



FUTURE COORDINATION OF DIGITISATION
LUXEMBOURG, 20.-22.06.2005
ABBAY OF NEUMÜNSTER CULTURAL MEETING CENTRE

FUTURE COORDINATION OF DIGITISATION

Proceedings of the International Conference on
Future Coordination of Digitisation



Edited by Ministry of Culture, Higher Education and Research

Written under the direction of Guy FRANK and Philippe ROBIN



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Culture, de l'Enseignement
supérieur et de la Recherche



Présidence luxembourgeoise
du Conseil de l'Union européenne



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ACKNOWLEDGEMENTS

Special thanks to authors of the texts, European Commission and MINERVA Project which participated in the financing of international conference.

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Cover image:
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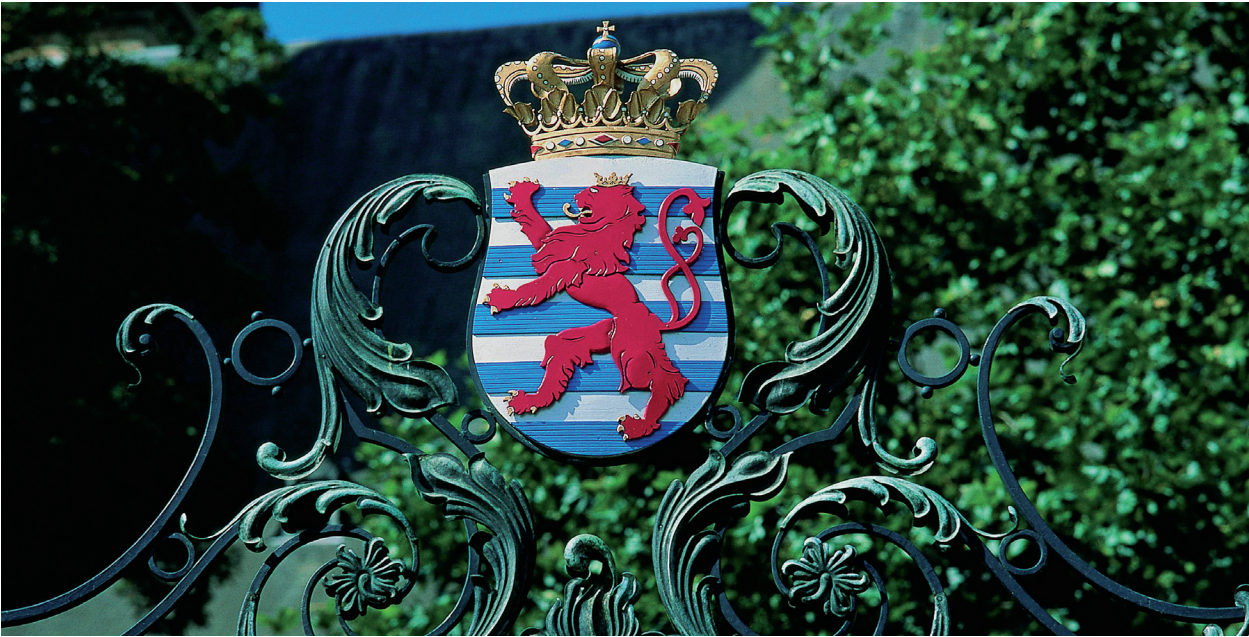
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WORK SCHEDULE FOR CULTURAL AFFAIRS

ROLLING AGENDA

The Work Plan for 2005-2006 of the Council of European Union focuses on five priorities of which one is the coordination of digitisation of heritage.

Under Luxembourg Presidency during 1st semester 2005, the three presidencies in turn (the past one (NL), the actual one (L) and the future one (UK)) agreed to act as a troika and to develop together the future coordination of digitisation initiative. The two main concerns of the troika were to work out a dynamic action plan as a follow up of the Lund action plan and to take on board the new terms of reference for NRG to transform this group from an informal network into a strong European cooperative group with clear functions and ratings. Building upon the outcomes of previous NRG meetings and especially on preparations under Dutch responsibility, the troika analysed the actual implementation of the Lund Action Plan and on-going situation. On 3 February 2005, National representatives were invited to Bourglinster to discuss the prepared documentation concerning the Dynamic Action Plan and the terms of reference concerning NRG. On 20 June 2005, the 8th official meeting of the national representative group was organized in the new Cultural Centre Abbey de Neumünster. Confirming the Lund principles, representatives agreed on the proposed Terms of Reference NRG and the Dynamic Action Plan. Support was also given to the principle of the European Digital Library and to cooperation with spin-off projects. 27 countries participated including Romania and Turkey for the first time. The outcomes were presented to the Ministers of Culture on 27 June 2005 in the framework of an informal Council.

PROGRAM OF WORK FOR DIGITISATION UNDER THE LUXEMBOURG PRESIDENCY

- **21.01.2005**
Cultural Affairs Committee
- **03.02.2005**
NRG enlarged working group
Dynamic Action Plan - ToR NRG - confirmation of Lund principles
- **20.06.2005**
8th NRG meeting
Co-ordination mechanisms for digitisation policies and programmes
- **21.06 - 22.06.2005**
International Conference
Future coordination of digitisation
- **27.06.2005**
Informal Council of Ministers of Culture

FOREWORD



OCTAVIE MODERT
SECRETARY OF STATE FOR
CULTURE, HIGHER EDUCATION
AND RESEARCH, LUXEMBOURG



FRANÇOIS BILTGEN
MINISTER FOR CULTURE,
HIGHER EDUCATION
AND RESEARCH, LUXEMBOURG

“Bringing about unlimited, lasting and secure digital access to the cultural heritage of Europe, supporting the move towards a digital Europe with a quick diffusion of cultural knowledge and thus contributing to the establishment of a ‘wealth’ of knowledge.”

By placing this priority on its agenda, the Luxembourg Presidency of the Council of the European Union reiterates its wish to coordinate national developments in the area of digitisation. That is why Luxembourg has actively participated in the drawing up and the elaboration of a dynamic action plan for the future coordination of the digitisation of our cultural heritage. Digitisation has become a serious challenge for the restoration and preservation of our heritage as well as for the protection and the future of European diversity in the areas of culture and language.

This international conference on the future of the coordination of digitisation represents one of the major events organised by the Ministry of Culture, Higher Education and Research during the Luxembourg Presidency. The discussions that take place on these two days will give us the opportunity to present both European policies and initiatives. We will be able to focus on the results of the work on digitisation initiated and realised in Luxembourg as well as at a wider European level. The debate and the reflection on the future of digitisation are going to be nourished through the confrontation of projects and the actors involved. Furthermore, the latter will be given a platform for dialogue, exchange of experience and renewal of contacts.

We wish all participants challenging debates and hope that their conclusions will allow to push forward the dynamism apparent in the important field of digitisation.

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INTRODUCTION

EXTRACTS FROM THE WELCOMING SPEECH GIVEN BY MINISTER FRANÇOIS BILTGEN



FRANÇOIS BILTGEN

MINISTER FOR CULTURE,
HIGHER EDUCATION
AND RESEARCH, LUXEMBOURG

— “Madame Commissioner, Ladies and Gentlemen,

On behalf of the Luxembourg Presidency of the Council of the European Union, it is a great pleasure for me to welcome you here, in the Cultural and Meeting Centre of Neumünster Abbey, for the International Conference on the Future of the Digitisation of Cultural and Scientific Heritage.

We are here in the ancient Abbey of Neumünster, a place rich in history and memories, which, prior to being focused toward the future, has rung the changes as a place of prayer and education, but also as a place of incarceration, having long served as the central prison.

The history of the room in which we sit today is especially moving. It bears the name of Monsieur Robert Krieps, former Minister for Justice and Culture, who, along with 3,500 other members of the Luxembourg resistance, was imprisoned here during the Nazi occupation before being deported to a concentration camp.

From a site, dedicated until now to locked doors, we have aimed at creating a place of openness and communication. In the words of the Director of the Cultural Centre, Monsieur Claude Frisoni, we have moved from “prison cells to grey cells”.

The unifying theme developed here is “the dialogue of cultures and the culture of dialogue”. To achieve this aim, the most sophisticated and the most futuristic means of human communication have been assembled in this place, open to dialogue. Communication is a theme with which I am very familiar, and to which I am deeply attached, having been Minister for Media before becoming Minister for Culture, Higher Education and Research.

We thank you for having accepted our invitation at a time when the European dream is in need of revitalisation and fresh energy. More than ever, we believe in that unifying vision: “unity within diversity”. The various seminars organised during our Presidency have shown, each in its own way, the new approach to exploring and rediscovering Europe, of making Europe humanly, socially and culturally more worthy. It is up to us to achieve this with a spirit of mutual cooperation.

If Luxembourg has simultaneously invested a lot of its skill, its energy and its time in the building of Europe and promoting the view of the present Presidency, it is because this country believes that the project of the European Union can be a “model of living together”, bringing happiness and personal fulfilment. Culture, and more especially the expression of culture, holds an important place in this. We are pleased to see that the past six months have allowed substantial progress in two prominent portfolios of our Presidency: negotiations relating to cultural diversity within the framework of UNESCO, as well as discussions on the future European programme “Culture 2007”.

Yesterday, the 8th conference of the National Representatives Group (NRG) was held in this very building. The 29 countries which took part included the 25 Member States of the European Union as well as Israel, Romania, Russia and Turkey.

This coordinating group has worked on the development of a new plan of action, but one also looking to the future of the MINERVA programme. Thus, in order to guarantee the continuity of the work of the NRG, these proposals will go to the Committee for Cultural Affairs and thence to the Council of Ministers.



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Let us not forget that the coordination of material for digitisation is one of the priorities of the “Rolling Agenda”. To be developed over the two years 2005-2006, this programme of work for the advancement of culture was set up under the Dutch Presidency and put in motion for the first time during the Luxembourg Presidency, and will be continued under the British, Austrian and Finnish Presidencies.

The European Commission – and I take this opportunity to welcome the Commissioner Viviane Reding, responsible for the Information Society and Media – will soon be involved in a new project, the Dynamic Action Plan, successor to the Lund Plan.

This new programme, more flexible than its predecessor, will cover four areas of action:

- (1) Users and contents
- (2) Digitisation technologies
- (3) Durability of the contents
- (4) Digital conservation

Today’s conference falls into the framework of the continuing development of the European MINERVA project (*Ministerial Network for Valorising Digital Activities*). This European

programme has proven itself an essential research network through its achievements and guidelines in the field of digitisation of cultural heritage. Begun in 2002, for an initial period of three years, MINERVA guarantees operational support for the National Representatives Group (NRG) which makes this project an important part of the plan of action “eEurope” and, more especially, of the European programme of digitisation as described in the “Lund Principles”.

The present conference will enable the future of the European programme of digitisation to be drawn up. It also presents the opportunity for a platform to facilitate the exchange of project experiences and the connecting of different European networks of digitisation.

Madame Commissioner, Ladies and Gentlemen,

Thank you for your attention. I wish you success in your work on the future of the digitisation of cultural and scientific heritage.”



INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

Luxembourg, 21. 22. June 2005

INTERNATIONAL CONTEXT

⊙ ⊖ ⊕

CHAIRMEN



GUY DOCKENDORF
DIRECTOR GENERAL OF CULTURAL AFFAIRS
MINISTRY OF CULTURE, HIGHER EDUCATION AND RESEARCH, LUXEMBOURG



PIERRE SCHILLING
DIRECTOR IN CHARGE OF eLUXEMBOURG
MINISTRY OF CIVIL SERVICE AND ADMINISTRATIVE REFORM, LUXEMBOURG



Tuesday 21st June 2005

There are going to be two sessions on **the first day**, a strategic one in the morning and a practical one in the afternoon. European and international visions in the area of digitisation will be introduced by representatives of the organisations responsible. Luxembourg will show what it has done so far. The aim of the Dynamic Action Plan is the continuation of the European coordination of digitisation after 2005. The coordinators of the troika of the Dutch, Luxembourg and UK Presidencies will present their strategic and operational approaches. Various cultural Luxembourg institutes will introduce the projects they initiated under the heading of the national coordination committee for digitisation. They will not only discuss concepts, obstacles and risks, but also present the projects that have already been realized. The day will close with an overview of opportunities and tools for future developments presented by the European Commission and the coordinator general of the Minerva project.

CONFERENCE

EUROPEAN CULTURAL ARCHIVES IN DIGITAL FORM: CHALLENGES INHERENT IN DIGITISATION, ACCESS AND STORAGE



VIVIANE REDING
MEMBER OF THE EUROPEAN COMMISSION,
COMMISSIONER FOR INFORMATION SOCIETY AND MEDIA,
EUROPEAN COMMISSION

— “Mr Minister, Ladies and Gentlemen,

The Luxembourg Presidency has chosen the right moment to organise this international conference on the digitisation of cultural archives in Europe.

There is a will on the part of Member States and cultural institutions to strengthen policies and actions in this area. The letter to President Barroso in April of last year, signed by six heads of state, and the letter from 19 national libraries, both clearly show that there is major political interest in making Europe’s cultural heritage more visible and more accessible through digitisation.

The work of the next two days will allow discussion of the actions of Member States, cultural institutions and the European Commission towards digitisation of the cultural heritage and open up avenues for future collaboration. They will enable an analysis of the difficulties which we have to overcome to ensure this huge task of the digitisation of cultural archive material achieves results commensurate with the existing cultural and economic stakes.

This analysis, involving all the countries of the European Union would not have been possible without the establishment, in 2001, of a group of representatives of Member States – the NRG which is present at this conference. Set up in 2002 with the support of Community funds, the MINERVA network has enabled information to be gathered and has stimulated cooperation between Member States. It has also permitted collaboration with other countries such as Russia and Israel which are participating in the MINERVA project and the work of the NRG as observers.

— **1. THE STAKES – CULTURAL AND ECONOMIC**

Digitalised cultural heritage has an increasingly important economic and social role to play. The exchange and use of information as well as its conversion into knowledge are forces of industrial and economic growth and productivity. They also provide a sector of economic activity which is important in itself and which contributes substantially to the goals of growth and the creation of employment. The importance of these industries in the European economy is estimated at around 5%.

Cultural institutions such as libraries and museums also have a considerable economic impact. For example, one recent study carried out for the British Library concluded that the library contributes £4 sterling in added value for every £1 sterling invested by the government. Another example, directly connected to digitalisation, is the RAI report that use of its audiovisual records increased by 85% within three years of digitalisation.

— **2. WHY DIGITALISE?**

There are two main reasons for digitalisation: to preserve our heritage, and to make it more accessible. Let us start with preservation. Part of the records of our libraries, our cinemas, our visual and audio archives ought to be digitalised to safeguard them. Collections of audiovisual records in analogue form are at particular risk of deterioration. A recent study of the large audiovisual archives of Member States identified 1 million hours of film footage, 1.6 million hours of video recordings, and 2 million hours of soundtrack which are at risk of being

lost in the near future if urgent action is not undertaken to transfer them to digital format. A large part of the history of the 20th century is held on audiovisual archive material. If we do not take steps to preserve them, the records of major events which shaped present-day Europe are at risk of being lost. It is paradoxical that our children sometimes have easier access to information about earlier eras than to our more recent past.

A second reason for digitisation is that it increases the value of our heritage in making it more accessible. The libraries of the 25 Member States hold over two thousand million books. The largest national libraries possess collections of over 100 million books and other items. Fewer than 2% of the collections are presently available in digital form. Digitisation is indispensable to enable greater exploitation of these for research and for cultural, educational and informative use. Moreover, large museums, libraries or audiovisual archives do not have sole prerogative of the storage and use of the European cultural heritage. Regional and local institutions, which often lack the means to access new information technologies, have to be considered. Conservators of regional museums recently estimated that, because of insufficient display space or the absence of digitisation, only 1/5th of their collections is available to the public.¹ Digitisation will save these collections from oblivion and make them visible to all.

3. WHAT ARE THE MAIN CHALLENGES?

The challenges are in the areas of organisation, technique, economy and law.

Economic aspects

Considering the number of books, documents and other material in the libraries and archives, a substantial amount of money is required for their digitisation. Cost estimates vary according to the quality of the original, the image definition, and the handling required. The average price for the digitisation of one page is between 0.5 and 1.0 Euro. Digitisation itself represents only 30% of the cost. The addition of descriptions enabling the books to be traced and to place them in a context is a further 30%. Administrative expenses account for 40%. The cost of the Google project to digitise 15 million books is estimated at between 150 million to 200 million dollars.

Organisational aspects

The size of the economic challenge illustrates the need for cooperation at a European level to achieve optimal use of available resources. This cooperation ought, amongst other things, to prevent the duplication of digitisation of identical documents and enable a single digitisation followed by the distribution of duplicates. That will require close collaboration

on the part of those responsible for the selection of the resources to be digitised.

The exchange of information concerning optimal methods is an important means of promoting the necessary skills of the cultural institutions – be they large or small. The MINERVA project has already contributed in this area. In March, 2004, MINERVA published a manual which summarised the best approaches in the various aspects of digitisation such as the selection of material, identification of the digitisation methods and programmes to be used, handling of the originals, the process of digitisation and dealing with intellectual property rights. MINERVA has also set up a prototype for small museums to help them develop a high quality internet site. The need for cooperation is not limited to coordination between public bodies. Public-private partnerships could speed up the digitisation process. Google is a recent example of this type of partnership with an economic framework which is definitely original. This type of cooperation is, however, not new in Europe. In Spain, over a decade ago, the Archivo General de Indias digitised 8 million documents with the backing of El Corte Inglés and IBM Spain. In the same vein, the digitisation of certain collections of the Louvre has been funded by business sponsorship. Telecom Italia is backing the digitisation of a library in Milan.

Technical aspects

Technological progress can help to lower the cost of digitisation while increasing the quality and efficiency. To achieve this, Member States must pool the knowledge of all their specialists – whether they work in business, libraries, archives or universities. Interdisciplinary cooperation in genuine centres of excellence can ensure progress in the techniques of digitisation in Europe.

Preservation of digital material

As the MINERVA project guidelines indicate, the long term goal of a digitisation project is to protect the information recorded and to ensure its accessibility for as long as possible. To remain accessible, however, the digitised information must be maintained. There is a risk of its becoming illegible or being lost if it is not transferred to new data carriers. Hence, a programme for the preservation of digitised material is also essential. The ideal solution would be to ensure that a programme of preservation is an integral part of any digitisation policy so that the latter would be long-lasting and economically viable.

In fact, the investment required for large scale digitisation is of such a magnitude that it would be inconceivable in most circumstances to carry out this exercise with a short term view. There are still no reliable methods or systems which enable

long-term conservation of digital material. One of the great challenges of the future is to develop these systems.

Royalties

Digitisation also raises legal problems, especially in the area of royalties. Digitisation implies making a copy and therefore raises the question of authors' fees.

Even if a library possess the rights to produce a digital form of a book, that does not mean it has the authority to grant on-line access to the digital version. Fear of infringing the legislation on royalties means that libraries do not digitise recent works with the result that these works will become scarce in our digital world.

Certainly, there are a number of important items – books, paintings, historic manuscripts - which are no longer covered by rules governing intellectual property rights because, for example, more than 70 years have passed since the author's death. The situation is, however, not straightforward. As the experience of the Bibliothèque nationale de France has shown, new editions of books no longer covered by the law on royalties but which have a new preface may lead to the situation whereby volumes 2, 3 and 4 can be digitised but volume 1, with a more recent royalties date, may not.

4. WHAT HAS BEEN DONE ALREADY?

Cooperation

The major challenges are not new. They were identified in 2001 during the Lund conference organised at the Commission's instigation. This initiative culminated with the definition of the "Lund Principles". They constitute the basis for the discussions which will take place during this two-day conference. These principles recognise the importance of highlighting European cultural heritage by making it universally accessible. Priority has to be given to establishing a system of cooperation between the programmes and practices of digitisation in the Member States.

I welcome the initiative of the Member States in setting up a group of national representatives – the NRG – and in forging close links with the MINERVA project. This is a sound basis for cooperation at European level. In the future, this cooperation will have to develop at a number of levels: between Member States, between cultural institutions, but also between the public and private sectors. Given the economic stakes and the cost, "public-private" partnerships represent an important part of the framework of this cooperation.

Ongoing research projects

In the framework of Communities' research programmes, the European Commission is supporting an extensive number of projects which contribute to technological development and the setting up of advanced services relating to digital libraries. Other projects are concerned with new tools and systems to digitise the cultural heritage, especially in museums and archaeological sites.

One of these large projects, PRESTOSPACE, co-financed by the Communities to a level of 9 million euros, is targeting the perfecting of restoration techniques and the rapid digitisation of audiovisual archive material. This project is complementary to measures undertaken within the programme, Media, which supports the creation of catalogues of films in digital format. The BRICKS project is in the process of developing a system of virtual libraries or museums. Any cultural institution can participate in BRICKS to create its own catalogue and develop innovative services for its users. The European Library project (TEL) has provided a single portal to the catalogues of European libraries and, in addition, access to some of their digital material.

These European projects conclude a number of important initiatives taken at national level. You will also have the opportunity during this conference to take part in the presentation of projects undertaken in the Grand Duchy of Luxembourg by the Bibiliothèque Nationale (National Library), the Centre National de l'Audiovisuel (National Audiovisual Centre) and the City of Luxembourg.

The Luxembourg Ministry of Culture, Higher Education and Research has also supported the setting up of the Centre Virtuel de la Connaissance sur l'Europe (CVCE) – the Centre for Virtual Information on Europe. The CVCE has developed a "European Navigator" (ENA) which can carry out multimedia searches simultaneously multi-source and multilingual in the area of digitised European heritage.

5. ANSWERING THE CHALLENGES AT EUROPEAN LEVEL

The European Commission has just adopted initiative i2010 which provides a strategic framework for the development of the Information Society.

The three priorities of the initiative are:

- i) to create a single European information space
- ii) to stimulate innovation and investment in research on the ICTs
- iii) to create a European Information Society based on inclusion.

I hope that digital libraries may become one of the high-profile projects of i2010. With this aim, I will, within the next few months, present a paper on libraries and archives in the digital area. This will address the questions raised by digitisation - the preservation of and access to digital material. These questions are crucial to the future evolution of libraries and archives. The paper will present new, more decisive steps towards digitisation and preservation and will be accompanied by on-line consultation aimed at stimulating a debate to define the steps in the mid-term.

Strengthening cooperation

MINERVA bears witness to the benefits that the museums, archives and libraries can gain from stimulating cooperation at both national and international level. In the future, this cooperation in the field of digitisation should be strengthened to move from an exchange of good ideas to the realisation of tangible and quantifiable goals. In particular, the use of quantified and measurable goals in digitisation could be a stimulus for all. These types of aims would enable the comparison of progress in the different Member States and the measurement of progress towards digitisation.

Of course, following the principle of subsidiarity, the Member States are the leading decision makers concerning their own heritage and cultural policies and, consequently, the digitisation projects. Nonetheless, the steps taken at community level, such as MINERVA, or shared research programmes, have shown that they contribute a real added value.

eContent+

The programme eContentplus has recently been adopted by the European Parliament and the Council. It aims to make digital material in the Community more accessible, useable and applicable. In 2005-2008, 60 million euros will be set aside for access to digital material in the area of culture. The programme will not underwrite digitisation per se, but will enable the national collections of material already in digital form to be linked. Thus, the user will more easily be able to combine material of interest from several different collections.

Supporting research

At the same time, relevant actions in the area of research will be strengthened. To mark the 5th call for proposals, which was launched in May 2005 within the framework of the IST research programme, the Commission will earmark 34 million euros to support the development of tools and systems which will ensure lasting accessibility and use of cultural and scientific resources. Hence, for the first time, a sum of money has been specifically set aside for projects pertaining to the preservation of digital material within the framework of the research programme.

In the future, within the framework of the research programme, new initiatives are expected in digitisation and the conservation of digital material. A completely new idea which is particularly promising is investment in **centres of excellence**. It is essential to gather together the knowledge and skills in the areas of digitisation and preservation of material. For that, partnerships are necessary, involving political decision-makers, libraries, archives, research facilities and the private sector. A European network of centres of excellence will reinforce the standards of excellence and will help all the cultural institutions and their staff to tackle the difficulties of digitising their collections. The centres will develop advanced technical solutions to overcome the challenges of digitisation and the preservation of material. They will make these solutions available to all our institutions and, wherever necessary, adapt them to individual needs. They will also support the development of skills which are lacking today, particularly in small institutions.

6. CONCLUSION

Digitisation of European cultural and scientific heritage is a major challenge from a cultural and economic point of view. Today, new technologies enable the realisation of the dream of the scientists of the past: the creation of a universal library.

However, to date, less than 2% of the contents of libraries and archives are available in digital form. If we want to make real progress, a clear commitment from the Member States and the Commission is required. I am determined to strive in this direction. I am convinced that, with the contribution of forces such as MINERVA, the NRG and all the cultural institutions involved, we will be able to take a notable step towards the realisation of a virtual European library.

I wish you a successful conference.”



CONFERENCE

THE CONVENTION FOR THE SAFEGUARDING OF THE INTANGIBLE CULTURAL HERITAGE (THE 2003 CONVENTION) AND ITS CULTURAL SPACES AND ASSOCIATED DOMAINS



RIEKS SMEETS

HEAD OF INTANGIBLE HERITAGE SECTION,
DIVISION FOR CULTURAL HERITAGE
UNESCO

The lengthy quest for the function and values of cultural expressions and practices, and of monuments and sites, as led by UNESCO, has paved the way for new approaches to understanding and protecting our cultural heritage. These approaches, which involve the recognition of communities and groups as those that enact, recreate and transmit the intangible or living heritage, found their culminating point in the adoption, in October 2003, of the Convention for the Safeguarding of the Intangible Cultural Heritage by UNESCO's General Conference.

According to the 2003 Convention, the intangible cultural heritage (ICH) – or living heritage – is the mainspring of our cultural diversity and its maintenance is a guarantee for continuing creativity.

The Convention states that the ICH manifests itself in the following domains :

- Oral tradition and expression, including languages as a vehicle of the intangible cultural heritage;
- Performing arts (such as traditional music, dance and theatre);
- Social practices, rituals and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship.

It defines the intangible cultural heritage more abstractly as the practices, representations, expressions, as well as the knowledge and skills that communities, groups and, in some cases, individuals recognise as part of their cultural heritage. Interestingly, the Convention also includes in this definition instruments, objects, artefacts and cultural spaces that are associated with manifestations of the ICH.

The definition also indicates that the intangible cultural heritage that is to be safeguarded by this Convention:

- is traditional, i.e. transmitted from generation to generation;
- is alive, i.e. constantly recreated by communities and groups, in response to their environment, their interaction with nature, and their history;
- provides communities and groups with a sense of identity and continuity;
- promotes respect for cultural diversity and human creativity;
- is compatible with international human rights instruments;
- complies with the requirements of mutual respect among communities and of sustainable development.

The Convention will enter into force three months after the deposit at UNESCO of the thirtieth instrument of ratification by member state. So far, 14 states have ratified. It will be implemented by an Intergovernmental Committee, whose members will be elected by the General Assembly of States party to the Convention.¹ The Committee will have many tasks; it will, among other things, make decisions on inscriptions of ICH elements on the Representative List for the ICH of Humanity that is established by the Convention. It will also manage the special Fund, equally established by the Convention, which is mainly to be used for capacity building in drafting and implementing action plans to safeguard and elaborate national inventories of ICH.

Many states have already started drawing up one or more inventories or catalogues that present the ICH present on their territory; often these inventories contain references to more extensive documentation. In some cases this information is made available on the web. It is obvious that over the next ten years extensive data collections concerning the ICH will be available on the web. It will be up to the Intergovernmental Committee that will implement the 2003 Convention to make recommendations to States concerning the ways they may wish to collect, take stock of, document and disseminate their ICH.

Domain 1: Oral traditions and expressions including language as a vector of ICH

Oral traditions of the Aka Pygmies of Central A

Hudhud Chants of the Ifugao in the Philippines

Domain 2: Traditional performing arts

Kutiyattam, India

the Royal Ballet of Cambodia

Domain 3: Social practices, rituals, festive events

Carnival of Binche, Belgium ->

Baltic celebrations

Carnival of Barranquilla, Colombia ->

Jongmyo, Rep.Korea

Domain 4: Traditional craftsmanship

Zafimaniry woodcrafting, Madagascar

Zapara cultural heritage, Peru

Domain 5: Knowledge about nature and the universe

Vanuatu Sand drawing

Zapara People, Ecuador Peru

Wajapi, oral en graphic Expressions, Brazil

Andean cosmonomy of the Kallawaya, Bolivia

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20 ¹ In April 2006 46 states had already ratified the 2003 Convention. Romania was the thirtieth State to do so on 20 January, 2006. Consequently, the 2003 Convention entered into force on 20 April. The following European Union Member States have so far ratified: Latvia, Lithuania, Estonia, Luxembourg, Hungary, Belgium, and Slovakia (in this order). Four more EU countries are expected to ratify the Convention before the end of 2006.

CONFERENCE

HERITAGE POLICY IN A EUROPEAN CONTEXT

JOHN MYERSCOUGH
INTERNATIONAL EXPERT
(UNITED-KINGDOM)

increasingly joined towards the end of the nineteenth century by the new state theatres in northern and eastern Europe from Sweden to Hungary.

TWENTIETH CENTURY

The scope of national cultural policy broadened in the twentieth century to include the live arts alongside the heritage, initially during the inter-war years. Systematic policy also extended to cover the entire state and all levels of government. This could have been for the good in, for example, the works of the French popular front government and the creation of the BBC in Britain. It was less so in the cause of fascist and communist regimes, as national cultural policy became a tool of totalitarianism.

Despite this mixed inter-war history, the concept of national cultural policy was generally adopted in the reconstruction of Europe in the post-war area and went forward on a liberal democratic basis in the West. Ministries of culture were founded by states almost everywhere, if not for historic reasons at the federal level in West Germany. Sometimes the new ministries had to be extracted from ministries of education or ministries of religious affairs, where the responsibility had often been previously located. Britain had possibly been the first state to create a national museum by parliamentary action, namely the British Museum in 1759, but it was the last large European state to establish an independent ministry of culture. This was in the 1980s, having delivered state funding since the 1940s through the arms-length principle.

Growth in public funding drove the expansion of cultural provision through new institutions, theatres, dance, opera and drama companies, orchestras, halls and museums, so as to make artistic and cultural experiences accessible to all. The growth was a partnership with the community of artists whose freedom of expression was respected. Culture became an explicit aspect of welfare-state provision in many parts of Europe, especially in northern Europe. The mission was to civilise by giving access to the best as a democratic right and also to inoculate against commercial influences in culture, which threatened to debase and corrupt the taste of the people.

BACKGROUND

These reflections on the long story of cultural policy in Europe are intended to set an historical context for the deliberations of this conference on the “future coordination of digitisation” in the heritage (museums, libraries, archives) across Europe.

BUILD-UP

Indeed, it was in the heritage field that the cultural policies of the states of Europe so often took root in the eighteenth and nineteenth centuries as an aspect of the building of nation states and the making of national cultures. With the establishment of uniform language areas and national history narratives went the protection of monuments and the building of state museums. Museums linked the interest of artists to national aspirations in connecting the historic achievements of the past to the present and the future. On the latter, national academies for the training of artists were created so as to obtain economic benefit from training in industrial design and artistic drawing. At the same time, the museums contributed to the creation of the new civic order and offered cultural enfranchisement to the people through education in their heritage.

Before the twentieth century, nation states usually left music and theatre to the municipalities, voluntary effort or commerce. Most states would have agreed with Thorbecke’s Dictum, which guided Dutch national cultural policy, that “government is no judge of science and art”. The state theatres of the German world and the contribution of the French state to opera, dance and drama were the exceptions, which were

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TURBULENCE

Some twenty years ago this world began to change in the Western Europe under four pressures:

- retrenchment in public expenditure, in response to the cold blast of public-sector reform, required the cultural sector to manage with the same or shrinking levels of public resource;
- the rising significance of cultural experiences communicated through the market place, especially those involving the new technologies (successful at reaching the young and diverse publics), made the scope of traditional cultural policy appear narrow;
- pressure from the new ambitions of cities and regions (and nations within states) in one direction and from supra-national, globalised forces at work in the other, challenged the supreme and exclusive role of the nation state in cultural policy;
- statistical research showed that the extension of access to all did not result in the take-up of art by all; the arts funded by the state remained minority interests and previously positive trends of rising attendance and expanding reach went into reverse; this created a “democratic deficit” which challenged the political basis of state cultural policy.

END OF “BIG” GOVERNMENT

The era of “big” government was coming to an end, which threatened some reduction in public services, especially those dependent on central provision and comprehensive state funding. Built-in funding commitments to major cultural institutions absorbed an increasing proportion of cultural budgets and constrained the ability of policy makers to innovate and respond to new areas of demand. The boundaries of the state were required to shrink and services previously part of government were put out in whole or part to individual and private provision.

COUNTRIES IN TRANSITION

A further signal of the end of “big” government was the collapse of the communist regimes and the emergence of the new democracies in Europe. From a different direction, these states arrived at a similar point to the established democracies. Their engagement in a process of deep political transition from authoritarian, ideological states to democratic social organisation, raised the issue of the appropriate exercise of public responsibility in the cultural field in acute form.

Attendance dropped from the artificially boosted levels of previous regimes. These countries continue to wrestle with an inheritance of over-extended cultural structures, the difficulties of setting priorities in a new political environment and the profound shift in the perceived function of culture, where state control used to be paramount.

RESPONSES

Responses to this pressure on policy have taken four principal forms:

- engaging with the wider economic and social significance of the cultural sector and finding new partners and a wider role in realising this potential, including targeting the creative industries as a legitimate sphere of cultural policy and exploring relevant technological opportunities;
- exploring new funding and management models involving mixes of public and private financing and looser forms of institutional organisation, untied from government;
- facing up to the issue of the weight of sustainable provision, resulting in mergers and closures and measures of decentralisation;
- switching focus from visitor numbers to the quality of engagement with culture as the measure of success.

HERITAGE PRESSURE

Heritage policy has not been insulated from the pressures on cultural policy in general referred to above:

- the long rise in museum visitor figures continued into the 1990s, when it appears to have paused, with falling attendance evident in some parts of Europe;
- competition from commercial alternatives in the use of leisure time and the rise of the “event” culture (and a mix-and-match approach) challenges the integrity of museum attendance, splintering interest and reducing frequencies;
- the extended range of the heritage remit and the inflated structure of institutions and weight of collections pose issues of sustainability and affordability;
- in the heritage too, the regions and cities protest about neglect and unfair distribution of funding.

HERITAGE RESPONSE

Responses to these issues in the heritage cover four main areas:

- pursuing the wider economic and social benefits that museums and heritage can bring in terms of regeneration (many examples, not least Sicily, with major opportunities in the new democracies);
- delivering institutional changes by measures of untying from government (notably in the Netherlands);
- addressing the quality of experience of visiting heritage attractions by building support services (eg in catering and retail) and also by developed educational and research programmes (the UK is exceptionally active in this area);
- reassessing the weight of institutions and accumulated heritage assets, including institutional trimming and mergers, transfer of ownerships into private hands and opening up the possibility of deaccessioning from public collections (a difficult area in which Italy is facing up to an exceptional challenge).

POLICY LINE

Such response can work to increase public expenditure, especially in partnership with private involvement, and key examples include the UK and Luxembourg. It is an exquisite irony that some of their responses return to nineteenth-century goals, in pursuing through the heritage civic order, education, personal improvement and economic advancement. The difference is that we do this now with the help of more partners and with undreamt-of technological support and, for the most part, we are no longer seeking to forge nation states but rather to understand origins, gain respect for diversity and achieve social cohesion. There is particular opportunity in urban policy for the heritage to help in redefining civic order and re-enfranchising civic space for a citizenry, including the excluded and many of diverse ethnic origins.

STATE OF EUROPE

Some twenty to thirty years ago the European Commission was toying still with building a European state and echoed the practice of the nineteenth-century nation states, by deploying cultural action to this end. These included some heritage investment into the restoration of things of European significance, eg the Acropolis in Athens and the Chiado central area in Lisbon. Various cultural symbols remain from this era, such as the European Community Youth Orchestra, and the European Capital of Culture programme continues successfully

to reach across the nation state to establish partnerships with the cities of Europe. The much-quoted dictum of Jean Monnet, possibly apocryphal, “if we were to begin again in building the European community, we would start with culture”, catches the mood of that moment well.

RULE OF SUBSIDIARITY

Since 1992, cultural policy in the strict sense has been confined within Europe to action by the member states, under the principle of subsidiarity. Subsequently, the European Union had addressed culture as an aspect of its prime remit to encourage the free movement of goods, people, information and ideas and to develop cooperation. The small spending programmes on culture are justified as facilitating this purpose, rather than as harbingers of an articulated cultural policy for Europe. Competition law has been modified to accommodate the specific nature of the cultural sector in economic terms and the need for member-state aid. Where appropriate, a cultural dimension has been added to EU programmes in the social and educational field and, with notable success, in spending of the structural funds. Spending on symbolic measures of European cultural significance has not been allowed to expand and programmes to counteract the impact of the market and defend diversity (eg protecting small languages or fostering local cultures) have not grown at the European level.

SUPPORT ROLE

Despite the death of the dream of European cultural policy, there are things of value for the cultural world which can be accomplished in the interstices of the European Union. The focus needs to be on supporting the sound operation of the cultural systems across Europe in ways which improve policy formation by states, regions and cities, and improve delivery by those who work within the sector. Policy support to member states at the European level may not seem a glamorous role but it can encompass fundamental work and represent excellent value for money.

DIGITISATION AND THE NRG

The work on coordinating digitisation for the heritage in Europe, the subject of this conference, seems to be an excellent example of this. This is addressing strategic development in a vital field of systemic importance. Whilst the EU-funded Minerva project has provided organisation support, the key step has been to build the mechanism of the national representatives group (NRG), which brings expertise together, coordinates the work and disseminates the results. This is a voluntary arrangement

created by the member states within a European framework. Its value is already confirmed by the positive responses to its work from within the member states.

CULTURAL STATISTICS AND EGMUS

By the same token, there has been much reflection on the need for comparative European cultural statistics, the value of which lies in the insights which come from being able to check benchmarks and identify trends. The Council of Ministers resolved to extend its LEG process to the cultural sector, which resulted in a valuable report in 2000, but it fell short of producing figures. Two member states, The Netherlands and Luxembourg, later joined by Germany, took the view that the practical way to produce useful and reliable numbers would be to work at the sectoral level, bringing together practitioners from the field with policy makers and statisticians and a start was made on museums, which led to the creation of the European group on museum statistics. The results of the work EGMUS after five years are being presented during this conference. The hallmarks for this success again were to function at the pan-European level on the basis of member-state action in partnership with the relevant sector.

COUNCIL OF EUROPE COUNTRY REVIEWS

It is important to remember, at this juncture, the significant work of the Council of Europe on cultural policy, which embodies similar approaches. The programme of country reviews, using a peer-review process, has delivered significant results by engaging directly on an inter-governmental basis with national cultural policies. Of course, a distinguishing feature of Council of Europe work is that it is set in a framework of cultural cooperation designed to foster the cultivation of common values, principles and ideals.



HERITAGE AWARENESS

The rapid pace of economic change has turned our minds backward to memories. The lowering of barriers between states within the European space and the reduced cost of travel, have fostered exploration of cultures which, together with other movements of peoples, have increased awareness of self and stimulated the questioning of identity and the pursuit of origins. Whilst the long rise in visiting heritage attractions may have reached a plateau (temporary or otherwise) in the 1990s, the indicators of personal engagement with the heritage in terms of visits to archives, involvement in family research and membership of study groups, from a small base, are rising strongly.

CRITICAL HERITAGE CHALLENGE

Perhaps the most critical challenge facing heritage policy today is to enable citizens to achieve individual understanding and knowledge of the shared cultural inheritance. This is a responsibility of states, cities and regions, with a strategic implication for Europe, which gains in importance, even urgency, as the European project continues its completion towards Europe's geo-political boundaries in the East. We are no longer forging nation states but engaged in a subtler process of relating our diverse past to our diverse present, with the goal of social inclusion and civil peace.

ENCOURAGING DEVELOPMENT

In this context, the progress being made in the coordination of digitisation of the heritage is an encouraging development. The benefits of this will be reflected in collections' management, research, communication and increased access. It is known that IT can expand access and increase reach across class, nation and ethnicity. In this, a degree of optimism should emerge from the deliberations of the conference.

PRESERVATION OF CULTURAL HERITAGE, CULTURAL DIVERSITY AND KNOWLEDGE SOCIETIES

by ISABELLE VINSON
EDITOR-IN-CHIEF
MUSEUM INTERNATIONAL,
DIVISION FOR CULTURAL HERITAGE
UNESCO

In pursuance of its missions in the fields of education, science, culture and communication, UNESCO has promoted the concept of knowledge societies based on the four principles of the freedom of expression, quality education for all, universal access to the knowledge, and information.

The concept of knowledge societies is, in the field of culture, closely connected to questions of diversity, its defence and its promotion in an environment which is constantly changing but which tends to favour global actors and commercial interests.

Understanding “diversity” has animated and oriented international political debates for the past fifteen years. From the Report of the World Commission on the Environment and Development in 1987, called the Brundtland Report, up until the *Universal Declaration on Cultural Diversity*, adopted by the 191 Member States of UNESCO in November 2001, the concept of diversity has been used to describe fields such as nature and environment, and then culture. It has also been used to embody a new vision for international action by associating culture with democratic pluralism, human rights, international solidarity and creativity. However, in the information age, does digital culture embrace this vision and contribute to preserve and sustain cultural diversity?

The spontaneous image that we have of digital culture in the Information Society is precisely that of diversity. Diversity that arises from the assimilation of Internet to a reservoir of content that is fed by a proliferation of initiatives by individual and agents that are spontaneously motivated to construct the digital world. But, that which is for some people

the richness of networks is, for others, an uncontrolled tidal-wave of content in a space which is abandoned to the chaos of struggles for visibility and shares in a ephemeral market. In the end, as Kwame Anthony Appiah¹) has shown in a report from the United Nations Programme for Development, directed by the Nobel Prize-winner of economy, Amartya Sen, the confrontation between numerous cultural contents connected with singular identities will lead to the cultural standardization of a space where distinctive cultural signs will have eliminated all unifying signs. Defending the preservation of the broadest variety of cultural contents as the cornerstone of digital society whose vocation is the dissemination of knowledge is thus far not sufficient.

We must therefore look beyond the surface of screens and argue that preservation of cultural and scientific heritage must not be understood as production of digital contents only but more globally, as a policy process towards a common platform of action with common ethical criteria. Only a global policy process would eventually ensure a central role of heritage in knowledge societies and would forge an alliance between digital heritage and cultural diversity.

What does this commitment mean for the heritage community from the perspective of an inter-government organisation like UNESCO?

Cultural Heritage is a major cultural resource of networks. I will quickly pass over this point since as actors who give culture a substantial role in electronic information flows and interchange; you are more familiar with this issue than anyone is. More importantly, the shift in the very notion of heritage has contributed to the intelligibility of the concept of cultural diversity and its social function. The anthropological approach to culture and the realignment of the social sciences around processes to the detriment of objects has strongly influenced the re-ranking of heritage into a series of different, complex and inter-dependant forms of expression, as manifested in social conventions. Today, the diversity of forms of expression determine heritage far more than adherence to a given descriptive norm. New objects have been added to the list of categories used in cultural institutions, such as cultural landscapes, oral and intangible heritage, holy sites and industrial heritage. This

¹ Cité par Amartya Sen, “Culture, Identity and Human development”, intervention présentée à une réunion UNDP, September 2003.

mutation, reflected in scientific models specific to the field of heritage, has not occurred internally under pressure from changing practice. On the contrary, it has been driven from within areas outside changing social realities: towns and cities, waves of migration, the spatial and cultural reconfiguring of identities and technological changes that have accompanied social transfers and reconfigurations.

The development of heritage has reflected the de-intellectualisation of culture in favour of other types of experience. The emergence of the notion of intangible heritage is a sign that the issue of heritage has finally shifted from cultural artefacts with distinctive features to practices, human relations and their role in transforming social structures. The unanimous adoption at UNESCO's last General Conference of *the Convention for the Safeguarding of the Intangible Cultural Heritage*⁽²⁾, whose scope encompasses practices, mental perceptions, knowledge and know-how, demonstrated that this shift has gained political recognition.

Digital content mainly exists interactively and in the form of broad areas of cooperation. In the same way as reception and expression related activities merge in environments driven by computer technology, heritage is now founded on sharing, on transfer and on social communication shaped in a given set of practices. The artefact now ranks below culture and heritage, just as the digital reproduction of an art object only draws its value from its cognitive, educational and more broadly cultural use by Internet users. In their respective fields, intangible heritage and digital culture each reflect the removal of time and space as a reference framework.

To summarise, the Mexican anthropologist Lourdes Arizpe, President of the International Council of Social Sciences, in her study on the relations between intangible cultural heritage and cultural diversity, offers a relevant and clear conceptual framework for cultural diversity in the digital world. She argues that *«cultural diversity as a human concept reflects the cultural relatedness of all groups around the world»*⁽³⁾.

The functional convergence between heritage and the digital world also goes hand in hand with ethical convergence.

The Internet has raised social issues requiring sweeping decisions such as global governance, knowledge access modes and the economisation of production and interchange. At the same time, the awareness of heritage has led us to regard cultural rights as human rights, to equate the destruction of cultural heritage to a crime against humanity, as pronounced by the International Criminal Court for the former Yugoslavia with a view to raising broad and ethical societal undertakings.

Until now, our responses to our desire to give globalisation a human face and to support the growth of our digital culture have mainly been normative in the form of International conventions and charters. Two instruments adopted by UNESCO's General Conference in October 2003, *the UNESCO Charter on the Preservation of Digital Heritage* and, secondly, *the Recommendation on the Promotion and Use of Multilingualism and Universal Access to Cyberspace* are among the first international normative instruments on heritage that aim to fit the digital world within an ethical framework.

Insofar as normative instruments largely depend on the consent of the countries concerned, these instruments often prove weak. They nonetheless remain consensual and useful in preparing national policies within a global framework. However, the cultural institutions and their professional networks are ideally positioned to forge a consensus between states by laying down a code of ethical and technical standards.

Thus, I will say that first, only international action can adjust to the trans-national nature of the digital world and tackle the ethical issues raised by its expansion and social appropriation but that, second, cultural institutions in nation-states are the key actors and instruments concerned by the application of legal instruments protecting cultural heritage in both physical space and cyberspace

The intention of my text was not to praise UNESCO's programmes or to offer you a theoretical and ideal vision of knowledge societies. I have tried to argue that the preservation of cultural and scientific heritage is not a sub-chapter of the information society but a core and fundamental issue in building democratic societies and ensuring cultural diversity. The ultimate aim of this text on behalf of my institution is to ask you, as representatives and members of the heritage community, for your commitment and support to defend cultural diversity with strong political resolve.

This, I am sure, will change the way the world will evolve in the digital age.



CONFERENCE

OTHERS INTERNATIONAL CONTRIBUTIONS



GUY FRANK

HEAD OF CULTURAL STATISTICS
AND ACCOUNTING DEPARTMENT
MINISTRY OF CULTURE,
HIGHER EDUCATION AND
RESEARCH (LUXEMBOURG)

the second half of the year, a main objective of British work will be to insure the continuation of NRG and to finalize the Dynamic Action Plan (DAP). A document which outlines Terms of Reference for the re-energised NRG, that is to be established during the period of the UK Presidency, will be transmitted to Cultural Affairs Committee on 28 September 2005. The Dynamic Action Plan should be agreed upon during the 9th NRG meeting in Bristol on 15th November.

PRESENTATION OF THE NEW ACTION PLAN FOR THE EU COORDINATION OF DIGITISATION: THE DYNAMIC ACTION PLAN

This new action plan presents a range of short-term and longer-term initiatives designed to make Europe's cultural and scientific resources more accessible to a broader public by using digitisation technologies and the Internet.

The action plan is the result of work carried out by the National Representatives Group on digitisation policies and programmes, in particular under the Netherlands, Luxembourg and UK Presidencies of the EU and takes forward the issues of the Lund Action Plan (2001).

This Dynamic Action Plan defines two levels (a strategic and an operational one) and four principal action areas.



DAVID DAWSON

HEAD OF DIGITAL FUTURES,
MUSEUMS LIBRARY AND
ARCHIVES COUNCIL -
MLA (UNITED-KINGDOM)

NRG, NEW ROLES AND TASKS, WORK PLAN FOR THE UK PRESIDENCY

After a short retrospective of the main steps realized in the European digitisation programme for cultural contents and of the importance of National Representatives Group (NRG), the rolling agenda of UK-Presidency is focused upon. During



PATRICIA MANSON

HEAD UNIT LEARNING
AND CULTURAL HERITAGE
DIRECTORATE CONTENT,
DG INFORMATION SOCIETY AND
MEDIA (EUROPEAN COMMISSION)

ACCESS TO AND PRESERVATION OF CULTURAL AND SCIENTIFIC RESOURCES

European Commission dedicates 36 million euros to research on access possibilities to cultural heritage in the 6th framework programme of Research and Development (2005). This part will considerably be increased in the 7th framework programme concerning research in digitisation in general, in digital preservation and access to cultural content, especially through a network of competence centres in these domains (2007). The eContentplus programme for the period 2005 to 2008 will attribute 60 million euros to efforts dealing with interoperability of collections and digital services as well as the access and the multilingualism of cultural material. European eContentplus programme tries to improve the accessibility and the usability of European digital content by focusing on domains where the market by itself cannot stimulate enough the disposal of digital content and services. eContentplus programme concentrates especially on cultural domains like archives, libraries, museums etc where interoperability is less realized between existing networks, by integrating the different types of organisations, structures, systems and cultural collections as well as the different types of content.

26 ² A full definition of intangible cultural heritage is given in Article 2 of the Convention. The Convention and Declaration may be consulted on <http://portal.unesco.org/culture> under the heading «Intangible Heritage».

³ Arizpe, Lourdes, «Intangible Cultural Heritage, Diversity and Coherence», in MUSEUM International, n°220/221, May 2004, vol..



BERNARD SMITH

HEAD UNIT INTERFACES
DIRECTORATE CONTENT,
DG INFORMATION SOCIETY AND
MEDIA (EUROPEAN COMMISSION)



ROSSELLA CAFFO

PROJECT MANAGER MINERVA
DIRECTOR OF MODERN AND
CONTEMPORARY HISTORY
LIBRARY, MINISTRY OF CULTURAL
HERITAGE AND ACTIVITIES (ITALY)

THE COORDINATION OF THE POLICIES OF DIGITISATION IN EUROPE

The “eEurope Action Plan”, launched by the European Commission and endorsed by EU Member States at the European Council in June 2000, recommended the creation of a coordination mechanism for digitisation programmes across Member States.

On 4 April 2001, representatives and experts from Member States met in Lund (Sweden) to discuss the issues involved and to make recommendations -[The Lund Principles](#) - for actions that support coordination and add value to digitisation activities in ways that would be sustainable over time. These recommendations are implemented by a group of National Representatives (NRG) and successive Presidencies, and benefit from operational support for the Minerva project.

National Representatives Group (NRG) on Digitisation Policies in the EU Member States

The [NRG members](#) are officially nominated experts from each Member State and act as ‘a steering group for the activities related to the coordination of digitisation policies and programmes, with special emphasis on cultural and scientific resources and on the contribution of public cultural institutions’. The aim of the group is to monitor progress regarding the objectives encapsulated in the [Lund Principles](#). NRG meetings take place every six months. They have become a platform where national experiences are shared, and where cooperation and coordination of national activities across the European Union are planned. They provide a stable, continuing focus for consensus building between Member States, promoting good practice and encouraging initiatives to support the visibility of quality cultural sites.

The objectives of the NRG are to:

1. Share national experiences and create a common platform for cooperation and coordination of national activities across the European Union;
2. Provide a focus for consensus building between Member States on the agreed actions for coordinating policies and programmes and for implementation at a national level, including through national networks where appropriate;
3. Establish mechanisms for cooperation with other ongoing efforts and networks at an international level;
4. Identify emerging issues which affect these objectives, and agree and propose appropriate actions;
5. Promote good practice within and between Member States, and thereby support skills development and training;
6. Encourage initiatives to support the visibility of quality cultural sites;
7. Identify and nominate experts for workgroups as necessary, and ensure dissemination and follow-up of their results;
8. Produce a report on progress for Member States every six months; the report should include recommendations for future action.

MULTILINGUISM PERSPECTIVES

“The IST WP 2005-2006 focuses on the future generation of technologies in which computers and networks will be integrated into the everyday environment, rendering accessible a multitude of services and applications through easy-to-use human interfaces”.

The challenges are interoperability to make interfaces as simple as possible and interaction as easy as possible and, for citizens, to be able to access, receive and use information in their own language. The European Commission supports research, development and integration of advanced technologies (intuitive multi-modal interfaces) and integrated multilingual information systems and services (speech-to-speech translation).

So far, interaction and multilingual systems had been focused upon. The objectives are natural and easy to use interfaces (multi-modal Interfaces) that use several modalities or are multilingual. Multilingual communication is now recognised as a really difficult research challenge.

The fact that basic infrastructure exists and that the importance of language resources has been recognised can be considered as achievements as well as the work realized already on search engines, speech, machine translation and evaluation.

Weak integration into real applications and existing language resources which are not integrated and used must be classified under failures and much work still remain to be achieved on these items.

Priorities for the future must be oriented around these topics and, at the European level, focus must be given on infrastructure, coordination and R&D for multilingual systems.

MINERVA TOOLS FOR THE FOLLOW-UP

After outlining the European framework for the digitization on the cultural heritage and the creation of portals concerning culture, the current debate on awareness about the importance of digitization increasing at all levels was detailed as well as the objectives and the means put in place to develop a European policy of digitisation (National Representatives Group, the Lund Principles, the Lund Action Plan the role of successive Presidencies, the NRG, European programs, i2010etc.). A short retrospective underlined the role of the MINERVA project and the most important results it has achieved between 2001 and 2005; political level (rolling agenda, relationship with the CAC, Charter of Parma, progress report), technical level (technical guidelines for digital cultural content creation program, good practice handbook, handbook for quality in cultural web sites), international cooperation, etc. Also Minerva project foresees a development of a set of educational materials using an eLearning approach. The European Michael project (Multilingual Inventory of Cultural Heritage in Europe) is a spin off project supported by Minerva. Minerva’ cooperation with several other EU projects like Presto Space, Bricks, Delos, Erpanet, Euridice, Calimera was presented and this presentation concluded on describing shortly the work still to be done and the conation with “The European Digital Library”.





Ministerial Network for Valorising Activities in digitisation (MINERVA)

■ MINERVA, with its extension to new Member States MINERVAplus, is a network of national ministries which aims to discuss, coordinate and harmonise digitisation efforts (www.minerva.org). Due to the high level of commitment guaranteed by the involvement of EU governments, it aims at co-ordinating national programmes. Its approach is strongly based on the principle of embeddedness within national digitisation activities.

■ It will also establish contacts with other European countries, international organisations, associations, networks, international and national projects involved in this sector, with a special focus on actions carried out in the DigiCult action of IST. The project will set up an advisory group; it is going to rely on existing actions to identify and integrate best practices in a pan-European framework in order to facilitate the adoption of the Lund action plan.

The support of the European Commission

■ The activities of the European Commission in the area of digitisation are coordinated by the Information Society and Media Directorate.

■ If financing digitisation is mainly a responsibility of Member States, The European Commission can contribute in areas where there is most European added-value. Instruments such as EU research programmes and eContentplus (www.cordis.lu/ist/directorate_e) can play an important role, for example by helping to aggregate digitised material across borders.



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INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

Luxembourg, 21. 22. June 2005

DIGITISATION OF THE CULTURAL CONTENTS
IN LUXEMBOURG



MULTILINGUAL ISSUES IN LUXEMBOURG

Population and languages ⁽¹⁾

The Grand Duchy of Luxembourg is located in the centre of Europe; it's often called «the heart of Europe». The territory of the country has a surface of 2.586 spkm. The population consists of 277.400 Luxembourg nationals (61,43%) and 174.200 foreigners (38,57%) ⁽²⁾. Luxembourg is one of those rare countries in the world where several languages are spoken and written throughout its territory and in different spheres of life – private, professional, social, cultural and political. The indigenous language is *Lëtzebuergesch* (*Luxembourgish-Frankish-Moselle dialect from the West*) and it coexists among others with High German and French. These three languages have been recognized by law in 1984⁽³⁾. At that moment *Lëtzebuergesch* was elevated to the rank of the Luxembourgers' national language. The government also sanctioned its status as a language in its own right, separate from German, and its importance as a symbol of the national identity of the Grand Duchy.

Although the status of national language has been granted to *Lëtzebuergesch*, the law stipulated that the language of legislation in the Grand Duchy is French, based on the Code Napoleon, the French civil code of law introduced in 1804. In civil and judicial affairs, it is specified that when an application was directed to a public authority in *Lëtzebuergesch*, French or German, the Administration has to respond in the language chosen by the applicant. In the House of Deputies, Luxembourg' parliament, discussions are held almost exclusively in *Lëtzebuergesch* and these debates are meticulously documented in the minutes which are regularly diffused to all interested households, free of charge.

The language used in governmental affairs is French. All domestic as well as most of the foreign correspondence is handled in that language, with the exception of exchanges with German-speaking countries where the government recurs to German. Official statements are made in French and in *Lëtzebuergesch* – the latter for example on all national holidays and days of remembrance. In daily life, it is interesting to have a look upon some statistical figures illustrating the languages in Luxembourg ⁽⁴⁾:

- 17% of residents speak more than one language with their children
- 53% of residents speak more than one language with their friends
- 56% of residents speak more than one language in their workplace
- *Lëtzebuergesch* is used 45% of the time in the capital
- *Lëtzebuergesch* is used 54% in the remainder of the central part of the country
- *Lëtzebuergesch* is used 68% in the north.

Farmers use *Lëtzebuergesch* without exception as their working language, the figure amounting to 75% among teachers. For workers without qualification, French dominates with 46%.

Speaking to foreign citizens, Luxembourgers usually adapt to their interlocutor' linguistic choice, situation illustrated in the figures below:

Language spoken between	Luxembourg nationals and foreigners	Foreigners and Luxembourg nationals
<i>Lëtzebuergesch</i>	15%	33%
French	79%	58%
German	2%	8%
English	2%	1%

Watching TV, German language is chosen by half of Luxembourg nationals and by 2/5 of all residents, whereas *Lëtzebuergesch* and French at the same level for nearly a quarter of Luxembourg people.

Language generally preferred by Luxembourg residents when watching TV	Luxembourg nationals	All residents
<i>Lëtzebuergesch</i>	24%	18%
French	24%	34%
German	50%	40%
English	1%	8%

About half of the *Lëtzebuergesch*-speaking inhabitants of the Grand Duchy recur to their mother tongue in private notes and letters and one third choose French; the remaining sixth use German. Compared to the dominance of *Lëtzebuergesch* in spoken language use, this language plays a rather modest role in written communication: as Luxembourg's educational system traditionally attaches great importance to the two neighbouring languages, the population is often more familiar with French and German orthography.

This linguistic situation is historically founded. A first important year in the eventful history of Luxembourg is the year 963 when Count Sigfried built a small fortress on the crag known as the Bock, called *Lützenburg* (to become Luxembourg in the 19th century). Being part of the Holy Roman Empire of the German Nation, the common language was High German.

Later, counts of Luxembourg conducted an aggressive expansion policy and extended the Duchy to the north and the west by a series of conquests. Different dialects were spoken: Walloon in the French-speaking area and *Lëtzebuergesch* in the German-speaking region (1364). The written and administrative languages were respectively French and German, in their ancient form.

Under the first French occupation by Louis XIV, the use of German was almost banned (1684). As a consequence of the French revolution (1789), French gained ground in a lasting manner, penetrating the local administration of the German-speaking area. In 1804, the Napoleonic code was introduced. *Lëtzebuergesch* remained the language shared by all in everyday life and on 21 April 1821, the first *Lëtzebuergesch* text is printed in the newspaper "Luxemburger Wochenblatt". At the London Conference, the Great Powers of the era declared Luxembourg independent and split the country a last time (1839). The influence of Luxembourg notables enables to impose French as the administrative, legislative and political language.

The industrialisation of the country brought about deep changes in the population: immigration from Germany and Italy and emigration by Luxembourg citizens to France and the United States. Linguistic preferences became a political matter. In 1843, French was henceforth to be a compulsory

32 ⁽¹⁾ «CD-ROM Lëtzebuergesch» Christine JEHLE, Institut grand-ducal, section de linguistique, d'ethnologie et d'onomastique, 2005
⁽²⁾ STATEC, <http://www.statistiques.public.lu/stat/TableViewer/tableView.aspx?ReportId=128>
⁽³⁾ Law of 24 February 1984 related to the organization of languages.
⁽⁴⁾ «Le sondage Balceine», Cahier RED, Sesopi – Centre intercommunautaire, 1998

school subject, together with German. French lessons were introduced at primary level, and the foreign language syllabus was to be implemented by the School Reform of 1912.

As a reaction to the linguistic trauma and the question of identity caused and raised by the German military occupation, *Lëtzebuergesch* vocabulary gradually integrated French words and the *Lëtzebuergesch* vernacular was stronger than ever. The treaty of Rome in 1957 created new influxes of immigrants to Luxembourg.

■ Facing this new languages and to preserve *Lëtzebuergesch*, an association focused on working towards a specific law on that topic. Inside the Ministry a permanent Council of Luxembourgish languages has been created to deal with all topics concerning *Lëtzebuergesch*. A special concern is diffusion of our language (www.cortina.lu) and creation of reference tools.

The survey

■ The questionnaire was sent out to cultural institutions like archives, libraries, museums, etc, but also to other institutions operating in cultural domains to make sure that all cultural domains were covered.

Cultural Heritage (21), Visual Arts(3), Music (7), Theatre (7), Audiovisual, film, etc (11), Socio-cultural (16), Research (9), Education (6), etc.

■ The response rate was rather low and therefore the Ministry of Culture decided to start exploring 91 websites of cultural and scientific institutions. The average coverage is 1.7 languages per website. 52 websites are monolingual, 24 bilingual, 10 tri-lingual and 6 quarto-lingual websites following the recommendations of the [Minerva handbook: Quality Principles for Cultural Websites](#).
Following constellations were found:

- Monolingual (52): English (2)/French (40), German (6), *Lëtzebuergesch* (4)
- Bilingual (24): English/French (13), French/German (11)
- tri-lingual (9): English/French/German (6), French/German/*Lëtzebuergesch* (3) English/French/ *Lëtzebuergesch* (1)
- quarto-lingual (6): Dutch/English/French/German (4), English/French/German/*Lëtzebuergesch* (2)

■ In the framework of the eEurope/eGovernment initiative, the Luxembourg government decided priorities for providing all Ministries and public administrations with a website and to go on-line with public websites only in French. Multilingual issues and other ones will be analyzed in a second step. The high degree of French monolingual websites is due to this fact.

Beside the governmental initiative, cultural institutes are working closely together to join efforts and to share experiences.

■ The National Library’s catalogue is both digital library portal as well as the union to 27 libraries have access to the integrated library system “ALEPH 500™” implemented at the National Library (www.bibnet.lu). On the international level, BnL participates in different networks and projects like “TEL - The European Library”.

■ The National Museum of Natural History (MNHN, www.mnhn.lu) is the national portal for our natural heritage (Luxnat). The Museum currently links names of plants and animals of species living in Luxembourg to their biological record collection in 5 languages with“RECORDER - software”. The work is still in progress and the aim is to put it on-line. The National Museum of National History participates in the European project related to a BIODiversity Collection Access Service for Europe Biocase (www.biocase.org). The aim of this European research project is to make biological collections accessible to research and MNHN is considered to be the national hub (<http://www.mnhn.lu/recherche/db/recorder/collmod.asp>).

■ The National Museum of History and Art (MNHA, www.mnha.lu) works closely together with National Museum of Natural History. The aim is to use “RECORDER” for the purposes of the different archaeological sections. Also both museums participate in several national programmes; a most interesting one is called “Luxembourg tomorrow” and among the strands is multilingualism. International collaboration is a very important issue for MNHA as well as for other cultural bodies.

Controlled vocabularies and thesauri

Actually, no multilingual thesauri dealing with cultural domains are available online.

■ The initiative of National Museum of Natural History is developing interrelationships between terms from different languages (Latin, English, French, German and Luxembourgish) in collaboration with the linguistic section of the Grand-ducal Institute. This is an ongoing project, which uses the thesaurus module in the biological recording application called Recorder (<http://www.mnhn.lu/recherche/db/recorder/collmod.asp>).

■ In 2003, the Public Research Institute «Gabriel Lippmann» (CRPGL) created the first computer-based spellchecker for the Luxembourgish language. In collaboration with the Permanent Council for the Luxembourgish Language (CPLL), which was responsible for the linguistic part of the project, the computer engineers at the CRPGL developed multi-platform software. This software, a plug-in that can be used in several office-suites, includes a sequential list of 130.000 Luxembourgish words and their grammatical forms. They have been extracted from the large electronic text corpus «LuxTexte».

■ This corpus covers a large variety of text types: contemporary literature, written and oral media, political speeches... Over 80% of the linguistic items are lemmatised and grammatically categorised. «LuxTexte» is constantly extended towards becoming a reliable representative update of the current use of the Luxembourgish language. (<http://www.lippmann.lu/cortina>)

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CENTRE CULTUREL DE RENCONTRE ABBAYE DE NEUMÜNSTER (CCRN)
À LUXEMBOURG
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DEVELOPMENT OF THE DIGITISATION OF THE CULTURAL AND SCIENTIFIC HERITAGE IN LUXEMBOURG

by **GUY FRANK**

HEAD OF CULTURAL STATISTICS
AND ACCOUNTING DEPARTMENT
MINISTRY OF CULTURE,
HIGHER EDUCATION AND
RESEARCH (LUXEMBOURG)

The reorganisation of Government after 2004 elections had a major effect on the project “eCulture” of the Ministry of Culture, Higher Education and Research. The responsibilities in Government changed as the competences for digital affairs had been transferred to the Ministry of Civil Service and Administrative Reform. The former «National Board for the Information Society» was dissolved and replaced by the «Coordination Committee for the Modernisation of the State». The objective of these changes was to insure coherence and better visibility in general. But it also meant that the representative of the Ministry of Culture, Higher Education and Research is not directly involved anymore.

In line with the Lisbon strategy of a knowledge-based economy and society, Government finalised the action plan on electronic governorship and continued to provide not only means for use of information and communication technologies but also for the coverage of a wide range of projects.

Initiatives dealing with the creation of thematic portals on the one hand and, on the other hand, projects incorporating transversal themes in different domains were welcomed. Working groups on important transversal projects had been created: projects to guarantee access to the universe of knowledge for everybody, projects on public key infrastructure, on developing information highways, on archiving public documents or on intellectual property, among others.

Nowadays the management plan for e-government continues focusing on administrative modernisation and electronic access to main public services. The project covers six action areas: organisation and management, contents and services, education and training, technologies and infrastructure, security and private life, and legal framework. Three different types of projects have been identified: short-term Internet projects (e.g. public submissions), short-term administrative management projects (e.g. agricultural police record), and short- and long-term strategic projects (e.g. interoperability). The electronic governorship means the whole panoply of measurements or decisions which contribute to define the framework in which evolve the society of

knowledge, the electronic administration and, more generally, new technologies of communications. The strategic objectives are transparency, inclusion and participation, efficiency and effectiveness, economic competitiveness, knowledge and conformity embedded in the framework defined on the level of the international organisations.

Initiated in 2004 to improve the quality of the projects concerning the implementation of communication and information technologies in the Luxembourg administration, the project “QUAPITAL – QUALité des Projets d’Implémentation des Technologies de l’information dans l’Administration Luxembourgeoise (Quality of the Projects of Implementation of Information Technologies in the Luxembourg Administration) determines a methodology of project management common to all actors of the State. It constitutes a major pillar within the framework of the management plan for e-government objectives.

A second project in the framework of e Government is the “Single Counter for Citizens”- a project defined as a unified virtual space whose main objective is to allow a simplified and transparent access to information and public services for the citizens. Actually, according to a survey realised by Eurostat; 55,2% of Luxembourg’s Net surfers say that they have used Internet for getting information on public authority. On European level, only Finland (61,4%) and Sweden (59,8%) have a better score. In downloading public forms, Luxembourg takes the first place in Europe with 46,3% of the Internet surfers in Luxembourg and again the third best score in sending comprehensive public forms to public authority. In 69,6% of the households, a broadband access was installed. These figures underline that Luxembourg is moving from a “paper” public authority to an “electronic” public authority.

Another important project focuses on raising awareness about information on security and the spreading/circulation of information. It aims to draw the attention of all citizens (children included) and of small and medium-sized enterprises to the abuses and misuses related to the new technologies of communication, in particular those of Internet and mobile telephony. Three methods were elaborated to approach the security of information and communication systems and networks: the theoretical one, the practical one and the one about the risks. International partners from Belgium, Germany and Switzerland have been associated to the project.

It is worth mentioning projects, for example, developing an information highway, the electronic commerce or the protection of information.

Other public players made also progress and launched several projects in the digitisation field. Among those, the City of Luxembourg is very

active and acquired special equipments for audiovisual material and an integrated system of information data bases. In the cultural domain, it is worth mentioning the digitisation of the collections of the Luxembourg City History Museum and the City's archives as well as the cross-border city-network "Quattropole" realizing common cooperation and mutual collaboration as well as exchange with the bordering countries.

As stated before, the Ministry of Culture, Higher Education and Research has not any representative in the CCME anymore and its interests are defended by the government agency "eLuxembourg". This agency tried, in close collaboration with the Ministry of Culture, to give a stimulus to the cultural sector by according priority to two main projects called "Cultural Portal" and "Digitisation of the national cultural heritage". Both projects are coordinated by a steering committee. "Cultural Portal" should introduce cultural events and contacts, information about cultural heritage, news and information on finances and logistics for cultural activities. The project is understood as a strategic one. "Digitisation of the national cultural heritage" is the project closest to the philosophy of MINERVA. MINERVA recommendations, guidelines and good practices were very useful for setting up the national project.

At first the cultural institutes will take priority over cultural associations and other cultural actors. A main concern is to avoid the production of an overabundance of information but to create a knowledge database, which is not only set on sophisticated technical work but that will serve as guidance catalogue in the usage of the information provided by informatics in general.

The missions of our different cultural institutes have been newly defined by the Law of 5 June 2004 bearing reorganisation of the Government's cultural institutes and ratifying the sector of scientific research not only of the National Museum of History and Art and of the National Museum of Natural History but also of the National Library. Each cultural institute has of course its own specific missions, but the more general assignments are the same; the study, the conservation and the diffusion of the cultural heritage as well as growing public awareness, education and training. One of the first missions is to define the role of digital technologies in working fields such as preserving, documenting, archiving, visualising, presenting and analysing (built and non-built cultural heritage) the characteristics of documents, paintings, monuments and other cultural objects.

A next step consists in finalising the inventory of the multitude of scientific catalogues. The diversity of the implied cultural actors is characterized by the conceptual, technical and financial approaches which are of course never the same. A comparative list of ongoing projects and progress realised in the different sections will help to choose the appropriate technologies, to fix a road map in accordance with the budget at disposal. The Ministry of Culture, Higher Education and Research of Luxembourg is a most important actor and therefore has continued, for the last few years, its coherent and efficient strategy to coordinate the project.

Long-term preservation of cultural heritage means to record collections in digital form to ensure their conservation and management and to make them accessible not only to specialised researchers but also to the greater public. Collaboration with research centres such as the National Library, the National Museum of History and Art, the National Museum of Natural History and so on, was strengthened as was their relationship with the Ministry of Education and vocational training and the Ministry of the Economy and Foreign Trade, for example. The cultural institutions try to maintain their identity but work also, by referring to common standards and new technologies, to create a common thesaurus and to define a common vocabulary to guarantee interoperability. The creation of one single cultural portal is not necessarily a successful mean in order to work together and to share knowledge. Subject-related portals with a common, introductory portal could be an alternative. All cultural institutes as well as associations and foundations should be integrated in order to cover all cultural fields. The staff must be trained so that they can rise to the standards required in order to allow the setting-up of a homogeneous inventory of collections, for example. And an absolute must is the collaboration with the research centres of the University of Luxembourg, the City of Luxembourg and the partners in the so-called "Grande Région".

THE LIBRARY SECTOR

The major investor in this domain is the National Library of Luxembourg. This cultural institute aims to play a very active role in the development of a highly effective "knowledge society" in the Grand-Duchy. The National Library differentiates its missions whether they belong to the heritage library or to the scientific and research part of the library. The library's priorities in digitisation are the development of electronic instruments, the placement of documents at the disposal of the portal to go online, the creation of digitised material from the digital fund "Luxemburgensia", the development of a policy of communication towards the public, the enlargement of the network of Luxembourg libraries (actually some thirty libraries are managed by the National Library through its network) and the training of library staff. The volumetric data entry of the Luxembourg collections has priority and their digitisation is a medium-term objective. Since 2002, the National Library has continuously developed a centre of information and communication technologies. More than 50.000 pages are now available on Internet and efforts on the digitisation of the Luxembourg press are important. The registration of copyright has been introduced by the Law of 5 June 2004 concerning the reorganisation of the cultural institutes.

THE AUDIOVISUAL SECTOR

The National Audiovisual Centre has been entrusted with the tasks of safeguarding, developing and promoting the Luxembourg audiovisual heritage. They produce audiovisual documentation from material of national interest and they encourage the public's interest and skills in using audiovisual tools for cultural and educational ends. The Na-

tional Audiovisual Centre archives include all the long and short films (fiction and documentary) produced, or co-produced, on celluloid in Luxembourg - from the first film made in the Grand-Duchy in 1899 up to the most recent productions.

In order to ensure their preservation, but also to facilitate access while allowing a non-damaging use of the sound archives of the recording library, the National Audiovisual Centre has begun with the digitisation of all its material.

Digitisation is a huge undertaking considering that the programme of digitisation involves some 15.000 hours of video recordings, some 6.000 hours of sound recordings and some 300.000 photographs. Therefore, it is determined to develop a strategy to safeguard the national audiovisual heritage and is trying to create a partnership with the private sector. Within the framework of the governmental programme e-Luxembourg, an Internet site was created and the work of digitisation began in 2003. It is expected to last eight years. The National Audiovisual Centre signed a contract with a private company to organise the conservation and management of sound archives and to ensure their optimal use, especially within the area of Luxembourg audiovisual production. The major difficulty in the progress of the project is to centre these three areas of audiovisual material (film/video, photograph and sound) into one single database. Indeed, every type requires a specific approach and it will be extremely difficult to carry out digitisation without setting up three different databases.

A big step forward to realise digitisation, conservation and safeguard of the audiovisual, sound and photographic material of the Centre is the agreement of partnership with a private partner. The public-private agreement will guarantee the adaptation of the newest systems of conservation to the most recent technical and technological developments, especially by proceeding to the digitization as well as the storage and the data-processing management of existing State contents and of those to be acquired in future.

THE MUSEUM SECTOR

In the museum sector, the National Museum of History and Art and the National Museum of Natural History are the key players in digitisation affairs.

The National Museum of History and Art continue its work of establishing a common scientific catalogue including all their different sections: archaeology, plastic arts, folk, numismatics, etc. The archaeology section is actually the most advanced one in the field of digitisation. Especially, the irretrievable destruction of our historical and cultural heritage, due to a growing building activity, is a reason to focus on the GIS-supported database that is being developed in the 'Environment and Cultural Heritage' (EPC) Project - the 'Living Tomorrow in Luxembourg' programme, where different ministries as well as cultural institutions are involved in the coordination group. Numerical 3D is a privileged tool of research and dissemination of the information. Efforts are undertaken to include other national or regional museums in the process. First initiatives have been launched and the collaboration sounds promising. The National Museum of History and Art would to coordinate all departments on a national level except the one concern-

ing nature which is under the responsibility of the National Museum of Natural History.

The National Museum of Natural History developed the natural history gateway LUXNAT and focused on Recorder 6 for the recording and reporting of field observations of taxa and biotopes. The National Museum of Natural History is the national centre for natural heritage information in Luxembourg and the national centre for biological data access at a European level in the BIOCASE project. The creation of a national bio- and geo-diversity web portal to make information accessible to a larger public is another concern of the museum. The realisation of new collection modules for the data base confirmed the need of having at disposal a management tool for bibliographical references by key words based on a thesaurus.

THE PUBLIC RECORDS SECTOR

Today archivists are confronted with various challenges in view of a considerable increase in the volume of files having to be analysed and then sorted out or filed for a long time. Therefore the National Archives have to invest in methods and tools, which are appropriate for the requirements of the information era. The Government's initiative on archiving public documents quickens the progress in the public records sector. Besides, giving the priority to documentation concerning «civil status, decennial tables and parochial registers», as well as the «notaries» and the «plans and charts», the National Archives launched an initiative on collaboration between different archive institutions in the North of the country by involving local authorities. Another project deals with the ARBED archives covering the period from 1911 to 1990; this work is realised in collaboration with the Centre on European Studies and Research and should be finished at the end of the year.

The National Centre of Literature, only 10 years after its creation, was successful in developing into an important centre of resources concerning Luxembourg's literature and scientific research in the cultural landscape of the Grand Duchy. The Centre contributes in a large scale to the valorisation of our cultural heritage, referring to our literary history as well as supporting today's literary creation. Due to hard work, especially while updating of the system of cataloguing, the whole literary library is accessible on-line. The connexion to the network created by the National Library allows active contribution to the common database of almost 30 libraries. The Centre worked also on the finalisation of the inventories of its collections. The "current bibliography of Luxembourg literature" is one of the most visited information points on the Centres' Web. Together with other cultural institutes, the CNL actively participates in the 'Environment and Cultural Heritage' (EPC) Project - 'Living Tomorrow in Luxembourg'.

Great attention is given to our national language, the "Lëtzebuergesch". A special commission is dealing with all aspects of this important cultural heritage. Research focuses on the creation of an interactive on-line version of the "Dictionnaire pratique de la Langue Luxembourgeoise". A first edition is scheduled for next year and the complete work should be finished in about five years. The database on

knowledge concerning the Luxembourg language foresees a thesaurus of five different languages: Luxembourgish, English, French, German and Portuguese. Being updated regularly on XML-technology, it also constitutes a flexible tool that allows being completely independent from commercial products. International cooperation has been set up with research institutions working in the field of Lexicography.

THE MONUMENTS AND HISTORIC SITES SECTOR

The digital work on national monuments and historic sites is an ongoing process in the Department of cultural heritage. The project of an own website has been reported due to some technical difficulties, but the data base management system called «Simona», a light version of former “INPAC”, is nearly ready. The classification covers five fields: rural and urban (town planning and rural heritage); feudal and fortified (restoration and re-animation – fortified towns and boroughs, - the Fortress of Luxembourg); religious (monasteries and convents - chapels - churches - wayside crosses - hermitage - sources and trees); craftsmen and industrial - landscape. A special effort is dedicated to the digitization in 3D-format. The Department of cultural heritage is also involved in the conservation and valorisation of the blast furnaces in the South of Luxembourg. The Government decided on 18 February 2005 to integrate them in the City of Sciences so that they serve as a reminder of Luxembourg’s industrial past to future generations. The three major objectives of this project are: to document the iron and steel industry, in particular the production of the cast iron in its technical, historical and sociological aspects; to preserve the shape of the site and to create new activities. The respect of historic substance is the guarantee of for long-term conservation.

THE EDUCATION SECTOR

In the education sector, it is important to mention the ICT-Integration strategy in primary and secondary schools. In the early 1980s, the Ministry of Education and vocational training started dealing with ICT in schools. Being aware that ICT constitutes a tool for teaching and learning, the Department of coordination of research and of innovation (SCRIPT) in teaching and technology was set up in 1993 to coordinate research and the innovation programmes in various teaching fields including that of the integration of technologies of information and communication. A specific portal “Myschool”, was created for the scholars as well as for the pupils and the project has been improved several times by integrating information on education and life long learning. The SCRIPT is collaborating very closely with the Department of Higher Education and the Department of Research of the Ministry of Culture, Higher Education and Research.

THE RESEARCH SECTOR

The Virtual Resource Centre for Knowledge about Europe is a Luxembourg-based public undertaking under the aegis of the Ministry of Culture, Higher Education and Research. The CVCE has created a platform for the research, gathering, selection,

processing and dissemination of digital content covering our cultural heritage. The European NAvigator (ENA), the CVCE’s flagship is an important initiative in order to create a digital library that provides multimedia content to its users. The primary task of the CVCE is to research, create and select relevant multimedia material on European integration in its widest sense. ENA is freely available on the Internet at www.ena.lu and can be accessed through interactive terminals installed in both national and Community institutions. The CVCE is also involved in digitisation work of the Ministry of Culture, Higher Education and Research.

UNESCO LUXEMBOURG

Luxembourg joined the Organisation on 27 October 1947. In 1994, UNESCO added the ‘City of Luxembourg: its Old Quarters and Fortifications’ to the Memory of the World Register. The presence of a cultural site on the list of the World Register is recognition of its outstanding value by the world community. The site belongs to the world community from that point onwards, while the country in question is obliged to protect, manage and valorise the site. At this moment, Unesco Luxembourg’s major concern is the integration of the “Saint Willbrodus “jumping” procession of Echternach” in the world heritage of immaterial heritage.

EGMUS

Jointly coordinated by France, Germany, Luxembourg and The Netherlands, the European Group on Museum Statistics (EGMUS) provides politicians, policy makers, and cultural workers in Europe with much needed information on museums. Until now the picture of European museums is fragmented, to put it mildly. Reliable and comparable data are a prerequisite for a more comprehensive view on the museum sector in Europe. EGMUS is an independent body, accepted as an informal working group in the framework of the European Working Group on Cultural Statistics of the Statistics Office of the European Union (Eurostat). Initiatives from EGMUS are included in the reports, recommendations and conclusions of the Working Group. The members of EGMUS are from the Member States which participated in the former European “Leadership Group (LEG) on Cultural Statistics in the EU” and the subsequent Working Group on Cultural Statistics. The latter consists of representatives from the Ministries of Culture, statisticians and experts working in or with museums. Major activities consist in collecting available data from national museum surveys and other sources, the elaboration of a common methodology and a common survey questionnaire. The principal aim of EGMUS is to produce relevant, coherent and comparable statistics on museums at European level. Questions on digitization are actually a priority in the work of EGMUS, which can provide reliable information in this specific area.

The large panel of projects concerning the conservation of our cultural heritage contributes to a large scale to the Society of knowledge and to the objectives of the Lisbon strategy. Each one of our national cultural institutes constitutes one tiny stone necessary to make up the mosaic called “the European Digital Library”.

CONFERENCE

INITIATIVES AND PROJECTS OF LUXEMBOURG CITY IN THE CONTEXT OF THE DIGITISATION OF CULTURAL AND SCIENTIFIC MATERIAL



PAUL HELMINGER
MAYOR OF LUXEMBOURG CITY
(LUXEMBOURG)

1. PROJECT FOR THE DIGITISATION OF THE COLLECTIONS OF THE MUSÉE D'HISTOIRE DE LA VILLE DE LUXEMBOURG

- The collections of the Musée d’Histoire de la Ville de Luxembourg consist of collector’s items, films, photographs, ektachromes and audio documents relating to the history of Luxembourg City, as well as press articles. These collections are being recorded in digital form to ensure their conservation and management, and to make them available to visitors or to specialist researchers who come to the museum to consult them on touch-sensitive screens. The wider public has access to them via the Internet (subject to laws governing royalties).
- Since the end of 2003, 27,500 press articles relating to aspects of Luxembourg City have been treated and archived with the aid of a new system consisting of three pieces of software: NewsClip, information base XI and NewsWeb. This system will be made available to other city departments if they require it. 5,000 old press articles (published between 1986 and 2003) are still awaiting digitisation.
- Since the end of 2004, 5,000 slides and ektachromes have been digitised using a high resolution process of digitisation. They can be consulted as mentioned above or as hard copy, in paper format.
- Specialised digitising equipment acquired by the Musée d’Histoire for the treatment of audiovisual material enables the recording, in digital format, of films and audio documents, whether the museum’s own or borrowed material. These can then be used in temporary exhibitions.

- The largest project consists of creating an integrated system of information data base, permitting the management of the collections cited above and, especially, collector’s items (20,000 at this point). In addition, addresses, reservations, exhibitions and the processes related to the museum’s activities, especially planning and preparing exhibitions with specific requirements in the domain of facility management or knowledge management, can be held in digital form.
- Setting up: end 2005
- Entering service: mid to end 2006
- Budget: estimated at 150,000 €

2. PROJECT RELATING TO THE “ELECTRONIC CULTURAL GUIDE” OF LUXEMBOURG CITY

- Introduction to the heritage (buildings, monuments, ...) of the city in the form of a “Virtual Museum”
- Identification of the circuits (tourist and cultural)
- Drawing attention to “subjects”
- Multilingual scientific texts for each “work”
- Provision of information:
 - Dedicated Internet site (virtual circuits)
 - Internet access adapted to mobile equipment (PDA)
 - Consultation via “voice server”
- Setting up: July 2005
- Pilot phase: October 2005 – October 2006 (5 – 10 subjects)
- Entering service: beginning 2007 (70-80 subjects)
- Budget: ~50,000 € over 2 years

3. PROJECT FOR THE DIGITISATION OF THE ARCHIVES OF LUXEMBOURG CITY

- Central management of the City Archives
- Digitisation of archive documents
- Establishing public internet access to historic archives
- Setting up: beginning 2006
- Entering service: end 2007
- Budget: ~65,000 €

4. LUXEMBOURG CITY'S PARTICIPATION IN THE "CULTURAL GATEWAY OF THE GREATER REGION"

- Within the framework of the cross-border cooperation "QuattroPole"
- Collaboration with the team of the project set up by ALAC, covering the cultural centres of the four cities
- Agreement with a partner from Saarbrücken for the editing of the material for 6 modules (cultural forum, window for cultural contributors,...)
- The cities ensure communication between the cultural associates within the cities

- Planning the creation of networks of mutual collaboration and exchange between the cultural participants and contributors, and the organisers of the cultural events
- The material will also be available for the "Cultural Gateway of the Greater Region"
- Setting up: June 2005
- Entering service: end 2006
- Budget: ~140,000 €



LE CASINO LUXEMBOURG - FORUM D'ART CONTEMPORAIN, LUXEMBOURG
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CONFERENCE

VIEWS ON THE PROJECTS FOR THE DIGITISATION OF LUXEMBOURG'S CULTURAL HERITAGE



PIERRE SCHILLING

REPRESENTING M. CLAUDE WISELER,
MINISTER IN CHARGE OF ELECTRONIC GOVERNORSHIP

DIRECTOR RESPONSIBLE FOR THE ADMINISTRATION
OF eLUXEMBOURG, CIVIL SERVICE MINISTRY (LUXEMBOURG)

■ "With the Lisbon Act, Europe has set itself ambitious goals as much in the economic as the social sphere.

■ Europe aims to become the most productive and the most competitive economic area in the world. One of the implements in achieving this goal is the development of the Information Society.

■ The Luxembourg Government has set up systems and provided the means by which revenue may be generated through the judicious use of information and communications technologies.

■ For a very long time, the use of these technologies was limited to material pertaining to government, industry and commerce.

■ The rapid development of multimedia applications, the growth of the World Wide Web and the availability of communication by broadband have permitted the creation of information systems which provide complete and easy access to multicultural and multidisciplinary data bases.

■ Access to knowledge will generate social and cultural values which will, in turn, increase economic turnover.

■ The Ministry for the Civil Service and Administrative Reform has just presented its management plan for e-government.

■ Alongside the projects for administrative modernisation and electronic access to main public services, this plan includes two additional projects in the area of culture.

■ The first project anticipates the establishment of an area of digitisation of the cultural heritage of our country:

We are well aware that digitisation of their collections has become essential for all cultural institutions (the National Archives, the National Library, the National Audiovisual Centre, the National Centre for Literature, the National Museum for Art and History, the National Museum of Natural History, the Department for National Sites and Monuments). That this innovation should be linked to the conservation, restoration and preservation of the collections is an important factor to be taken into consideration by the planned study.

■ The value and importance of the digitised material in the cultural domain are:

- accessibility and permanence
- an advantage in favour of cultural diversity, education and activities related to the material
- cultural enrichment

■ The second project envisages the establishment of a Cultural Gateway, a virtual point of access to Luxembourg's cultural wealth:

■ The aim of this gateway is:

- to stimulate the wider public's interest in culture by presenting a summarised and consolidated overview of the cultural heritage of our country;
- virtual showcase of digitised items
- introduction to the cultural institutions of the country

■ to offer interested parties a complete overview of cultural events plus the opportunity to:

- purchase tickets on-line through the national ticket office
- receive notification of events
- access advance information about events

■ for organisers of cultural events:

- an opportunity to better manage the marketing of their events in making the gateway agenda the first port of call for real-time information for the interested public and the media.
- a tool enabling their event to be better programmed through a programme of reservation of possible dates.

In order to guarantee the widest possible access to this material, the management plan for e-government foresees a number of

management steps in the areas of education, promotion and security.

To ensure a lasting return for our investments in digitised material, all of these measures will, in fact, be indispensable.

Hence, the Cultural Gateway, combined with the concepts of e-Learning, will open new horizons for those involved in the cultural education of young, and less young, generations.

Development of these systems, enabling access to the Internet for everyone, everywhere, will make culture accessible to those who, for health reasons, may not have the opportunity to visit museums.

Aware of the fact that a country's true wealth is be measured by its culture, I consider the afore-mentioned projects worthy of our full commitment.

We hope that, through these projects, we will spread the knowledge of this wealth beyond our borders."



CONFERENCE - NATIONAL LIBRARY OF LUXEMBOURG (BNL)

DIGITISATION: OBJECTIVES, STRATEGIES AND CHALLENGES IN THE CONTEXT OF THE LUXEMBOURG VIRTUAL LIBRARY



MONIQUE KIEFFER

DIRECTOR OF THE NATIONAL
LIBRARY OF LUXEMBOURG (BNL)

■ Housed within the venerable walls of the former 'Athénée Grand-Ducal', which is more than four centuries old, the National Library of Luxembourg is the conservatory of the intellectual production and the collective memory of the Grand Duchy. It dates back to the year 1798.

Yet as an encyclopaedic library, its non-Luxembourg collections account for two-thirds of its contents. It provides readers with a varied and multilingual range of works of all types covering all branches of knowledge: books, reference works, journals, daily newspapers, films, electronic databases and journals as well as digitised documents. Since the National Library is the main research library in Luxembourg, the Government has decided to extend its mission in the near future. It is thus also going to be the main University Library.



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THE LUXEMBOURG UNION CATALOGUE

In 1985, the National Library initiated a library network that grew considerably with the introduction of the library management system Aleph 500. The network “bibnet.lu” (www.bibnet.lu) came to fruition primarily through the union catalogue of the same name. Today, “bibnet.lu” links some thirty Luxembourg libraries of very different profiles: the University of Luxembourg libraries, the libraries of the Henri Tudor Research Centre, the Luxembourg Central Bank, STATEC (Luxembourg’s central statistics agency - Service central des statistiques et des études économiques), CEPS/INSTEAD (Centre d’études des populations, de la pauvreté et des politiques socio-économiques), as well as those of the State’s cultural institutions, the “Grand Séminaire”, municipal libraries, the Centre for Educational Documentation and Further Education at the Ministry of Education and Vocational Training, as well as the libraries of grammar schools.

THE DIGITAL LIBRARY

The digital library project of the National Library of Luxembourg (eBnL) is part of its mission to conserve and promote knowledge. Its objective is to develop a virtual library of which the patrimonial part will be fed at the same time by the digitisation of existing documents and the systematic collection of numerical publications produced in Luxembourg. Thanks to the law of 25 June 2004 the reorganisation of the cultural institutes of the State will be subjected from now on to the registration of copyright. As it wants its funds to be known better, the National Library started digitisation and the setting on-line of its catalogues. In the coming years, our main effort will relate to the digitisation and restoration of the Luxembourg press, a source of priceless information.

The National Library has established a centre for information and communication technologies. The digital library has developed continuously since 2002. It is implemented within the context of e-Europe under the impetus provided by the European Commission, with financial support from the national e-Luxembourg programme.

The digital library consists of the following electronic resources:

- The online catalogues of the National Library;
- The online national bibliography;
- National Library links, a choice of more than 680 resources accessible via the Internet;
- Electronic journals (over 7000 titles);
- Electronic databases (over 180 resources);
- CD-ROMs, mostly bibliographic repertoires;
- Luxembourg publications digitised by the National Library, mainly daily newspapers. More than 50.000 pages are available via <http://luxemburgensia.bnl.lu>

The available electronic resources are interlinked with the OpenURL enabled SFX software and aggregated inside the MetaLib Gateway, available at <http://portail.bnl.lu>

Planned developments for 2006 include:

- Full membership in the European Library Gateway;
- Establishment of a long-term digitisation strategy;
- Setting up a Long-term digital preservation solution;
- Streamlining electronic resource management with an ERM solution.

THE NATIONAL LIBRARY AND THE KNOWLEDGE SOCIETY

Libraries are key tools for public authorities to promote knowledge and culture among all strata of the population. At a time when national and university libraries are liberalising their access conditions, the National Library of Luxembourg, which is proud of a long tradition of openness to the general public, intends to maintain that policy.

The Library aims to play an active role in the development of a highly effective knowledge society and economy in the Grand Duchy. The digital library gateway is specifically aimed at the needs of researchers and students and is offering a host of added-value services in addition to the single-sign on and remote access possibilities.

CONFERENCE

PREDICTION AND MANAGEMENT OF
CULTURAL DATA IN ACCORDANCE WITH
INTERNATIONAL STANDARDS



SUSANNE RICK

SCIENTIFIC COLLABORATOR
NATIONAL MUSEUM OF HISTORY
AND ART (LUXEMBOURG)



FRANK BRONIEWSKY

SCIENTIFIC COLLABORATOR
NATIONAL MUSEUM OF HISTORY
AND ART (LUXEMBOURG)



JEAN-NOËL ANSLIJN

SCIENTIFIC COLLABORATOR
NATIONAL MUSEUM OF HISTORY
AND ART (LUXEMBOURG)

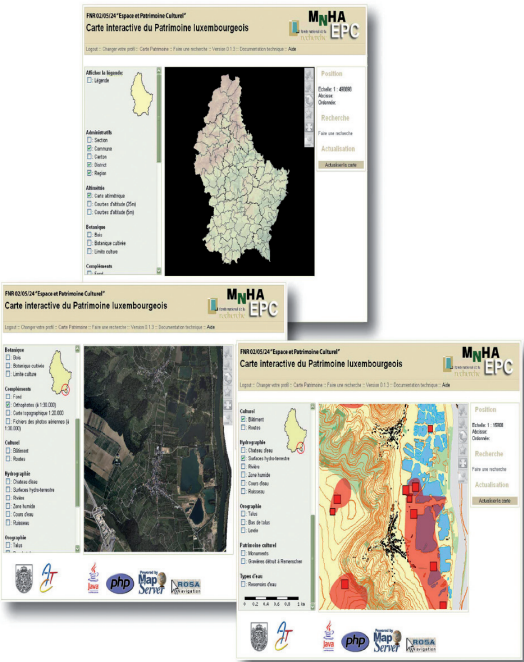
The spatial planning of large areas involving construction work and intensive cultivation of the land is one of the most problematic factors that are likely to lead to the destruction of our historical and cultural heritage. Overall, there are very few cultural heritage sites still visible above ground. Collections of preserved artefacts as well as archaeological and historical maps provide crucial data, as does the occasional prospecting during building projects and field investigations conducted by researchers into local history. Yet less than 10 % of Luxembourg’s cultural heritage has actually been discovered or documented.

The surface area built on during the final decade of the 20th century equals that of the past 2 000 years. Emergency excavations have allowed to investigate only 1 to 2 % of what are now built-on areas. From the number of construction projects planned in Luxembourg it can be deduced that in just one generation a quarter of our cultural heritage will be irretrievably destroyed, without archaeologists or historians ever having had the opportunity to document it properly or to carry out salvage work. In order to avoid this disastrous scenario, a team of experts comprising an archaeologist, an IT specialist and a geographer has been working on behalf of

the Prehistoric Section at the Luxembourg National Museum of History and Art (MNHA) since April 2003 on a five-year project to develop a GIS-supported database of archaeological site locations incorporating a tool for archaeological predictive modelling. The ‘Environment and Cultural Heritage’ (EPC) Project receives funding from the Luxembourg National Research Fund (FNR) under priority measure 5 in support of ‘Spatial Organisation’ of the ‘Living Tomorrow in Luxembourg’ programme. Although initially the project focuses on pre-selected pilot zones, a later stage will cover the whole surface area of Luxembourg and will integrate historical, architectonic, geospatial and cultural data.

The aim of the Project is to develop a computer-aided decision-making tool for use by government ministries, public works contractors (local authorities and administrations), building contractors, planning offices and private individuals. Existing and potential archaeological site locations may be taken into consideration during the planning and research stages of construction work. This approach is particularly important in the context of the sustained upward trend in economic and demographic growth observed in Luxembourg over the past two decades. To this end, the tool will be used to generate maps

indicating the degree to which certain areas are likely to be of cultural interest to Luxembourg’s heritage so that this factor may be taken into consideration during building projects. The maps will indicate the varying archaeological sensitivity of known archaeological site locations, predict potential site locations and suggest building sites where Luxembourg’s endangered cultural heritage is not at risk. In so doing, the EPC Project takes account of the dual concept of sustainable development and permanent protection.



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Thanks to an effective coordination between the Ministry of Culture (MNHA and Department of National Sites and Monuments — SSMN), the Ministry of Finance (Land Registry and Topography Department — ACT), the Ministry of the Interior (Department of Town and Country Planning — DATUR), the Ministry of Public Works (Highways Department — P&Ch, and Archaeological and Geological Department — SGL) and the Ministry of the Environment (Forestry Commission — ADEF), a wide range of existing geographic and other subject-specific data have been made available and incorporated into the system. Without this backing it would certainly not be possible to undertake such an ambitious project.

What is the process involved in detecting potential archaeological site locations? Over the last fifteen years information gathered through excavations, emergency salvage work, prospecting and reported finds in pilot areas (e.g. industrial and construction areas in suburbs, the restoration of the old part of Luxembourg City, gravel quarrying in the Moselle Valley, the Luxembourg–Saarbrücken motorway, etc.) has allowed to determine site parameters that can then be used to predict sites of potential archaeological interest by means of various location factors. This process of predictive modelling is based on the hypothesis that (pre)historic man was guided by logical thinking in his choice of settlement location. As a result, decisive location and environmental factors may be reconstructed and applied to other areas. This is where the use of Geographic Information Systems (GIS) is vital, not only to generate digital mapping but also to calculate individual location factors. Former environmental conditions can thus be reconstructed according to spatial and temporal variations with a view to predicting the location of potential archaeological sites. Alongside aerial photographs and topographic maps, maps showing information such as soil quality, geomorphology, vegetation and hydrography are especially useful. Important parameters taken into consideration when choosing a settlement location would have included availability of water, the curvature and gradient of the land, the visibility of site locations, aspect and wind direction, as well as altitude and geomorphology. Statistical prediction models such as logistical regression, the cluster method or the neural network method can be used to evaluate available data and predict the extent to which a site may be of potential archaeological interest.

Over the past ten years, archaeological sensitivity maps used in neighbouring countries have produced good results. Their reliability has been demonstrated by subsequent field testing and has helped foster cooperation with building contractors. Backed by the Ministry of Culture and the National Research Fund and in accordance with national and European guidelines, the EPC Project takes into account the protection of surface and subterranean archaeological sites that are endangered as a result of land-use planning and development. This is a first for Luxembourg! With its innovative design and user-friendly structure, the GIS-supported database developed by the EPC Project will not only be useful to public bodies as an administrative module and a basis of assessment for conducting cost analyses, but will also be made available to private individuals and scientists as a research tool.

CONFERENCE

PRESENTATION OF DIGITISATION TOOLS FOR
NATURAL HERITAGE DATA OF THE NATIONAL
MUSEUM OF NATURAL HISTORY, LUXEMBOURG



GUY COLLING
HEAD OF DEPARTMENT
«BIOLOGIE DES POPULATIONS»,
NATIONAL MUSEUM OF NATURAL
HISTORY (LUXEMBOURG)



TANIA WALISCH
CURATOR «SECTION BANQUE DE
DONNÉES», NATIONAL MUSEUM
OF NATURAL HISTORY
(LUXEMBOURG)



JIM MEISCH
CURATOR «SECTION
BOTANIQUE», NATIONAL MUSEUM
OF NATURAL HISTORY
(LUXEMBOURG)

In the past natural history museums were among the first biological record centres. Extensive collections were put together to document the living world of the nation they were located in as well as the living world abroad. Although the main purpose of these collections was taxonomical, they also represented valuable occurrence data of taxa. Moreover, many difficult taxonomic groups need to be collected in the field for determination purposes, which means that the observation data available for these groups correspond in fact to the collection.

The Luxembourg National Museum of Natural History (LNMNH) was the first biological record centre in Luxembourg, and the initial version of the LUXNAT database concentrated on observation data. However, the absence of a clear data model led to a proliferation of ‘home-made databases’ within the museum. As the museum regroups many different scientific sections, each of the latter developed its own system.

In 2000, the LNMNH decided to adopt Recorder for the management of its observation data. Unfortunately, earth sciences and natural history collections did not fit in. In 2002, Charles Copp elaborated an extended data model integrating the different aspects of the collections. The NBN data model, as

used in Recorder, includes most attributes required for the recording and management of biological field data. Recorder had, however, only limited facilities for collecting details of specimens linked to records and none at all for museum specimens lacking field data. Recorder was also unable to deal with earth science data related to either field records or specimens. The extended data model as used in the new collection module for Recorder handles the following extra areas of information:

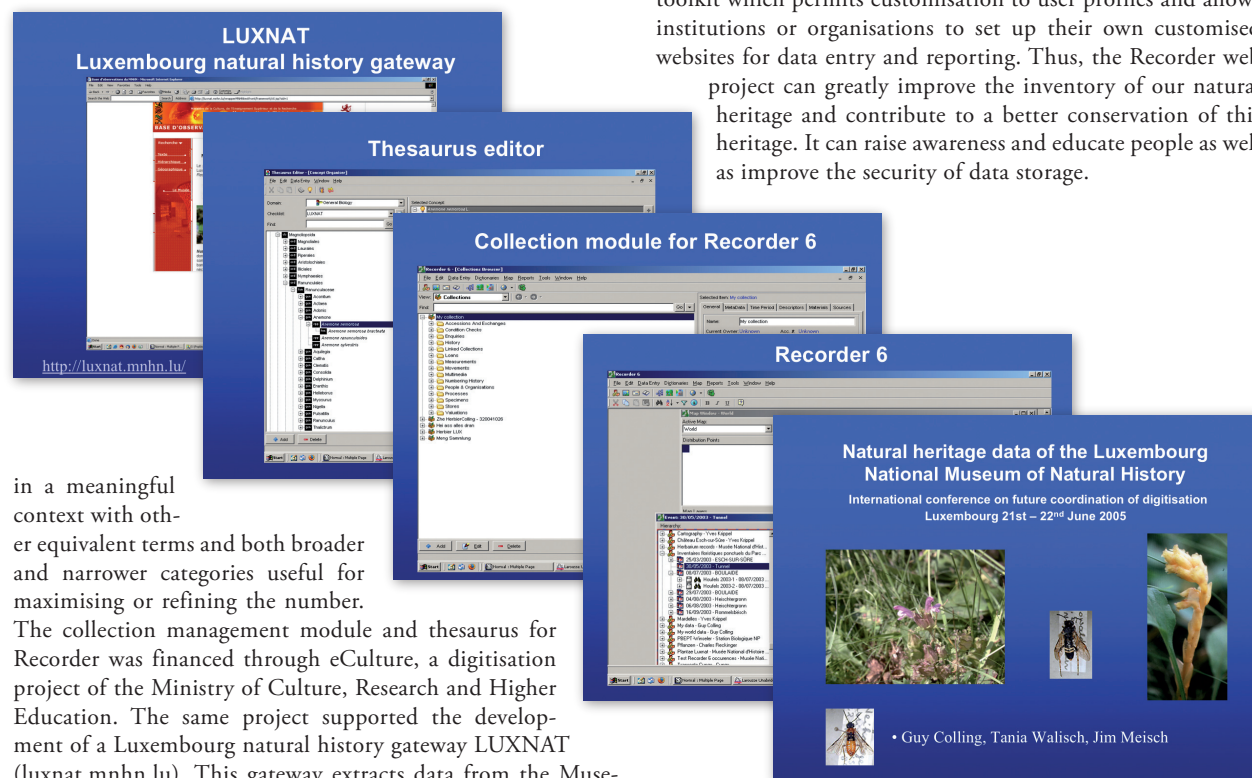
1. Accession
2. Collections
3. Specimens (all types including minerals, rocks, fossils, herbarium sheets, mounted skins, wet collections, skeletal material, shells, mounted insects and others)
4. Documents as objects
5. Images as objects [management and description]
6. Stores and storage furniture
7. Loans (In and Out)
8. Exchanges
9. Valuations

10. Conservation Checks
11. Conservation Tasks
12. Conservation Jobs
13. Materials
14. Funding Sources
15. Enquiry Form
16. Quick data entry forms for specimens [including customised forms for subject domains]
17. Thesaurus including a Stratigraphy Dictionary (including Biostratigraphy, Lithostratigraphy and Chronostratigraphy), a Mineral Dictionary, a Rock Names Dictionary, Fossil Names and new museological term lists

The thesaurus, which has been built into the Luxembourg Collections Management software (Recorder 6 extension) was originally designed for the European-funded BioCASE project (Nov. 2001-Jan. 2005). It is designed to manage multiple related term lists covering all aspects of natural science collections and field observations including taxonomy, habitats, gazetteers, collecting methodologies and stratigraphy. The thesaurus holds classifications and term lists derived from existing sources and also terms entered by users of the database (e.g. imported from existing registers). It can place these terms

um's Recorder database and makes them publicly available via the web. It allows retrieval of observation data for a taxon via a free text field search or a selection from a systematic hierarchical tree. It also allows the user to search for observations linked to a location name or to a geographical region by clicking on a map of Luxembourg. It delivers basic occurrence data, a distribution map, an image and a short description of each taxon. The Museum functions as the central node for a network of institutions, associations and naturalists who use their own Recorder installations and transfer their data via the NBN data transfer model. It produces taxonomic lists and is responsible for the release of new Recorder versions. Thus, every single user needs to update his Recorder installation each time a maintenance upgrade or a change in term lists is released. The complexity of Recorder often puts off people who wish to record simple observation data. Some of them do not have the appropriate hardware to install and run Recorder. Moreover, single users might lack the necessary tools to ensure backups on a regular basis. A web-based Recorder would therefore facilitate simple and rapid data entry for everyone involved in biological recording and it would avoid updates and hardware problems at the user end.

A great advantage of the Recorder web is its design as a flexible toolkit which permits customisation to user profiles and allows institutions or organisations to set up their own customised websites for data entry and reporting. Thus, the Recorder web project can greatly improve the inventory of our natural heritage and contribute to a better conservation of this heritage. It can raise awareness and educate people as well as improve the security of data storage.



in a meaningful context with other equivalent terms and both broader and narrower categories useful for maximising or refining the number. The collection management module and thesaurus for Recorder was financed through eCulture, a digitisation project of the Ministry of Culture, Research and Higher Education. The same project supported the development of a Luxembourg natural history gateway LUXNAT (luxnat.mnhn.lu). This gateway extracts data from the Muse-

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CONFERENCE

SAFEGUARDING AND DEVELOPING LUXEMBOURG'S AUDIOVISUAL HERITAGE



FERNAND DEVAS
HEAD OF THE ENGINEERING
DEPARTMENT
NATIONAL AUDIOVISUAL CENTRE
(LUXEMBOURG)

■ The project to safeguard and highlight Luxembourg's audiovisual heritage was initiated by the National Audiovisual Centre (CNA) in the early 1990s.

■ Set up in 1989, the National Audiovisual Centre has been entrusted with the tasks of safeguarding, developing and promoting the Luxembourg audiovisual heritage, producing audiovisual documentation of material of national interest and developing public awareness of, and skill in using, audio-visual tools for cultural and educational ends. In addition, the Centre will promote Luxembourg audiovisual creativity in general by distributing productions abroad.

■ The CNA's areas of concern are mainly those of film, photography and sound production. In each of these fields, the CNA is involved in the collection of material either by registration of copyright or by contacting the legal owners, the restoration and physical preservation of such items, making them available to the public and integrating them into audiovisual productions.

THE MEDIUM OF FILM, THE BEGINNING OF THE PROJECT

At the beginning of the 1990s, discussions began with the CLT-UFA, the RTL Group's predecessor, with the aim of taking over their stock of films on celluloid which consisted mainly of 16mm copies of programmes produced by RTL Télé Luxembourg. As Luxembourg does not have a public television company, RTL is the only professional source of images of daily life in Luxembourg. Disintegration or destruction of these

images, which cover the period from the Second World War to the present day, would have been a huge loss for the country.

It was imperative to take steps to copy these films onto video format but this could not be done until specialised laboratories had carried out restoration work on a significant number of the documents.

Simultaneously, tests were carried out on the video archives of the CLT-UFA. In the light of the results of these tests, it was decided that restoration of the video archives should be given urgent priority as these were in an even poorer state than the film on celluloid.

Copying the 1-inch, 2-inch and U-Matic formats to Digi Beta was the main priority. At that time, almost all of the video documentation was copied to the appropriate format. The transfer of celluloid film to video format continued at a more sedate pace at the same time.

In February, 1996, two agreements (one for each film type) were signed with the CLT-UFA, enabling the CNA to acquire film and video material.

■ During the International Film Year in 1995, the CNA launched an appeal to the Luxembourg population asking them to entrust family films to the Centre on temporary loan. The success of this appeal was so great that the CNA was inundated with amateur film footage and the backlog in handling the films was, and still is, one of several months. These films are mainly 8mm and Super 8 but there is also some 9.5mm and 16mm footage.

In these private films, a large number of historic events and details of daily life were documented which were not recorded on the Luxembourg celluloid films. Footage of WWII and the Liberation, and Luxembourgers in the Belgian Congo were among the historic events while scenes of daily family life such as children at school and family celebrations as well as social events such as village fêtes, sports events and Luxembourgers at work were captured on the private films.

The CNA archive presently includes over 5,000 films from private individuals, covering a period from the 1920s to the 1990s. This rich fund of material is complemented by other



collections of national interest, notably reports and documentaries relating to the country and its heritage.

Two complete films have been restored by the CNA: Jean Cocteau's "Beauty and the Beast" and an 80-minute long documentary produced by the company Columeta, predecessor of Arcelor. As the latter is a silent film covering steel production in the 1920s, the CNA has commissioned an original sound track.

The CNA presently has nearly 30,000 films and 10,000 videos in its care. Its archives include all the long and short films (fiction and documentary) produced, or co-produced, on celluloid in Luxembourg - from the first film made in the Grand-Duchy in 1899 up to the most recent productions.

PART TWO OF THE PROJECT: PHOTOGRAPHY

As part of its responsibilities, the National Audiovisual Centre has been charged with preserving, developing and disseminating Luxembourg's photographic heritage. Since its inception, the CNA has both purchased and received donations of numerous photographic works. Along with photographs produced by the Centre itself as part of its normal work, these now make up a collection estimated at around 220,000 items.

Made up of amateur photos dating from the beginning of the century through to the works of contemporary photographers, this collection is a precious mirror of the technical and artistic evolution of photography while marking social and historical developments within the Grand-Duchy.

The CNA has taken a completely different approach for the preservation of photographic heritage. While the process of archiving material has increased in recent years, the process of restoration has known two great successes. These are:

- The restoration and installation of the "Family of Man" at Clervaux Castle. The restoration of this prestigious collection was completed in 1991 and the areas designated for the exhibition at Clervaux Castle were subject to rigorous criteria to conserve the photographs.
- The restoration of the collection "The Bitter Years, 1935-1941". An earlier attempt at restoration in 1994 enabled many works, which had not been properly stored, to be brought up to standard for the exhibition in the Luxembourg Casino during the Year of Culture in 1995. A second move to restore them, supported by a project concerned with preventative conservation, was completed in 2003.

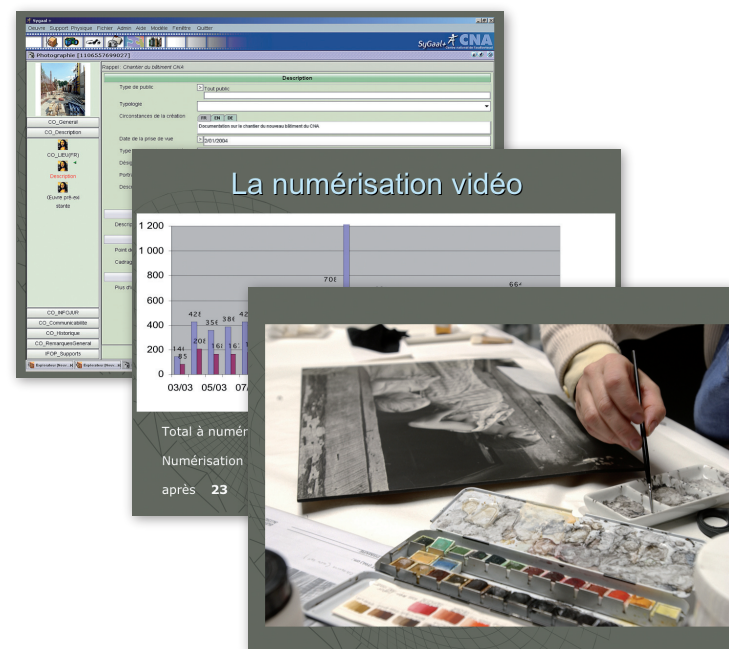
Today, digitisation of the CNA's photographic collection is underway.

PART THREE OF THE PROJECT: SOUND

As for sound, the CNA has been graced with a sound studio since its inception. This studio was originally intended for the work of stage professionals, radio productions and post-production work on films and videos. With the establishment of two restoration units, this activity has become one of the present priorities of the CNA's audio department.

Sound has also been the subject of an agreement between the CLT-UFA and the CNA. Through this agreement, the two parties have co-operated to establish the appropriate procedures for the physical conservation of sound archives of the Luxembourg recording library. These include radio programmes and musical recordings, especially of the RTL symphony orchestra which is now known as the Luxembourg Philharmonic Orchestra. The aim of the agreement is to organise the conservation and management of sound archives to ensure their optimal use, especially within the area of Luxembourg audiovisual production.

In order to ensure their preservation, but also to facilitate access while allowing a non-damaging use of the sound archives of the recording library, the CNA has begun the digitisation of all its material. Digitisation is a huge undertaking considering that the sound library presently contains 11,000 analogue tapes and that each tape consists of an average of 35 minutes of audio recording.



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SAFEGUARDING - A FOUR-PART PLAN

Since 1990, the CNA has been determined to develop a strategy to safeguard the national audiovisual heritage. This four-part plan was begun at the start of the new millennium.

1) Raising the CNA's profile with the public and researchers

Within the framework of the governmental programme e-Luxembourg, an internet site has been created with the aim of:

- Making Luxembourg's rich audiovisual heritage accessible to the public;
- Disseminating information on the current level of audiovisual production and creation;
- Selling CNA products through an "e-shop".

2) Establishing a vast programme of digitisation of audiovisual documents

This programme of digitisation involves 15,000 hours of video, 6,000 hours of sound recordings and 300,000 photographs. Following several years of studies, the work of digitisation was begun in 2003 and is expected to last eight years. For the digitisation of film and video alone, the State financial participation is estimated at 6.167 million euros. This includes the transfer of know-how and equipment to the public service at the end of the programme.

Technical aspects

The films on celluloid have been transferred to digital video (digi beta) using the Philips telecinema SPIRIT Data Cine (colour) and Cintel URSA (black and white). The resulting video documents have been transferred onto computer files, MPEG-2 at 10 mbits/s, via an automatic digital station.

The photographic items have been recorded on digital files .tif and the sound recordings onto computer files .wav.

All the computer files of "broadcast quality" are stored on a robot computer. Files of "viewable quality" have been created from these high quality files - MPEG-4 for video, JPEG for photos and MP3 for audio. These files are stored on an audiovisual server and will be accessible via internet or through interactive terminals.

For the obvious reasons of human resources and competence, the CNA has called on the expertise of private partners. In the field of video, the Broadcasting Centre Europe (BCE), a Luxembourg-based subsidiary of RTL, is the external partner. This service provider already possesses the necessary computer infrastructure for digitisation.

The CNA has also put out a call to external companies for the digitisation of photographs. Only the audio material is being digitised directly by the CNA's own services.

3) Developing a new relational database

Present technology permits easy storage of digitised material but there is still the problem of locating the material to make it available to a third party.

The CNA decided to develop a new relational database.

The aim of this new relational database is to:

- Facilitate professional document research ;
- Permit easy management of public access through an internet site as well as through interactive terminals;
- Become the link between the actual archive material, the digitised archive material and their exploitation in the widest sense of the term.

The major difficulty in developing the project has been bringing these three areas of audiovisual material together onto a single database. Indeed, the three types (film/video, photograph and sound) require different approaches. It has been extremely difficult to carry out digitisation without having to set up three different databases.

4) Provision of tailor-made premises

The government has decided to provide the CNA with new premises, specially adapted to its requirements.

In the autumn of 2006, the CNA will move to new premises specifically equipped for its work. This will include archive rooms of international standard for the storage and security of the material, areas accessible to the public showing the full scope of the CNA, an exhibition room, two cinema theatres and a media library.



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CONFERENCE

EUROPEAN NAVIGATOR (ENA), THE MULTIMEDIA REFERENCE ON THE HISTORY OF EUROPE



MARIANNE BACKES

DIRECTOR OF THE VIRTUAL
RESOURCE CENTRE FOR
KNOWLEDGE ABOUT EUROPE
– CVCE (LUXEMBOURG)

■ The Centre Virtuel de la Connaissance sur l'Europe (Virtual Resource Centre for Knowledge about Europe - CVCE) is a Luxembourg-based public undertaking under the aegis of the Ministry of Culture, Higher Education and Research.

■ The CVCE has created a platform for the research, gathering, selection, processing and dissemination of digital content covering our cultural heritage. A team made up of specialists from many different disciplines — historians, legal experts, translators, IT specialists and so on — all help the CVCE to ensure that the platform remains innovative and up-to-date, both in terms of content and technology. This gave rise to European Navigator (ENA), the CVCE's flagship initiative to create a digital library that provides multimedia content to its users.

■ The primary task of the CVCE is to research, create and select relevant multimedia material on European integration in its widest sense. The CVCE is responsible for developing, refining and expanding the content contained within ENA. By gathering an extensive amount of carefully selected material, ENA provides access to more than half a century of European history through the events and institutions of a Europe in the process of integration, thus safeguarding the collective memory of Europe.

■ Students, teachers, researchers and anyone with an interest in European integration will find a wealth of original material here, such as photos, sound clips, film recordings, press

articles and cartoons, all of which are accompanied by synopses, tables and interactive maps and diagrams. This vast and varied catalogue of documentary resources is selected, created, processed and authenticated by the CVCE's multidisciplinary team.

■ ENA is a multilingual application that enjoys global coverage thanks to its availability on the Internet. ENA's interface and collection of documents are currently available in French, English and German although other languages will be added as the system develops. Furthermore, each source document is available in its original language and in translation.

■ ENA comprises many additional features that, together, make it a indispensable working tool. These features include a search engine, a thesaurus, a glossary, a media library and an album that allow its users to enjoy an enhanced experience.

■ ENA is freely available on the Internet at www.ena.lu and can also be accessed through interactive terminals installed in both national and Community institutions.



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CONFERENCE

DESCRIPTION OF THE PRESENTATION CASES - IT SECURITY : EVERYBODY IS CONCERNED



FRANCOIS THILL

PROJECT LEADER CASES,
MINISTRY OF ECONOMY
(LUXEMBOURG)



PASCAL STEICHEN

CASES, MINISTRY OF ECONOMY
(LUXEMBOURG)

■ Teaching Small and Medium-Sized Enterprises (SMEs) and citizens about information security is a pre-requisite for our information society to flourish if not to survive. CASES focuses on these two target groups; it helps raise awareness and provides support with security in the IT area. Once trust and confidence have been firmly established, both citizens and SMEs will feel more comfortable with the information society and, most importantly, benefit from e-commerce and e-government services. The project leaders presented Luxembourg CASES work and demonstrated that really everybody is concerned by IT security.

■ As a first step, CASES (www.cases.lu and www.casescontact.org) aims to build a lean infrastructure devoted to performing mainly two primary tasks:

1. Sharing and distribution of information (e.g., gather, sanitise and share incidents reports);
2. Raising awareness about information security.

■ In this initial phase, organisational issues must be resolved while CASES acceptability and trust by other groups must be earned or secured. Once the organisational structure has been



THIERRY ZOLLER

CASES, MINISTRY OF ECONOMY
(LUXEMBOURG)

fine-tuned, Member States may wish to ask CASES to perform additional tasks that are seen as critical in the EU's striving toward a digital economy based on trust and confidence.

■ CASES will cover the above listed security/trust gaps as it starts fulfilling its unique selling proposition (UPS) of further leveraging EU efforts in order to improve infrastructure protection. CASES can bring the European Union a big step closer toward security. Most importantly, this can be done within a limited timeframe and at very reasonable cost.

■ CASES' primary target groups will be small and medium-sized enterprises (SMEs) as well as citizens. However, governmental agencies, industry and other groups will also benefit.

■ CASES is one way of starting the pan-European effort that **builds on existing structures** without establishing new ones. It does not interfere with initiatives such as the Cyber Security Task Force but, instead, supports these efforts by focusing on practical front line activities while adding a technical verification component. Ultimately, in combination with research efforts undertaken for confidentiality and trust by FP6, CASES will provide the necessary information and testing ground to make sure that such research will result in the tools needed to further accelerate security efforts.

■ International collaboration is one of the key factors for success. Without synergy effects and without a European network of trust and knowledge it will be very hard to take full advantage of all the benefits modern communication networks can provide. Consumer confidence must be strengthened if markets are to develop.

CONFERENCE

RAISING AWARENESS ABOUT CULTURAL AND SCIENTIFIC HERITAGE AS PART OF ICT-INTEGRATION STRATEGY IN PRIMARY AND SECONDARY SCHOOLS



CLAUDE SCHOCK

PROJECT LEADER, SCRIPT
(SERVICE OF COORDINATION
OF RESEARCH, TEACHING AND
TECHNOLOGICAL INNOVATION),
MINISTRY OF EDUCATION AND
VOCATIONAL TRAINING
(LUXEMBOURG)



JOS BERTEMES

PROJECT LEADER, SCRIPT
(SERVICE OF COORDINATION
OF RESEARCH, TEACHING AND
TECHNOLOGICAL INNOVATION),
MINISTRY OF EDUCATION AND
VOCATIONAL TRAINING
(LUXEMBOURG)

“New technologies” started being taught as a subject in the mid-1980s, particular emphasis being put on the technical aspects of ICT. In 1999 the Ministry of Education wanted to change the perception of the use of ICT at schools. It became important to consider ICT as a tool for teaching and learning.

Finding new, meaningful contents was crucial since ICT was no longer considered a subject, but a tool for learning. Using a new tool such as ICT to study local heritage is one of the ways that is being developed to make ICT part of the national curriculum.

OTHER LUXEMBOURG CONTRIBUTIONS

UNESCO WORLD HERITAGE SITE: CITY OF LUXEMBOURG - ITS OLD QUARTERS AND FORTIFICATIONS



JEAN-PIERRE KRAEMER

PRESIDENT OF LUXEMBOURG
NATIONAL COMMISSION FOR
UNESCO

Luxembourg joined the Organisation on October 27, 1947. In 1994 UNESCO added the ‘City of Luxembourg: its Old Quarters and Fortifications’ to the Memory of the World Register. The nomination process is very hard; there are five different steps to take: the ‘Tentative List’, the ‘Nomination List’, the ‘Advisory Bodies’, the ‘World Heritage Committee’ and the ‘Criteria for Selection’.

The speaker presents the results of this registration and shows that the latter does not hinder either the development of a city or its openness to the future.

The presence of a cultural site on the list of the World Register is recognition of its outstanding value by the world community. The site belongs to the whole community from that point onwards, while the country in question is obliged to protect, manage and valorise the site.

Luxembourg has succeeded in combining its obligations of protection with the demands of city planning. UNESCO and ICOMOS experts have been involved in all important new urban projects (Museum of Modern Art Grand-Duc Jean, City of Justice, etc) and their recommendations have been taken into account. The preservation of the classified site has thus been guaranteed whereas, simultaneously, the architectural environment and the protection of our heritage have both been respected.

CONFERENCE

PROJECT EUROPEAN GROUP ON MUSEUM STATISTICS: MUSEUMS IN EUROPE – BASIC FIGURES



MONIKA HAGEDORN-SAUPE

DEPUTY DIRECTOR
OF THE INSTITUTE
FOR MUSEUM RESEARCH
(GERMANY)



VLADIMÍR BÍNA

RESEARCH CO-ORDINATOR
CULTURE, MINISTRY
OF EDUCATION, CULTURE
AND SCIENCE (NETHERLANDS)

The aim of the European Group on Museum Statistics (EGMUS) is to provide politicians, policy makers, and cultural workers in Europe with much needed information on museums. Until now the picture of European museums is fragmented, to put it mildly. Reliable and comparable data are a prerequisite for a more comprehensive view on museum sector in Europe.

Participants of EGMUS came from the Member States participating in former European “Leadership Group (LEG) on Cultural Statistics in the EU” and the subsequent Working Group on Cultural Statistics (representatives from Ministries of Culture, statisticians) as well as experts working in museum domain. Major activities consist of collection of available data from national museum surveys and other sources, the elaboration of a common methodology and a common survey questionnaire. The principal aim of EGMUS is to produce relevant, coherent and comparable statistics on museums at European level.

EGMUS is an independent body, accepted as an informal working group in the framework of the European Working Group on Cultural Statistics of the Statistical Office of Eu-

ropean Union (Eurostat). Communications from EGMUS are included in the reports, recommendations and conclusions of the Working Group.

Jointly coordinated by France, Germany, Luxembourg and The Netherlands, 23 other European countries participate in EGMUS, as well as Eurostat and UNESCO.

The first edition “A Guide to European Museum Statistics”, a selection significant statistical data on museum sector, a design for an EGMUS internet site and a draft of a European museum questionnaire were presented to the audience. The speakers underlined the prospects for collaboration between EGMUS and the European project of digitalization of the cultural contents, in particular through the knowledge acquired by EGMUS in the data acquisition on the communication and information technology.

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INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

Luxembourg, 21. 22. June 2005

PRESENTATION OF WORKING AREAS OF THE DYNAMIC ACTION
PLAN FOR THE COORDINATION OF DIGITISATION OF CULTURAL
AND SCIENTIFIC CONTENT

⊙ ⊖ ⊕ CHAIRMAN



GUY FRANK

LUXEMBOURG REPRESENTATIVE WITH THE NRG,
HEAD OF CULTURAL STATISTICS AND ACCOUNTING DEPARTMENT
MINISTRY OF CULTURE, HIGHER EDUCATION AND
RESEARCH (LUXEMBOURG)

⊙ ⊖ ⊕

Wednesday 22nd June 2005

A first goal of the **second day** of the Conference is to present the successor of the Lund Action Plan which should be introduced by end of 2005 and to start paving the way for the actual implementation of the new action plan proposed by the NRG. A second goal is to aggregate other cultural actors and projects and national resources on the initiative underpinning its implementation.

The foreseen four sections of this day introduce the specific issues related to the four action areas of the proposed Dynamic Action Plan, defining current activity, obstacles and risks. Each session will be chaired by a coordinator and key speakers will present experience and opportunities for future practical implementation by:

1. presenting the action areas objectives and approach;
2. discussing/validating the vision and the suggested actions for each action area;
3. starting to define some concrete proposals for the future implementation of the DAP.

The audience will have the possibility for questioning by being actively involved by the coordinator at the end of each session.

INTRODUCTION TO THE SECOND DAY OF THE CONFERENCE

The initiative promoted by the European Commission in 2001 led to the definition of the *LUND Principles*: “Europe’s cultural and scientific knowledge resources are a unique public asset, forming the collective and evolving memory of our diverse societies and providing a solid basis for the development of our digital content industries in a sustainable knowledge society” and the creation of the *National Representatives Group* (NRG) as a means of expression of the Member States. NRG members are officially nominated as representatives of each Member State and act as “a steering group for the activities related to the coordination of digitised policies and programmes, with special emphasis on cultural and scientific resources and on the contribution of public cultural institutions”. Since that first meeting in Lund (Sweden) on 4 April 2001 a lot of work has been done; some concrete and significant results have been achieved. Member states have taken the tasks stated in the *LUND Action Plan* seriously: “Promoting digitisation and digital preservation to be vital to a vast number of public and private organisations in all Member States and extending to, and making feasible for, a critical mass of such organisations”, with the support of the MINERVA projects and of other national projects or competence centres, in order to implement the *LUND Principles*. A normal and responsible step in this process will be a review of the entire initiative implementation plan; principles and results will have to be compared. The NRG has decided to point to the barriers and problems encountered over these first three years. In order to maximise impact and to respond to updated scenarios, the substantial progress made will have to be identified, as will remaining obstacles and new barriers; more effective coordination measures will have to be created. The three successive EU-Presidencies NL-LUX-UK have been committed to driving this process forward on behalf of the NRG: as a first result, the Action Plan has had to be revised while the Lund Principles still remain valid. The task force working on this has decided to enlarge the vision of the Lund Action Plan both in terms of the areas of topics (in particular, in the 4th action area a link is established with ‘digital preservation’) and in terms of partners involved in the practical implementation of the new Dynamic Action Plan (DAP). This last point is really crucial. The message that the DAP is open to any other project or competence centre in addition to MINERVA has to be strengthened. To bring the fragmented competences, initiatives and invested resources

together on a common platform is a core objective for the future of digitisation and ‘digital preservation’ in cultural and scientific areas.

So a first goal of the second day of the Conference is to present the successor of the Lund Action Plan, the Dynamic Action Plan and the four action areas with stable strategic objectives and a flexible structure for the practical implementation phase. The DAP should be introduced by the end of this year under the UK-Presidency; the way should also be paved for the actual implementation of the DAP proposed by the NRG.

A second goal of the Conference, which is crucial for the success of the entire initiative, is to bring in other cultural actors like small and medium organizations, institutes as well as projects and national resources. A clear motivation strategy must be generated about benefit for everybody. Cooperation as well as sharing knowledge and experience are key-concepts for future European projects. Today’s meeting should reinforce this fundamental concern.

According to the action areas as defined in the Dynamic Action Plan, the day has been divided into four parts; the specific issues related to each one are presented and explained by experts working in the areas. Current activities, obstacles and risks are the topics of the presentations. Experts from different European cultural networks like MINERVA, Digicult, BRICKS, DELOS, EPOCH, MICHAEL, NESTOR, PRESTOSPACE, etc have been invited, as have experts dealing with digitisation.

Each session is chaired by a coordinator. Key speakers will present experience and opportunities for future practical implementation by:

- 1- Explaining action area objectives and approach;
- 2- Discussing/validating the vision and the suggested actions for each action area;
- 3- Starting to define some concrete proposals for the future implementation of the DAP.

The audience may raise questions as the coordinator will invite them to get actively involved at the end of each session.



SESSION 1

USERS AND CONTENT

“Users need to benefit more from the networking of cultural knowledge, as the implementation of technologies enables the development of a European Cultural information space. They need to be facilitated to easily find and use cultural content and to contribute their own knowledge and experience, becoming active citizens in information societies”.

A ‘digital renaissance’ should start from putting the users at the centre of the future information society, in particular the democracy and inclusion should lead the development of a society really for all the citizen, regardless of gender, professional background, level of education, social status, religious, ethnic, or cultural identity to have access to digital cultural heritage information in balance with the protection of legal rights of the owner and producer.

What do users want, do, need, think, know, presuppose, expect, are familiar with, do not do, want to pay, trust, like, dislike, avoid? Watching individual users, user groups, user categories and communities, evaluating patterns of use, and planning accordingly, will be a fundamental part of the dynamic action plan.

Accessibility and multilingualism are probably the hardest challenges for developing cultural applications on the web.

On the first issue a lot of work has been done, in particular for accessibility and usability by people with special needs, for example the Web Accessibility Initiative promoted by the World Wide Web Consortium and supported also by the European Commission. About multilingualism that is improving in some sectors of the information society we are still at a pioneer state for cultural applications. These two issues are really cross-sectoral and, due to the dimension of the challenges, a common approach and a strong cooperation are absolutely advisable for economy of scale and exploitation of opportunities.

Another point is the ‘quality’ of web sites of cultural institutions, in terms of transparency, provenance and authenticity require more attention. MINERVA project has done a huge work on that issue setting up an expert workgroup with representatives from many member states: the main results have been the agreement on ‘ten principles’ and production of some guidelines.

The concept of ‘user community’ should be split into two groups the ‘content holders’ like the cultural institutions that must implement new technologies to provide services, and the final users like citizen, students, professionals that should be the real target of web applications.

COORDINATOR:



DAVID DAWSON

HEAD OF DIGITAL FUTURES, MUSEUMS LIBRARY AND ARCHIVES COUNCIL - MLA (UNITED-KINGDOM)

PARTICIPANTS:



MONIKA HAGEDORN-SAUPE

DEPUTY DIRECTOR OF THE INSTITUTE FOR MUSEUM RESEARCH OF BERLIN (GERMANY)



GABIELLA SZALOKI

NATIONAL LIBRARY (HUNGARY)



FRANCO NICCOLUCCI

UNIVERSITY OF FLORENCE (ITALY)



CHRISTOPHE DESSAUX

HEAD OF MISSION OF RESEARCH AND TECHNOLOGY, DDAI, MINISTRY OF CULTURE AND COMMUNICATION (FRANCE)

A SURVEY OF MULTILINGUISM AND THE USE OF THESAURI IN CULTURAL WEBSITES

by **GABRIELLA SZALOKI**

After the accession to the European Union the new member states became a part of a multicultural and multilingual community. At present there are 20 official, and about 150 estimated minority and immigrant languages are spoken in the enlarged European Union¹. The information retrieval on the Web, or in a common database can be a serious problem. That is why on the kick off meeting of the MINERVA Plus Project in Budapest February 2004, it was decided to establish a working group specialized on multilingual issues, especially on multilingual thesauri. The working group was a follow up of the work carried out by the working group by the MINERVA Project Work Package 3 (WP3), lead by France.

Instead of creating a brand new multilingual thesaurus for the project's purposes, we decided to make a survey on multilingual websites and thesauri. It gave us also a good opportunity for discovering the usage of multilingual thesauri in all over Europe. The survey was completely democratic, and we declare, that our results cannot be considered as statistically relevant. It can be better referred as random sampling. The reason of this can be explained with the different customs of the member states, the different methods of circulating and gathering information implemented by the national representatives and naturally the different social attitudes of each country towards the issue of multilingualism and consequently the different levels of maturity of the digital products in terms of multilingual features.

The coordinators' attitudes, working fields, and positions made a major impact on their countries' results. In some countries, like Israel, The Netherlands, and Slovakia, where they had just finished a survey, it was enough to send us the results offline. Other countries, like Poland, Greece, and Russia also decided to send us offline results, because of shortage of time, or other resources. These were added extra to the online results in the same form.

The aim of the survey was mapping the multilingual access to the European digital cultural content. For implementing the survey we have compiled a website

<http://www.mek.oszk.hu/minervalsurvey>, which served us for the data collection and displaying the actual results. From the front page could be reached the online questionnaire, which had two major parts. The first section was for auditing the multilingualism of the cultural websites. The second part could be filled out only by those institutions, which declared, that they use controlled vocabulary for information retrieval in their database. This part was based on an Israeli questionnaire, used in a prior survey. The results could be followed online continuously. There were separate links from the front page to the «Statistics», to the registered «Institutions», and to the «Controlled vocabularies» grouped by the countries.

The statistics were calculated by countries individually, and also for the results of the whole survey. It analysed the institutions types, the number of the languages available on the site, the site availability in English, and the type of the searching tools. The «Institutions» showed the names of the registered institutions, linked to their websites, so this way they could be easily checked out. The «Controlled vocabularies» showed the names of the registered thesauri, and their registration form.

The first run of the data collection started in June, and closed in August 2004. In the first analysis there were 236 answers from 21 states. This high score indicated also the diversity of the activity of the participation. Answers ranged from 1 to 40 per states, this shows how many institutions registered their websites in our database. There were 67 libraries, 63 museums, 35 archives, 21 cultural sites, and 45 other institutions. The results of the first run demonstrated, that the 30% of the websites were still monolingual, 43% were bilingual, and about 26% were multilingual. There were 31 thesauri registered: 13 from Italy, 10 from the United Kingdom, 6 from Hungary, 1 from the Netherlands, and 1 from Austria.

The working group had its first meeting on 12th of November 2004 in Budapest. The members of the working group presented a short country report from a multilingual aspect. The slides are available on the official website of the survey by clicking on the «Download the slide shows». It was clear, that there are different regulations and customs in the member states, so we planned to collect country reports from multilingual aspect. We also agreed on new rules for the survey, and

restrictions for the results. We started a second run for those countries, which were underrepresented in the survey. We also decided to create a mailing list for circulating general information, and using it as a discussion area. We set up the criteria for the best practices, and agreed on the definitions.

The second meeting took place in Berlin on the 8th of April 2005, joined to the two days WP5 meeting on quality of the websites, and we gained useful experiences. We realized that it would be useful to get to know about the multilingual issues from each country in a sophisticated way, so we decided to collect country reports. This will also help us to find the best practices we could share. We agreed on the form of the country reports, and the deadline of preparing them.

The second run of the survey was closed at the end of May 2005. The results were doubled. There were 676 websites registered from 24 countries. Some countries, like Germany, Italy, Greece, Israel, Malta sent additional information, but no

information came from Cyprus, Latvia, Lithuania, and Luxembourg. There were 265 museums, 138 libraries, 98 archives, 65 cultural sites, and 129 other websites registered. 179 of them are still monolingual, the majority: 310 are bilingual, 123 are available in 4 languages, 14 in 5 languages, 10 in 6 languages, 4 in 7 languages, 3 in 9 languages, and 1 in 34 languages. There are 491 from 676 websites available in English. There are 106 registered controlled vocabularies in our database. 1 from Austria, 3 from France, 22 from Germany, 6 from Hungary, 30 from Israel, 13 from Italy, 19 from Russia, 1 from Sweden, 1 from The Netherlands, 10 from the United Kingdom. We identify the best practices from these.

There are still some tasks to be done this year: preparing the deliverable about the work carried out by the working group. To achieve this we need to fine tuning the country reports, ask those countries, who hasn't prepared yet to provide us their reports, analyze and distribute the findings.



VILLAGE DE SCHENGEN
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OTHER CONTRIBUTIONS ILLUSTRATING THE ACTION AREAS 1

QUALITY PRINCIPLES FOR CULTURAL WEB SITES

by **MONICA HAGEDORN-SAUPE**

In the MINERVA working group 5 - *Identification of user needs, content and quality framework for common access points* (www.minerva.org), a group of countries work on the Quality Principles for Cultural Websites. The first result of the working group was the “Handbook for quality in the cultural Web sites – Improving quality for citizens”. The authors of the Handbook propose :

- A theoretical framework to guide the process of formulating quality issues;
- A proposal for criteria of quality for the accessibility via Internet;
- A reminder to take user needs into account.

The working group enumerated also ten principles of good quality in “Quality Principles for Cultural Websites: a Handbook”. A good quality cultural website must be:

- Transparent;
- Maintained;
- User-centred;
- Multi-lingual;
- Managed;
- Effective;
- Accessible;
- Responsive;
- Interoperable;
- Preserved.

EPOCH: ACCESS AND SURVEY ON SOCIOECONOMIC

by **FRANCO NICCOLUCCI**

EPOCH is a consortium of 85 partners (University Departments, Research Centres, Cultural Institutions and Heritage Agencies) coordinated by the University of Brighton to carry on a 4-years project on ICT applications to Cultural Heritage. The EPOCH project (technically, a Network of Excellence, in the EU terminology) has been granted about 8 million Euro and started on 15 March 2004. The overall goal of the project is to foster integration and cross-fertilization among researchers and research institutions across Europe, and among different disciplines in the Humanities and in the technological

field. This goal is achieved by monitoring needs and opportunities as those offered by technological development, by carrying on positive actions towards integration, like the creation of interdisciplinary task forces and supporting researchers’ mobility and relocation, and by developing a common infrastructure for research and applications.

The management of such a huge consortium is not an easy task, and the coordinator is helped by three other executive directors and by an Executive Committee of seven people.

Strategic decisions are taken by the Board of Directors and approved by all partners in the Assembly, or through electronic vote. Nonetheless, EPOCH characterizes as an open and democratic community, with new partners entering every year and other interested institutions joining as affiliates.

Main outputs of EPOCH include the Research Agenda report, a yearly document focusing on those issues that appear as the most relevant for research and applications. The report is the product of internal consultation performed in several workshops and then submitted to the review college, an organism formed by well known experts to evaluate the network’s proposals and results. After approval by the EU reviewers, the report is then provided to the scientific community as a contribution to coordinate efforts towards an effective advancement of European research in this field.

Another similar document is the Report on the State of the Union about policies, practices and research, which photographs the situation of member states concerning the applications of ICT to CH. The first issue includes reports regarding almost all states contributed by different authors from an unofficial perspective. Overall conclusions are showing the existence of a two-velocity Europe and should raise the government concern about delays still occurring in some countries.

The report on Training Offerings and Needs in Europe takes a snapshot on the situation of higher education in the relevant fields, with a particular attention to interdisciplinary curricula. Here a similar hiatus appears, which may cause in the long term a substantial divide among education levels in different European states, and push students and researchers to the more advanced countries, thus aggravating the situation. The report is being distributed to all potentially interested academic authorities.

All the reports are available for download from the project web site www.epoch-net.org (approval for www.epoch.eu is pending at the .eu registrar), where a whole bunch of information about the project is provided for researchers, heritage professionals and the public at large.

EPOCH is developing a substantial research activity. This includes the preparation of showcases aimed at heritage professionals to demonstrate how current technology may be put to work for heritage.

The showcases as yet developed are the following:

SHOWCASE 1 : ON SITE RECONSTRUCTION EXPERIENCE
Visitors see virtual reconstructions of disappeared monuments superimposed on the scene through AR glasses, giving a feel for

the original appearance of a site in situ, stressing the authenticity of the remains

SHOWCASE 2 : MULTIMODAL INTERFACE FOR SAFE PRESENTATION OF VALUABLE OBJECTS

Offers museum visitors an intuitive tool for the exploration of objects not physically present by manipulating a touch-sensitive replica and seeing the original object visualised in 3D (annotated multi-media information is activated by touching parts of the replica)

SHOWCASE 3 : TOOL FOR STRATIGRAPHIC DATA RECORDING

Demonstrates a state-of-the-art tool that can assist archaeologists in the systematic recording of their excavations through detailed 3D capture and representation of stratigraphical layers.

SHOWCASE 4 : MULTILINGUAL AVATARS

Designed to raise awareness of the potential of underpinning technologies in modelling and rendering of wide-ranging, highly-detailed scenes, combined with multi-lingual avatars, responding through natural language and combined in a low-cost real-time system

SHOWCASE 5 : E-TOURISM THROUGH CULTURAL ROUTES

Creates a new form of web supported tourism, through cultural routes, digital souvenirs, e-business and a distributed network of IT enriched sites

SHOWCASE 6 : AVATAR BASED INTERACTIVE STORYTELLING :

Interactive storytelling from database through talking head avatars, with personalisation and high quality synthetic voice

SHOWCASE 7 : ARCHAEOLOGICAL DOCUMENTATION FOR THE SEMANTIC WEB :

Demonstrates the archaeological community the advantages of integration by creating an effective documentation system for archaeologists, based upon digital libraries and visual tools

SHOWCASE 8 : IMAGE-BASED MODELING :

Demonstrates the CH community that 3D acquisition and modelling does not necessarily call for expensive devices, and can become part of normal archaeological practice, based on images taken in any case.

A more detailed explanation of showcases is available on the EPOCH web site. It is expected that other ongoing research project (so-called NEWTONs, see below) will produce further showcases as well.

Showcases have eventually developed into scenarios, that is generalized applications of ICT to Cultural Heritage, using EPOCH’s technology and susceptible of application to a large number of cases. These aren’t yet off-the-shelf products, but

may be turned into industrial applications with no large effort. Most of the work will likely concern personalization to individual cases, as it has appeared that two cultural applications hardly ever are identical, but almost always have peculiarities deriving from site-specific features and from cultural diversity that should be carefully preserved. It is expected that a business model may be built on this, and EPOCH is currently investigating the socio-economic impact of culture with a yearly conference named “Heritage Impact” held in Brighton. The team working on such issues is developing a business model for cultural institutions and policy makers.

According to the analysis developed in the Research Agenda, EPOCH has outlined a number of issues worth investigating, as they are pointed out by heritage professionals as necessary and useful, or they correspond to missing tools in the production pipeline of cultural communication. Some of these are developed within the Common Infrastructure activity, as they use existing technology and just require being organized, setup and deployed. So EPOCH researchers have surveyed current applications (a list is available on the web site) and are currently improving their fit to cultural heritage needs. In particular this applies to standards. Here EPOCH’s work is addressing documentation, where CIDOC-CRM stands as the ISO internationally accepted documentation standard for cultural heritage objects, collections and sites; technology, where discussion is ongoing to define the most suitable one for “CH 3D objects”; and usability, with the preparation of guidelines. It appears that notwithstanding the theoretical acceptance of CIDOC-CRM as the overall solution for documentation, a plethora of de-facto standard is still widely used and for some cases (e.g. archaeological excavations) there is still much work to do. Technological solutions are also the subject of a debate, with X3D, COLLADA and MPEG-21 candidating for EPOCH’s choice. Such activities show the definite advantage of a large community: for example the work on documentation involves 7 European documentation systems and the national agencies in charge of them. EPOCH is actively supporting the definition of the Ename Charter for the interpretation of heritage sites (www.enamecharter.org), and a Charter on the credibility of 3D visualization in cultural applications, both addressing social issues involved with the use of computer graphics technology for cultural communication.

In other cases, the Research Agenda has shown that software tools are in fact lacking. EPOCH has promoted and is financially supporting the creation by groupings of partners of NEW TOOLS Needed (NEWTON), i. e. pieces of software addressing such issues.

They include:

➤ ARCHIVE MAPPER FOR ARCHAEOLOGY (AMA)

AMA will develop a tool for semi-automated mapping to CIDOC. One of AMA’s explicit goals is to stimulate the adoption of CIDOC-CRM as reference model by heritage professionals and heritage policy makers, showcasing the bi-directional equivalence between it and existing national or de-facto standards and providing the tools to implement such mapping.

➤ CONTEXT INFLUENCED MOBILE ACQUISITION AND DELIVERY OF CH DATA (CIMAD)

CIMAD, a collaboration between institutes from Italy and the United Kingdom, has an ambitious goal: it aims at the implementation of a framework for “smart” cultural heritage environments. These environments will support distributed and mobile on-site applications, from data capture to public dissemination.

➤ INTEGRATION OF IMAGES AND LASERSCAN DATA FOR 3D MODELLING (IMODELASER)

In recent years a number of techniques for data acquisition and processing have been developed in photogrammetry and computer vision. However, in terms of quality and reliability, the results are often not yet acceptable for cultural heritage professional. To solve this dilemma, a team in Zürich will work on the integration of image and laserscan data for 3D modelling.

➤ UNDERWATER DATA COLLECTION AND PHOTOGRAMMETRY (UPGRADE)

The new UPGRADE project is bringing together experts in underwater archaeology to develop a software suite for the integration and fusion of acoustical, optical and platform navigation data. These tools should make the whole process largely automatic, and facilitate the construction of georeferenced 3D maps of underwater archaeological areas.

➤ VIRTUAL HUMAN OPEN SIMULATION FRAMEWORK FOR CULTURAL HERITAGE (CHARACTERISE)

While 3D representations of cultural heritage sites are becoming more common, the empty streets of these models can often seem sterile and lifeless. In the new VIRTUMAN project experts from Switzerland and the United Kingdom will join forces to create a ‘Scene Population Toolkit’. This toolkit will allow to place intelligent, multilingual avatars into virtual scenes.

➤ THE EPOCH 3D MULTIMEDIA KIOSK (3DKIOSK)

3D processing involves an entire chain of steps, from different techniques to capture 3D data, over ways to clean up these data and integrate the results into models, up to ways of visualising the models. 3DKIOSK wants to offer novel solutions for each of these levels. The goal is an integrated turnkey solution, tailored for the needs and requirements of museums.

More details on NEWTONs are available on the EPOCH web site.

Results for NEWTONs are expected during year 3. Some partial ones are already available, as a web service for creating 3D models from photos, which has been successfully tested in a number of conditions, including for example the use of plain tourist images to build 3D models of heritage buildings. Such a service will be integrated into 3DKIOSK.

As we are convinced that committing to research without caring of researchers is useless, EPOCH is carrying on an effective human resource development program. This includes training, with courses and Summer Schools organized by partners under the supervision and with the financial support of the project. Support is also granted to young people wishing to attend conferences and courses under the EPOCH bursary program and the mobility program, providing support for researchers from partners wishing to temporarily relocate at another partner to carry on joint research activity.

Finally, spread and outreach of EPOCH’s results are obtained by attending and lecturing at scientific conferences and commercial exhibitions and by participating in EU-organized events. Wherever possible, EPOCH has managed a booth where demonstrations are performed and information material is distributed. Along with the organization of several workshops, EPOCH has organized every year a session at an important Spring event (the CAA Conference and/or the EVA Conference) and is organizing every November its yearly Conference named VAST (2003: Brighton; 2004: Brussels; 2005: Pisa; 2006: Nicosia), which is attended by some 200 research-

ers from inside and outside the network. Dissemination is further achieved by a publication series, which hosts proceedings, manuals, reports and other printed material, distributed on paper by a professional publishing house (EPOCH partner) and also available for free from the web site.

What will be the future of EPOCH after the end of EU support in March 2008?

Of course, much will depend on the quality of its results: if they will prove to be useful, the scientific community will take over and further develop them. However, we have started planning the future of EPOCH beyond EPOCH. One promising solution consists in the creation of national/regional Expertise Centres, no-profit organizations supporting SMEs activity and favouring the matching of the offer by them with the demand by heritage institutions, local government and public heritage agencies. The Centres should be self-sustainable and form a Europe-wide network.

It is also expected that ties created in four years’ activity among research institutions will survive and inter-disciplinary trans-national team that have worked together for so long do not dissolve, as unfortunately sometimes happens in EU-funded research. Partnerships from within EPOCH have already successfully bid for other projects and are working on them.

How to make these liaisons permanent is still a matter of investigation, which will take an important place now that the project has passed above the mid-term mark and is sailing downwind towards ever-improved results.



THE FIRST EUROPEAN PROGRAMME PROVIDING ACCESS TO DIGITISED CULTURAL MATERIAL: MICHAEL (MULTILINGUAL INVENTORY OF CULTURAL HERITAGE IN EUROPE).

by **CRISTOPHE DESSAUX**

■ The MICHAEL project (www.michael-culture.org) is the result of co-operation between France, Italy and the United Kingdom. The European Commission has given its support to MICHAEL through the eTen programme, set up to ensure the dissemination of new technologies.

■ MICHAEL aims to open an on-line European gateway offering easy, fast access to the digitised collections of museums, libraries and the archives of various European countries. In June 2004, the first steps were taken to create the innovative tools for free computer access and a multilingual search engine. Between now and 2007, the MICHAEL programme will be capable of gathering information on collections from all over Europe, based on the national networks of cultural institutions. A wide range of uses are envisaged, notably in the areas of education and research but also in the development of new commercial services, especially in tourism and culture-related fields. Thus, this tool constitutes an essential step towards the creation of a European cultural area on the internet.

■ Built on common standards and methods, and notably on the recommendations of the MINERVA project and the National Representatives Group for the digitisation of cultural heritage material within European (NRG), MICHAEL extends access not only to national collections but also to European-wide knowledge and skills relating to digitisation and the creation of digitised inventories.⁽¹⁾ In this way, MICHAEL is at the forefront of the policy of the development of on-line services in Europe.

■ The MICHAEL programme relies on two complementary modules:
- a management and production module enables the creation, modification, importation and management of descriptive

files on the digitised cultural heritage. Built on the XML (eXist) database, and a structure of Web files based on the Cocon programme, this module provides an extensive framework for the creation of the digitised catalogues.

- a publication module offers users a simple and efficient interface to search for and find digitised cultural collections, then to consult descriptions of these. To do this, it uses the XML SDX search engine and relies on the MICHAEL production module. These tools will be made freely available as a computer software package.

■ The MICHAEL project links public and private bodies at the heart of a consortium.⁽²⁾ Thus, the project's public partners enhance the value of their national effort in the area of digitisation of cultural resources, valued at a total of 33 million euros for the 3 countries, over 3 years. The European Commission has allocated 3.3 million euros in funding for the project.

■ With the integration of new countries and new institutions into the network and the European catalogue, MICHAEL aims to provide the most widely available and most comprehensive digitised collection of cultural material in Europe. Thus, the European Commission will support the extension of the project (MICHAEL +) to a further 11 countries as of 2006 ⁽³⁾.

■ The perpetuation of the services of MICHAEL is a vital investment of the utmost importance. Even more important than European financial support is the protection afforded by European legislation, guaranteeing the continuity of the administration of the MICHAEL services. Finally, in every country, the partners of the MICHAEL project are developing partnership networks with the aim of encouraging cultural institutions to subscribe to the European catalogue by providing information about their digitised collections.

SESSION 2

ECONOMIC SUSTAINABILITY

■ "European Digital Libraries need the unique assets that Europe's cultural and scientific knowledge resources provide, forming a basis for the development of digital content industries in a sustainable knowledge society. There is a need to identify and remove barriers to the economic sustainability of the creation and maintenance of these digital cultural assets, services and networks, allied to a need to develop appropriate policy approaches, technological solutions and business models in this area."

■ Unfortunately, experience shows that many projects in the past have died for lack of vision by the policy-makers and the authorities responsible. They failed to create the conditions needed for the survival of the systems. Either informatics sys-

tems were too complex or expensive to be run by the cultural operators or the companies that sold them interrupted the assistance or the production of that release. Costs for maintaining an informatics system include training of personnel, updating of the hardware and software, development of the knowledge base and services offered to the final users. 'Running costs' for digital collections and services should be taken into consideration during the initial studies and planning of each project related to technology applications.

■ Legal aspects, Intellectual rights protection (IPR) and 'running costs' should be balanced against the right to free access by everybody. An example is the emerging digital rights management systems (DRMS).

COORDINATOR:



ANDREA GRANELLI

➤ ITALIAN COUNCIL FOR RESEARCH (ITALY)

PARTICIPANTS:



ANNA MARIA TAMMARO

➤ DIGITAL RENAISSANCE FOUNDATION (ITALY)



VITO CAPPELLINI

➤ UNIVERSITY OF FLORENCE (ITALY)



FRANCESCO NUCCI

➤ ENGINEERING INGEGNERIA INFORMATICA (ITALY)

⁽¹⁾ The three public partners are the active members of the NRG – the NRG advises the European Commission specifically on aspects of digitisation of the cultural heritage and extending the availability of digitised resources both on-line and off-line.

⁽²⁾ Public bodies: in France, the Ministry of Culture and Communication; in Italy, the Ministry of Cultural Treasures and Activities (MiBAC), coordinator of the consortium; in the United Kingdom, the

Government Agency for Museums, Libraries and Archives (MLA). Private bodies: in France, the Dédale association and, in Italy, the Amitié association. The French company AJLSM is a sub-contractor for the provision of technical services.

⁽³⁾ Germany, Spain, Finland, Greece, Hungary, Malta, the Netherlands, Poland, the Czech Republic, Sweden.

OPEN ACCESS PARADIGM AND CREATION OF KNOWLEDGE

by **ANNA-MARIA TAMMARO**

■ In a Knowledge Society, the opportunity exists for unprecedented connections between scientists, information, data and computational services (Grid) through the Internet. The Open Access paradigm ⁽¹⁾ could support research organisations and education systems which have the ability to contribute open, quality-based, economically sustainable contents and services in accordance with changes in the world of work and society. Any user can read, download, copy, distribute, print, search, or link digital objects, crawl them for indexing, pass them as data onto software, or use them for any other purpose, following Creative Commons licences. This vision is an appealing one and would appear to be realisable with current technology, combining the open access paradigm with the opportunities of open source and open content movement. The value of such a trusted network of digital resources for global economic and intellectual development is apparent to all who view such globalisation as beneficial.

■ This presentation is based on the evidence that knowledge is a process which is culturally derived, acquired, and applied, and that learning—the acquisition of new knowledge—relies on skills that are culturally dependent. These cultural bases for knowledge creation and absorption mean that knowledge management systems, especially those supporting digital libraries, must take cultural contexts into consideration in their design and implementation if they are to realise their potential for providing access to the widest range of knowledge.

■ Specific emphasis for the Dynamic Action Plan (DAP) could be on three levels: 1) System level, 2) Product level, 3) Community level.

■ **SYSTEM LEVEL: INTEROPERABILITY AND INTEGRATION OF OPEN CONTENT**

This will include the whole complexity of interoperability and integration, not limited to protocol and standards but including architecture and functional roles. The possibility of multiple choices and options will be taken into account, from

simple adoption of OAI-PMH protocol and metadata indexing to “content publishers” (Digital Asset Management Systems, gateways, content management systems and unstructured data-handling solutions). This line of discussion wants to explore opportunities and risks of the open access paradigm, collaboration between commercial firms acting as service providers and cultural institutions acting as content providers, evaluating what works and what does not work.

■ **PRODUCT LEVEL: EVOLVING CONTENT BUSINESS MODELS**

There should be a brainstorm session involving publishers, service providers, content owners, and internal content creators about how they are changing their content distribution strategies and diversifying their business. Content providers should balance access and distribution as well as manage and control their intellectual property rights and digital environment asset; new creative business models are needed such as, for example, service aggregators, rights management providers or asset management solutions. The guiding principle of open archives is that researchers themselves upload articles, conference papers etc., into the repositories. Thus, very low maintenance costs can be achieved for:

■ **A subject-specific repository:** it aims at the parallel publishing of material, allowing earlier and more efficient dissemination through specialised search agents.

■ **An institutional repository:** the custodians of the repository usually check that totally irrelevant material is not deposited.

■ **Open journals:** papers are available globally and much earlier, than, for instance, the finally published versions of the manuscripts in paper-based journals.

■ The often intricate relationships between public and private organisations are the nub of the content industry. The DAP could offer the chance to explore business models with

content owners, distributors and service providers. There is a fundamental need to break down the divide between producers and consumers.

■ **COMMUNITY LEVEL: RE-USING CONTENT AND CREATING NEW KNOWLEDGE**

Rather than focusing solely on the individual user who interacts with open content, we ought to consider group, organisation, and community activities and concerns which give rise to information-related behaviour in different scenarios such as e-learning, e-government, cultural tourism.

Open digital content, the Web, DRM, ERM and e-commerce developments combine to create myriad opportunities for repurposing content into diverse distribution channels to maximise revenue for service providers but also for learning and teaching purposes. This imperative extends not only to commercial content but also to the cultural institutions wishing to maximise internal investment in digital content.

The crisis of access to digital content and the difficulties associated with rights management are the most pressing issues in cyberspace today. Open Access content is a concept that balances the need for access versus control. It would allow copyrighted content to move from device to device without uncontrolled copying. It would meet publishers’ needs to control unauthorized and uncompensated copies while granting consumers a sense of ownership and the ability to engage in fair use manipulation of legitimate digital content.

There is also some discussion on quality. One quality measure used to be branding, which went together with the development of an internal quality culture - seen as a marketing and sustainability factor by larger institutions. There is a debate whether or not peer review processes - prior to publication or after - were effective as a measure of quality. Quality can also truly be measured within the context of use.

OTHER CONTRIBUTIONS ILLUSTRATING THE ACTION AREAS

WATERMARKING FOR COPYRIGHT PROTECTION

by **VITO CAPPELLINI**

■ Copyright protection is required in the distribution of digital content (data, music, images, video products, films, etc.), in particular through the Internet network.

■ Watermarking techniques can be efficiently applied for copyright protection.

■ Advanced watermarking techniques, defined by the Media Integration and Communication Centre (MICC) for digital images protection, are based on suitable marking of transformed domain data.

■ Applications developed for Cultural Heritage Institutions are described, in connection also with SME working in the Florence area.

■ Particular reference is given to Projects developed in cooperation with the Uffizi Gallery.

72 ⁽¹⁾ International initiatives which have developed the Open Access paradigm are:
- Budapest Open Access Initiative (BOAI) in 2001
- The Berlin declaration evolved from a European Union-funded digital project, European Cultural Heritage Online (ECHO), which facilitates access to cultural materials (see Nature 424, 491; 2003).
- UN World Summit on the Information Society (WSIS) met in Geneva in 2003 and approved a Declaration of Principles and a Plan of Action that contained explicit endorsements of open access to scientific information.

National initiatives supporting Open Access are: FAIR and DARE Programmes in the UK and the Netherlands respectively, which aim to investigate and develop the use of OAI within institutional repositories. The two Programmes have brought OAI to the forefront of thinking in the two countries when institutional repositories and related activities are being considered and planned by academic institutions.

A ROADMAP FOR THE NEXT GENERATION CULTURAL DIGITAL LIBRARY SERVICE: THE BRICKS PROJECT

by **FRANCESCO NUCCI**

■ The BRICKS EU Project (<http://www.brickscmmunity.org>; <http://www.bricksfactory.com>) is creating a distributed, scalable, and safe infrastructure that will provide enabling open-source technology for the European Digital Memory.

■ This infrastructure, known as the “Foundation”, has been implemented through the integration of independent software units called “Bricks”, which are deployed on the nodes of the architecture. A Brick is an independent building block whose functionality is made available through a formally defined interface. Bricks can be put together to provide richer functionality, and may encapsulate Content.

■ In order to test and validate the Foundation infrastructure and demonstrate how to build value-added services on such an infrastructure, some significant added-value “Pillar” applications have been developed and made available. They are based on the “Greek-temple metaphor”. The intention is to use such applications to validate the Foundation services. At the same time, these applications will constitute the basis for the future advancement of the BRICKS sustainability concept and be an attractive feature in the creation of a future Cultural Heritage Community.

■ Final users have largely been involved from the very beginning, from the design phase of the case study applications onwards, thus ensuring that such applications matched the initial requirements (“vertical integration”) and contributed to bridge the gap between the community of users and advanced ICTs in the Cultural Heritage domain.

■ The BRICKS European Project is going to provide the organisational and technological building blocks to develop a Digital Library of the European Digital Memory as a networked system of services covering globally available collections of multimedia digital content and providing a variety of knowledge layers for different users and access modalities.

■ The BRICKS vision is that of an integrated system offering functionality for a new generation of Digital Libraries,

which becomes a comprehensive term covering “Digital Museums”, “Digital Archives” and other kinds of digital memory systems. The results of the project will constitute the main assets of a newly funded BRICKS Factory, which will be the fundamental factor to guarantee future sustainability.

■ From the conceptual point of view, the BRICKS work-frame is based on the Greek Temple Metaphor: the Infrastructure Area is represented by the “Foundations” of the temple, the Application Services Area constitutes the “Pillars”, and the Valorisation and Sustainability Area is the “Roof”. The usage of this metaphor can help to explain how the “Bricks” will be used to build a “Temple” for the European Digital Memory. The metaphor also explains how, in the BRICKS Consortium, the Service-Oriented Area is represented by the Pillars for the future sustainability of the “BRICKS Factory since they will constitute the real added value for final users.

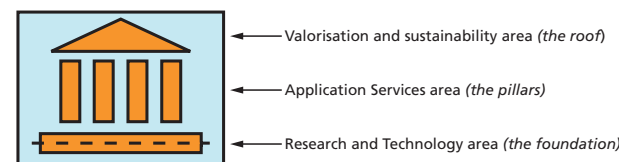


Figure:
BRICKS work-frame represented by the Greek Temple metaphor

BRICKS is advancing the state of the art by creating an Open Digital Library System based on sharing and re-using contents and services. Additional services of any kind may be added in a cost-effective manner. The key factor of this advance is the hinging of the Digital Library on an open infrastructure. The recent idea of an open, service-based Digital Library infrastructure has been pursued in different application areas by a number of recently-launched projects: Schoolnet, Greenstone, Digital Library in a Box. BRICKS infrastructure compares favourably with all of those:

- it provides better scalability, self-reliability and sustainability thanks to the decentralised architecture;
- it offers a secure and trusted environment;
- it provides a high degree of flexibility in the usage and composition of content and services;
- it is endowed with advanced basic services, such as multi-dimensional and multi-lingual search;
- it is definitely based on international standards.

■ Most existing Digital Library systems still reflect organisational patterns we are used to from conventional libraries and archives: a central server or repository is the core of the system; all content is maintained there. This is convenient for those who run the library because services can be kept at the desired level of quality in a reliable and well-established way. Contemporary technology, however, does not need such a centralised architecture. Networking technology provides unprecedented opportunities to create decentralised architectures, allowing many partners to participate in the creation of virtual digital libraries. It equally offers access to the various resources provided by individual partners. While this results in a new dimension of accessibility for users, it also causes new problems. New

ways must be found to manage decentralised contents that might not be homogeneous; metadata resources are needed to establish library standards; access and modification rights have to be established for various types of property right-holders, whereas search and browsing techniques need to be adapted.

■ The very diverse content of digital libraries makes new and challenging demands on storage and management systems and architectures. A multitude of different kinds of data (including images, video, audio, tables, arrays, graphics, algorithms, procedures, documents) and related formats, have to be addressed. Moreover, there is a need to expedite the access and use of cultural data and to consider emerging requirements such as distributed access, collaborative aspects, multimedia compositions, automatic extraction, sophisticated query and browsing functionalities, personalized access, etc.

■ As a main consequence, even small institutions will be able to become part of the BRICKS network with reduced costs (no prerequisites of increased computing power) and increased security (shared data does not reside in one particular location, it is accessible from each node, without points of failures).





SESSION 3

TECHNOLOGICAL DEVELOPMENTS AND TOOLS

■ “The technological environment in which Europe’s digital cultural content industries are taken forward is mainly the result of developments in major ICT industries (telecommunications, network infrastructures, database technologies and personal/business computing). Digitisation initiatives of cultural content holders do not automatically coincide with or take account of innovations driven by scientific or business research and development. Cultural institutions therefore need guidance to take account of the significance of existing and emerging developments in the research and application domains and to ensure that their own research needs are met”.

■ The speakers bring their experience and point of view about the importance for the cultural users community to be involved in the process of driving technology development and, more in deep, the definition of the specific projects launched in this sector. The user community should reinforce its level of background and training on the new technologies both in order to facilitate their adoption in the daily-work and to participate in the definition of the project idea and objectives. From the experience we can understand that one element responsible of some failures in the past, was the lack of involvement of the user community from the beginning of the project definition expecting users to adopt an ‘external object’ as it is with minimum level of assessment.

■ The objectives of this action area are to monitor these developments and to forge close ties between the cultural heritage community, and science and R&D programmes. The aim is to build consensus within the cultural heritage community on some common technical specifications. The adoption of common research agendas by the European research communities and investors is a second step in this process.

■ DELOS research agenda is the result of a large community (cultural institutions, research centres, industry and policy-makers) consultation and cooperative process for definition of the priorities and objectives.

■ The MINERVA technical guidelines are an outcome of a workgroup with experts from many European countries bringing their competence and point of view. The ‘vision’ behind this initiative was trying to maximise results and knowledge produced by former projects and integrating them in a unique product that could offer a unique ‘entry point’ for all the users, in particular the less technical-skilled. The strategic importance of some technical recommendations issued by national/sectoral authorities that could offer a clear and trusted reference for content holders and decision-makers.

■ Training programmes should be a key element of a long-term policy for the cultural sector and updating of the personnel

COORDINATOR:



ANDREA MULRENIN
✉ SALZBURG RESEARCH
(AUSTRIA)

PARTICIPANTS:



VITTORE CASAROSA
✉ INSTITUTE OF INFORMATION SCIENCE AND TECHNOLOGIES, ITALIAN NATIONAL RESEARCH COUNCIL, DEPUTY DIRECTOR OF THE DELOS NETWORK OF EXCELLENCE (ITALY)



EELCO BRUINSMA
✉ MINISTRY OF EDUCATION, CULTURE AND SCIENCE (THE NETHERLANDS)



DAVID DAWSON
✉ HEAD OF DIGITAL FUTURES, MUSEUMS LIBRARY AND ARCHIVES COUNCIL - MLA (UNITED-KINGDOM)

TECHNOLOGIES FOR DIGITAL LIBRARIES: A RESEARCH AGENDA

by **VITTORE CASAROSA**

The speaker presented the main research activities of the DELOS Network of Excellence, and how the activities of the different research clusters aim at providing the technologies of the next generation Digital Libraries.

DELOS, the European Network of Excellence on Digital Libraries (www.delos.info), is one of the Cultural Heritage projects funded by the Information Society Technologies programme under the EU's Sixth Framework Programme for Research and Development. The Network has presently 58 members, and its activities will continue until the end of 2007. DELOS is conducting a joint program of activities aimed at integrating and coordinating the ongoing research activities of the major European teams working in DL-related areas with the goal of developing the next generation Digital Library technologies.

That all citizens, anywhere, anytime, should have access to Internet-connected digital devices to search all of human knowledge, regardless of barriers of time, place, culture or language has been the vision of DELOS since its inception. DELOS believes that, in the near future, networked virtual libraries will enable anyone from their home, school or office to access the knowledge contained in the digital collections created by traditional libraries, museums, archives, universities, governmental agencies, specialized organizations, and individuals around the world. These new libraries will offer digital versions of traditional library, museum and archive holdings including text, video, sound and images, 2D and 3D objects. But they will also provide powerful new technological capabilities that enable users to refine their requests, analyze the results, access collections in other languages, share resources, and work collaboratively. No matter where the digital information resides physically, sophisticated search software can find it and present it to the user on demand.

The main objective of DELOS is to contribute to the development of the enabling technologies so that its vision for digital libraries may become reality. Digital Libraries is a multi-disciplinary field whose progress relies on the advancement of

many enabling technologies. It is of crucial importance that the research activities that are carried out separately under these enabling technologies are integrated with research activities being conducted within the digital library field, and we consider that to be the main task of DELOS. From the practical point of view, the main objective of DELOS is thus to build interoperable multimodal/multilingual services and integrated content management, ranging from the personal to the global for the specialist and the general population, to be incorporated into industrial-strength Digital Library Management Systems.

Considering a conceptual "Information Space", Digital Libraries should fill the gap between the traditional Data Base systems and Information Retrieval technologies on one side and "Web surfing" on the other. The former deals with highly structured information and applications, while the latter deals mostly with unknown (unstructured) information and applications. In the end we expect that Digital Libraries will support the specialized needs of very diverse application domains, from cultural heritage to general science, from health to government, from education to entertainment, and so on. To fulfill their role of universal knowledge infrastructures, Digital Libraries require focusing research in some key areas: (i) user-centred system design methodology; (ii) development of proactive systems with functionality that facilitates collaboration, communication, and information creation; (iii) development of generic Digital Library Management Systems that provide basic system infrastructures that can be used to implement application specific digital libraries incorporating context-specific services.

The research activities of DELOS have been organized in seven clusters, each one of which tries to gather under a common theme the many research issues in that topic.

DIGITAL LIBRARY ARCHITECTURES

Digital Libraries require a common infrastructure, which has to be highly scalable and customizable. Concepts and techniques from peer-to-peer data management to grid computing middleware and to service-oriented architecture are being in-

vestigated to understand which features are best suited to address large-scale distribution, scalability, availability, reliability, self organization and other properties needed in a robust Digital Library Management Systems. The cluster is also actively working on the definition of a Reference Model for Digital Library Systems, which will provide the conceptual framework for the architecture, functionality, operations and behavior of a Digital Library.

INFORMATION ACCESS AND PERSONALISATION

According to the DELOS vision, information stored in Digital Libraries needs to be accessed, integrated and individualized for any user, at anytime and anywhere in possibly multiple comprehensive and efficient ways. Two main aspects are relevant in information access: (i) interaction with a single source of information, where the main research focus is presently the investigation of indexing techniques for novel data types (e.g. similarity measures for audio/visual information items); (ii) information integration, when interacting with multiple sources of information providers, where the main issues being addressed are the criteria for routing a query to different sources of information and the merging of the returned results. For personalization, the main topic is the development of a conceptual framework to model the user preferences, taking into account not only the past behaviour but also the context of the interactions.

AUDIO/VISUAL AND NON-TRADITIONAL OBJECTS

The content of Digital Libraries is increasingly moving from pure textual information to the inclusion of images, audio, video and other complex objects like collections of scientific data, representations of 3D objects, continuous data streams. The main topics being addressed by the cluster are: (semi) automatic meta-data extraction from video and images, content-based retrieval of videos and images, presentation of results based on the specific requirements of the delivery media.

USER INTERFACES AND VISUALISATION

The main goal of this cluster is to develop methodologies, techniques and tools to establish a theoretically motivated and empirically supported frame of reference for designers and researchers, so to enable Digital Library designers and developers to meet not only the technological, but also the user-oriented requirements in a balanced way. In this perspective, the main topics presently being investigated are: the definition of new query and browse paradigms, to explore alternatives to the universal "point and click" paradigm in use today; the provision of capabilities for adapting the user interface to the task being performed; the provision of capabilities for supporting user collaboration, such as sharing of annotations, sharing of query results, etc. For visualization, new alternatives for the presentation of query results are being investigated (e.g. 3D coloured display of information clusters present in the result), and also

the provision to the user of tools for the direct manipulation of the visualized information.

KNOWLEDGE EXTRACTION AND SEMANTIC INTEROPERABILITY

The application of algorithms for the mining and analysis of digital resources (text, data, complex objects), offers exciting opportunities for the extraction of new knowledge and the re-use of data and information in new ways. Also the area of semantic interoperability is growing in importance in digital library research. It applies to the application of different vocabularies and terminology used in descriptions of digital objects for both learning and research, collections of those objects, collections of datasets and resources used in the wider cultural heritage sector and in e-research. Indeed, cross-sectoral and cross-domain shared understanding of semantic descriptions is one of the steps needed for accessing distributed information in a seamless way. The main topic on which the cluster is focusing is the interoperability and possibly the integration of higher-level ontologies, which is seen as the key for accessing heterogeneous distributed information.

PRESERVATION

The increased availability of information in digital format (whether digitized from physical objects or born digital) is causing an increased attention to the problem of preservation, i.e. how to ensure that the digital information will still be accessible 10, 100, 1000 years from now. This is a relatively new field, and the main focus of the cluster is in the coordination and promotion of research activities in order to provide the methodological framework and theory for ensuring that digital libraries research addresses preservation issues and digital libraries incorporate preservation elements in their designs. More specifically, a conceptual model for preservation has been defined, to ensure that integration of preservation functionality into the overall system design is taken into account during the initial steps of the design. Also techniques to automate as much as possible the selection and ingest of materials into a preservation repository are being investigated.

EVALUATION

Digital libraries need to be evaluated as systems and as services to determine how useful, usable, and economical they are and whether they achieve reasonable cost-benefit ratios. Results of evaluation studies can provide strategic guidance for the design and deployment of future systems, can assist in determining whether digital libraries address the appropriate social, cultural, and economic problems, and whether they are as maintainable as possible. Consistent evaluation methods can also enable comparison between systems and services. The cluster is focusing on the definition of an evaluation framework of general applicability, and the development of evaluation tool-kits. In addition, two large-scale evaluation initiatives are being supported: one is for the evaluation of multilingual informa-

tion access (CLEF, Cross Language Evaluation Forum) and the other is for the evaluation of information access and retrieval from XML documents (INEX).

One last closing comment is that the meaning of the words “Digital Library” has become more and more difficult to define. Even within homogeneous groups, very often it comes out that those words represent different things to different people, depending on their experience and knowledge of the field, and it is difficult to reach a consensus on a common meaning and vision.

What we have seen above is the “DELOS meaning”, i.e. a meaning mostly based on a technological point of view. In an attempt to provide a more general meaning, other definitions have been proposed, such as “Dynamic Universal Knowledge Environments” (DUKE) or “Knowledge Commons”. It is not clear if those terms will actually replace “Digital Libraries”, but in any case we can conclude with the words of Shakespeare: “what’s in a name? that which we call a rose, by any other name would smell as sweet”.

OTHER CONTRIBUTIONS ILLUSTRATING THE ACTION AREAS

TECHNOLOGIES OPPORTUNITIES AND RISKS

by EELCO BRUINSMA

The speaker focused on the threat of rapid technological changes and especially standards, highlighting the fact that the evaluation procedures for R&D proposals are lengthy and that it may happen that the project idea is outdated when you are about to launch. He presented some opportunities and risks of the evolution of the technological environment encouraged by the new action plan.

PRINCIPAL OPPORTUNITIES:

- 1. Tight integration of creative and reflective work with use, re-use, and enrichment of digital assets;
- 2. Shift of productivity, elements of the digitisation process could be transferred to users and user communities (example in a bordering area e.g. distributed management and development of the Dutch version of the Art & Architecture Thesaurus, or the Naturalis Taxonomical Thesaurus, loosely based on the Wiki-principle).

For these opportunities to turn into working reality the shift toward open standards, open technologies, and an ‘open mentality’ must continue.

PRINCIPAL RISKS:

- 1. Unpredictable rate of obsolescence: danger to longevity of digital assets;
- 2. Vendor lock-in;
- 3. Fragmentation of approach to digitisation and the creation of digital resources;
- 4. Instability of standards, conflict between de jure and de facto standards, leading to partial implementation and loss of focus in R&D;
- 5. Discussion of application and implementation of potentially important standards often remains very academic (e.g. application of DTD’s, much theory, developers were creating workarounds, now superseded by Schemes, still no real integration with productivity tools of knowledge workers).

TECHNICAL GUIDELINES FOR DIGITISATION OF CULTURAL CONTENTS

by DAVID DAWSON

One of the many achievements of the MINERVA Project has been the development of a coherent set of Technical Standards for Digital Cultural Content Programmes. Based upon existing best practice developed at both Member State and European levels, they were intended to support managers in developing an approach for their content creation programmes. The Standards cover the whole digital lifecycle, from project planning and handling of original materials, through to digital preservation of the final results. Developed by UKOLN, with a range of partners from across Europe, the Standards were developed to enable the interoperability of content and services, so that users can find the content that meets their needs, that content providers can maximise the potential access to their resources.

The MINERVA Technical Standards have been adopted by a range of institutions and funding bodies from across Europe, and have been downloaded over 20,000 times. The impact has been demonstrated in the UK, with a clear link between the adoption of standards and a higher degree of accessibility of content to the visually impaired than other public sector websites.

The MINERVA partners are committed to maintaining and developing the Technical Standards, as they have become an invaluable resource for the cultural sector.





SESSION 4

DIGITAL MEMORY PRESERVATION

COORDINATOR:



DANIEL TERUGGI
MANAGER OF RESEARCH AND EXPERIMENTATION, NATIONAL INSTITUTE OF AUDIOVISUAL (FRANCE)

PARTICIPANTS:



MAURIZIO LUNGH
SCIENTIFIC DIRECTOR OF DIGITAL RENAISSANCE FOUNDATION (ITALY)



STEFAN ROHDE-ENSLIN
INSTITUTE FOR MUSEUM RESEARCH OF BERLIN (GERMANY)



JUSTRELL BORJE
DIRECTOR OF NATIONAL ARCHIVES (SWEDEN)

“Safeguarding digital resources for the future is a vital part of a sustainable Knowledge Society. Ever larger volumes of information are ‘born digital’ and their preservation is vital, not just to the cultural sector, but also in critical areas such as eGovernment and eHealth. The issue needs to be tackled on many fronts (technological, research, organisational and operational) but still has not been embedded in service or policy development. Action research is needed to avoid a *digital dark age*”.

Digital resources are representations of information and knowledge. Increasingly the digital form becomes the one and only form in which our societies create and collect actual information. By assembling and combining pieces of information we create new insights, knowledge and again information. This process of creating knowledge becomes itself more and more

supported by and ultimately dependent on, digital technologies. To facilitate for future generations to understand, criticise and use the information created today this process in which it is generated and the technologies used therein need to be preserved together with the information itself.

Digital resources offer new opportunities in collecting and assembling pieces of information, they make cooperation and collaboration feasible of all kinds of institutions which store information feasible - basically by reducing all information to Ones and Zeros and by enabling their very fast exchange. This reduction defines a substantial part of the twofold challenge: How to keep bits and bytes alive through time and how to ensure that future generations will be able to reconstruct the meaning which we put into them today.

SESSION 4

DIGITAL MEMORY PRESERVATION

Because it is always only bits and bytes, the challenge is basically the same for every institution that uses and creates or stores digital resources. It is not limited to the cultural sector. The science sector is affected in the same way as eGovernment, the judicature or the health sector. They all code vital information into bits and they all have a need to keep at least a part of it intelligible for longer periods. With such a common challenge ahead cooperation in the search for solutions suggests itself. The challenge is not bound to limits set by national borders or language areas. Cooperation across Europe - and even further - is in demand. Digital memory preservation is an inter-national and inter-sectoral challenge.

Digital memory preservation is a task with many facets. The technical aspects of keeping Ones and Zeros are only a part of it. There are other aspects that urgently need research: How can it be secured that the bits we hand out to future generations remain unchanged? How can we ensure that our digital legacy is interpreted correctly? If we cannot keep all our data for the future, what shall be the basis for a decision what to keep? What happens if an institution that stores vital data breaks up, stops service or changes its functions? Intellectual property rights influence the possibility of digital memory preservation directly, prohibiting or allowing only limited numbers of copies. How shall the balance be defined between the rights of the present owners and the interests of future generations to take hold of their information and data? What will digital preservation cost? Who shall be responsible for preserving for the future which kind of data?

These are only some of the many questions which have to be answered on the way to a sound solution. Most of them still need research and decisions. This need is urgent and calls for cooperation.

But digital memory preservation is not only a challenge it is also an opportunity. Creating digital copies of medieval books and distributing them prevents the loss of their content in case of a fire in a historical library. Digital copies of unavoidably deteriorating historic photographs keep their present visual information. This holds especially true for those parts of our audiovisual heritage which is stored on wax cylinders, magnetic tapes or film material. The natural deterioration of such material combined with the technical obsolescence of the equipment makes it difficult to play wax cylinders or to read many of the magnetic tapes still today and thus creates an urgent danger for this part of our heritage. Digitising the content of such material as soon as possible is the only viable solution.

Here again, the challenge does not stop at national borders and affects more than one sector. Common action and research, cooperation of public and private institutions, of science and cultural heritage institutions is needed to prevent the loss of our society's memory.

But while on the one hand the transfer from analog to digital memory enables us to keep such memory alive, it does pose on the other hand again the question of how to keep this saved memory in its digital form for the future.

NESTOR: A STEP ON THE ROAD TO DIGITAL PRESERVATION

by **STEPHAN ROHDE-ENSLIN**

The presentation was given to share the experiences in cooperating for digital preservation collected so far in the project "NESTOR" – *Network of Expertise in long-term STOrage of digital Resources* (www.digitalpreservation.de). These experiences show that cooperation is possible and probably the only way to find solutions acceptable and practicable for everyone.

"Nestor" is a cooperation project of institutions from the cultural heritage sector. It is led by the ddb, Deutsche Bibliothek (Frankfurt). Cooperating partners are the Computer Media Service of the Humboldt-University (Berlin), the Bavarian State Library (Munich), the State and University Library of Lower Saxony (Göttingen), the State Archives of Bavaria (Munich) and the Institute for Museum Research of the State Museums of Berlin, Prussian Heritage (Berlin). It is funded by the German Federal Ministry of Education and Research and runs from mid 2003 to mid 2006.

Again and again it takes time to find the "common language" between organisations from the different sectors inside the cultural heritage field. It is even more difficult to find such a basis with partners outside that field, e.g. industry, research or publishers. Different structures in the sectors create different needs and a differing understanding of how to tackle the task of long-term preservation of digital resources. The aims of private and public institutions are not totally identical. Task of "nestor" is to overcome such obstacles, to find a "common language", to help everyone to understand the other, to foster communication and to encourage cooperation.

Among the tools "nestor" uses are invitations to discussions, the networking among projects in the field of long-term preservation, the distribution of news and background-information and the announcement of experts.

By and by "nestor" became a focal point for questions and discussions about long-term preservation. "nestor" tries to connect this basically national discourse to the ongoing international discussions through a close cooperation with organizations outside the German speaking area.

From its start the "nestor" project was designed as a cooperative project. This helps very much in enhancing further cooperation. One focus of the project's work is its website as a platform for communication and cooperation. Different project partners administer different parts of it but everyone contributes to every section. Through public events, in workshops and especially through participation in its working groups "nestor" reaches out to many organisations inside and outside the cultural heritage field. Such wide cooperation is possible and creates fruitful discussions that benefit every participant.

In the presentation "nestor's" concept and working methods were shown as an example how a working cooperation might look like. The need for a very broad cooperation in saving digital heritage was emphasized and its possibility demonstrated.



OTHER CONTRIBUTIONS ILLUSTRATING THE ACTION AREAS

FIRENZE AGENDA WORKING GROUP

by **MAURIZIO LUNGH**

Firenze Agenda working group is an the initiative launched by the Italian Presidency, the European Commission, the ERPANET and MINERVA project in October 2003 and linked to the National Representatives Group (NRG). The group of experts proposed an agenda with few, focussed objectives in response to the challenges of preserving digital memory. The focus addresses creation, preservation and access issues, including both digitised and born-digital objects. And also respects the interests of museum, libraries and archives, and the differences between media format.

The expert workgroup was invited to work around three sectors of action:

- 1) Create awareness and cooperation;
- 2) Exchange good practice and develop a common point of view;
- 3) Long-term policies and strategies.

The workgroup is composed by around 70 experts from cultural and state institutions, university, research projects, sectoral or professional authorities. During the Dutch Presidency, the group worked out a document (URL ...) presenting a survey about on-going activities across the European Union and it has identified nine key priorities that could be taken in consideration by policy-makers, responsible, international bodies and associations.

COORDINATION

Coordination is the first priority in order to save time and resources: it must be cross-sectoral and international and starting from dissemination of best practices results to driving some priorities for decision-makers. A high-level European co-ordination infrastructure for setting an agenda and co-ordination seams to be crucial. Three levels of coordination have been identified: community level, existing networks level, NRG.

NRG FRAMEWORK

Connection to the European Union developments as now taking place in the NRG-EU Council resolution of 16 Nov. 2004 is fundamental. The envisaged commitment of governments to

NRG and the new action plan requires supporting network for implementation.

CROSS-SECTORAL

A model of cooperation at European level for digital memory preservation extendible to different users beyond libraries and archives with particular attention to the commercial sectors and the e-government, scientific community, pharmaceutical, ICT, broadcasting, is needed.

TRANSFER OF RESULTS

On-going projects and initiatives should be brought to cooperate on a common platform, with a particular attention to transfer results from research and industry to content holders and from big cultural institutions to small and medium centres.

TRAINING

It is vital to invest on training of the cultural heritage personnel. The cooperation between the projects that are developing the technologies and e-learning programmes should be reinforced for faster and more effective knowledge transfer.

RESEARCH TOPICS

Technology research should further focus on methods for automatic archiving, indexing and management of high volumes of dynamic digital objects, on automation of preservation tasks for born-digital objects. Preservation has specific needs for deeper web, audio, video, multimedia and born-digital.

RESPONSIBILITY

National authorities must assign responsibilities creating some reference centres that could be instrumental in establishing some networks involving all the actors.

RUNNING COSTS

Preservation costs must be considered as “running costs” in the yearly balance of the cultural institutions in order to grant long-term accessibility of digital content. Research for a sustainable economic model for digital libraries should be supported.

LEGAL CONTEXT

The Member States have to define suitable law/rules for copyright management of digital objects and for deposit and permanent access of net published documents. The EC should produce a Directive and related guidelines to identify the basic requirements for the digital preservation, at least for the main products of the public administration.

The ‘Firenze agenda’ works to be instrumental for adoption of these priorities by the different sectoral and national authorities aiming at establishing some coordination mechanisms and a wider framework in the EU and at raising up awareness and actions about ‘digital preservation’. The ‘Firenze agenda’ workgroup decided to submit a proposal for a coordination action at the European Commission in the framework of the 6th FP in agreement with main actors in the field.

PROTEAN PROJECT

by **JUSTRELL BORJE**

GENERAL FRAMEWORK

The cultural heritage sector is faced with a growing demand among citizen for improved participation in societal processes, better quality and transparency in cultural and societal experiences, development of knowledge on a personal and societal level (i.e lifelong learning), and cultural resources for research. These demands increasingly involve a need to make current and future digital information accessible. There is also a need to guarantee that this information will still be accessible with minimal loss or decay when accessed in later periods.

Over the years, a number of solutions with regard to preservation and access of digital information have been presented, but up to date none have fully responded to the requirements of the cultural heritage sector. It is now time for the institutions in this field to mutually develop and demonstrate models, methods and tools needed to ensure the continuous existence and accessibility of digital information over time. However, to be successful, such an initiative must include both scientific institutions focused on research in IT and commercial players for example in digital storage.

On European level the work done by the National Representative Group and the Minerva project has formed a solid ground for coordination in the field of long term digital preservation.

In, Sweden, ALM-collaboration has been in place for about ten years, and in 2004 a coordinating office (ALM-centre) for archives, libraries and museums was established as a

joint initiative of most of the important national cultural institutions.Coordination with IT-research is also in place through a joint project on digital preservation incl. the National Archives and Lulea University of Technology. The objectives are (on short-term) to develop methods and tools for long-term preservation of digital information in the public sector and (on long-term) to establish a national centre of competence on long-term digital preservation and access.

Transfer of electronic records from state agencies to the Swedish National Archives has been going on for about thirty years, and there are some lessons learned in managing archival information in digital form. During the past two decades focus has moved from finding the ‘ideal’ long-term storage media to weighting the advantages and risks of different digital preservation strategies, and to define practical solutions based on standards that may use several available digital preservation strategies concurrently. It is also an established “truth” that the complexity of electronic records and their environment makes it necessary to involve archival procedures at an early stage in records creation in order to safe guard possibilities for preservation and future accessibility and usability. And once in the custody of an archival institution, the task of keeping the digital information “alive” requires frequent adaptations to and perpetual evolution of the digital repository system.

THE PROTEAN PROJECT

In Sweden, the National Archives (www.riksarkivet.ra.se), the National Library (www.kb.se), and the National Archive of Recorded Sound and Moving Images (www.ljudochbildarkivet.

se), together with Lulea University of Technology (www.ltu.se), are planning to propose an IST project under the sixth EU framework programme. The project is called PROTEAN, and the call in mind is IST Call 5 (deadline 21st September). The idea is to form an Integrated Project with the objectives to develop strategic and technical models as well as practical methods and tools for long-term preservation of digital cultural heritage resources.

■ PROTEAN is an acronym for PReservation Over Time by Electronic Archiving and Networking, but the adjective protean comes from the name of the Greek god Proteus, who is the keeper of knowledge of the past, present and future. Anyone who wants this knowledge must catch Proteus, who will change into many forms to escape. Once a person is persistent enough to hold Proteus through all his changes, he will reveal his knowledge. Therefore, we refer to anyone or anything who is flexible, able to change and adapt or having many forms, as protean.

DIGITAL MEMORY PRESERVATION

by **DANIEL TERUGGI**

■ Digital handling and storing of information was presented for decades as the future for information in modern society. If the technological evolutions have completely changed our ways of functioning and thought, a new challenge has appeared for the preservation of the unprecedented amounts of information that need to be secured and stored. Information is reliable but media are fragile; a major issue for the next five years is assuring the conservation, the authentication and the retrieval of information.

■ Institutions traditionally responsible for preserving audio-visual collections (broadcasters, research institutions, libraries, museums, etc.) now face major technical, organisational, resource, and legal challenges in taking on the migration to digital formats and the preservation of already digitised holdings. Technical obsolescence and physical deterioration of their assets imply widely concerted policy and efficient technical services to achieve long-term digital preservation. The principal goal of PrestoSpace project (www.prestospace.org) is to build-up preservation factories providing affordable services to all kinds of collection's custodians in order to manage and distribute their assets.

■ In order to enable any European archive owner, from small collections to the largest, to manage an autonomous and realistic patrimonial policy, including preservation and exploitation of digital assets, PrestoSpace will push the limits of the current technology beyond the State of the Art, bring-

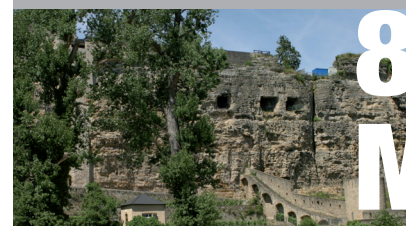
ing together industry, research institutes and stakeholders at European level to provide products and services for bringing effective automated preservation and access to Europe's diverse audiovisual collections.

■ The project's objective is to provide technical solutions and integrated systems for a complete digital preservation of all kinds of audio-visual collections.

■ Audiovisual archiving is a complex and multi-disciplinary domain spanning such diverse fields as chemistry, physics, signal processing, robotics, artificial intelligence and semantic interpretation. The challenge is to integrate partners of all domains representing the variety of competencies needed. The Project therefore brings together participants including archive owners, research centres from archive institutions, general research centres and universities, industrials, and international non-profit institutions.

The PrestoSpace project is divided in four research areas:

- Preservation;
- Restoration;
- Storage and Archive Management;
- Metadata, Delivery and Access.



8TH OFFICIAL MEETING OF THE NATIONAL REPRESENTATIVES GROUP (NRG)

Luxembourg, 20th June 2005



SUMMARY AND OBJECTIVES OF THE MEETING

■ The 8th NRG meeting was held on 20 June 2005 in Luxembourg under the chairmanship of the Luxembourg Presidency of the European Union 2005. In addition, a conference on “Future coordination of digitisation” was held on 21-22 June. Both events were hosted by the Luxembourg Ministry of Culture, Higher Education and Research with the support of the Minerva IST project and the European Commission.

■ The NRG consists of a group of national delegates (civil servants and managers of culture ministries, other ministries, IT managers of major national institutions and programmes) who were nominated by their permanent EU representatives. The NRG meets on a bi-annual basis and the meetings are chaired by the current Council Presidency. The MINERVA project acts as the operative secretary for the NRG framework, the network being partially funded by the IST programme of the European Commission, and partially co-supported by Member States. Some expert work-groups work on specific issues related to the implementation of the Lund Principles.

■ The end of 2005 is set to be the end of the current Action Plan for the coordination of digitisation in Europe that was drawn up under the Swedish EU Presidency in 2001, and of the funding of the Minerva project.

THE SPECIFIC OBJECTIVES OF THE MEETING WERE TO:

- Present the **Dynamic Action Plan** (hereafter DAP) elaborated by the troika of the NL, L and UK EU-Presidencies, as the successor of the Lund Action Plan. As one of the Council's political priorities (work plan 2005-2006) to be achieved and implemented during 2005, an agreement by the national representatives is expected on the strategic objectives of the new action plan;
- Discuss future mutual relations between the NRG and the Commission around the implementation of the European Digital Library, outlined in i2010;
- Consider the draft Call for Proposals of the eContentplus Programme launched by the Commission;
- Underline the added value that coordination within Minerva work-groups has brought to the project on the European level;
- Redefine the **role and responsibilities for the NRG**: identify a procedure to drive the nomination or reconfirmation of NRG members and ensure commitment and endorsement by Member States;
- Confirm that the Lund principles still hold true;
- Draw up a timetable for the finalisation of the dynamic action plan and for the nomination of new or the reconfirmation of current NRG members;
- Introduce the **United Kingdom Presidency** planning for the developments of the coordination initiative.





KEY STATEMENTS

■ NRG is implementing the **Lund Principles** and has developed concrete results produced mainly by the MINERVA work-groups. In addition, the NRG is preparing a completely new strategy as well as a new action plan and mandate for the NRG by Member States. As a result of the efforts made by the Netherlands, Luxembourg and UK-EU Presidencies, following the work of the Greek, Italian and Irish Presidencies, the coordination initiative has increased its visibility and its potential impact on the user community.

■ In November 2004 the Council of Ministers for Culture adopted a Rolling Agenda 2005-2006 in preparation of a **Work Plan for Culture 2006-2010** with 5 priorities, one of the latter being the future coordination of digitisation. The NRG has been asked to prepare a new Action Plan. The troika of the European Union Presidencies (NL-LUX-UK) is supported by the NRG Task Force and has prepared a draft for the successor of the Lund Action Plan to commence in January 2006.

■ A draft **Dynamic Action Plan** (DAP) for future coordinated actions from 2006 onwards was presented to the NRG meeting in Luxembourg. The Lund Principles are still valid, but numerous obstacles were identified during the implementation of the Lund Action Plan: these obstacles have been the starting points for the definition of the DAP. The Luxembourg Presidency has set up a collaborative platform with some of the most relevant current projects to discuss the joint implementation of the DAP.

■ A proposal for nominations (or the reconfirmation of formal nominations) and for the definition of the **new role and responsibilities of NRG** members with new Terms of Reference was proposed at the NRG meeting in Luxembourg.

■ The Dynamic Action Plan together with the redefined NRG structure will be proposed to the **Council by November 2005, to reinforce the mandate of the NRG in its new context and to start the DAP.**

■ The NRG supports the principle of the **European Digital Library**, as it enables access to the cultural and scientific heritage of Europe and includes a wide range of media types such as images, literary works, manuscripts and moving images.

■ The NRG is aware of the eContentplus programme and has noted how the objectives of the programme could be related to a number of priorities identified by the NRG in the Dynamic Action Plan.

■ **The successful MINERVA** project will shortly come to an end but its 'products' will allow the initiative to continue and allow new challenges to be faced. **Long-term sustainability** for the results of the project will be made possible through several different routes: the support Member States give to their national representatives will continue; other national or EC-funded projects will be invited to support the DAP; and it is likely that a new secretariat initiative will deal with the coordination of the expert work-groups and the preparation of NRG meetings.

■ **The 3rd NRG Report** is ready for distribution. It is planned that the **4th NRG report** will be drafted in December 2005, under the UK Presidency.

■ The **United Kingdom EU Presidency** will continue actions regarding the NRG framework. It will support the development and will launch the Dynamic Action Plan. Particular focus will be put on access and users (eLearning and eInclusion), building on current practical initiatives and considering how the European Digital Library can be constructed, a key priority in i2010.

PROGRESS OF IMPLEMENTATION AS OF JUNE 2005



DYNAMIC ACTION PLAN AND RENOVATION OF THE NRG

The Luxembourg Presidency has carried on the process started by the Netherlands to revise the Lund Principles and the Lund Action Plan, as well as the current NRG organisation of the co-ordination initiative. During a workshop held under the chairmanship of Luxembourg at Bourglinster Castle on 3 February, the NRG Task Force focused on producing a proposal for the DAP, as the successor of the Lund Action Plan. This was discussed and the broad approach validated at the 8th NRG meeting held in Luxembourg-City on 20 June 2005. The strategic part of the DAP will be submitted for endorsement to the EU Council of Culture; the dynamic part of the plan will be undertaken by the NRG as its responsibility of operational implementation and reporting on progress to the Council on a regular basis. A document about redefined roles and responsibilities for the NRG with this commitment to the EU Council has been proposed to the NRG for comments.

ENLARGEMENT OF THE COMMUNITY

Benefiting from the initiative of a 'digitisation cluster' launched by MINERVA under the Italian Presidency, the Luxembourg Presidency has established a cooperation platform with a number of experts and the most relevant current projects in Europe in order to enlarge consensus to and support of the DAP and its operational implementation.

FUTURE SUSTAINABILITY OF THE INITIATIVE

Building on the work started under the Dutch Presidency, the debate about sustainability has been carried forward and remains open. Member States should ensure commitment and endorsement to bring forward the coordination initiative. The support for coordination is demonstrated by the attendance of new countries at the 8th NRG meeting: the presence of Ro-

mania with the Secretary of State of the Ministry of Culture and Turkey with a consultant of the Prime Minister is quite encouraging.

Funding opportunities are under evaluation both for an NRG secretary and for the coordination of the expert work-groups, as well as for some operative projects in support of the DAP. In the meantime some Member State initiatives and current projects are actively supporting the NRG initiative.

DIGITAL MEMORY PRESERVATION

The «Firenze agenda» experts group met in Rome on 4 February 2005 at a workshop organised by the Istituto Centrale Catalogo Unico and the DELOS project. The main goal was how to develop activity and define the features that would be necessary to create a Coordination Action on digital memory preservation. It would aim at creating awareness and consensus about risks and priorities, and also prepare a research agenda for an action plan in the field. Some projects have already joined the initiative, to which UNESCO has given full support. The workgroup presented its goals at a Conference in St. Petersburg, Russia on 17-19 May.

INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

A conference was held in Luxembourg on 21-22 June. Its main goals were the presentation of the DAP to the authorities, the European Commission as well as the cultural community, and the discussion for practical the implementation of the strategic objectives of the plan. A complete report of the conference including the 8th NRG meeting conclusions will be produced and distributed widely.



MINERVA PROGRESS SINCE THE LAST NRG MEETING

1. DISSEMINATION

Since the last NRG meeting in The Hague on 17 September 2004 the wide dissemination of the NRG/MINERVA recommendations and guidelines has continued through the organisation of MINERVA workshops and through participation at major international conferences and seminars. MINERVA workshops took place in each country participating in MINERVA and MINERVA Plus.

Cooperation with UNESCO: Since 2003 MINERVA has co-operated closely with UNESCO, particularly within the “*Information for All*” programme (IFAP) on the initiative of Russia, through conferences held in Kamchatka, Moscow and Saint Petersburg and other activities targeted to NIS. Common intents see a concrete implementation in the MEDCULT project which, with the support of the French network STRABON, will lead to translation into Arabic of the MINERVA products for web quality and to their diffusion in the countries around the **Mediterranean basin**.

The ROSTE UNESCO office particularly involved in south-eastern Europe (Regional Bureau for Science in Europe, UNESCO Venice Office) asked the Italian Ministry for Cultural Heritage and Activities - in its role as MINERVA co-ordinator – to be its partner in organising and running the **South Eastern European Regional Meeting on Digitisation of Cultural Heritage** (Ohrid, 17-20 March 2005), and to present the activities and projects of MINERVA and the co-ordination mechanisms of the NRG. Representatives from the following countries attended the conference: Albania, Bosnia Herzegovina, Bulgaria, Croatia, F.Y.R.O.M., Moldavia, Romania, Serbia & Montenegro. The conference approved a final document that proposes a set of recommendations for the digitisation of the cultural heritage of south-eastern Europe, based on the Lund Principles and the Charter of Parma.

2. PUBLICATIONS

The third edition of the **Global Report** has been completed, with contributions from EU Member States and from observer countries, including Russia, Israel and representatives from south-eastern Europe.

Translation and publication of the **Quality Principles Post Cards** is continuing. Printed versions are currently available in English, French, Italian, German and Dutch/Flemish. The other national versions are published online and accessible both through the common MINERVA website and through national MINERVA websites.

The Ten Quality Principles together with a commentary and a practical checklist for evaluating the quality of a cultural website are published as **Quality principles for Cultural websites: a handbook** <http://www.minervaeurope.org/userneeds/qualityprinciples.htm>. The handbook has been printed in English, Italian and French, while numerous translations are published online and new translations are still in progress.

National websites were created in order to increase the national impact of MINERVA.

3. SPIN-OFF PROJECTS

In addition to the UNESCO project mentioned before, the following two spin-off projects are progressing:

MICHAEL: Multilingual Inventory of Cultural Heritage in Europe (www.michael-culture.org)

The current consortium includes Italy, France and the UK. The enlargement of the MICHAEL project to **MICHAELplus** has been proposed for funding to the European Commission. It should include a large set of European countries that have expressed their interest in joining the initiative: Finland, Germany, Greece, Ireland, Malta, The Netherlands, Poland, The Czech Republic and Hungary.

EURIDICE: European Recommended materials for Distance Learning Courses for Educators The negotiation of the EURIDICE project is finished and the project is expected to start in summer. It is coordinated by the Polish National Archive.

4. WORKING GROUPS

WP3 – INVENTORIES, DISCOVERY OF DIGITISED CONTENT, MULTILINGUALISM ISSUES

Survey about Multilingual websites and thesauri, *coordinated by Hungary*.

Intermediate results are available on the Internet at: www.mek.oszk.hu/minerva/survey.

A meeting of the working group has been organised by the WP Leader in Budapest in November 2004 to assess the results achieved and to plan the remaining work.

A survey finished in June 2005 and a full report, including country reports, are expected by the end of 2005, as part of the finalisation of the MINERVA Plus project. Publication and dissemination of the report will follow.

WP4 – INTEROPERABILITY AND SERVICE PROVISION

Inspection of the European legislation regarding Intellectual Property Rights, *coordinated by Greece*.

Draft **Report on IPR** European Legislation is now available online on the MINERVA website (www.minervaeurope.org).

A guidance document on the application of IPR in the cultural sector, based on the work of the EMII-DCF project, has been drafted and will be published in November 2005. A more detailed study on the links between cultural sector content and the re-use in eLearning has been completed, and will be discussed at a workshop, probably to be held at EVA London 25-29 July 2005.

The UK Presidency is holding a **conference on IPR** from 5 to 7 October 2005. MINERVA representatives are expected to participate and will be able to examine the potential of balanced approaches to IPR in the context of an event focused on the Creative Industries. As part of the work of WP4, in addition to the work on IPR, translations and national adaptations of the **Technical Guidelines** are progressing and a printed version in English is going to be available by the second half of 2005.

WP5 – IDENTIFICATION OF USER NEEDS, CONTENT AND QUALITY FRAMEWORK FOR COMMON ACCESS POINTS & SMALL CULTURAL INSTITUTIONS

coordinated by Belgium and Germany.

The MINERVA **Quality principles for Cultural websites: a handbook** is now available in paper version in English, Italian and French, while numerous translations are published online and new translations are still in progress.

'Post-cards' presenting the 10 Quality Principles have been published both on paper and online.

Museo&Web, a prototype website for small and medium-sized museums was created on the basis of these principles. The prototype is available free of charge. Validation of the prototype is in progress by several cultural institutions.

An **international conference on the Quality of Cultural websites** was organised in Berlin from 7 to 8 April 2005, where all MINERVA products focusing on the quality of cultural websites were presented and discussed among almost 100 participants from various EU countries.

WP6 – IDENTIFICATION OF GOOD PRACTICES AND COMPETENCE CENTRES

Study about Cost Reduction, *coordinated by Israel*.

An **international workshop on cost reduction** took place in Fränsta, Sweden, on 25 January 2005. The proceedings of the workshop have been published on the MINERVA website. A full report should be completed as part of the finalisation of the MINERVA Plus project by the end of 2005.

As part of the work of WP6, in addition to the work on Cost Reduction, a specific report on Best Practices for the digitisation of **audiovisual** cultural content is under revision. The final version of the report should be completed by end of July 2005 for further dissemination. This is an interesting area, and further investigation is expected to be carried out in future.



IMMEDIATE ACTIONS

(JULY – DECEMBER 2005)

For the second semester 2005 the UK Presidency has agreed to set out the following priorities:

- To drive the process fine tuning of the DAP and the reconfirmation of the NRG;
- To reinforce the spirit of cooperation amongst the NRG, and relations with the Commission;
- To support the development of proposals that will support the delivery of the DAP and that will enable the work of the NRG to continue on an appropriate level;
- To plan the implementation of the i2010 proposal for a European Digital Library;
- To engage in the current debate about ensuring that IPR and Digital Rights Management maintains a fair balance between creators and users.

The meeting agreed that the NRG members at national level should undertake and support the following actions, in addition to the ongoing support for the workgroups coordinated through MINERVA.

Practical actions to be undertaken before the next NRG meeting:

- To drive the process fine tuning of the DAP and the renewal of the NRG;
- To reinforce the spirit of cooperation amongst the NRG, and relations with the Commission;
- To support the development of proposals that will support the delivery of the DAP, and that will enable the work of the NRG to continue at an appropriate level;
- To plan the implementation of the i2010 proposal for a European Digital Library;
- To engage in the on-going debate about ensuring that IPR and Digital Rights Management maintains a fair balance between creators and users.

The meeting agreed that the NRG members at national level should undertake and support the following actions, in addition to the ongoing support for the workgroups coordinated through MINERVA.

Practical actions to be undertaken before the next NRG meeting:

- To fine tune the DAP and prepare a document, agreed by the NRG, for the CAC by October 2005 (LUX will finalise the first part of the DAP);
- To prepare a strategy for renewal of the NRG by October 2005, and for the sustainability of a lightweight secretariat for the NRG (troika);
- To start preparing the 4th NRG progress report about activity in 2005 (LUX and UK and MINERVA);
- To organise the 9th NRG meeting on 17th November 2005 and a related conference on 16th November that will focus on the link between Culture and Learning in an online world (UK);
- To begin the process of prioritising the Operational Objectives in the DAP, and supporting the development of initiatives that may be supported by the IST and eContentplus funding programmes (NRG);
- To ensure that, wherever possible, proposals are coordinated by the NRG, reflect the quality of cultural and scholarly content from across Europe, and provide the best possible platform from which to tackle remaining research problems, particularly in Digital Preservation. (NRG);
- To ensure the maintenance of the products of flagship projects that have demonstrated their value to the cultural community.

CLOSING REMARKS

The NRG paid tribute to the Luxembourg Presidency's work in support of the DAP definition as the successor of the Lund Action Plan. On a strategic level there were discussions on refined "roles and responsibilities" for the NRG. The NRG welcomed the development of concrete results and products by the MINERVA workgroups, as well as the follow-up given to the work on digital preservation done by former Presidencies. In particular, the NRG considers that the effective cooperation and grouping based on some other projects and national initiatives is an added value which should reinforce consensus and approach across Europe.

The United Kingdom Presidency will host the 9th NRG meeting in Bristol on 17 November 2005.

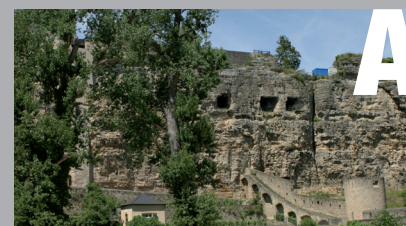
An additional EU Presidency Conference on 16 November will examine links between Culture and Learning in an online world.

The NRG thanked the Luxembourg Presidency for their hospitality as well as for the organisation of and their constructive input into the debate.












ANNEX



GLOSSARY OF EUROPEAN PROJECTS

PROJECTS		INTERNET	CONTACT PERSONS
BRICKS 	Building Resources for integrated Cultural Knowledge Services BRICKS is an Integrated Project for Cultural heritage Access, it aims at establishing the organisation and technology foundations of a Digital Library at the level of European Digital Memory. A “digital library” in this context refers to a networked system of services over globally available collections of multimedia digital documents, providing a variety of knowledge layers for a variety of users and access modalities.	www.brickscommunity.org	Francesco NUCCI nucci@eng.it
ECONTENTPLUS 	On 9 March 2005 the European Parliament and the Council approved the eContentplus Programme, a multiannual Community programme to make digital content in Europe more accessible, usable and exploitable. The 4-year programme (2005–08), proposed by the European Commission, will have a budget of € 149 million to tackle organisational barriers and promote take up of leading-edge technical solutions to improve accessibility and usability of digital material in a multilingual environment. The Programme addresses specific market areas where development has been slow: geographic content (as a key constituent of public sector content), educational content, cultural, scientific and scholarly content. The Programme also supports EU-wide co-ordination of collections in libraries, museums and archives and the preservation of digital collections so as to ensure availability of cultural, scholarly and scientific assets for future use.	www.europa.eu.int/information_society/activities/econtentplus	econtentplus@ec.europa.eu
DELOS 	Network of Excellence on Digital Libraries DELOS is a Network of Excellence on Digital Libraries partially funded by the European Commission in the frame of the Information Society Technologies Programme. The main objective of DELOS is thus to contribute to the development of the enabling technologies so that its vision for digital libraries may become reality.	www.delos.info	Bruno LEDANTEC bruno.le_dantec@ercim.org
DIGICULT 	Technology Challenges for Digital Culture	www.digicult.info	John PEREIRA john.pereira@salzburgresearch.at
EGMUS 	European Group on Museum Statistics The aim of the European Group on Museum Statistics (EGMUS) is to provide politicians, policy makers, and cultural workers in Europe with much needed information on museums. Until now the picture of European museums is fragmented, to put it mildly. Reliable and comparable data are a prerequisite for a more comprehensive view on museum sector in Europe.	www.egmus.net (In construction)	Monika HAGEDORN-SAUPE m.hagedorn@smb.spk-berlin.de
EPOCH 	Excellence in Processing Open Cultural Heritage EPOCH is a network of about a hundred European cultural institutions joining their efforts to improve the quality and effectiveness of the use of Information and Communication Technology for Cultural Heritage. Participants include university departments, research centres, heritage institutions, such as museums or national heritage agencies, and commercial enterprises, together endeavouring to overcome the fragmentation of current research in this field.	www.epoch-net.org	David ARNOLD D.Arnold@brighton.ac.uk

MINERVA 	Ministerial Network for Valorising Activities in digitisation MINERVA network was created by EU Member States, with the international participation of Israel and Russia. It runs the operations of the NRG, the group of the national representatives officially nominated by the 25 Ministries of Culture in Europe, established to enhance the digital diffusion of European cultural heritage. MINERVA tangible result is a common European platform of standards and guidelines, to create digital cultural content and interoperable cultural portals, offering easy access for all. Cooperation of MINERVA with other EU projects has a twofold benefit: to reinforce the impact of the MINERVA results enlarging its audience and to receive input from the research and industrial communities about forefront technologies.	www.minervaeurope.org	Rossella CAFFO rcaffo@beniculturali.it
NESTOR 	Network of Expertise in Long-Term STORage of Digital Resources The project's objective is to create a network of expertise in long-term storage of digital reources for Germany. As the perspective of current and future archive users is central to the project, the emphasis is put on long-term accessibility of digital resources and not that much on pure preservation aspects. Within the project among other things the following offers will be created: a web-based information forum with information on different aspects of long-term archiving and long-term accessibility of digital resources in Germany, a platform for information and communication, criteria for trusted digital repositories, recommendations for certification procedures of digital repositories, recommendations for collecting guidelines and selection criteria of digital resources to be archived, guidelines and policies for the long-term preservation of digital resources, the concept for a permanent organisation form of the “network of expertise in digital preservation” and its information forum in Germany, a detailed plan laying out the distributed responsibilities and the workflow between the network's participating institutions. The long-term goal is a permanent distributed infrastructure for long-term preservation and long-term accessibility of digital resources in Germany comparable e.g. to the Digital Preservation Coalition in the UK.	www.langzeitarchivierung.de	Bert Wendland bwendland@cms.hu-berlin.de
PRESTO SPACE 	Preservation towards storage and access – Standardised Practices for Audiovisual Contents in Europe The project's objective is to provide technical solutions and integrated systems for digital preservation of all types of audiovisual collections. The project intends to provide tangible results in the domain of preservation, restoration, storage and archive management, content description, delivery and access. Economic factors supporting preservation factories providing affordable services to all kinds of collection custodians in order to manage and to allow to their assets.	www.prestospace.org	Daniel TERUGGI prestospace_contact@ina.fr

GLOSSARY OF LUXEMBOURG PROJECTS

PROJECTS		INTERNET	CONTACT PERSONS
CASES 	Cyber world Awareness Security Enhancement Structures CASES Luxembourg is a project sponsored by the Ministry of the Economy & Foreign Commerce, aiming to campaign against the risks related to information security. It operates through an Internet portal, training programs and a structure of anonymous warnings, by putting emphasis on ensuring an ease of understanding of the potential risks by citizens and small/medium sized companies (the so-called "PME"). CASES is also an integral part of a European exchange program on this topic.	www.cases.public.lu	François THILL Francois.Thill@eco.etat.lu
eBNL 	The eBnL project of the national Library of Luxembourg lies within the scope of its missions of conservation of the inheritance and promotion of the company of knowledge in Luxembourg. The objective is to develop a virtual library of which the patrimonial part will be fed at the same time by digitalization of existing documents and the systematic collection of the numerical publications produced in Luxembourg.	www.bnl.lu	Monique KIEFFER monique.kieffer@bi.etat.lu
EPC 	Spaces and Cultural Inheritance Within the framework of the program «Food tomorrow in Luxembourg» proposed by the Funds National of Research, the section prehistory of the National Museum of History and Art of Luxembourg (MNHA) develop a bank of « géoréférences » cartographic data coupled to a geographical information system appearing the cultural constraints to respect at the time of the building work. This computerized instrument of evaluation and administrative and scientific follow-up is intended to be used as tool of decision-making aid, management and system of consultation of the cultural resources (archaeological, architectural, historical, etc.) on the scale of Luxembourg for the various public and private actors of the regional planning.	www.mnha.lu	Foni LEBRUN foni.le-brun@mnha.etat.lu
LUXNAT 	Portal on the Luxembourg natural heritage As a national node of natural heritage data, the Museum has developed an integrated computerized system for its field and collection records. This system comprises the following parts: - The UK's National Biodiversity Network Recorder software for biological observation data ; - the Luxembourg Natural History extension to Recorder to allow for the management of earth and life science collection data ; - The Thesaurus tool to manage standard term lists.	www.mnhn.lu	Guy COLLING gcolling@mnhn.lu
CNA PROJECT 	LUXNAT : Portal on the Luxembourg natural heritage The project to safeguard and highlight Luxembourg's audiovisual heritage was initiated by the National Audiovisual Centre (CNA) in the early 1990s. The CNA's areas of concern are mainly those of film, photography and sound production. In each of these fields, the CNA is involved in the collection of material either by registration of copyright or by contacting the legal owners, the restoration and physical preservation of such items, making them available to the public and integrating them into audiovisual productions.	www.cna.public.lu	Jean BACK jean.back@cna.etat.lu European Navigator

ENA 	European Navigator ENA is a multilingual application that enjoys global coverage thanks to its availability on the Internet. ENA's interface and collection of documents are currently available in French, English and German although other languages will be added as the system develops. Furthermore, each source document is available in its original language and in translation.	www.ena.lu	Marianne BACKES marianne.backes@cvce.lu
MYSCHOOL 	Educational portal "MySchool" MySchool is the educational portal of the Luxembourg schools' services. In 1999 the Ministry of Education wanted to change the perception of the use of ICT at schools. It became important to consider ICT as a tool for teaching and learning.	www.myschool.lu	Daniel WEILER weiler@myschool.lu Contact@myschool.lu

LUXEMBOURG COMPETENCE CENTERS FOR DIGITISATION

Advisory centers and associated practical competence in different areas of digitisation exist in a number of Member States and these are often producers of guidelines.

- Bibliothèque nationale de Luxembourg (BnL)**
<http://www.bnl.lu>
<http://luxemburgensia.bnl.lu>
<http://portail.bnl.lu>

Consulting, collection management, metadata ontology
Digitisation of books
Digitisation of manuscripts
Digitisation of newspapers
Long term archiving and access, webarchiving

- Centre national de l’Audiovisuel (CNA)**
<http://www.cna.public.lu/>

Digitisation of film
Digitisation of photographic objects
Digitisation of sound
Digitisation of TV and radio

- Centre Virtuel de la Connaissance sur l’Europe (CVCE)**
<http://www.ena.lu>
<http://www.cvce.lu>

Consulting, collection management, metadata ontology
Digitisation of books
Digitisation of film
Digitisation of newspapers
Digitisation of photographic objects
Digitisation of sound
Multimedia

- Musée national d’histoire et d’art (MNHA)**
<http://www.mnha.public.lu>

Consulting, collection management, metadata ontology
Digitisation of art objects
Digitisation of film
Digitisation of museum collections
Digitisation of photographic objects
Digitisation of public archives
3D-environment

- Musée national d’histoire naturelle (MNHN)**
<http://www.mnhn.lu/default.asp>

Consulting, collection management, metadata ontology

INTERNATIONAL COMPETENCE CENTERS

<http://www.minervaeurope.org/interoperability/competenccenters.htm>

8TH OFFICIAL METING OF THE NRG, LUXEMBOURG - LIST OF PARTICIPANTS

MEMBERS OF THE NATIONAL REPRESENTATIVES GROUP

- AUSTRIA**
Austrian Federal Ministry for Education, Science and Culture (for strategic and financing issues)
Irene Hyna / Irene.Hyna@bmbwk.gv.at
Salzburg Research Forschungsgesellschaft (for operative issue)
Andrea Mulrenin / andrea.mulrenin@salzburgresearch.at

- BELGIUM**
Ministry of the French Community
Isabelle Dujacquier
Isabelle.dujacquier@cfwb.be
Ministry of the Flemisch Community, Administration of Culture
Debbie Esmans / debbie.esmans@wvc.vlaanderen.be

- CZECH REPUBLIC**
Ministry of Culture
Zuzana Bauerová / zuzana.bauerova@mkcr.cz

- ESTONIA**
Ministry of Culture
Anton Pärn / anton.parn@kul.ee

- FINLAND**
National Board of Antiquities
Vesa Hongisto / vesa.hongisto@nba.fi

- FRANCE**
Ministry of Culture and Communication
Christophe Dessaux / christophe.dessaux@culture.gouv.fr

- GERMANY**
Institute for Museum Research
Monica Hagedorn-Saupe / m.hagedorn@smb.spk-berlin.de
Landesarchivdirektion Baden-Württemberg
Gerald Maier / maier@lad-bw.de

- GREECE**
National Technical University of Athens
Stefanos Kollias / stefanos@cs.ntua.gr

- HUNGARY**
Ministry of Cultural Heritage
Iván Rónai / ivan.ronai@nkom.gov.hu

- IRELAND**
National Museum of Ireland
Anne Grady / agrady@museum.ie

- ITALY**
Ministry for Cultural Heritage and Activities
Rossella Caffo / rcaffo@beniculturali.it

- LUXEMBOURG**
Ministry of Culture, Higher Education and Research
Guy Frank / guy.frank@mc.etat.lu

- MALTA**
Heritage Malta
Antoinette Caruana / antoinette.caruana@heritagemalta.org

- THE NETHERLANDS**
Ministry of education, culture and science
Marius Snijders / m.j.m.snyders@minocw.nl

- POLAND**
National Library
Joanna Pasztaleniec-Jarzynska / bnjpjarz@bn.org.pl

- PORTUGAL**
Ministry of Culture
Lidia Jacob / lidiajacob@mail.min-cultura.pt

- SLOVAKIA**
Slovak National Library
Martin Katuscák / katuscak.m@snk.sk

- SLOVENIA**
Ministry of Culture
Jelka Gazvoda / jelka.gazvoda@gov.si

- SWEDEN**
National Archives
Borje Justrell / borje.justrell@riksarkivet.ra.se

- UNITED KINGDOM**
The Council for Museums, Archives and Libraries
David Dawson / David.Dawson@mmla.gov.uk

MEMBERS OF THE NATIONAL REPRESENTATIVES GROUP, OBSERVERS

📄 ISRAEL
eJewish.info - The Initiative for Developing Jewish Networking Infrastructures
Dov Winer / dov@jazo.org.il

📄 RUSSIA
Ministry of culture and mass communication
Evgeny Kuzmin / Kuzmin@mkrf.ru

📄 Centre PIC
Nadezhda Brakker
lku@artinfo.ru

OBSERVERS, NOT MEMBERS OF THE NATIONAL REPRESENTATIVES GROUP

📄 EUROPEAN COMMISSION
DG Information Society and Media, Directorate Content
Patricia Manson / patricia.manson@cec.eu.int
DG Information Society and Media, Directorate Content
Claude Poliart / claude.poliart@cec.eu.int

📄 CYPRUS
University of Cyprus and Artos Foundation
Achilleas Icentonis / achilleas@artosfoundation.org

📄 ESTONIA
Ministry of Culture
Indrek Eensaar / indrek.eensaar@kul.ee

📄 GERMANY
Institute for Museum Research
Stephan Rhode-Enslin / s.rohde-enslin@smb.spk-berlin.de
Landesarchiv Baden Württemberg
Jeanette Godau / jeanette.godau@la-bw.de

📄 HUNGARY
National Szechenyi Library
Gabriella Szaloki / szalokig@oszk.hu

📄 ITALY
« Amitié »
Pier Giacomo Sola / pgsola@amitie.it
MINERVA Project
Antonella Fresa / fresa@promoter.it

📄 LATVIA
State Agency « Culture Information Systems »
Laila Valdovska / laila.valdovska@kis.gov.lv

📄 LUXEMBOURG
Digital Renaissance Foundation
Maurizio Lunghi / m.lunghi@culturalheritage.it
Ministry of Culture, Higher Education and Research
Philippe Robin / philippe.robin@mcesr.etat.lu

📄 MALTA
Across Limits Malta
Angele Giuliano / angele@acrosslimits.com
Heritage Malta
Pierre Sammut / pierre.sammut@gov.mt

📄 THE NETHERLANDS
Ministry of Education, Culture and Science
Eelco Bruinsma / eelco.bruinsma@cheperu.nl

📄 NORWAY
ABM-utvikling – Norwegian authority for Archive, Library and Museum
Lars Egeland / lars.egeland@abm-utvikling.no

📄 POLAND
Ministry of Culture
Andrzej Jezierski / ajezierski@mk.gov.pl

📄 SLOVAKIA
University Library in Bratislava, UNESCO Commission for Memory of the World
Aloz Androvic / androvic@ulib.sk

📄 SLOVENIA
Ministry of Culture
Ksenija Kovacec Nagilc / ksenija.kovacec@gov.si

📄 SPAIN
National Library
Jose Esteban / jose.esteban@bne.es

📄 SWEDEN
Culturenet Sweden
Ana Maria Duran / ana.duran@swipnet.se

📄 UNITED KINGDOM
Department for Culture, Media and Sport
Jo Turner / jo.turner@culture.gsi.gov.uk
The Council for Museums, Archives and Libraries
Kate Fernie / kate.fern@mla.gov.uk
Department for Culture, Media and Sport
Becky Furnell / rebecca.furnell@culture.gsi.gov.uk

📄 ROMANIA
Institute for Cultural Memory
Dan Matei / dan@cimec.ro

📄 RUSSIA
Centre PIC
Leonid Kuybyshev / leonid@evarussia.ru

📄 TURKEI
Prime Minister’s Office
Fikret UCCAN / fikret.uccan@basbakanlik.gov.tr

LIST OF THE SPEAKERS TO THE INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

LUXEMBOURG, 21 & 22.06.2005

NAME	FIRST NAME	POSITION	INSTITUTION	COUNTRY	EMAIL
ANSLIJN	Jean-Noël	Archaeologist	National Museum of History and Art, Environment Cultural Heritage Project	Luxembourg	jnanslijn@mnha.etat.lu
BACKES	Marianne	Director	Virtual Resource Centre for Knowledge about Europe (CVCE)	Luxembourg	marianne.backes@cvce.lu
BERTEMES	Jos	Project leader	Ministry of Education and Vocational Training, Department of Educational Research and Innovation (SCRIPT)	Luxembourg	bertemes@men.lu
BILTGEN	François	Minister	Ministry of Culture, Higher Education and Research	Luxembourg	francois.biltgen@mcesr.etat.lu
BINA	Vladimir	Research Co-ordinator	Ministry of Education, Culture and Science, Cultural Policy Department	Netherlands	v.bina@minocw.nl
BORJE	Justrell	Director	National Archives of Sweden	Sweden	borje.justrell@riksarkivet.ra.se
BRONIEWSKI	Frank	Geographer	National Museum of History and Art, Environment Cultural Heritage Project	Luxembourg	frank.broniewski@mnha.etat.lu
BRUINSMA	Eelco	External adviser	Ministry of Education, Culture and Science	Netherlands	eelco.bruinsma@cheperu.nl
CAFFO	Rosella	Director	Ministry of Cultural Heritage and Activities, Modern and Contemporary History Library	Italy	rcaffo@beniculturali.it
CAPPELLINI	Vito	Director	University of Florence	Italy	cappellini@det.unifi.it
CASAROSA	Vittore	Scientific advisor	Italian National Research Council, Institute of Information Science and Technologies (CNR-ISTI)	Italy	casarosa@isti.cnr.it
COLLING	Guy	Head of department «Biologie des populations»	National Museum of Natural History	Luxembourg	gcolling@mnhn.lu
DAWSON	David	Head of Digital Futures, Museums, Libraries and Archives Council	Museums, Libraries and Archives Council	United-Kingdom	david.dawson@mla.gov.uk
DESSAUX	Christophe	Head of Research and Technology Mission	Ministry of Culture and Communication, Development and International Affairs Office	France	christophe.dessaux@culture.gouv.fr
DEVAS	Fernand	Head of the Engineering Department	National Audiovisual Centre	Luxembourg	fernand.devas@cna.etat.lu
DOCKENDORF	Guy	Director	Ministry of Culture, Higher Education and Research	Luxembourg	guy.dockendorf@culture.lu
FRANK	Guy	Head of Cultural Statistics and Accounting Department	Ministry of Culture, Higher Education and Research	Luxembourg	guy.frank@mc.etat.lu
GRANELLI	Andrea	Expert	Italian National Research Council	Italy	granelli@tin.it
HAGEDORN-SAUPE	Monika	Deputy Director	Institute for Museum Research	Allemagne	m.hagedorn@smb.spk-berlin.de
HELMINGER	Paul	Mayor	Luxembourg City	Luxembourg	helminger@vdl.lu
KIEFFER	Monique	Director	National Library of Luxembourg	Luxembourg	monique.kieffer@bnl.etat.lu
KLEIN	Paul	Secretary	Luxembourg Commission on the co-operation with UNESCO	Luxembourg	klein.paul@education.lu
KRAEMER	Jean-Pierre	President	Luxembourg Commission on the co-operation with UNESCO	Luxembourg	unesco@mcesr.etat.lu

NAME	FIRST NAME	POSITION	INSTITUTION	COUNTRY	EMAIL
LUNGHI	Maurizio	External Expert of Luxembourg Ministry of Culture	Digital Renaissance Foundation	Italy	m.lunghi@culturalheritage.it
MANSON	Patricia	Head Unit Learning and Cultural Heritage	European Commission, DG Information Society and Media, Directorate Content		patricia.manson@cec.eu.int
MEISCH	Jim	Curator	National Museum of Natural History, «Section Botanique»	Luxembourg	jmeisch@mnhn.lu
MULRENIN	Andrea	Senior researcher	Salzburg Research	Austria	andrea.mulrenin@salzburgresearch.at
MYERSCOUGH	John	International Expert		United-Kingdom	myerscough-@btconnect.com
NICCOLUCCI	Franco	Professor	University of Florence	Italy	niccolucci@unifi.it
NUCCI	Francesco	Expert	Engineering - Ingegneria Informatica	Italy	francesco.nucci@eng.it
PEIFFER	Patrick	IT Project Manager	National Library of Luxembourg	Luxembourg	patrick.peiffer@bnl.etat.lu
REDING	Viviane	Commissioner for Information Society and Media	European Commission		viviane.reding@cec.eu.int
RICK	Susanne	Scientific collaborator	National Museum of History and Art	Luxembourg	susanne.rick@mnha.etat.lu
ROHDE-ENSLIN	Stefan	Scientist	Institute for Museum Research	Germany	s.rohde-enslin@smb.spk-berlin.de
SCHILLING	Pierre	Director in charge of eLuxembourg	Ministry of Civil Services and Administrative Reform,	Luxembourg	pierre.schilling@sel.etat.lu
SCHOCK	Claude	Project leader	Ministry of Education and Vocational Training, Department of Educational Research and Innovation (SCRIPT)	Luxembourg	schock@men.lu
SMEETS	Rieks	Head of Intangible Heritage Section	UNESCO, Cultural Heritage Division		r.smeets@unesco.org
SMITH	Bernard	Head Unit Interfaces	European Commission, DG Information Society and Media, Directorate Content		Bernard.Smith@cec.eu.int
STEICHEN	Pascal	Project leader	Ministry of Economics, Cyberworld Awareness Security Enhancement Structure (CASES) Project	Luxembourg	pascal.steichen@eco.etat.lu
SZALOKI	Gabriella	Librarian	National Szechenyi Library	Hungary	szalokig@oszk.hu
TAMMARO	Anna Maria	Expert	Digital Renaissance Foundation	Italy	annamaria.tammaro@unipr.it
TERRUGGI	Daniel	Director	National Institute of Audio-visual, Group of Musical Research	France	dterruggi@ina.fr
THILL	François	Project leader	Ministry of Economics, Cyberworld Awareness Security Enhancement Structure (CASES) Project	Luxembourg	francois.thill@eco.etat.lu
WALISCH	Tania	Curator	National Museum of Natural History, «Service Banque de données»	Luxembourg	twalisch@mnhn.lu
ZOLLER	Thierry	Project leader	Ministry of Economics, Cyberworld Awareness Security Enhancement Structure (CASES) Project	Luxembourg	thierry.zoller@telindus.lu

8TH OFFICIAL MEETING OF THE NATIONAL REPRESENTATIVES GROUP & INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

LUXEMBOURG, 20-21-22.06.2005

MONDAY 20TH JUNE 2005 8TH OFFICIAL MEETING OF THE NATIONAL REPRESENTATIVES GROUP

08.30	Registration
09.00	Greetings and introduction to “8th Official meeting of the National Representatives Group” by Guy FRANK (Luxembourg), <i>Ministry of Culture, Higher Education and Research</i>
09.15 - 11.00	The Dynamic Action Plan and Action Areas <i>Working document: draft of “the new action plan”</i>
11.00 - 11.30	Coffee break
11.30 - 12.30	The Dynamic Action Plan and Action Areas <i>Working document: draft of “the new action plan”</i>
13.00 - 14.30	Lunch break
14.30 - 16.00	The Dynamic Action Plan: schedule for implementation and evolution of the NRG <i>NRG structure, process for nomination of the NRG, operational level of the action plan</i>
16.00 - 16.30	Coffee break
16.30 - 17.00	Conclusions
17.00	Closing of the meeting
17.00	Cultural program (<i>Vianden: visit of Castle, Dinner</i>)

TUESDAY 21ST JUNE 2005 INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION

08.30	Registration
09.00	Greetings and introduction to “International Conference on future coordination of digitisation” by François BILTGEN (Luxembourg), <i>Current President of the European Council of Ministers for Culture Minister for Culture, Higher Education and Research</i>
	Chairman: Guy DOCKENDORF, <i>Director General, Ministry of Culture, Higher Education and Research (Luxembourg), actual President of the CAC</i>
09.30 - 10.30	Keynote speech: “e-Cultural content in Europe: joint challenges of digitisation, access and preservation” by Viviane REDING (European Commission), <i>Commissioner for information society and media</i> Keynote speech by Rieks SMEETS (UNESCO) <i>Chief of Intangible Heritage Section, Division of the Cultural Heritage, UNESCO Paris</i> “Heritage Policy in a European Context” by John MYERSCOUGH (United-Kingdom) <i>International expert</i>
10.30 - 11.00	PROGRESS OF THE NATIONAL REPRESENTATIVES GROUP (NRG) “The Dynamic Action Plan” by Guy FRANK (Luxembourg) <i>Ministry of Culture, Higher Education and Research</i> “NRG, new roles and tasks, work plan for the UK Presidency” by David DAWSON (United-Kingdom) <i>Head of Digital Futures, Museums, Libraries and Archives Council</i>
11.00 - 11.30	Coffee break
11.30 - 13.00	THE LUXEMBOURG ACTIVITIES... (1) “Digitisation: objectives, strategies and challenges in the context of the Luxembourg Virtual Library” by Monique KIEFFER (Luxembourg), <i>Director of the National Library of Luxembourg (BnL)</i> “Preservation of film, photo and sound: National Audiovisual Centre” by Fernand DEVAS (Luxembourg), <i>Head of the engineering department, National Audiovisual Centre (CNA)</i> “Presentation of digitisation tools for natural heritage data of the National Museum of Natural History” by Guy COLLING (Luxembourg), <i>Head of department “Biologie des populations”, National Museum of Natural History</i> Jim MEISCH (Luxembourg), <i>Curator “Section botanique”, National Museum of Natural History</i> Tania WALISCH (Luxembourg), <i>Curator “Service Banque de données”, National Museum of Natural History</i> “The project Spaces and Cultural Inheritance (EPC): a management tool computerized to the service of the Luxembourg inheritance” by Susanne RICK (Luxembourg), <i>scientific collaborator, National Museum of History and Art</i> Jean-Noël ANSLIJN (Luxembourg), <i>scientific collaborator, National Museum of History and Art</i> Franck BRONIEWWSKI (Luxembourg), <i>scientific collaborator, National Museum of History and Art</i> “City of Luxembourg, UNESCO World Heritage site, old Quarters and fortresses” by Jean-Pierre KRAEMER (Luxembourg) <i>President of Luxembourg commission on the co-operation with UNESCO</i> Paul KLEIN (Luxembourg), <i>Secretary of Luxembourg commission on the co-operation with UNESCO</i>

13.00 - 14.30	Lunch break
	Chairman: Pierre SCHILLING (Luxembourg), <i>Director in charge of e-Luxembourg</i>
14.30	Keynote speech by Claude WISELER <i>Minister for Civil Services and the Administrative Reform</i> <i>Minister in charge of the electronic governorship, President of “Comité de coordination pour la modernisation de l’État”(CCME)</i>
15.00 - 16.00	THE LUXEMBOURG ACTIVITIES... (2) “IT security: everybody is concerned - Demonstration of a smart phone cracking via Bluetooth” by François THILL, Pascal STEICHEN, Thierry ZOLLER (Luxembourg) <i>Projects leader, CASES, Ministry of Economics</i> “Raising awareness for cultural and scientific heritage as part of ICT-integration strategy in primary and secondary schools” by Claude SCHOCK and Jos BERTEMES (Luxembourg) <i>Projects leader, SCRIPT (Service de coordination de la Recherche et de l’Innovation pédagogique et technologique), Ministry of Education and Vocational Training.</i> “Project European Group on Museum Statistics: Museums in Europe – Basic figures” by Vladimir BINA (The Netherlands), <i>Research Co-ordinator Culture, Department for Media, Literature and Libraries, Ministry of Education, Culture and Science</i> Monika HAGEDORN-SAUPE (Germany), <i>Deputy Director of the Institute for Museum Research (Institut für Museumskunde Staatliche Museen zu Berlin)</i> Philippe ROBIN (Luxembourg), <i>Ministry of Culture, Higher Education and Research</i> “The multi-media reference on the history of Europe” by Marianne BACKES (Luxembourg) <i>Director of the «Centre Virtuel de la Connaissance sur l’Europe » (CVCE)</i>
16.00 - 17.00	OPPORTUNITIES AND TOOLS FUTURE DEVELOPMENTS “Programs from the European Commission” by Patricia MANSON (European Commission) <i>Head Unit Learning and Cultural Heritage, Directorate Content, DG Information Society and Media</i> “Multilinguism perspectives” by Bernard SMITH (European Commission) <i>Head Unit Interfaces, Directorate Content, DG Information Society and Media</i> “Minerva tools for the follow-up” by Rossella CAFFO (Italy) <i>Direttore della Biblioteca di storia moderna e contemporanea, Ministry of Culture (Ministero per I Beni e le Attività Culturali - MiBAC), Project manager MINERVA</i>
17.00 - 17.30	Round table - Discussion
17.30	End of the first day
17.30	Cultural program (<i>Bech-Kleinmacher: visit of “A Possen”museum, Dinner</i>)

WEDNESDAY 22 ND JUNE 2005 INTERNATIONAL CONFERENCE ON FUTURE COORDINATION OF DIGITISATION		
08.30	Registration	
	Chairman: Guy FRANK, <i>Ministry of Culture, Higher Education and Research, national representative of the NRG</i> (Luxembourg)	
09.00	Introduction by Rossella CAFFO (Italy), <i>Direttore della Biblioteca di storia moderna e contemporanea, Ministry of Culture (Ministero per I Beni e le Attività Culturali - MiBAC), Project manager MINERVA</i> Guy FRANK (Luxembourg), <i>Ministry of Culture, Higher Education and Research</i>	
09.15 - 10.30	SESSION 1 Users and content Coordinator: David DAWSON (United-Kingdom) <i>Head of Digital Futures, Museums, Libraries and Archives Council - MLA</i> Participants: Monika HAGEDORN-SAUPE (Germany) <i>Deputy Director of the Institute for Museum Research of Berlin</i> Gabiella SZALOKI (Hungry) <i>National Library</i> Franco NICCOLUCCI (Italy) <i>University of Florence</i> Christophe DESSAUX (France) <i>Head of the mission of research and technology, Ministry of culture and communication</i>	“Quality principles for cultural web sites” “A survey of Multilinguism and the use of thesauri in cultural websites” “Access and survey on socioeconomic” - EPOCH “MICHAEL : first European platform of access to the digitized cultural resources”
10.30 - 11.00	Coffee break	
11.00 - 12.15	SESSION 2 Economic sustainability Coordinator: Andrea GRANELLI (Italy), <i>Italian Council for Research</i> Participants: Anna Maria TAMMARO (Italy) <i>Digital Renaissance Foundation</i> Vito CAPPELLINI (Italy) <i>University of Florence</i> Francesco NUCCI (Italy) <i>Engineering ingeneria informatica</i>	“Open access paradigm and creation of knowledge” “Watermarking for Copyright Protection” “Business models suitable for the cultural and scientific application” - BRICKS

12.15 - 13.30	<div>SESSION 3</div> <div>Technological developments and tools</div> <div>Coordinator: Andrea MULRENIN(Austria) <i>Salzburg Research Forschungsgellschaft mbH</i></div> <div>Participants:</div> <div><div>David DAWSON (United-Kingdom) <i>Head of Digital Futures, Museums, Libraries and Archives Council</i></div><div>Vittore CASAROSA (Italy) <i>Institute of Information Science and Technologies, Italian National Research Council; Deputy director of DELOS network of excellence</i></div><div>Eelco BRUINSMA (The Netherlands) <i>Ministry of Education, Culture and Science</i></div></div> <div><div>“Technical guidelines for digitisation of cultural contents”</div><div>“Technologies for digital libraries: a research agenda” - DELOS</div><div>“Technologies opportunities and risks”</div></div>
13.30 - 14.30	Lunch break
14.30 - 15.45	<div>SESSION 4</div> <div>Digital memory preservation</div> <div>Coordinator: Daniel TERUGGI (France) <i>Manager of the Research and Experimentation Department, National Institute of Audiovisual, Ministry of Culture and the Communication</i></div> <div>Participants:</div> <div><div>Maurizio LUNGHI (Italy) <i>Digital renaissance fundation</i></div><div>Stefan ROHDE-ENSLIN (Germany) <i>Institute for museum research of Berlin</i></div><div>Justrell BORJE (Sweden) <i>Director of National Archives</i></div></div> <div><div>Firenze Agenda working group</div><div>“NESTOR : a step on the road to digital preservation”</div><div>“PROTEAN project”</div></div>
14.30 - 15.45	Conclusions and perspectives
14.30 - 15.45	<div>Closing speech by Paul HELMINGER (Luxembourg) <i>Mayor of Luxembourg City</i></div> <div>Initiatives and projects of the City of Luxembourg in the context of the digitisation of cultural and scientific contents.</div>
16.45	Closing of the meeting

DYNAMIC ACTION PLAN FOR THE EU CO-ORDINATION OF DIGITISATION OF CULTURAL AND SCIENTIFIC CONTENT

TEXT PREPARED BY THE TROIKA OF THE EU PRESIDENCIES OF THE NETHERLANDS, LUXEMBOURG AND UNITED KINGDOM
FINAL TEXT TO BE PRESENTED UNDER UNITED KINGDOM PRESIDENCY OF THE EU

1. INTRODUCTION

The eEurope 2002 Action Plan recommended the creation of a co-ordination mechanism for digitisation programmes across Member States. In 2001, representatives and experts from Member States met under the Swedish Presidency, supported by the European Commission, and agreed the Lund Principles¹ that established priorities to add value to digitisation activities in ways that would be sustainable over time. The accompanying Lund Action Plan recommended actions to support progress for the period until 2005. The Lund Action Plan is being implemented by a group of National Representatives (NRG) and successive Presidencies, and benefits from several projects and research networks, including the highly successful. Minerva² and Digicult³ projects.

As many of the barriers identified within Lund continue to exist, one of the Council's priorities for the 2005-2006 Work Plan is to proceed with coordination through an updated action plan as a follow up on the Lund actions⁴. On 14th November 2005 the Council reaffirmed the validity of the Lund Principles, and recognised digitisation of cultural and scientific heritage to be of strategic importance in:

- (a) Providing rich and diverse digital resources that support education and research, tourism and the creative industries
- (b) Enabling digital access by all citizens to national, regional and local cultural heritage of Europe
- (c) Advancing the European Digital Libraries initiative

This importance is also recognised by ongoing investments by the Member States, and by the Commission's Communication "i2010 – Digital Libraries"⁵. Together, these will build upon Europe's rich heritage and combine multicultural and multilingual environments with technological advances and new business models.

2. GENERAL OBJECTIVES

Europe's cultural and scientific knowledge resources are a unique public asset forming the collective and evolving memory of our diverse societies. Resource discovery, accessibility, usability, interoperability authenticity, quality and trust by all users of the Information Society are essential requirements for the delivery of digital cultural information and services.

In an increasingly broadband enabled society, relevant and useful digital content and services provide bridges to enable social inclusion, promote learning and overcome the digital divide. Cultural institutions such as libraries, museums, archives and natural and environmental heritage bodies are essential contributors of digital content, but they need to be mobilised and effort must be co-ordinated to make best use of existing technologies and to contribute to the creation, use and delivery of local cultural content that meet the needs of all citizens.

To realise the vision of a European Cultural Information Space, six objectives are pursued through this updated action plan, acknowledging and building upon the previous set of Lund Principles:

- (1) Providing strategic leadership in a dynamic and changing environment in which rapid technological and economical developments are taking place.
- (2) Strengthening coordination and forging stronger links between Member States' digitisation initiatives, EU networks and projects.
- (3) Continuing efforts in overcoming fragmentation and duplication of digitisation activities and maximising synergy.
- (4) Assessing and identifying appropriate models, funding and policy approaches to sustain development and long-term preservation strategies
- (5) Promoting cultural and linguistic diversity through digital content creation
- (6) Improving online access to European cultural content

¹ see www.cordis.lu/ist/digicult/lund-principles.htm

² see www.cordis.lu/ist/digicult/projects_all.htm

³ see www.digicult.info

⁴ Council Doc. 13839/04, cult 102

⁵ COM(2005) 229 - i2010

3. ACTION AREAS

A. Users and content:

Users need to benefit more from the networking of cultural knowledge, as the implementation of technologies enables the development of a European Cultural information space. They need to be facilitated to easily find and use cultural content and to contribute their own knowledge and experience, becoming active citizens in information societies.

Key issues:

- Preventing duplication of digitisation efforts
- Developing and sharing user-needs analyses for cultural content and service
- Mandating quality standards for content and services
- Recognising cultural content as a driver for eLearning and the creative industries
- Ensuring that IPR mechanisms maintain a balance between enabling access and use whilst respecting the rights of creators
- Engaging audiences in re-use and content production
- Mobilising cultural institutions to make best use of existing technologies to enable digital access by all citizens

Immediate actions 2006-2007:

- (1) Bringing together national and European digitisation initiatives to establish a European Common Information Space, including the TEL and Michael / MICHAEL Plus projects
 - a. to develop and maintain online registries of digitised collections in each Member State;
 - b. to ensure the linking of these registries to establish an online European Cultural Information Space;
 - c. to identify through this activity the gaps in content provision and emerging digitisation needs on a European level;
 - d. to incorporate this analysis into priority-setting within national digitisation initiatives.
- (2) Develop flexible monitoring mechanisms to demonstrate the authenticity, performance and security of the deployment of digital cultural content and services.
- (3) Assess the impact of models that
 - a. ensure a fair balance between intellectual property rights and access
 - b. support accessibility for those with disabilities
 - c. promote the use of digitised content.

- (4) Work towards common quality standards for accessibility and usability and provide support and guidance to enable the development of services that meet these standards.
- (5) Assess the role of digital cultural content for boosting eLearning and the Creative Industries.
- (6) Promoting best practice examples of the use of technology to support access for all citizens

B. Technologies for digitisation:

The technological environment in which Europe's digital cultural content industries are taken forward is mainly the result of developments in major ICT industries (telecommunications, network infrastructures, database technologies and personal/business computing). Digitisation initiatives of cultural content holders do not automatically coincide with or take account of innovations driven by scientific or business research and development. Cultural institutions therefore need guidance to take account of the significance of existing and emerging developments in the research and application domains and to ensure that their own research needs are met.

Key issues:

- Deployment of new technologies and common standards for digitisation.
- Identification of future research needs and requirements that will enable the development of user-centred services.

Immediate actions 2006-2007:

- (1) Define common needs for research and tools for digitisation.
- (2) Monitor emerging technological developments to provide guidance on digitisation, storage and resource creation.
- (3) Ensure a strong voice for the EU cultural and scientific heritage sector in the development of international standards, such as ISO, DCMI and W3C
- (4) Mandate appropriate technical and content standards

C. Sustainability of content:

European Digital Libraries need the unique assets that Europe's cultural and scientific knowledge resources provide, forming a basis for the development of digital content industries in a sustainable knowledge society. There is a need to identify and remove barriers to the economic sustainability of the creation and maintenance of these digital cultural assets, services and networks, allied to a need to develop appropriate policy approaches, technological solutions and business models in this area.

Key issues:

- Sustainable and reliable digital cultural content and services
- Suitable funding and business models for digital collections
- PPPs and private sponsoring of digitisation
- Open software and standards for digitisation
- Ensuring that Digital Rights Management systems are developed that enable controlled access to content within specified context and policy frameworks

Immediate actions 2006-2007:

- (1) Develop and promote the implementation of funding and business models that support economic sustainability of digital cultural content.
- (2) Promote the take-up of effective cost-reduction methods for digitisation by cultural institutions.

D. Digital preservation:

Safeguarding digital resources for the future is a vital part of a sustainable Knowledge Society. Ever larger volumes of information are 'born digital' and their preservation is vital, not just to the cultural sector, but also in critical areas such as eGovernment and eHealth. The issue needs to be tackled on many fronts (technological, research, organisational and operational) but still has not been embedded in service or policy development. Action research is needed to avoid a 'digital dark age'.

Key issues:

- Common policies and approaches to direct and implement digital preservation strategies.
- Persistent identification of European digitised resources.

Immediate actions 2006-2007:

- (1) Stimulate implementation of policies and tools for digital preservation.
- (2) Assess the implementation of persistent resource identifiers

E. Monitoring progress:

Monitoring the implementation of the Dynamic Action Plan is essential to demonstrate the impact of the efforts and investment at European and Member State levels and to track progress towards the creation of the European Cultural Information Space. Changing needs and requirements can be better understood and valued by measuring from a common baseline, using agreed indicators and sharing methodologies. This will enable the identification of the contribution being made through co-ordination, funding, policy implementation and the deployment of research results at national and European levels.

Key issues:

- Quantitative accounting of growth and use of digital cultural resources.
- Aggregation of actions and strategies on national and EU-level.

Immediate actions 2006-2007:

- (1) Quantify the results of digitisation initiatives by delivering standardised data on input/output/use indicators and to present these in an annual publication.
- (2) Monitor and feedback European efforts and disseminate good practice.
- (3) Perform new user-needs surveys.
- (4) Identify qualitative and impact indicators for future implementation

4. IMPLEMENTATION

- (1) On 16 November 2004 the Council of the European Union agreed to proceed with the coordination of digitisation through an updated European action plan as a follow up of the Lund action plan, to be delivered under UK Presidency. Member States are expected to take the necessary steps for the implementation of the action plan at hand.
- (2) In line with its mandate as defined by the Cultural Affairs Committee, the National Representatives Group (NRG) will be responsible for supporting the implementation of the Dynamic Action Plan within Member States.

In that context, NRG will carry out specific actions to

- monitor progress and impact of the implementation of the Dynamic Action Plan
- identify new strategic areas and actions by maintaining and updating the Dynamic Action Plan
- report on initiatives that support the creation of a European Cultural Information Space.



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