The policy implemented

The digitisation of cultural and scientific heritage in France is organised under various programmes. The national digitisation programme of the Ministry of Culture and Communication concerns the State-owned holdings of public departments, whereas major national institutions such as the INA (National Audiovisual Institute), the BNF (National Library of France), the RMN (Association of National Museums) and the IRCAM (the Institute for Acoustic/Musical Research and Coordination) each have their own digitisation programmes. Local authorities co-finance some projects or fund specific projects to optimise the use of digital documents.

The Documentary Computer Applications and Multimedia Committee of the Ministerial Research Council brings together experts from all cultural sectors to discuss questions connected to the digitisation of heritage. The MRT (Research and Technology Department) of the Ministry of Culture and Communication co-ordinates multidisciplinary scientific activities, the production of knowledge, the devising of descriptive systems, data structuring and modelling, the improvement of digital tools, and the optimisation of results. The MRT acts both as a committee of scientific experts and as a national observatory of the digitisation of cultural heritage.

The national digitisation programme

Launched in 1996, the National digitisation programme of the Ministry of Culture and Communication concerns the digitisation of iconographic, sound and audiovisual holdings belonging to the State. It is managed by the MRT with the support of the Committee of Experts of the Documentary Computer Applications and Multimedia Committee of the Ministerial Research Council. A budgetary allocation to support the digitisation of holdings belonging to local authorities has existed since 2000. The digitisation programme currently covers 20 regions and 3 Directorates of the central administration of the Ministry of Culture and Communication, bringing together holdings conserved in the departments covered by the general inventory of the artistic and cultural treasures of France, in archaeology departments, at historical monuments, in museums, in the archives of the Départements and in municipal libraries. These operations have benefited from funding amounting to approximately €390 000 (FF2.5 million) in 1996, €410 000 (FF2.65 million) in 1997, €620 000 (FF4 million) in 1998, €770 000 (FF5 million) in 1999, and €1.8 million (FF12 million) in 2000, 2001 and 2002.

For the year 2003, a total allocation of €2.56 million has been earmarked for digitisation in the draft financial law, which represents an increase of 40%, indicative of the priority which the Ministry accords to this activity. The national digitisation programme has made it possible to digitise 2 million images and 2 000 hours of sound recording. Digitisation of animated images was first taken into account when the call for projects was made in 2002. The digitised documents are available in the form of CD-ROMs which may be consulted in archive or documentation centres and on line by accessing the principal national databases of the Ministry, such as:

- Joconde (16 000 images) [http://www.culture.fr/documentation/ccmf/pres.htm]
- Mémoire (140 000 images) [http://www.culture.gouv.fr/documentation/memorie/pres.htm]
The national directory of digitised holdings and the site on digitisation

The national directory of digitised holdings is a pedagogical site for teachers created jointly by the Directorate of the Museums of France and the Ministry of National Education. It illustrates the history curriculum of secondary schools and is structured in a way which teaches those consulting it how to interpret images and how to approach the content of curricula through pictures.

The site “Louvre.edu” (http://www.louvre.edu) was also created in partnership with the French Ministry of National Education and is designed for use by pupils.

The Major Archaeological Sites Collection managed by the MRT makes it possible to work with researchers on the on-line representation of excavation sites or topics, such as:

- the Cave of Chauvet-Pont-d'Arc (http://www.culture.fr/culture/arcnat/chauvet/fr/index.html)
- the Morbihan megaliths (http://www.culture.fr/culture/arcnat/megalithes/fr/index.html)
- from Saqqara to the Louvre Museum (http://www.culture.fr/culture/arcnat/saqqara/fr/index.html)
- the Lakemen (http://www.culture.gouv.fr/culture/arcnat/chalain/fr/index1.html)
- and many others.

The complete collection can be found at the address: http://www.culture.gouv.fr/culture/bdd/index.htm.

Other sites have been developed with researchers in the fields of architecture and on the occasion of major national celebrations:

- Enluminures (14 000 images) (http://www.enluminures.culture.fr)
- Ethnologie (8 300 images) (http://www.culture.fr/documentation/ethnies/presse.htm)

The list of documentary databases managed by the departments of the Ministry of Culture and Communication can be found at the following address: http://www.culture.gouv.fr/culture/bdd/index.htm.

The major public institutions

Thanks to the National Library of France's digitisation plan, its digital library is building up a store of thousands of works, images and sound documents every year. As a result, more than 80 000 digital documents can be consulted at its facilities, while 50 000 of the documents in this collection can be viewed via the Internet and downloaded free of charge.

The national directory of digitised holdings and the site on digitisation

The national directory of digitised holdings (http://www.culture.gouv.fr/culture/mt/numerisation/fr/f_02.htm), maintained by different departments in the Ministry, promotes the visibility of digitised cultural collections. It currently contains 526 entries describing digital heritage holdings. Coordination is provided by the MRT.

The national directory of digitised resources has been incorporated into the site on digitisation, which contains all the information concerning the national digitisation programme of the Ministry of Culture and Communication. Legal and technical entries provide practical information. A collection of documents, articles and guides can be found on the site. Major national and European events are mentioned in an agenda. Finally, a section on Europe allows for the presentation of activities carried out in the context of the National Representatives Group.

An active policy to optimise the use of resources

The assembly of digitised collections in the context of the national digitisation programme illustrates the diversity and richness of the heritage collections and permits the growth of French contents on the Internet. Multimedia presentations targeted at various publics, including schools, teachers, tourists or the general public make it possible to exploit digitised resources to the full. These presentations display heritage, therefore, for educational or publicisation purposes. These projects are also an opportunity for specialists from different backgrounds to deploy their skills together to work on original publications.

“L'Histoire par l'image” (History through pictures), (http://www.histoire-image.org/), is &

The adoption of the Lund Principles

The “Lund Principles”, established in April 2001, are a declaration of intent on the part of various States to develop their heritage digitisation policies in a common direction. The Ministry of Culture and Communication has incorporated these principles (promotion of interoperability, of schemata designed to promote the integration of European data, of a research policy) into its orientations concerning the digitisation of cultural and scientific heritage.

In France, the promotion of a European vision of digitisation policies and programmes is ensured by the MRT and the Documentary Computer Applications and Multimedia Committee of the Ministerial Research Council (with the support of “Relais Culture Europe”) by way of numerous activities undertaken among the various Directorates of the Ministry, and at conferences and seminars. The site on digitisation has also opened a European section to publicise work carried out at European level: http://www.culture.gouv.fr/culture/mt/numerisation/fr/f_07.htm

The adoption of common European standards will be encouraged by co-operation in initiatives and national networks and by the definition of clear guidelines at ministerial level on topics such as preservation, interoperability, management of intellectual property rights, the development of standard commercial...
interfaces and access to cultural resources. The report by Bruno Ory-Lavollée, entitled La diffusion numérique du patrimoine, dimension de la politique culturelle (Digitised dissemination of heritage, a dimension of cultural policy), drawn up in January 2002 at the request of the Ministry for Culture, treats these topics and identifies co-ordination requirements at national level:


The development of a research policy on digitisation and on the optimisation of the use of digitised resources is a priority, recorded as such in the strategic orientations of research for 2002-2004 by the French Minister for Culture and Communication:


The subjects covered by the Lund Principles have also been presented to be discussed among groups of experts, co-ordinated in the context of the Minerva project: http://www.minerva-europe.org/. Common platforms for optimising the use of digitised holdings, good practices and a comparative assessment will make it possible to organise these activities in France, based on the expertise of countries which have already set up suitable structures.

The details of this organisation can be found in the National policy profile published on the digitisation site of the Ministry of Culture and Communication:

http://www.culture.gouv.fr/culture/numeration/fr/eeurope/nationalpages-1.fr.htm. It is constantly updated by the MRT (Research and Technology Department).

Co-operation activities

Policies for digitising cultural and scientific heritage in France must take into account all the initiatives so far, the national and international networks, and the research, education and cultural policies which are involved in the subject of digitisation. They must draw on centres of expertise concerning types of documents and specific technologies and promote and pool the digitised resources created to ensure the substantial presence of cultural contents on the Internet.

Co-ordination of national networks

Co-ordination of French activities in the context of work by the National Representatives Group on the Digitisation of Cultural and Scientific Heritage is ensured by the following three people:

- Jean-Pierre Dalbéra, head of the MRT (Research and Technology Department), Ministry of Culture, national representative on digitisation of cultural and scientific heritage
- Daniel Malbert, responsible for the information society, Department of International Affairs, Ministry of Culture
- Muriel Foulonneau, responsible for the information society, Relais Culture Europe

The French representatives involved in European co-operation are supported by the Documentary Computer Applications and Multimedia Committee of the Ministerial Research Council, co-ordinated by the MRT and which brings together experts from the different cultural sectors involved in the digitisation of heritage. Input is sought from the members of the Ministerial Multimedia Committee, who are informed about each of the meetings of the experts groups of the GNR. Members help with the collection of information and take part in meetings on the quality of cultural Internet sites, surveying digitisation activities, good practices, comparative assessment, interoperability, access to multilingual resources and questions concerning intellectual property rights.

European projects are co-ordinated with the Department of International Affairs of the Ministry and with the correspondent of the Ministry to the Cultural Affairs Committee (CAC).

Links with other national initiatives

The MRT has to take part in the RTP (multidisciplinary thematic network) on “digital documents” of the National Centre for Scientific Research (CNRS). A meeting held on 4 October 2002 brought together all the laboratories of the network which had responded to the call for expressions of interest issued by the European Commission in preparation for the Sixth Framework Programme of Research and Development (FP6). The MRT (Research and Technology Department) presented the ESCHER network of excellence project to the members of the RTP, which had been produced by the National Representatives Group on the Digitisation of Cultural and Scientific Heritage.

The work of national and multinational networks, such as the project called “Multilingual access to heritage”, launched by a laboratory of the CNRS, is actively pursued and financed to support digitisation endeavours.

Projects are also under way with the network of museums in the French-speaking world (France, Belgium, Switzerland, Quebec/Canada) to create a portal. This project is piloted by the OCIM, the Office for Museographical Co-operation and Information of the University of Dijon.


A network of players in the area of research into information technologies applied to culture is currently being set up. A representative from the Ministry of Culture and Communication has been appointed to the National Thematic Group of the European Commission’s Information Society Technologies Programme (IST) to talk about problems of research on digital cultural contents.

Instituting interministerial co-operation on topics connected with the digitisation of cultural and scientific heritage has become a priority. This must complete the steps taken to better integrate research results and to boost joint initiatives with the education sector.

European and international co-operation

All sectors of culture are involved in international networks. Examples include the Directorate of the Museums of France in the European Museums’ Information Institute, the Institute for Acoustic/Musical Research and Co-ordination in the ISMIR network (International Conference on Music Information Retrieval), the National Library of France in the Eblida network (European Bureau of Library, Information and Documentation Associations), and the Directorate of the Archives of France in the ERPANE European project (Electronic Resource Preservation and Access Network).

In addition to these co-operation networks, French cultural institutions are taking part in a number of sectoral projects, such as PRESTO for the restoration of audiovisual archives (INA), CUIDADO for access to
sound and audiovisual images (IRCAM), RLG-CMI for the pooling of digitised resources in more than 200 institutions worldwide (Directorate of the Archives of France, BnF), NEDLIB for the legal deposit on the Web (BnF), ARTISTE for access to high-definition images (C2RMF), STRABON for the use of digitised heritage resources to develop cultural and sustainable tourism in the Mediterranean (MRT).

International networks are also based on bilateral co-operation projects, such as with Canada (French-Canadian project to digitise and make use of the Archives of Nouvelle France) and Finland (multimedia projects in libraries).

Multidisciplinary projects involving heritage held by archives, libraries and museums are conducted by the MRT in co-operation with SMEs, the research sector and tourism (e.g. the Fondation Maison des Sciences de l’Homme (Foundation for Social Sciences) is leading the Euro-Mediterranean STRABON project supported by the Ministries of Culture, Tourism and Foreign Affairs) and charities and cultural associations (e.g. Relais Culture Europe in Minerva).

Specific projects for optimising the use of cultural heritage have been carried out in co-operation with other European countries, as can be seen from multimedia productions such as “Vivre au bord du Danube il y a 6 500 ans” (“Life along the Danube 6 500 years ago”), produced in co-operation with the National History Museum of Romania: http://www.culture.fr/culture/arcnat/harsova/fr/index.html.

The virtual visit to the “Walled town of Carcassonne” (http://www.carcassonne.culture.fr/) was developed for the network of sites “Real Middle Ages, Imaginary Middle Ages” created as part of a European project launched at the initiative of the museums of the city of Turin.

Finally, the Ministry takes part in Unesco’s work on the preservation of and access to heritage, including the draft recommendation on the promotion and use of multilingualism and universal access to cyberspace, the draft charter on the preservation of digital heritage and the draft international convention on intangible cultural heritage.

The Ministry’s participation is co-ordinated by the Department of International Affairs, whose representative also sits on the intergovernmental committee for the programme “Information for all,” responsible for co-ordinating and evaluating Unesco programmes in the area of information and communication technologies.

An international seminar of experts entitled “Promoting universal access to cultural heritage in cyberspace”, organised in September 2003 under the auspices of Unesco, made it possible to compare best practices aimed at guaranteeing a widespread and permanent access to digitised heritage.

Comparative assessment

The standards determined by the experts of the Committee on Documentary Computer Applications and Multimedia of the Ministerial Research Council are used as a reference for the national digitisation programme and for all the projects which it finances or co-finances.

A comparative analysis of digitisation programmes, based on European initiatives, the joint grid established by European experts and the European productivity study carried out by the National Library of France, the National Audiovisual Institute (INA) and the Institute for Acoustic/Musical Research and Co-ordination (IRCAM) is now being performed.
The co-operation to be entered into with other ministries on the digitisation of cultural and scientific heritage will have to include a comparison of ongoing practices and programmes. The 2003 call for proposals for the national digitisation programme by the Ministry of Culture and Communication will incorporate elements on the evaluation of projects, their objectives and feedback. Discussions at European level will contribute to these new provisions.

**Inventories and identification of resources**

A policy of taking a census of digitised resources was launched in 1996 to take account of the amount of digitisation carried out. All this census work has made it possible to contribute to a platform on the Internet giving access to descriptions of holdings.

**Available inventories**

An inventory of digitised holdings was drawn up in 2001 at the request of the Minister for Culture to take account and to optimise the results of the digitisation programmes. The directory is installed on the SDX platform, developed as part of the research and development activities of the Ministry of Culture, to publish dynamic Websites on the Internet and to carry out research in XML documents. (http://sdx.culture.gouv.fr)

The directory contains entries originating from various cultural sectors, museums, libraries, archives, archaeology departments, monuments, etc. The census has been carried out thanks to the national digitisation programme and to relays in each sector of activity, whether libraries, archives, archaeology or museum departments. The MRT co-ordinates the collection of data and acts as a national observatory. The directory of digitised holdings ought to evolve into an inter-ministerial structure. Contacts are under way with other ministries to harmonise the collection of data on digitised collections. Among the various initiatives, one might mention that of the sub-directorate of libraries of the National Education Ministry which carried out surveys of digitisation projects in progress in 1999 and 2002.

**Metadata and interoperability for the identification of resources**

The directory of digitised holdings contains two types of information, one describing the institutions responsible and the other the actual holdings and collections themselves. Descriptive catalogue entries have been devised in co-operation with representatives of each of the sectors corresponding to the various types of holding, with care being taken to keep them simple. The entries describe both the digitised holdings and the digitisation project concerning them (the status of the project, how it is financed, technical information, the theme of the collection), and the institutions which conserve them (address, representative and status). These entries thus make it possible to record digitisation activities, to guarantee the coherence of the digitised collections and to gauge the scope of the projects entered into.

Data collection and the maintenance of the entries is shared by the different directorates of the Ministry and the different establishments concerned. The entries are however compiled in a single base with a sole interface. On 26 June 2002, a meeting was organised with the Departments of the Ministry and the public institutions under its authority to analyse the ways in which data were being collected, the purposes and uses of the directory and possible future developments. Those present redefined the objectives of the directory as a way of tracing initiatives in each sector, of promoting the optimal exploitation of material on given themes, of bringing together holdings from several institutions, of avoiding digitising the same document several times, of informing the general public and finally, of identifying centres of competence on the digitisation of specific types of document.

The documentary aspects of such a system are particularly important. The description of collections, that is to say of the corpora of documentation, raises problems of consistency, between sectors, depending on the size of the institutions which manage them and depending on the extent of the digitisation projects concerned. Projects are described in line with the purposes of the directory, taking account of pertinent indicators to implement the Ministry's digitisation policy. The 26 June 2002 meeting afforded an opportunity to introduce the activities of the European working group on inventories of digitised holdings. It led to a common position on the developments hoped for from the directory in preparation for the European meeting of 5 July 2002 held in Paris on the topics of interoperability and the surveying of digitisation initiatives.

**Good practices and competences**

Surveying existing initiatives permits the identification of centres of competence for various types of documents and of the practices employed in the cultural sector.

**Examples of good practices and recommendations**

The site on digitisation described above contains reference documents and recommendations for the digitisation of heritage. The reference documents relate to technical, documentary and legal questions:

Technical and documentary information:
- Plan for naming holdings
- Sectoral entries (for libraries, archive departments, etc.)
- Recommendations on conservation
- Recommendations on documentary aspects, applications, hardware

Legal information:
- Legal questions linked to the exploitation of digital documents
- Guides for drawing up digitisation contracts
- Recommendations for the management of copyright
- Example of an assignment contract for photographic copyright

These headings sometimes refer to good practices, such as that of the protocol on cultural decentralisation,
which set up the BNSA (Digital Knowledge Bank in Aquitaine) showing the legal conditions which permitted a local authority to carry out a regional project in partnership with the State. The BNSA brings together the heritage resources of several institutions in the region of Aquitaine. A number of legal and organisational provisions had to be introduced to manage a central base, to deal with the question of the rights and responsibilities of each of the establishments concerned, to obtain funding and to incorporate a new member of the consortium. The documents which served as a basis for this regional co-operation are published on the digitisation site. Promotion of and support for good digitisation practices by our European partners will be guaranteed through a symposium organised in November 2002 to which several of our partners have been invited (http://www.alienor.org/colloque/index.htm) and by two issues of the publication “Culture & Recherche” devoted to European experiences, L’Europe et la société de l’information (Europe and the Information Society), http://www.culture.gouv.fr/culture/editions/r-cr/cr88.pdf, which came out in January 2002 and No 93, November-December 2002, appeared in November 2002. Le patrimoine numérique scientifique et culturel européen, http://www.culture.gouv.fr/culture/editions/r-cr/cr93.pdf.

Centres of competence

The selection and evaluation of digitisation projects for the national digitisation programme are carried out by the Ministerial Committee on Documentary Computer Applications and Multimedia. The members of this Committee, who originate in different cultural sectors, act as contact persons for digitisation questions. They are:

• At MRT: Alain Maulny, Martine Tayeb and Marie-France Calas, who constitute a multidisciplinary pole of skills in the area of cultural heritage digitisation
• At the Directorate of the Museums of France: Laurent Manzouevre and Mathilde Huei
• At the Directorate of Books and Libraries: Laure Cédelle
• At the Directorate of the Archives of France: Catherine Dhéréent and J’oll Poivre
• At the Directorate of Plastic Arts: Evelyne Pierre
• At the Directorate of Architecture and Heritage: Christophe Dessaix, Geneviève Pinçon, Luc Lièvre
• At the Directorate of Information Systems: Michel Bottin and Frédéric Roland.

Some specialised institutions also play a particular role and contribute leading-edge technical expertise, such as the INA (National Audiovisual Institute) for sound and audiovisual documents, the IRCAM for music and sound, the National Library of France for printed matter, the C2RMF for databases and tools for processing images for the conservation or restoration of heritage.

Major digitisation training initiatives

Training courses are organised throughout the year by the training office of the Ministry of Culture in collaboration with Mr Alain Maulny, who is in charge of the national digitisation programme and are aimed at various cultural institutions. Experts from various cultural sectors contribute to this training.

400 staff members of the Ministry of Culture and Communication were trained between 1998 and 2001. The training periods were designed for project leaders, staff responsible for implementing projects, documentalists, photographers and computer technicians (technical training in digitisation). Specific training courses (software for touching up images, digitisers, digital equipment, calibration of the process) are intended for photographers while others are devoted to legal questions and the digitisation of sound resources. Ad hoc training is given in seminars, university courses, symposia, etc. and in training sessions at the request of the Regional Directorates of Cultural Affairs (DRAC) or at the request of groups of museums, for instance.

The INA and the IRCAM organise specific training on audiovisual production, music or the conservation of digital documents. They may also take part in training periods organised by the Ministry of Culture and Communication. Seminars are also organised by the National Library of France, the Directorate of the Archives of France, and the Committee on Documentary Computer Applications and Multimedia of the Ministerial Research Council.

To implement projects, those responsible for the national digitisation programme travel throughout France to help teams which are starting up projects. The companies in charge of the technical digitisation of documents organise visits to their production site for project leaders.

All these contact persons in each of the cultural sectors concerned and the individuals in charge of the national programme for the digitisation of cultural and scientific heritage under the Ministry of Culture provide ongoing support for these projects. Such support comprises preliminary information sessions, awareness-raising of what is at stake and of the methodologies needed to implement a digitisation project, proper training activities and, finally, constantly available support and expertise to achieve the projects. Expertise and the building up of skills are constantly maintained thanks to the regular publications of the ministerial departments, including the bulletin on Encoded Archive Description (EAD), or “Culture & Recherche” on research activities in the cultural sphere: http://www.culture.gouv.fr/culture/doc/index.htm.

European added value and structure of contents

European cooperation has to facilitate the identification of good practices internationally and lead to the definition of recommendations and common priorities.

Quality and accessibility of Internet sites

Work on quality initiated at European level and based on the Brussels Quality Framework, established in 2001 in order to standardise quality criteria for the presentation of cultural resources on the Internet, will be relayed to the various French bodies involved in quality procedures. All the structures at national level should contribute to European discussion on this question and should take into account the common approach taken by the countries of Europe.

An interministerial agency, the ATICA (Agency for Information and Communication Technologies in Administration), http://www.atica.gouv.fr/, disseminates information and organises meetings on the subjects of interoperability, publication on the Internet, re-using data, on-line services, etc.

The January 2002 report by Bruno Ory-Lavollée entitled La diffusion numérique du patrimoine, dimension de la politique culturelle (Digital dissemination of heritage, a dimension of cultural policy), http://www.culture.gouv.fr/culture/actual/
Research is being carried out into emulation and migration techniques using different media by public institutions such as the INA in co-operation with the laboratories of the CNRS or the Ecole Normale Supérieure of Ulm.

The strategy of developing freeware tools is also part of the approach for long-term access to documents, whatever their format.

Long-term vision is an essential component of heritage digitisation policies. Thus the ministry's commitment to its strategic orientations for research and to programmes spanning several years will ensure that the structures put in place to digitise cultural and scientific heritage will be usable in the long term.

### Research on digitisation

An innovatory policy is essential to guarantee the quality of the services proposed to make optimal use of cultural contents and to ensure the long-term preservation of documents. Research on digitisation and the optimisation of digital resources is part of the Ministry of Culture and Communication's strategic guidelines for research for 2002-2004:

http://www.culture.gouv.fr/culture/mrt/
cm/schem2003_2004/som_scheme_rmc_01_04.htm

The following are the salient themes of the ministry's strategy:

- standardisation and interoperability of documentary systems,
- involvement of local authorities in digitisation projects,
- development of free platforms and formatting of documents in XML for the management and optimisation of collections,
- the extension of the Ministry of Culture and Communication's national digitisation programme,
- commitment to European and international research projects.

Research into the high-quality representation of collections, ontologies, the preservation of data and support media, assisted indexing and access to distributed resources are considered priorities within the cultural research structures.

### High-quality digitisation and access through contents

High-quality digitisation is the subject of research into the preservation of the characteristics of works and their optimisation (in particular by the Research and Restoration Centre of the Museums of France). Research into the technical quality of digitised documents allows the development of new ways of accessing information and assisting indexing, the recognition of images for audio-visual uses, the recognition of painters' signatures in museums' collections and research through contents to access musical works, for example, thanks to sounds with particular features.

Thanks to research conducted into the technical quality of digitised documents, it is possible to better preserve and use them.**

### Preservation of support media

In order to supply reliable data on the physical storage media of digitised data, ageing tests have to be performed. With a view to not repeating this work and in order to enable institutions which digitise their
resources to ensure that they are permanent, the National Test Laboratory and two laboratories of the National Scientific Research Centre have started a project with the MRT of the Ministry of Culture and Communication (in agreement with the BNF and INA), setting up a public interest grouping aimed at serving as a research and resources centre for the reliability and permanence of digital media and data. Given the interest of this research for all countries implementing digitisation programmes, it is planned to carry out this project with interested European partners and thus to pool the necessary funding.

Access to distributed contents
Both nationally and at European level, responsibility for maintaining data is shared among a number of institutions. It ought to be possible to connect regional initiatives to have access to common services and to lower the costs of the technical infrastructure required. The Ministry of Culture and Communication is supporting these initiatives by developing services which use freeware, particularly applications under the SDX platform, making it possible to access resources remaining at regional level. The tools developed in open source and the standards defined jointly by all the cultural sectors (in the Documentary Computer Applications and Multimedia Committee of the Ministerial Research Council) guarantee that the tools developed in one region will be able to be used in others.

In this way the BibX bibliographical management system project, in the development of which the DRAC of Lorraine is participating, is being carried out in concertation with other interested services which are likely to use the final system. The SDX platform, version 2, permits indexing of distributed resources. The objectives for 2003 will take into account experimenting with services using distributed resources, with SDX2 and the protocol “Open Archival Initiative Protocol for Metadata Harvesting”. They will make it possible to develop centres of competence in these areas and to analyse the kinds of organisation which need to be introduced to guarantee reliability of information and to offer high-quality services.

Standardisation of descriptions
The document standardisation policy must be able to guarantee the semantic interoperability of resources. It comprises both the production of sectoral or multidisciplinary DTDs, participation in international standardisation bodies and finally the promotion of equivalence and links between the various descriptive systems. The Directorate of the Archives of France, for example, has taken charge of the translation of DTD EAD (Document Type Definition Encoded Archival Description) into French. A DTD for files on artists has been devised to describe artists, their biography and their production in a consistent manner, whatever the cultural sector. It is used in the directory of performing arts which describes holdings emanating from all kinds of institutions on the performing arts. The DTD BiblioML has been devised for bibliographical descriptions.

The DTD Illustration makes it possible to describe graphic documents relating to both movable and immovable heritage. The DTD Inventaire describes scientific files in the General Inventory of Artistic Monuments and Treasures of France. All these DTDs are referenced in the directory of XML schemas of the administration held by the ATICA Agency: http://www.atica.pm.gouv.fr/pages/documents/fiche.php?id=1035&id_chapitre=8&id_theme=14&letype=0#. Work is in progress on vocabularies, particularly to offer quality metadata making it possible to access the Internet resources of the Ministry of Culture and Communication.

Optimisation of resources
Research activities in the area of optimising the use of digitised resources make it possible to provide new technical and/or methodological solutions. They aim at linking heterogeneous documentary collections together, at proposing user-friendly navigation modes, at representing cultural resources interactively and at providing means for modest structures for using their resources without having to develop very great technological skills.

In the tourism sector, the Centre Européen des Technologies de l’Information en milieu Rural (European Centre for Information Technologies in the Rural Environment) in the region of Midi-Pyrénées, http://www.cetir.net/programmes/hypercarta.htm, in collaboration with the Matra company, has combined a Geographical Information System, digital cultural resources and tourist information. The discovery of heritage is incorporated into navigation within the territory. Tools must also be developed to optimise the use of digital collections in a way which is quite straightforward. The MRT has financed the development of an application making it possible to navigate from one multimedia document to another which can be published on the Internet. The first applications generated are currently being tested. The cultural institutions which make use of them do not need high-level technical skills and can concentrate on the editorial aspects. Other application generators which are user-friendly and simple to handle are currently being studied for the use of cultural collections.
En France, la numérisation du patrimoine culturel et scientifique est organisée dans le cadre d'une politique de numérisation du patrimoine mis en œuvre par le Ministère de la Culture et de la Communication. Cette politique vise à valoriser les richesses culturelles, à faciliter leur accessibilité et leur diffusion, et à assurer leur pérennité.

La Direction des Musées de France est chargée de la numérisation du patrimoine culturel en France. Elle met en place des différentes initiatives et des projets de numérisation, en collaboration avec d'autres acteurs tels que les bibliothèques, les archives, les musées et les institutions culturelles. Elle développe des stratégies de diffusion et de valorisation des contenus numérisés, et interagit avec les autres acteurs nationaux et internationaux dans ce domaine.

La Direction des Musées de France a la responsabilité de coordonner les activités de numérisation au niveau national. Elle veille à la cohérence des actions et à la mise en œuvre de politiques communes. Elle s'assure également de la valorisation et de la diffusion des contenus numérisés, en collaboration avec d'autres acteurs du secteur culturel.

Les politiques de numérisation du patrimoine culturel et scientifique en France sont mises en œuvre à travers des projets de recherche et de développement, ainsi que des initiatives de coopération internationale. Ces projets sont financés par des ressources publiques et privées, et permettent de mobiliser des acteurs divers tels que les musées, les bibliothèques, les archives, les institutions culturelles et les entreprises.

Les grands établissements publics et des institutions du réseau culturel ont également leur propre programme de numérisation, comme le Centre National de la Recherche Scientifique (CNRS), l'Institut National de la Audiovisuelle (INA), ou encore les institutions régionales de numérisation, comme la MRT (Maison de la Recherche et de la Technologie) et le Centre National des Champs Intelligents (CNCI).

La Direction des Musées de France travaille en étroite collaboration avec les autres acteurs du secteur culturel pour assurer la cohérence des initiatives de numérisation et de valorisation des contenus culturels. Elle s'efforce de garantir une diffusion équitable des contenus numérisés, en favorisant la participation des publics les plus larges.

La Direction des Musées de France est également engagée dans la mise en œuvre de politiques de médiation culturelle, pour que les publics puissent accéder de manière simple et intuitive à ces contenus numérisés. Elle développe des initiatives de formation et de formation continue, pour que les professionnels du secteur culturel puissent acquérir les compétences nécessaires à la manipulation et à la diffusion des contenus numérisés.

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L'annuaire est installé sur la plate-forme SDX, développée dans le cadre des activités de recherche et développement du Ministère de la Culture, pour publier sur l'Internet des sites Web dynamiques et effectuer des recherches dans des documents XML.


La participation du ministère est coordonnée par le Département des Affaires internationales, qui représente la délégation au comité intergouvernemental du programme "Information pour tout" chargé de coordonner et d'évaluer les actions du Unesco dans le domaine des technologies de l'information et de la communication. Un séminaire d'experts internationaux "Vers un espace public numérique solidaire pour le patrimoine culturel", organisé en septembre 2001 sous l'égide de l'Unesco a permis de comparer les meilleures pratiques, visant à assurer un accès larges et pérenne au patrimoine numérique.

Évaluation comparative

Les standards déterminés par les experts de la Commission du Conseil de l'Europe et par le Comité ministériel de la Recherche sont utilisés comme référence pour le programme national de numérisation et tous projets associés. Une réflexion a été engagée sur l'évaluation comparative des compétences des centres de compétences, en s'appuyant sur les initiatives européennes, la grilère culturelle établie par les experts européens et l'Etat-providence pour le développement de la Bibliothèque Nationale de France, l'Institut National de l'Audiodiffusion et l'Institut de Recherche et de Coordination Acoustique/Musique (IRCAM). Le comité se réunit avec des experts de la numérisation du patrimoine culturel et scientifique de la Bibliothèque nationale des quatre ans.


L'annuaire des fonds numérisés contient deux types d'éléments, dérivant d'une part des institutions responsables et d'autre part les fonds et collections. Les fiches descriptives ont été élaborées avec un souci de simplicité, en concertation avec des représentants de chacun des secteurs afin de correspondre aux différents types de fonds. Les fiches décrivent d'une part les fonds numérisés et le projet de numérisation les concernant (statut du projet, financement, informations techniques, thème de la collection), d'autre part les institutions qui en ont la garde (adresse, représentant, statut). Elles permettent de rendre compte des activités de numérisation, d'assurer la cohérence des collections numériques et d'analyser la teneur des projets engagés.

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La collection des informations et la maîtrise des fiches sont reparties entre les différentes directions du ministère et les différents établissements concernés. Mais les fiches sont rassemblées dans une base de données rédigée en HTML. Informations culturelles et techniques sont rassemblées dans une base de données rédigée en HTML.

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La sélection et l'évaluation des projets de numérisation pour le programme national de numérisation sont réalisés par le Comité ministériel " informatique documentaire et multimédia " . La sélection et l'évaluation des projets de numérisation pour le programme national de numérisation sont réalisés par le Comité ministériel " informatique documentaire et multimédia " . Les membres du comité sont les personnes ressources des différents secteurs culturels qui contribuent à la définition des recommandations et de priorités communes.

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La réalisation de la stratégie d'archives dans les institutions publiques peut être considérée comme un processus qui implique un équilibre entre l'archivage traditionnel et le numérique.

Le Comité de Rédaction Internet propose des orientations pour l'archivage numérique et la valorisation des ressources culturelles. Les archives électroniques sont présentées comme un outil pour la préservation et la valorisation des ressources numérisées.

Le projet BibX de système de gestion bibliographique, au sein de la Direction de la Recherche et de l'Innovation DRAC Lorraine, est développé en collaboration avec d'autres services intéressés, susceptibles d'utiliser le système final.

La plate-forme SDX version 2 permet l'indexation de ressources documentaires, ce qui permet de développer des centres de compétences techniques dans ces domaines et d'analyser les modes d'organisation à mettre en place pour garantir la fiabilité de l'information et offrir des services de haute qualité.

La normalisation des descriptions

La politique de normalisation documentaire doit permettre de garantir l'interopérabilité des ressources documentaires. Elle comprend à la fois l'interconnexion de supports physiques de différentes institutions et l'extension des supports numériques aux ressources culturelles.

La numérisation de haute qualité et accès par les contenus

La numérisation de haute qualité fait l’objet de recherches pour la préservation des caractéristiques des œuvres et leur valorisation. Les recherches portent sur la qualité technique des documents numérisés, la préservation des supports et la valorisation des ressources distribuées.

Les travaux de recherche, par exemple, visent à développer des plateformes libres et des formats de données valides pour la gestion et la valorisation des collections. Les recherches portent sur la qualité technique des documents numérisés, la préservation des supports et la valorisation des ressources distribuées.

Les thèmes suivants apparaissent clairement dans la stratégie du ministère :

- la numérisation et l'interopérabilité des systèmes documentaires,
- l'intégration des dispositifs dans les systèmes d'information,
- le développement de plateformes libres et le formatage des documents pour l'accès à de nouvelles ressources.

Les recherches se font en collaboration avec des partenaires européens, tels que l'ERPANET et l'ORGANIZATION.

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