERPANET (Electronic Resource Preservation and Access) - This is an on-going thematic network dedicated to best practices and skills development for digital preservation. ERPANET extracts relevant information on digital presentation from journals, projects, list servers, as well as listing different policy documents. It provides extensive reviews of 200 key articles on preservation taken from >100 journals. It provides seminars and workshops that are well documented, e.g. see the recent workshops on preserving the Web and long-term preservation of databases. It has an online charter outlining the principles of digital preservation.

Project leader: s.ross@hatii.arts.gla.ac.uk

Web site: www.erpanet.org

MUSICNETWORK (The Interactive Music Network) - This is a thematic network on interactive multimedia music functionalities and new distribution modes. The focus is on music notation, music libraries, multimedia standards and music encoding, music distribution, protection systems, music for the handicapped, and restoration of old music sheets. It provides a portal to all the essential literature on the topic, as well as pointing to all the major projects in the field. It has >200 registered members and organises events and workshops throughout the year.

Project leader: nesi@dsi.unifi.it

Web site: www.interactivemusicnetwork.org

DigiCult Forum (The Digital Cultural Forum) - This is an on-going action that provides technology watch, newsletters, and a discussion forum on research and technological development for the cultural heritage sector. Integrity and authenticity, digital asset management systems and semantic Web have all been treated in thematic publications. Recently, a major technology watch report covered customer relationship management, digital asset management systems, smart labels and tags, virtual reality and display technology, human interfaces, and games technologies. This project emerged after the conclusion of the DigiCULT report in 2001.

Project leader: andrea.mulrenin@salzburgresearch.at

Web site: www.digicult.info

FIRST (Film Restoration and Conservation Strategies) - This is

an on-going action on the conservation, restoration and exploitation of historic film collections. It has working groups on digitisation, restoration, archival and storage, cataloguing and retrieval, distribution and access to archived material. It will provide recommendations on widely accepted practices and guidelines, as well as a set of research needs. In addition to the Association Européenne des Cinémathèques (ACE) the participants include the French Institut National de l'Audiovisuel, the Radio Television Belge (RTB), the Belgian telecommunications company Belgacom, and the European Multimedia Forum.

Project leader: cinematheque@ledoux.be

Web site: www.film-first.org

MUSENIC (The Museum Network Information Centre) - This is an on-going action to start a new Internet top-level domain called ".museum". The focus is on domain policy, registration, naming conventions, and including technical facilities and awareness building. The model must work for museums, and be reproducible for other communities such as libraries, archives, monuments, sites, etc.. The project consortium includes The International Council of Museums and the J. Paul Getty Trust.

Project leader: ck@nrm.se

Web site: musedoma.org and naturally musedoma.museum

Culture 2000 funds a number of multi-annual projects designed to bring together expertise, promote awareness through exhibitions, etc., and provide a cultural resource for future use. Some examples are:

Ubi erat Lupa (www.ubi-erat-lupa.org) - a kind of access portal to antiquity as a way to highlight Europe's common past;

Art Nouveau in Progress (www.artnouveau-net.org);

Ceramics-Culture-Innovation (www.ceramic2000.org);

North-European Shipwreck Sites (www.mossproject.com) - promoting underwater cultural heritage;

Gaudi on European architecture (www.gaudi-programme.net);

Rinascimento Virtuale (<http://www1.uni-hamburg.de/RV/>) - on discovering texts on palimpsest manuscripts;

Archives of European Archaeology (www.inha.fr/area-archives/);

Archaeological Records of Europe (ads.ahds.ac.uk/arena/).