Spain

Teresa Malo de Molina
Spanish National Library

At political level, last March 30 (Spanish Official State Gazette 18-04-2007), and following the guidelines of the European Commission Recommendation of 24 August 2006 on the digitisation and online accessibility of cultural material and digital preservation (2006/585/EC), it was decided to create the Spanish Commission on digitalisation and on-line accessibility of cultural material and digital preservation at the Ministry of Culture, as a working group, in order to guarantee the determined incorporation of Spain to The European Digital Library Project so as to make its rich and diverse cultural heritage accessible to all citizens.
The Spanish Commission on digitalisation and on-line accessibility of cultural material and digital preservation has the following functions:

a) Assessing the Ministry of Culture about the fulfilment of the following objectives:
  1. Reinforcing the national strategies and objectives regarding digitalisation and digital preservation.
  2. Contributing to the development of The European Digital Library as a common multilingual access point to Europe's distributed digital cultural material.
  3. Improving the conditions framework regarding digitalisation and accessibility to the digital preservation and cultural material network.
  4. Strengthening the coordination efforts between the different players and administrations affected.
  5. Developing efficient means of preservation of the material originally created in digital format.
  6. Other questions regarding the fulfilment of objectives established in the European Commission Recommendation of 24 August 2006, on the digitisation and online accessibility of cultural material and digital preservation (2006/585/EC).

b) Preparing, at the end of the year, a memorandum on the activities carried out by the Commission.

This is a very large Commission, made up of up to 27 members, presided by the Subsecretary of the Ministry of Culture and with representation of all the different cultural sectors and Autonomous Regions, as well as of significant projects and entities in the field of the cultural heritage digitalisation.

The AVANZA plan for the development of the Information Society in Spain for 2006-2010 continues developing its strategies and, regarding the Digital Context, the specific line devoted to Digital Contents, it has the main aim of substantially increasing the presence of contents in Internet written in the languages of the Spanish territory and thus it intends to act upon the following axis:

• Establishing a cooperation framework with the digital content industry to develop business models that will allow the commercial reuse of the information generated by the public sector.
• Creating digital contents by the public sector by means of the digitalisation and the dissemination of cultural heritage, especially libraries and archives.

Within this action we can find the support of the Corporate Public Entity dependent on the Ministry of Industry, Red.es, to the cultural heritage digitalisation that in 2006 has been defined in an agreement with the Spanish National Library. The purpose of this collaboration framework agreement is to implement the "Hispanic Digital Library" programme and was signed on 30 June 2006. The purpose of this Agreement is to implement a project for the digitalisation and dissemination of the emblematic works of the Library in accordance with the guidelines and strategies of other European countries, as well as to sponsor the creation of a "Hispanic Digital Library" that will allow the largest documentary collection in the country to be offered

to the public, a service that would allow researching, consulting and analysing the fundamental texts of the Hispanic culture. This project, that will have a great impact in the Latin American culture, will favour the development of a national digital library system and will facilitate the necessary access infrastructure to disseminate all the digitalisation initiatives carried out in the national territory, channelling this information through the European Digital Library. Thanks to this agreement, Red.es will support the Spanish National Library in the development of the necessary technological infrastructures to implement its digital library in accordance with the international standards and in an OIA-PHM protocol compatible system, as well as in the migration of more than 20,000 digital objects now available and the digitisation of 200 emblematic pieces.

A. Users and content

The Directory and digital resources collector `<http://roai.mcu.es/es/inicio/inicio.cmd>` implemented by the General Subdirectorate of Library Coordination in collaboration with the Autonomous Regions at the beginning of 2006, currently includes 109 digital collections of Spanish libraries. For each collection included the name, the responsible entity, a brief description of its contents, the creation and termination dates, the responsible personnel and a link to its Internet address is provided. Since 2006, the Spanish National Library has been participating in the MICHAEL project (Multilingual Inventory of Cultural Heritage in Europe) through the eContent MICHAEL Plus, aimed at extending the Michael project to 11 new countries. The purpose of MICHAEL `<http://www.michael-culture.org/>` is to create a European directory of all the digital collections available at libraries, archives, museums and other cultural institutions, gathering data from each of the national inventories. The Spanish National Library has already started the process of creating a Spanish national inventory and at present it has installed a trial server and has translated the Michael data model into Spanish.
The General Subdirectorate of State Museums (SGME) has initiated, within the framework of the State Museums Plan Collections Programme, the deployment

of a standardised museum documentation system through the Domus software application. The SGME has the following lines of action:

- Provision of IT technical infrastructures to museums.
- Implementation of Domus in a great number of museums by means of collaboration agreements.
- Campaigns of collection inventory, cataloguing, documentation and digitalisation;
- Preparation and publication of several Cultural Heritage thesauruses.

The objective is to finally reach the public dissemination of the collections firstly by accessing the catalogue of each museum on its web page, and finally, by means of a collective catalogue of museums (Spanish Museums Digital Network). The Domus software application that was first implemented in 1999, now has 70 user museums all over Spain and continues to be in progress in accordance with the needs of the museum. In order to define the priorities of new developments both in the software application and in the Cultural Heritage thesaurus, as well as to manage the public services to be offered by the future Spanish Museums Digital Network, a Technical Commission for Monitoring the Domus User Institutions Network was created in December 2006 in order to conduct the project far beyond the scope of the Ministry of Culture, making it a common project for all the Spanish museums. The collections of the following museums are now available on Internet:

- Museo del Traje `<http://museodeltraje.mcu.es/ motorbusquedas/buscar.jsp>`
- Museo Casa Cervantes de Valladolid `<http://museocasacervantes.mcu.es/ motorbusquedas/buscar.jsp>`
- Portal de museos y conjuntos arqueológicos y monumentales de Andalucía `<http://www.juntadeandalucia.es/ cultura/museos/domus.jsp>`

The Archivos Estatales en Red (AER) `<http://aer.mcu.es/sgae/index_aer.jsp>` provides access to all the digitalised documentation relating to America that until now has to be consulted

in the Archivo General de Indias, at the National Historic Archive and at the Archivo General de Simancas. Taking this documentary core as a basis, different data banks have been integrated with the descriptive cards of documents to which their respective digitalised images have later been associated. This gradual process is slowly taking place in all the State Archives dependent on the Spanish Ministry of Culture.

The integration of digitalised images is carried out with documents from all eras, including both conventional documents (manuscripts or printed documents, simple and complex documentary units such as dossiers, processes or record keeping books), and iconic documents (posters, maps, plans, drawings, photographs).

For the time being it provides access to the digitalised collections of the following archives:

• Archivo General de Indias
• National Historic Archive
• Archivo General de la Guerra Civil Española
• Archivo General de Simancas
• Archivo General de la Administración
• Archivo de la Corona de Aragón
• Archivo de la Real Chancillería de Valladolid
• Sección Nobleza del Archivo Histórico Nacional
• Archivo Histórico Provincial de Alava

The Spanish network of university libraries, Red Española de Bibliotecas Universitarias (REBIUN), has implemented the Digital Thesis Portal `<http://www.ucm.es/BUCM/buscar/11502.php>` with the aim of providing the greatest dissemination via Internet of the results of university researches, as well as of encouraging electronic publishing and digital libraries and offering a tool that channels thesis information to researchers in order to promote scientific production. It offers a browser on all the thesis works actually available on the Internet that currently enshrines 2,978 thesis works of different Spanish universities. There are also other Spanish on-line digital thesis projects, among which the following can be highlighted:

• Doctoral Thesis: Institutional Archive "E-Prints Complutense", database of doctoral thesis of the Universidad Complutense de Madrid, it currently has 3,600 thesis works with full text in open access `<http://www.ucm.es/eprints/>`
• DIALNET, database of doctoral thesis works of the University of Extremadura, the University of La Laguna, the University of La Rioja, the University of Las Palmas de Gran Canaria, the Public University of Navarra and the Universidade da Coruña. `<http://dialnet.unirioja.es/servlet/portadatesis>`.
• ULPGC, database of doctoral thesis works of the Universidad de Las Palmas de Gran Canaria, it currently has over 1,300 thesis works, end of career dissertations and memoranda. `<http://bdigital.ulpgc.es/digital/visualizar/previo.php?accion=tesis&dsplegable=0>`
• USC, database of doctoral thesis works of the University of Santiago de Compostela. `<http://iacobus.usc.es/search*gag~S7/s?SEARCH=BUSC+dixital+teses>`
• On-line Doctoral Thesis Cooperative repository containing 4000 doctoral thesis works in digital format from the universities of Catalonia and other autonomous regions (Universitat de Barcelona, Universitat Autònoma de Barcelona, Universitat Politècnica de Catalunya, Universitat Pompeu Fabra, Universitat de Girona, Universitat de Lleida, Universitat Rovira i Virgili, Universitat Oberta de Catalunya, Universitat Ramon Llull, Universitat de les Illes Balears, Universitat de València, Universitat Jaume I, Universidad de Cantabria, Universidad de Murcia, Universidade da Coruña). `<http://www.tdr.cesca.es/>`

On the 30 November 2006, the E-Ciencia portal was published. This is a digital platform that provides open access to the scientific production of the state Universities integrated in the Madrid Consortium (Consortium of Universities of the Madrid Autonomous Region and of UNED for library cooperation), that will be progressively extended to all scientists and researchers in the Madrid Autonomous Region. The Service Provider of the E-Ciencia portal is based on the Arc software, created by the engineer Xiaoming Liu during his stay at the Old Dominium University (U.S.A.). The technology used is java, servlets and jsps and Mysql database, all free software.

For the communication between the repositories (open archives) of the universities and data logger,

the OAI-PMH protocol is used. The Dublin Core language has been chosen as metadata scheme. E-Ciencia offers simple and advanced search options, surfing by university, and grouping results according to institution and publication date, as well as sorting by date, author and title. Currently it provides access to 13,555 digital documents.
`<http://www.madrimasd.org/informacionidi/e-ciencia>`

Developing and sharing user needs analyses for cultural content and services

The 10th European Conference on Research and Advanced Technology for Digital Libraries (ECDL) was held in Alicante (Spain) in September 2006. The ECDL has become the major European conference on digital libraries, and associated technical, practical, and social issues, gathering researchers, developers, content providers and users in the field. The conference included presentations and discussions about technical issues and other applications. Some of the topics included were:

• Concepts of Digital Libraries and digital content.
• Collection building, management and integration.
• System architectures, integration and interoperability.
• Information organization, search and usage.
• Multilingual information Access and Multimedia Information Handling.
• User interfaces for Digital Libraries
• User studies and system evaluation.
• Digital archiving and preservation: methodological, technical and legal issues.
• Digital Library applications in e-science, e-learning, e-government, cultural heritage, etc.

The special topic of this edition of the ECDL Conference was "Towards the European Digital Library", with the aim of emphasizing the contribution of the European Digital Library research community (and its liaisons with the international research community in general) to the current efforts of the European Commission in this sense.

Recognising cultural content as a driver for eLearning and the creative industries

During 2006 great progress has been made in creating repositories of digital objects linked with training

at Spanish universities, among which the following deserve mention:

• La Factoria de Recursos Docentes of the Universidad Politécnica de Cataluña
  `<http://www-ice.upc.es/ factoria/>`
• E-Espacio of the National Distance Education University (UNED)
  `<http://e-spacio.uned.es/fez/index.php>`
• The Universia training resources library that handles the reuse of teaching resources located at different repositories. Currently it holds 3,068,928 resources from 79 different collections.
  `<http://biblioteca.universia.net/>`

Universia has furthermore committed itself with the OpenCourseWare (OCW) project that was started in 2001 by the MIT to offer an open scheme for the teaching material that its teachers use in their courses together with a study guide. Universia has accordingly sponsored the OCW Universia consortium `<http://heracles.gate.upm.es ocwuniversia/>` and has recently entered into a collaboration agreement with the Universidad Politécnica de Madrid to jointly promote its development.
The OCW Universia consortium is based on the following principles:

• Guaranteeing the identity of each participant Institution.
• Sharing resources, based on the experiences of others and disseminating good practices.
• Providing access to information and to the appropriate forums.
• Increasing the visibility of each Institution.
• Forming part of the world Consortium of *OCW sites* created in April 2006.

In order to launch this initiative, a group of sponsor Universities interested in the project and ready to create their own *OCW site* where a minimum of ten topics taught by their teachers will be incorporated has been formed. In March 2007, in the framework of this sponsor group, the first set of Spanish *OCW sites* with own topics will be presented and after this date the initiative will be opened to incorporate

new Universities that may be interested in participating in the project. The world presentation of the project will take place in May 2007.

Ensuring that IPR mechanisms maintain a balance between enabling access and use whilst respecting the rights of creators

At the VI REBIUN Workshop on digital projects `<http://info-fp.uned.es/biblioteca/Workshop/inicio.html>`, called *Digital libraries in shared global space* held in Madrid in October 2006, a round table was dedicated to copyright in open-access and institutional repositories, with discussions about how to handle the fair use of orphan works, the economic models required in the mass digitalisation era and the impact of the information open access movement on the digitalisation economy.
The Intellectual Property Service of the Library of the Universidad Politécnica de Cataluña has published a FAQ on intellectual property and copyright `<http://bibliotecnica.upc.es/sepi/drets%20d'autor.asp>` that answers questions about the use of protected material in teaching resources and its publication on Intranets giving guidelines for the protection of works and for the assignment of Creative Commons licences.

Mandating quality standards for contents and services

In September 2005, the International Conference on Dublin Core and Metadata Applications (DC-2005) `<http://dc2005.uc3m.es/>` was held in Madrid at the Universidad Carlos III, with the participation of 210 experts from 33 different countries, all of them coming from different areas of the academic and professional world related with the electronic information (digital libraries, e-Administration and e-learning, among others). Several speakers highlighted the importance of developing vocabularies that may help users share the same terminology and the convenience of applying these vocabularies to state institutions.
The Institute of Communication Technologies (INTECO), sponsored by the Spanish Ministry of Industry, Trade and Tourism, has created the Web Standards and Accessibility Reference Centre to allow the web pages belonging to the General State Administration

to be visited and used by as many citizens as possible, regardless of their limitations or to those limitations derived from their environment, reviewing the level of accessibility and compliance with standards, offering support and training to the General State Administration, carrying out observatory studies and developing an I+D+i (Research+Development +innovation) that ensures the fulfilment of the proposed guidelines and their adaptation to the Laws on Services of the Information Society and Equal Opportunities, Non-Discrimination and Universal Accessibility of disabled persons.
The present state of accessibility and use of web standards of the General State Administration are studied from the Reference Centre, sponsoring actions aimed at standardising the administration's web portals in W3C technologies.

• Study of the General State Administration portals, with the aim of adopting measures designed to obtain a public web for EVERYBODY, especially in the sites and portals maintained and sustained from the Public Administration.
• Consultancy, support and dissemination. Resolution of problems detected in the studies.
• Training: Training actions and distance training, with accessibility courses and accessible contents management.

Dissemination of technologies even to facilitate access to electronic administration.

B. Digitisation technologies

Deployment of new technologies and common standards for digitisation

The latest optic digitalisation technologies represent a decisive progress for tasks such as documentation, research, monitoring, dissemination and teaching of the Artistic Heritage. Thus, the 3D+Colour Digitalisation Laboratory `<http://www.cartif.es/3d/index.php?resH=1024>` of the CARTIF Foundation, a technological centre dedicated to applied research, whose core purpose is to foster technological possibilities of enterprises in Castilla y León,

has developed some direct applications of these technologies:

• Simulation of different materials, textures, lighting conditions, finishes and pigments.
• Interactive handling of the pieces for their presentation at Virtual Museums, exhibition halls, etc.
• Introduction of the piece in CAD environments and in real or virtual scenarios.
• Support for restoration work (monitoring of deterioration, planning and evaluation of interventions).
• Manufacture of total or partial duplicates in equivalent material to their originals or in alternative low cost materials.

The forming of real colour in the resulting virtual model represents a problem that has not yet been resolved at commercial level (beyond the dot colour), and for which the 3D+Colour Digitalisation Laboratory has made its own developments, now in use, in the following aspects:

• Automatic processing of the colour level by scanning.
• Simulation of different materials, textures and lighting conditions.
• Superposing of images to the 3D model.

Laser digitalisation allows the creation of virtual models corresponding to mock-ups or models of subsequent works of art, transferable either to Fast Prototyped programmes for their manufacture or functional analysis, or to CAM programmes for their reproduction on a different scale (even giants). In this latter case, the supporting frame should be determined, a thing that is also achieved with the digitalising process. In 2006, the i2Cat Foundation of Catalonia completed the XAC (Catalan Audiovisual Network) project `<http://www.i2cat.cat/i2cat/servlet/ I2CAT.MainServlet?seccio=21_26>` that consists in developing a pilot platform devoted to the Catalonia audiovisual sector (local televisions, producers and other audiovisual entities), the main target being to facilitate the exchange (purchase/sale) of contents, by defining and implementing a prototype that allows the exchange between different agents, in a digital environment (Internet). It includes the cross-encoding of contents via Grid technologies, the presentation

of contents, and various techniques to improve the efficiency of the transfer protocols, as well as establishing licences and rights of the resources.

C. Content sustainability

The Spanish National Library has implemented its Hispanic Digital Library project with the publication in March 2007 of its Digital Newspaper Archive `<http:// hemerotecadigital.bne.es/inicio.htm>`. In this first phase, the public is given access to the digital collection of historic Spanish press contained in the Library, initially composed of 143 titles, published between 1772 and 1933, which represents the possibility of consulting around 500,000 digitalised pages. The criterion behind the composition of this collection has been the selection of the most representative newspapers and magazines of their era, reflecting the thematic richness of the Spanish newspaper publication and for which complete collections will be preserved. Those visiting the newspaper library will find political press as well as satiric, humoristic, scientific, religious, illustrated, amusing, sports, artistic, literary press, among others. The offer of titles will be extended to cover the historic evolution of the Spanish press. During 2007 it is planned to progressively incorporate new publications edited in the 17th and 18th centuries, as well as to incorporate press headlines that are essential for the study of the 19th century. The application that manages this collection allows to make searches by a specific title, as well as by a group of publications edited in a specific place or on a specific date. The format of the digital publications is PDF with OCR that allows any topic to be browsed within the text of the publication. As a result of these new text search possibilities, the Digital Newspaper Library has become a fantastic research tool. Thanks to the support of Red.es, the Spanish National Library is soon going to introduce a new technological infrastructure that will allow to disseminate and integrate in the future European Digital Library all the digital objects now available, forming the Hispanic Digital Library where all the Spanish cultural entities will be invited to participate. The first step in this European integration is now being

carried out by including all the digital collections of the Spanish National Library in The European Library (TEL) `<http://www.theeuropeanlibrary.org/portal/index.htm>`, the portal that gives access to the European National Library collections and is now configured as a basis of the European Digital Library project. The incorporation of the Spanish National Library in TEL is furthermore undertaken with the support of the European Commission, through the EDL project (`http://edlproject.eu/`).

D. Digital preservation

In March 2006, the Subdirectorate for Library Coordination of the Ministry of Culture, in collaboration with the Spanish National Library, organised the Conference on Digital Heritage Preservation `<http://www.mcu.es/bibliotecas/CE/jppd/index.htm>` at the proposal of the Digital Preservation Working Group of the library cooperation forum of the Ministry of Culture and Autonomous Regions. During this conference the scenario and situation of the core concepts and of the main Spanish and European initiatives regarding digital preservation were discussed.
The Digital Heritage Project of Catalonia `<http://www.padicat.cat>`, coordinated by the Biblioteca de Cataluña and with the IT infrastructure and support of the Centre de Supercomputació de Catalunya (CESCA) has initiated the filing of the .CAT domain web, that corresponds to Catalonia.
This project includes the following work lines:

• Establishing agreements with digital heritage producers in Catalonia: cultural and academic institutions, civil society, public administration, media, companies, etc. Through these agreements, they would authorise the capture, preservation and dissemination of their Web contents. Up to date, 1,076 entities have been identified, 848 letters of invitation to sign these agreements have been sent out and 105 agreements have been formalised.
• Web capturing regarding relevant events of the history of Catalonia. An intensive capture of web sites was made related with the autonomous

government elections of November 2006. Web sites of the different political parties with or without parliamentary representatives, the blogs of the candidates, web sites of political foundations, as well as digital media and opinion creators were captured with high frequency (daily, twice a week or once a week, depending on each case). The captures were made one fortnight before the elections until approximately one fortnight afterwards. A total of 652 captures of 83 different web sites were carried out. This information is presented grouped with own space in the PADICAT portal (`http://www.padicat.cat/eleccions2006.php`)
• Capture of other domains. An agreement has been signed with the PuntCAT Foundation by virtue of which the Foundation will provide the Catalonian Library a list of registered .CAT domains for its capture. There are approximately 19,000 domains. There are also proposals for incorporating Web sites using a form of the PADICAT portal. These proposals are validated before being included in the project.

The installation of the hardware and software at the Centre de Supercomputació in Catalonia was carried out from March to June 2006. The captures according to the work lines explained above started in July. In February 2007, PADICAT had already contents related with 250 different web sites, having made 800 captures. In all, 4.5 million files occupying 230 GB. From December 2006 to February 2007, 2,989 visits were received from 2,096 different visitors.
At the same time, the Spanish National Library, together with the library cooperation forum of the Ministry of Culture and the Autonomous Regions, is trying to instigate a new law on Legal Deposit in Spain to guarantee the preservation of Spanish digital contents, given that the current legislation does not envisage this essential task.

E. Monitoring

The Observatorio de Ciencia y Tecnología en Internet (Interlab) `<http://internetlab.cindoc.csic.es/>`, integrated in the Scientific Documentation and Information Centre (CINDOC) of the Consejo Superior de Investigaciones Científicas is in charge

of developing quantitative techniques
for the description and evaluation of contents
in Internet, for obtaining rigorous, pertinent
and updated statistics about the impact of the network
in different activities of scientific-technical, economic
and social interest and the analysis of the scientific
communication patterns via Web and their importance
in structuring the Information Society.
The work lines for 2005-2008 are the following:

- Developing Information Society indicators, particularly
  related to the generation and dissemination
  of knowledge via web and the electronic publication
  of results of the academic activity and of scientific
  and technical researches.
- Designing new documentary analysis techniques
  taking into account the specific features of the Web,
  the international standards on metadata description
  (*Dublin Core*) and the user needs.
- Making studies about the design of Web information
  recovery techniques using intelligent automatic agents
  and about the impact of the Semantic Web
  and the advanced marking techniques (XML)
  in the development of electronic repositories
  of documents.
- Designing, making feasibility studies and applying
  new qualitative and quantitative criteria to the formal
  and content evaluation of Web resources.