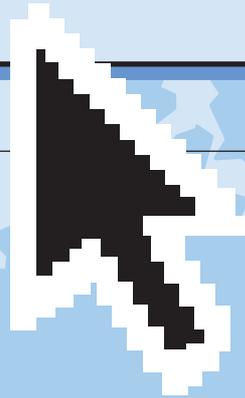


Send Now



**Using digital
technology to
make cultural
heritage accessible**

emii

European Museums' Information Institute

Europe has an incredibly rich **cultural heritage**. Museums, archives and libraries look after a very wide range of resources that can help us understand the past and make sense of the present.

Until recently, these cultural assets were more or less hidden. It was difficult to find out what was held in the collections of all but the most important institutions. What is more, a personal visit was necessary if someone wanted to see the material. **Now, digital technology enables us to make cultural assets accessible to all.**

Opening up access to Europe's cultural assets will bring many benefits. It will open new possibilities for European researchers. It will enable cultural heritage institutions to find new markets and audiences. And it will provide new opportunities for publishers and content creators.

But, there are problems. There is still no easy way to identify the existence and location of material. The complex pattern of intellectual property rights makes it difficult to create and exploit digital resources. There is also a confusing array of technical and other standards facing anyone trying to create digital resources.

These problems must be overcome if we are to be able to exploit the richness of Europe's cultural heritage to the full.

The Distributed Content Framework provides a step towards the resolution of these **problems**. This document describes what the project has achieved.

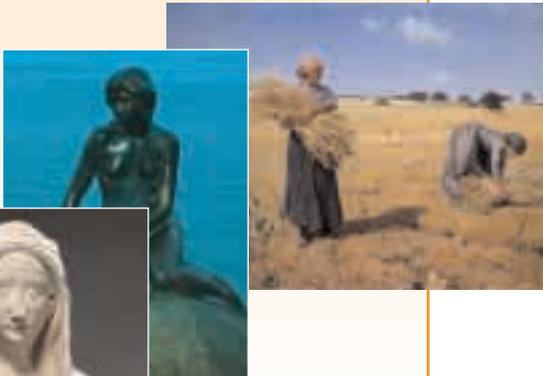


Hans is working in Berlin on a piece of advanced research exploring the development of merchant ships in Europe in the 18th and 19th centuries. He needs access to models and paintings of ships, to plans and drawings of ships, and to archive material relating to the construction, costs and uses of the merchant shipping fleets. This material is held in a variety of museums, archives and libraries all over Europe. Ten years ago he would have had to travel widely, and at great cost, in order to gather the material that he needs for his research. But now he thinks he should be able to download most of what he needs to his personal computer.





Mimmo and Lisa work for a small multimedia company in Milan. They want to produce an interactive digital guide to the cultural treasures of Europe. Tourists will be able to access the guide using third generation mobile telephones as they travel around. Mimmo and Lisa need good quality images of the main cultural attractions: paintings, sculptures, manuscripts and buildings as well as sound clips. Like Hans, they are sure that they will be able to obtain digital copies, delivered to their desktops.



Fionnula works in a small museum in Dublin. She has been approached by a much bigger museum in Stockholm that is working with a Swedish television company to produce a programme and a linked interactive website on the heritage that the Vikings left behind them. They want to have digital copies of some of the jewellery in Fionnula's museum. She sees this as a great opportunity but she needs help to negotiate the legal permissions to use the material and she is not sure what standards she should use to produce the digital copies.



The Distributed Content Framework project

The Distributed Content Framework project was an initiative by the European Museums' Information Institute.

The project ran from March 2002 until August 2003. It was funded by the Information Society Technologies Programme, which is part of the European Commission's Sixth Research and Technology Development Framework Programme.

The logo for the European Museums' Information Institute (EMII) is written in a blue, cursive script.

The European Museums' Information Institute

is a collaborative, virtual network connecting key cultural institutions in the European Union. The main purpose is to promote the exchange of best practice and the effective use of standards in information management among member states and associated countries.

Aim and objectives

The overall aim of the Distributed Content Framework project was to investigate the feasibility of creating a framework for the provision of digitised cultural content and to produce achievable conditions and guidelines to which content holders can subscribe when participating in European Commission-funded research projects.

Within this broad aim, the project had three more specific objectives:

- To identify the needs of researchers and others who will benefit from access to digital content.
- To clarify the questions relating to intellectual property rights and to develop templates for licences that will accommodate the requirements of users and will uphold the rights of content holders.
- To identify common technical standards and guidelines and so to sustain interoperability and the preservation of digital cultural resources.

The project has now been completed and final reports are available from:

<http://www.emii.eu>

The partners

The project has been led by

- **mda** (Europe) in the United Kingdom, working with eight other partners:

- Mission de la Recherche et de la Technologie (France)
- Kulturarvsstyrelsen (Denmark)
- Statens Kulturråd (Sweden)
- Museu Nacional do Azulejo (Portugal)
- Illuminations (United Kingdom)
- Adlib Information Systems BV (The Netherlands)
- Museovirasto (Finland)
- Tate (United Kingdom)



User requirements

The starting point for any project like this must be a clear understanding of the users' requirements. To achieve this, the project team reviewed over 30 research projects that had depended on the availability and use of digital resources.

The content creators

Many of the organisations that hold cultural assets in Europe are small and poorly funded. They do not usually have staff with the necessary knowledge of intellectual property rights or the required skills in digitisation. They need clear guidance about the intellectual property rights that are embodied in the assets that they hold. They also need a framework that they can use when licensing or assigning the rights to other organisations.

Many content creators are also bewildered by the technical issues associated with digitisation. Again, they need clear guidance about which standards to follow.

Fionnula in Dublin has selected various pieces of jewelry for the programme-makers in Stockholm. She is confident that the museum holds the rights to the objects – they have been in the museum's possession for nearly 100 years, but she is not sure about the digital images. She has a three-dimensional digital image of one bracelet made by a Dublin media company two years ago and some digital photographs made by a local photographer who has now moved away from Dublin. One of the museum's trustees has told her to make sure that she does not give away the rights.

She is also not sure about the technical business of digitisation. The television company in Stockholm has specified a number of standards and formats but Fionnula cannot make sense of it all.



JPEG

TIFF

GIF

PICT

EPS

DPI

The content users

Most researchers and other content users are trying to use digital resources from a range of sources. They need first to identify the location of the material but the range of different systems that are used to describe and catalogue material makes this difficult. They then need to obtain the right to use digital copies in their work. Many find that the content-holders are reluctant to allow anyone to have access to digital copies – for a variety of different reasons. Even when they have overcome those barriers, they often find that the material arrives in all sorts of different formats, some of which are incompatible.

Hans has tracked down a set of contemporary drawings in one of the national maritime museums but the curator there is reluctant to let him have digital copies as she is concerned that, by doing so, the museum will lose control of them.



Meanwhile, in Milan, Mimmo and Lisa have begun to assemble a reasonable collection of images and resources, although they are amazed at the variations in the amounts museums try to charge for a licence to use an image. Their problem is that the images have arrived in a range of different formats and they have to spend a large amount of time getting them all to conform to common standards.



Managing intellectual property rights

Intellectual property rights ensure that individuals, and organisations can profit from their creative or intellectual endeavours, more particularly, they prevent others profiting at the creator's expense. What was a relatively straightforward area of law has, in recent years, become very complex indeed.

Technological change has meant that it is now very easy, and usually very cheap to make copies. Digital material, in particular, can be copied and manipulated at almost no cost. To accommodate these changed conditions, the law on intellectual property has been adapted and modified and what was once simple is now quite complex.

Auditing

The first step in managing the rights in cultural assets is to identify what rights exist in the material held by a museum, archive or library. Institutions should carry out audits of their assets, documenting who owns the intellectual property rights. A museum, for example, may display an image of a painting on its website. The rights to the painting will probably be held by the museum, but additional rights will be held by the photographer who took the photograph of the painting. Other rights will belong to the designer and creator of the website.

Licences

Where necessary the museum must negotiate with the rights holders to obtain permission to use the assets. These permissions must be set out in licences.

These licences should specify the nature and scope of the content, the ways in which it can be used, the geographical extent of the rights, the duration of the licence and, where appropriate, a fee.

This should be done for each cultural asset that the museum, archive or library intends to exploit.

Managing the rights

It is not sufficient simply to negotiate licences to use material. The rights need to be managed. The rights holders should document both the rights and the licences associated with an object and this information should be stored along with all other records of the object.

Few intellectual property right licences last forever. It is important, therefore, to record when rights are due to expire, re-negotiating licences as necessary.

Protecting rights

Museums and other cultural heritage organisations need to protect their intellectual property rights. They should negotiate secure licences with individuals and organisations that want to make use of their assets.

They should also take steps to make sure that there is no unreasonable unauthorised use. Often it is sufficient to display warnings or statements about terms of use. For more valuable digital assets it might be necessary to use technical devices to protect the material. These include the use of low resolution images, digital encryption, digital watermarking, password protection and web casting.

A model licence

The Distributed Content Framework team have drawn up model licence templates that can be used by museums and other content holders as a basis for drawing up agreements for the use of their digital assets. The templates can be found at <http://www.emii-dcf.org>.

Using the Distributed Content Framework's guidance, Fionnula has identified the different intellectual property rights that are embodied in the objects that she has selected. She has tracked down the missing photographer and has drawn up a contract that, for a fee, assigns his rights in the digital image. She has also used the model licence template to draw up a contract for the programme-makers in Stockholm. The fee that the museum will receive for the use of the images has made the museum's board of trustees happy.



Getting the format right

The full value of digital resources will only be realised when they can easily be used by different people in different circumstances. This will only be possible when content holders follow an agreed set of standards when they create and manage their digital resources.

Standardisation also holds the key to ensuring interoperability between different resources and datasets. It is also important when considering the issue of sustainability and the preservation of digital assets.

Rapid changes in technology have produced a wide array of standards that are themselves subject to change and development. The Distributed Content Framework provides content holders with a guide through the maze of standards and sets out a model that, if it is followed by cultural institutions throughout Europe, will ensure that digital resources are easily accessible by everyone.

Technical standards

The first issue is to decide which technical standards should be followed by organisations when they digitise their cultural assets. These cover the encoding of characters and text as well as the encoding of images, both still and moving. Digital sound, video and virtual reality assets each have their own format standards.

There are also standards governing the interchange of digital resources between applications. These determine the degree of interoperability and are likely to become more and more important as the volume of digital material increases.

Cultural standards

These are the standards that govern the description of resources. Some are concerned with describing collections of material, others are concerned with describing individual objects. Clearly different approaches are required for describing different types of material - three-dimensional objects, for example, are very different from archives which in turn are different from books. There are different standards for each and the Distributed Content Framework project provides clear guidance on which should be used.

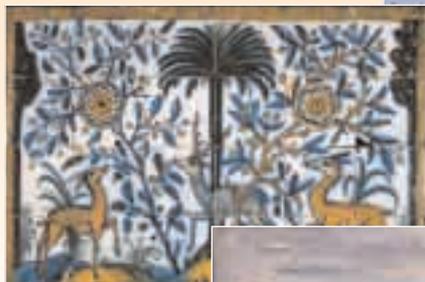
Information management

Finally, there are standards that should be followed when managing digital resources and, more particularly, when preserving them and ensuring that they will continue to be useable despite technological changes.

In Berlin, Hans has been struggling with the different technical standards and formats that are used by the institutions that hold material that he needs. He has managed to track down most of the resources he needs and he has obtained the rights to use them as part of his research. He now has the task of dealing with material in different formats. He just wishes that the Distributed Content Framework project's Data Capture Model had been available earlier so that European museums and other content holders could have agreed on the technical standards to use.



Mimmo and Lisa feel much the same in Milan. They have selected the images that they will use for their interactive tourist guide and, using the Data Capture Model, they have identified the technical standards to which they will adhere. They are now discussing the long-term sustainability requirements with the firm's systems manager.



The partners



The Distributed Content Framework is an initiative of the **European Museums' Information Institute**. The Institute is a collaborative, virtual network connecting key cultural institutions in the European Union. The main purpose of the Institute is to promote the exchange of best practice and the effective use of standards in information management among member states and associated countries.



The project was led by **mda**, a not-for-profit organisation dedicated to working in partnership with museums and other collections holders to improve access to collections for learning and enrichment. **mda** is based in Cambridge in the United Kingdom.

The purpose of **mda** is to benefit all those working with collections by providing easy access to quality-assured resources, advice and support on collections management and use. What underpins its purpose is a shared core value which holds collections and their stories as being one of the key factors contributing to the well-being of society.

The other partners in the Project were:



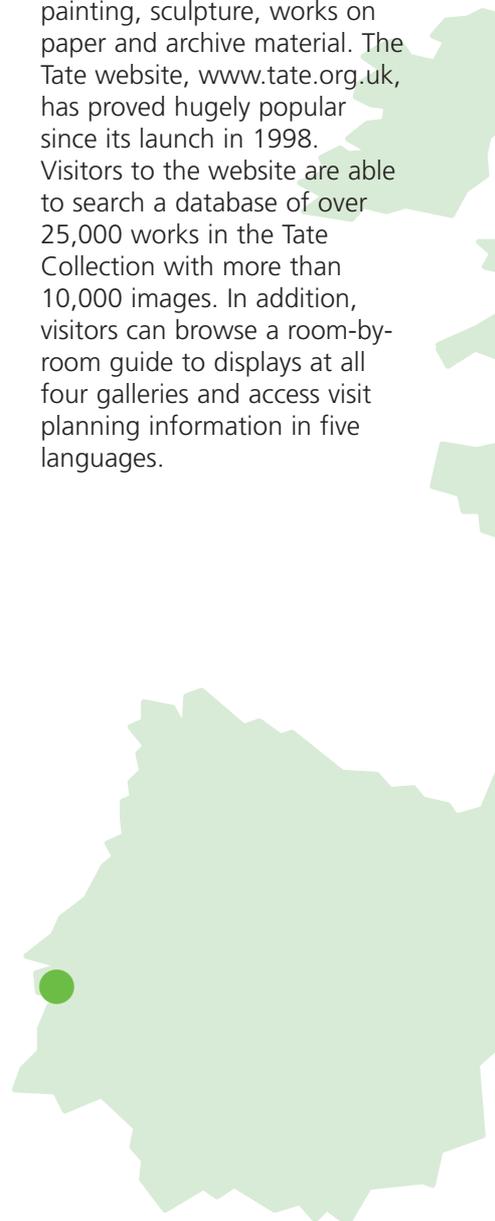
Tate is the national gallery of British art and of international modern and contemporary art in the United Kingdom. Tate's aim is to increase public awareness, understanding and appreciation of British Art from the sixteenth century to the present day and modern and contemporary art from around the world. Tate has a collection of over 60,000 items of painting, sculpture, works on paper and archive material. The Tate website, www.tate.org.uk, has proved hugely popular since its launch in 1998. Visitors to the website are able to search a database of over 25,000 works in the Tate Collection with more than 10,000 images. In addition, visitors can browse a room-by-room guide to displays at all four galleries and access visit planning information in five languages.



Instituto Português de Museus



Museu Nacional do Azulejo is devoted to an art that is considered one of the most important and original forms of Portuguese culture. The permanent collection covers the azulejo from 1450 to the present day. The Museum has a specialized library, open to the public, and divulges its activities and studies on tile heritage in the catalogues and in the Azulejo journal. The Museum maintains a close collaboration with Portuguese official institutions responsible for conservation and restoration of built heritage and scientific research



Illuminations

Illuminations Television Ltd

is a leading producer of television and convergent media. Founded in 1982, the company enjoys an excellent international reputation as a producer of imaginative and distinctive television. The company specialises in factual programmes about the arts, digital culture, history, science and ideas, as well as performance work with drama, music and dance.



KulturArvsstyrelsen/ Danish National Cultural Heritage Agency

is responsible for co-ordinating the work of the Danish museums at a national level, recommending new museums for state recognition, distributing funds intended for special projects, calculating state subsidies, co-ordinating international activities and providing advice for the various museums, as well as for the Minister of Culture and other public officials.



Museovirasto/The Finnish National Board of Antiquities

is responsible for the preservation of Finland's material cultural heritage and environment and for the acquisition and distribution of knowledge about it. As a cultural and research establishment, the Board develops and supports the work of the Finnish museums and related research. It is also responsible for the protection of antiquities, the architectural heritage, environments of cultural importance and the cultural legacy in collaboration with other authorities and museums.

KULTURRÅDET

Statens Kulturråd/ Swedish National Council for Cultural Affairs

promotes artistic and cultural renewal, promotes the cultural heritage and broadens participation in cultural life. It is responsible for the national cultural policy and works to ensure that cultural policy aspects of development are taken into consideration in other areas of society. It promotes cultural policy activities as well as improving the methods for evaluating cultural policy in order to increase and spread aggregate knowledge in the cultural field.

ADLIB

ADLIB Information Systems BV

is an independent, employee-owned company, dedicated to the development, implementation and support of ADLIB and associated application systems. In addition, the company develops applications for archive and records management systems; document management systems and image database applications. ADLIB offers professional expertise in the field of libraries, museums, archives and information science, in addition to technical expertise in software, hardware, networking and communications.



Mission de la recherche et de la technologie

is part of the French Ministry of Culture and Communication. It is responsible for evaluating and increasing the standing of research activities, as well as the implementation of new programmes and the forging of relations with external scientific communities. It produces several online electronic multimedia publications. These are exclusively based on research works in the field of archaeology, art history, musicology and heritage conservation.

The future

The Distributed Content Framework project has begun a process that will continue. It provides museums, archives, libraries and other holders of culture heritage resources in Europe with a basis for developing their digital services. The guidance on intellectual property rights, the licence templates and the advice on technical standards will make it easier to create a European digital cultural resource.

Applying the results

The European Museums' Information Institute will work with its partners to promote the Framework. It will encourage and assist the holders of cultural content to develop their digital assets and, in this way, it will assist researchers and others who can make use of resources in digital form. It will be another step forwards in the creation of a European Information Society.

More information

More information about the Distributed Content Framework and the results of the project can be obtained from

EMII
c/o mda
The Spectrum Building
The Michael Young Centre
Purbeck Road
Cambridge
CB2 2PD
United Kingdom
tel: 01223 415760
fax: 01223 415960
email: emii@emii.eu

Acknowledgements

Editor: Nick Moore
Design: Information Design Workshop, UK

EMII-DCF project structure:

IST Programme Project Officer

Pat Manson (March - Dec 02)
Maurizio Lunghi (Jan - Nov 03)

Project Management

Project Director, Louise Smith, mda, UK
Project Manager, Rosa Botterill, EMI

Content Creation Analysis Workpackage

Team Leader, Muriel Foulonneau, Relais Culture Europe/MRT, France
Teresa Campos, National Tile Museum/Instituto Português de Museus, Portugal
Sirkka Valanto, National Board of Antiquities, Finland
Mirna Mattila, National Board of Antiquities, Finland
John Wyver, Illuminations TV, UK

Legal Requirements Workpackage

Team Leader, Tine Østergaard, National Cultural Heritage Agency, Denmark
Michael Lauenborg, National Cultural Heritage Agency, Denmark
Sharon Page, Tate, UK
Jacqueline Michell, Tate, UK
Naomi Korn, Tate, UK
Emma Wilson, Tate, UK

Standards Requirements Workpackage

Team Leader, Gordon McKenna, mda, UK
Bert Degenhart Drenth, Adlib Information Systems BV, The Netherlands
Effie Patsatzi, mda, UK

Dissemination Workpackage

Team Leader, Lotta Elmros, Swedish National Council for Cultural Affairs, Sweden

National Advisers

Sandy Buchanan, SCRAN, UK
David Dawson, Resource, UK
Inês Freitas, Instituto Português de Museus, Portugal
Hans Rengman, META Kunskap om kunskap, Sweden
Fiona Marshall, EMMILAC, UK

Picture credits

Page 2: A Danish Timber Barque unloading © National Maritime Museum, UK
Page 3: Colheita – Ceifeiras, Museu Nacional de Soares dos Reis © IPM/DDF, Portugal
The Little Mermaid © Jacob Friberg, Denmark
Virgem com o Menino, Museu Nacional de Machado de Castro © IPM/DDF, Portugal
A ringed pin © National Board of Antiquities/ Esa Suominen 1984, Finland
Page 5: The grave goods of a woman © National Board of Antiquities/ Ritva Bäckman 1987, Finland
Sailors discharging © National Maritime Museum, UK
l'entrée du musée du Louvre © Jean Pierre Dalbéra, France
Page 7: The personal ornaments of a woman © National Board of Antiquities/ Esa Suominen 1984, Finland
Page 9: The tea clipper Thermopylae © National Maritime Museum, UK
Taça, Casa Museu Anastácio Gonçalves © IPM, Portugal
Painel de azulejos – Fuga para o Egipto, Museu Nacional do Azulejo © IPM/DDF, Portugal
les jardins du palais royal à Paris © Jean Pierre Dalbéra, France
Painel de azulejos – Frontal de altar, Museu Nacional do Azulejo © IPM/DDF, Portugal
View from Tate Modern: Millennium Bridge and St Paul's Cathedral © mda, UK
Praia de Banhos – Póvoa do Varzim, Museu do Chiado © IPM/DDF, Portugal

Print: Cambridge Document Output Centre, UK

EMII-DCF is a project initiative of the European Museums' Information Institute. The EMI-DCF consortium acknowledges funding received from the European Commission Information Society Technologies Programme for the development of the project.

