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Valorising activities in digitisation

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1. Introduction

Since 2001, the European National Representatives Group on digitisation of cultural and scientific heritage (NRG) has demonstrated the conscience, at political level, of the importance of this issue and the necessity to organise the digitisation activity being held by numerous institutions.

Countries are obviously organised in a very different way and the situations towards digitisation are extremely various. However, a common conscience is being created of the necessity to organise that activity; both to measure the investment necessary to digital content creation and to modify, on the long term, the way memory institutions include the digital revolution in their day-to-day work. This is the point of creating competences, and taking into account both digital and physical collections as the entire asset being managed within a memory institution.

In most countries, digitisation has been first launched individually by institutions to set specific services for their public or to preserve their physical objects. The conscience of governments to have an active role in organising these activities in their territory has appeared as a second step, and is arising with the activities of the National Representatives Group, with the support of the European Commission and the successive presidencies.

Indeed, the overall objective of the NRG activity is to help countries establishing clear policies towards digital heritage and to support the coordination of the priorities being set. To ensure a fully completed process towards the definition of policies, the NRG supports the exchange and benchmark of practices and the implementation of common tools to manage digitisation activities in European countries and to provide a better access to those resources for European citizens.

Among those tools, various countries had led actions to inventory digitisation activities in their territory. On the one hand, this helped defining the needs and strategic issues being taken, on the other hand, inventories of digitisation activity could provide a basis for developing intelligent access to digital material. Those inventories were oriented towards the definition of projects being carried out, collections available, or Websites to access those collections.

In this context, the Minerva project (WP3) aims at developing a common approach to the actions being performed to gather inventories of digitised material and digitisation projects. A specific action has been defined in the technical annex to determine the way in which it would be possible to implement inventories of digitised content at national level, in a suitable way for national priorities, but in any case, compatible with a European framework.

The action defined by the Minerva project includes the analysis of the initiatives in Europe to inventory digitised collections and the possibility to set up a common technical system for reporting on those surveys. The main challenge is to ensure sustainable data collection, based on national observatories.

1.1 Context

Existing initiatives in this area have been considered in order to take into account existing material and experiences. The analysis of the current situation will lead to specifications for a common framework.

The common framework can be a decision-making tool - European scoreboard on digitisation activities -, an orientation means for scientists, a means of disseminating good practices and a means of valorising collections.

To do so, the framework's definition must include a data model for describing collections, projects and institutions, necessary metadata and vocabularies and the way it is possible to deal with multilingual issues. This will be gathered in a feasibility study of the common European framework for collecting information on digitisation activities.

This framework must be part of the European information environment being created through European cooperation for making resources interoperable, for sharing good practices, for benchmarking approaches to digitisation, to deal with multilingual issues and intellectual property rights.

The working group on inventories, resource discovery and multilingualism issues must make two reports. The present study must establish an assessment of existing initiatives in the context of a common service. The second report will assess feasibility of such a common service and set specifications.

1.2 Methodology

The implementation of a common system must be based upon the on-going activity of the National Representatives Group. Advancement of work is first of all visible in the progress done by countries to implement the Lund Action Plan¹ at national level.

The NRG first of all provides information on existing priorities and actions being carried out in European countries and organisational issues being faced.

From the National Representatives Group, a working group (Minerva working group) has been set up to define the possibility to raise national inventories of digitised resources and to set up a common service. The main objective of the work of this group is to ensure coordination of national initiatives and provide incentive to set up management tools.

Constitution of a working group

Experts from all countries represented in the NRG are invited to join the working group on inventories of digitised content and resource discovery. The group has been constituted on the basis of information exchange, from July 2001. It has taken into account the work being carried out in all other workpackages, and created synergies notably with interoperability and good practices groups.

- A first preparatory meeting, initiated by the National Representatives Group, has taken place in Paris in July 2001, in the Maison de la Fondation des Sciences de l'Homme, with the participation of representatives of the European Commission, Italian Ministry of Culture, French Ministry of Culture and British laboratory of UKOLN². This has constituted the first step to exchange information on initiatives being led at national level.
- In the scope of the Minerva project, a second meeting has taken place on July 5th, 2002 in Hôtel Musso, in the Department of Architecture and Built heritage of the French Ministry of Culture & Communication in Paris, organised by both the French Ministry of Culture and the British agency Resource, on both issues of Interoperability and Inventories of Digitised resources. The objective was to gather information on national initiatives to inventory digitised resources and examine the possibility of providing common access to existing material, together with the interoperability focus.

¹ http://www.cordis.lu/ist/ka3/digicult/lund_ap_browse.htm

² Paul Miller (UKOLN), Cristina Magliano, Ermina Sciacchitano and Rossella Caffo from Italy, Pat Manson and Maurizio Lunghi from the European Commission, Philippe Avenier, Jean-Pierre Dalbéra and Martine Tayeb from the French Ministry of Culture

- A third meeting in January 24th, 2003, has taken place in the Palais Royal, headquarter of the French ministry of Culture & Communication in Paris. It aimed at validating a common data model to describe digitisation activities and to examine metadata and terminology issues.
- Experts having attended the meetings are listed in second annex of present work. The heterogeneity of their statute and functions is due to organisational heterogeneity of the cultural heritage field in Europe. The present study aims at describing the different interests and approaches encountered according to national priorities on digitisation and organisational forms.

Working topics

The activity on inventories and discovery of digitised resources is integrated in the coordination of digitisation policies. It must be considered as part of (and support to) the policies being developed at national level, according to various types of objectives and on various ways.

The working group must assess existing initiatives and the possibilities to set up a common technical platform inventorying digitised resources in Europe.

Due to the relation with political issues and the necessity to take advantage of existing systems, the approach is uncentralised and it must rely on national responsibility to set their own systems to inventory digitised resources. The common framework must therefore include the description of digitisation activities according to common objectives and a distributed model of data collection. It will enable to connect existing systems and possibly include new systems of data collection.

The working group has therefore agreed a methodology based on the connection of existing initiatives and the definition of future national systems.

The features being considered by the working group are :

- *Introductory work to define the issues for setting up an inventory of digitised resources*
This stage includes preliminary research on existing experiences both in Europe and outside Europe, in order to assess the quality of experiences and define hypothesis on how and what is suitable to describe in the case of a European system.
- *National observatories*
A European overview of digitisation initiatives can only be provided by national relays. The point is to identify who knows about a digitisation project and about the available digital material. National organisation of digitisation activity is a key element to identify information flow and the easiest way to keep a system up-to-date and valuable. Those national observatories are not specific to resource discovery. Their role must be important for the identification of good practices or dissemination of standards as well.
- *Describing digitisation initiatives and material*
To reach a common or compatible description of digitisation activities in Europe, it is first important to identify the objectives of such initiatives and the opportunity to set up such tools. A common data model must help representing the organisation of digitisation at national level and within institutions. It must include a way to consider actors and processes to lead to the establishment of common services. The data model must be shared within the national representatives group, for all activities developed in the scope of the Minerva project. The present study only refers to part of that data model. The description of digitisation initiatives must lead to a common core metadata schema and possible terminologies to use in a common service.

- *Multilingual issues*

Terminologies also lead to consider multilingual issues which are faced by any type of European service. Experiences and standards must be analysed for defining the elements to integrate in the digitisation policies being set up at European level.

The Minerva Intranet hosts work papers related to the present activity³. The group's activity is communicated to other partners and to the NRG members on a regular basis.

NRG status reports and the support provided by the Minerva project allow to measure the evolution and progress being undertaken in inventorying digitisation activities.

At the stage of this report, the work has focused on existing inventories on the one hand and on the other hand, the definition of issues to face for setting specifications for a common platform.

³ <http://www.minervaeurope.org/intranet/wp.asp>

2. Existing experiences

The project to inventory digitisation initiatives must take advantage of existing material and existing initiatives, across Europe and at international level.

The identification of national observatories in Europe is the starting point to find information on digitisation activities. They must be the national relays to our European initiative, whatever priority they set for their own national inventory.

Indeed, the necessity to take into account each country's specificity leads to consider the distributed organisation of data collection.

However, this must entail data interoperability, so that it would be possible in the future to set a common system to provide access to national inventories. In order to define interoperability conditions, access points and data display, it has appeared very important to study existing initiatives in this area and understand their objectives and the strategic choices they have done.

Existing initiatives to build up inventories of digitisation activities have been examined according to the way they describe digitisation activities, access to descriptions and coverage of digitisation.

2.1 The creation of inventories on digitisation activities

International experiences and national experiences outside Europe have been studied. Some of them are presented here, in order to show different approaches to inventories of digitisation initiatives.

Only experiences available on the Web have been taken into account, since they contribute to ease end-user and professional access to digital resources.

Some national and sectoral initiatives have extended to cross-domain approach. Existing experiences at international level must demonstrate strategic opportunity to set up that type of inventories and to help identifying the major issues to face in managing digital content creation.

2.1.1 Objectives of inventories

Some national and sectoral initiatives have been carried out, mostly from the library sector, then extended to cross-domain issues. Their objective is usually digital resource discovery, for both a general public and professional use. They therefore focus on providing Web access to the resources created, showing that the main objective of those digitisation projects is to make resources available on the Web.

The American Research Libraries Group has taken a great part in describing such initiatives in an analytical way. A survey has been published by the Research Libraries Group in 2000 on initiatives to inventory digitised resources⁴. It concludes that the main objectives to set up such directories are :

- Providing examples on experiences to people intending to launch a new project;
- Creating complementary collections and avoiding duplications;
- Providing access to web sites containing digitised collections;
- Item-level access.

⁴ In December 2000, Richard Entlich has led a survey of such initiatives to inventory digitisation activities. It is the focus of an article of the FAQ : "is there a good, comprehensive catalog of Web-accessible digitised collections available on the Internet?"⁴.

All of those objectives are actually contained in the Minerva project, resource discovery, identification of competence centres, management of collections, and strategies for content creation.

List of directories

Initiator	Directory	Address	Comment
NINCH	International Database of Digital Humanities Projects	http://www.ninch.org/programs/data/	Project-oriented, survey, prototype
University of Arizona	Clearinghouse of Image databases	http://www.library.arizona.edu/images/image_projects.html	Project-oriented, relies on a mailing list
Unesco/IFLA	Unesco / IFLA directory of digitized collections	http://www.unesco.org/webworld/digicol/	Collection-oriented, aim at creating a virtual library - Mostly with IFLA : only provides a reference to the collection.
Australian National Library	Australian digitisation projects	http://www.nla.gov.au/libraries/digitisation/	
Canadian National Library	Inventory of digitised collections	http://www.nlc-bnc.ca/initiatives/	
Information Highway Applications Branch Industry Canada	Canada's digital collections	http://collections.ic.gc.ca/e/index.php	Programme providing a gateway to its collections – To build Canadian treasures on the Web
Digital Libraries Federation	Public Access Collection	http://www.hti.umich.edu/cgi/b/bib/bib-idx?c=dlcoll	Includes a reference to source collections
Association of Research Libraries (US)	Digital Initiatives Database of the	http://www.arl.org/did/	Link to Websites
French Ministry of Culture & Communication	French directory of digitised collections	http://www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm	Points to national databases and other information sources For general public and professionals
Spanish Ministry of Science and Technology	IFigenia catalogue of cultural digitised collections	To open in April 2003	Survey For general public and professionals
UK New Opportunities Fund	New Opportunities Fund portal	http://nof.stridebird.com/	Link to Websites For the general public
UK Technical Advisory service for Images	TASI Image sites	http://www.tasi.ac.uk/imagesites/images.html	Few information are published. Relies upon a competence centre Professional audience
Italian Ministry of culture	Repertoria delle Digitale – Italian Digital Library	http://www.bditaliana.it/appl2/ricercad.aspx	Projects aiming at illustrating the Italian Digital Library
Kulturnet Sweden	digitaliseringprojekt inom arkiv, bibliotek och museer / ABM-området	http://www.kultur.nu/rapporter/digitaliseringsprojekt.html	Survey
Göttinger Digitalizierungs Zentrum	DGF Projects	http://gdz.sub.uni-goettingen.de/en/vdf-e/	Funded Projects in the Deutsche Forschungsgemeinschaft Programme

- *Metasearches : citizen access to cultural heritage*

Inventories of digitisation initiatives may be a means of setting up intermediary tools for providing item-level access to cultural heritage resources.

End-user access to surrogates appears as an important function of any inventory of digitised resources. When such inventories exist, they are often publicly available (although not all elements), because they can be used to locate digital resources. The inventories are therefore gateways to memory institutions holdings, when digital surrogates are available online. Description of collections must include information on availability of resources, which will enable users to select appropriate collections.

“The Canadian Inventory of Digital Initiatives provides descriptions of Canadian information resources created for the Web, including general digital collections, resources centred around a particular theme, and reference sources and databases. The database provides project/resource names, participating organizations, general and technical descriptions, subject categories (broad Dewey decimal classes), contact information and other details.”⁵

Professional users, which may also be project operators or the programme manager, can also use such inventories to set up specific services. For example the TASI system (Technical Advisory Service for Images) mentions detailed information on technical features of both content and technical environment of the collections. Z39.50 compliance is an example of information related to the possibility to provide improved access to resources, by allowing meta-search services. The New Opportunities Fund portal is being set up as an information system relating activities of a specific programme (including project and collection description) but “projects are expected to make available item-level metadata about all the resources (digitised resources and other learning resources) that they make available.”⁶ The New Opportunities Fund portal is aimed at general public.

For end-users, the two-steps system of item-level access, implying the location of a collection then the location of the item is working as an Internet directory. While describing technical features and environment of collections, inventories may help reaching content itself and complementary actions can provide services to directly access those resources.

- *Managing collections and setting priorities*

Before launching a programme of digitisation, priorities must be set on material to digitise in order to define exactly which results are expected. That process can be more or less formal. It can belong to the definition of the programme. Some programmes are built with a specific objective of creating coherent digital collections.

The Irish Cultural Heritage Project includes a survey on local studies held by libraries. It starts with inventorying physical collections in order to assess the priority for digitisation according to political priorities which are access, conservation and cooperation. “The project will establish a comprehensive and up-to-date record of the local studies holdings in public libraries. It will prioritise content in terms of access and conservation, and will investigate co-operation in relation to shared access to selected

⁵ Home page < <http://www.nlc-bnc.ca/initiatives/erella.htm>>

⁶ Andy Powell, “NOF-digitise Portal Architecture- Discussion paper », 5 April 2002 – feature to be completed as a second step

collections with the National Library, the National Archives and the National Museum, academic institutions and Northern Ireland repositories, among others.”⁷.

The Belgium process to set up an inventory of digitised collections is also linked to the programme which is being prepared. The first step appears as an inventory of physical collections. Strategic actions are directed towards collection management issues.

There has been a great deal of activity in the UK, with a major programme which has identified physical collections in the Research Support Libraries Programme⁸. This has encouraged the development of metadata standards, which has also been adopted by Cornucopia, which is recording museum collection⁹.

The national programme of digitisation of the French ministry of culture also sets priorities related to complementary content creation, cooperation between institutions to create value-added heritage services and preservation of physical objects. The programme’s management relies on national bibliographic databases which contain references to physical holdings in various areas¹⁰.

The creation of a representation of physical collections, as a basis for digitisation initiatives is a way of formalising a policy on digital content creation, which could be compared to a library acquisition policy.

- *Avoiding duplication of effort*

Management of content creation also involves the setting up of mechanisms to avoid digitising twice the same material. This is especially important in the library sector where institutions held many non unique objects. The French national library for example is always questioned about on-going and planned digitisation activities so that it is trying to publish as much information on current activities as possible.

Similar approaches in the library sector have led to implement European-level references for microforms (EROMM) and for the digitisation of periodicals (EU-funded DIEPER project¹¹) so that it is possible to avoid spending money twice. Digitisation may not have been led in an appropriate way for every usage, so that it is sometimes necessary to perform digitisation operation again but with large-scale collections the amount of data make it worth setting up processes for managing the creation of digital collections, thus saving efforts.

- *Managing activity over a territory*

Management of activities aims at determining which actors launch which type of projects, to gather information on programmes’ results and to focus digitisation programmes according to these indicators (as a complementary approach to practices benchmarks).

Collaboration between institutions is also part of the management scope and have been identified as a priority in various countries’ policies¹². This is a key issue for developing value-added services to highlight our heritage and to share competences. It affects costs

⁷ Annette Kelly and Domitilla Fagan, “Not only Shamrocks: Digitising Local Studies Material in Ireland” in Cultivate Interactive, - November 2002 <<http://www.cultivate-int.org/issue8/digitisation/>>

⁸ www.rslp.ac.uk

⁹ www.cornucopia.org.uk

¹⁰ <http://www.culture.gouv.fr/culture/bdd/index.html>

¹¹ <http://gdz.sub.uni-goettingen.de/dieper/>

¹² see NRG status reports Dec 2002, published in European Commission, “Coordinating digitisation in Europe”, notably French and Dutch reports, <http://www.minervaeurope.org/publications/globalreport.htm>

of projects and competence management. Inventories also facilitate the implementation of value-added services to access common resources, held in various institutions.

Certain types of competences, general information on how collections have been digitised allow the definition of standards in use and what is possible to do with the collections created. Standardisation is a key issue for enabling future services to take advantage of our heritage and highlight our cultural assets.

Management of competences will ensure the highest quality of digitisation. The Irish experience of Cultural Heritage Project is intended to create competence centres. The “pilot projects” are presented in the Web portal as creations of competence centres. The development of competences is focused on the variety of material types, format and processing and the institution type (museum, library or archive) for content creation.

Obviously, a competence centre cannot be described in a similar way as collections, but collection features may be an important criteria when searching for expertise and support.

There is a clear benefit to measure investment efforts. This means taking advantage of expertise, accompanying project management but also measuring results on user satisfaction. This includes services set up to access content (such as Web applications) and content itself, audience and use.

Inventories of digitisation activity must match all those requirements but they are first of all tools to implement a policy, which aims first of all at transforming our memory institutions. Their organisation shall be modified to include digital asset management in a process coherent with physical asset management. These inventories support digitisation policies by demonstrating competences and material available for building services and ensuring the creation of a coherent digital asset.

2.1.2 Scope of inventories

Selection criteria

The objective of inventories of digitisation activities is not always exhaustiveness. The quality of material which is gathered is taken into account as well. The Australian digitisation clearly defines rules of selection:

“Projects should be significant or substantial, either in terms of the importance or unique nature of the content, or in terms of the amount of material being digitised or produced.

- Entries from public, private and non-profit organisations;
- Projects that are currently under-way, planned for the future or already completed;
- Conversion of collections - of books, manuscripts, articles, films, unique reference tools, finding aids or indexes, photographs, illustrations, maps, sound recordings (refer also to Australia's oral history collections: a national directory), video, 3D objects etc. - to digital form, regardless of the storage media; and
- Projects to create new digital objects or resources. “¹³.

The database excludes Websites, galleries, exhibitions and all types of services to provide or access improve access to digital resources. Indeed, Australian digitisation projects is powered by the Australian Libraries Gateway. “This service aims to record and make accessible information about digitisation projects undertaken by Australian cultural organisations”¹⁴.

¹³ Australian digitisation projects Website <<http://www.nla.gov.au/libraries/digitisation/scope.html>>

¹⁴ Australian digitisation projects Home Page <<http://www.nla.gov.au/libraries/digitisation/>>

Cross-domain initiatives

The sector of the digitisation project is also an important criteria. The library sector appears to have a major role in the establishment of such directories. The directory of Australian digitisation projects is basically an initiative of the library sector and it belongs to a library service, gathering material from libraries all over the country. However, other cultural heritage institutions have added content to the database of digitisation projects.

All the same, the ARL Digital Initiatives Database of the American Association of Research Libraries “is a Web-based registry for descriptions of digital initiatives in or involving libraries.”¹⁵.

However, the scope of such initiatives is usually larger than only the library sector. Indeed, most of them include cross-domain references. This, of course, entails some difficulties and choices in the way the activity is described.

It appears that, in many cases, solutions to mix possibilities which do not correspond to all projects, are chosen. For example, the NINCH system allows the setting of multiple values to describe categories of institutions in a single field. All the same, the Canadian inventory of digitised collections mixes legal statute, domain scope, geographic scope of action, type (museum, school...) of the institution in a single field. The Arizona Clearinghouse of Image databases was first a directory of image databases but it has enlarged its scope to other digital media in a cross-domain context.

Various entities described

Descriptions are focused, either on collections and services to access those collections, or on projects, including funding and methodologies.

This clearly depends upon the focus of such an initiative. The NINCH project aims at defining funding opportunities and methodologies in use. It is also closely related to the record of practices in the digitisation processes¹⁶. The Arizona Clearinghouse of Image Databases is a professional tool: “it is targeted at professionals working with image technology, librarians, archivists, metadata specialists, database administrator and other who are planning or developing databases containing digital objects.”¹⁷. However, other systems aim at resource discovery and largely focus on describing products and services provided by memory institutions (or others types of institutions) to establish an common gateway.

Relation to information environment

The creation of digital surrogates implies a logical link between the digital and the physical collections. The description of resulting digital assets may take advantage of this link. The Australian digitisation projects explicitly refer to such a directory as the Australia's oral history collections: a national directory, which does not include digital surrogates. However, no existing system includes a link between those parts and descriptions of both physical and digital collections¹⁸, although they are logically very well related and this is an aim of activities in the UK.

The Göttingen directory and, to a certain extent, the French directory refer to the programme under which the project is funded.

¹⁵ ARL Web site < <http://www.arl.org/did/>>

¹⁶ <http://www.ninch.org/programs/tools.html#data>

¹⁷ Author's Brief on Clearinghouse of Image Databases
<http://www.library.arizona.edu/images/authorsbrief_rev121900.html>

¹⁸ see Irish Cultural Heritage Project

The present project cannot describe everything but it must take into account all elements on which political issues have a direct impact, which is the digitisation programmes, their technical framework and the coordination committees which gather experts from all cultural sectors.

According to the purpose and the institution which launches such services to inventory digitisation activities, the scope may include all cultural heritage sectors, specific quality criteria such as Web access, describe various entities, such as projects, institutions, physical and digital collections and services and products to access material.

2.1.3 The institutions which develop inventories on digitisation

The RLG survey in 2000 identifies that such initiatives can be held internally, within memory institutions, to identify digitisation activities for management issues. But efforts to inventory initiatives are often led at a higher organisational level, state, province, national agencies or by domain. Both private and institutional sectors have provided some effort to make available comprehensive inventories.

National (and university in the US) libraries, sectoral consortia and programmes initiate those services. Those who have a role in structuring a sector or funding digitisation activities can decide to foster the knowledge of those activities and help resource discovery.

The NRG could have the political role of promoting the concept of harvesting the results of national initiatives, in order to provide a European view of cultural heritage. That is the reason why the present study must first build bridges between existing systems and ensure the compatibility of emerging initiatives.

2.1.4 Information sources

Initial surveys are very often the basis of an on-going service to provide resources on digitisation activities. The NINCH International Database of Digital Humanities Projects has started with a survey carried out in 1995 for by the Council on Library Resources and the Commission on Preservation and Access¹⁹. All the same with the Unesco Catalogue : “The IFLA Core Programmes for Preservation and Conservation (PAC) and Universal Availability of Publications (UAP) are working together, on behalf of UNESCO, to undertake a survey of digitisation programmes in major cultural institutions, in order to establish a 'virtual library' of digitised collections worldwide. “²⁰.

The process in Spain and Sweden are similar. Surveys have been launched from the institution level, by the Ministry of Science and Technology in Spain, by a department of the ministry in charge of maintaining the directory of cultural websites in Sweden.

Several conditions enable such a directory to be kept up-to-date :

- to know about new initiatives;
- to know about the evolution of directory records (eg. changes in project status, amount of surrogates created...).

This requires to rely on persons who will naturally have access to those information.

¹⁹ Patricia A. McClung “Preliminary Results of the CPA/CLR Digital Collections Inventory”,
<<http://www.clir.org/pubs/reports/mcclung/>>

²⁰ IFLA Web page <<http://www.ifla.org/VI/2/p1/desc.htm>>

The Arizona Clearinghouse of Image Databases ensures up-to-date information through a specialised mailing list. It relies on a virtual community of experts, which can be considered as a competence centre.

Digitisation programme managers can also report activities they are funding. Update of information then relies on funding flows. The Göttinger Digitalisierung Centrum lists and describes projects funded under the Deutsche Forschungsgemeinschaft (DFG) programme²¹ and relies on the programmes' activity.

2.1.5 Issues for a European service

The RLG review underlined the following problems of such inventories of digitisation initiatives:

- Lack of common definitions (eg. collection vs. exhibition);
- Problem to update entries and locating new sites (information gathering);
- Lack of institutional support and / or funding;
- Lack of metadata standards;
- Lack of permanent address scheme;
- Technical difficulty in establishing interfaces;
- Lack of coordination between efforts;
- Uncertainty about audience and functionalities they desire.

The extension of those directories to provide meta-collection item-level access raises a challenge to set permanent Web Addresses. The current approach to the creation of persistent Web addresses is the use Digital Object Identifiers. This involves the use of an identifier that is independent of the URL of the Web page of the resource. This identifier is resolved through a *resolver* which means that the URL can change, whilst a persistent URL can be cited and referred to. Currently this technology is being developed by a not-for-profit foundation, but is being deployed by private sector companies. The danger is that the costs involved will become prohibitive, and that the not-for-profit needs an alternative open source approach that will be sustainable in the longer-term. This issue is of long-term importance for project inventories, and the implications will be addressed in the interoperability focus of the Minerva project. However, this is clearly a serious issue that needs significant effort in European Research Programmes.

This raises the main issues a European project will have to face in coordinating existing efforts, in clearly defining audience, in focussing on getting information, in agreeing clear common definitions, finally in ensuring institutional support and funding.

The integration of inventories in the process of setting up a programme or to include them in the role of a cross-domain expert committee allows to obtain the institutional support for this activity, ensure information is updated, by benefit from funding and evaluation processes. However, the European coordinated effort must first focus on taking advantage of existing material and setting common metadata standards.

2.2 National projects developed in Europe

The following examples show the diversity of focus encountered across Europe for inventorying digitisation activity. But they also represent the on-going trend to build such

²¹ <http://gdz.sub.uni-goettingen.de/en/vdf-e/>,

tools. The current work aims at setting a convergence and a compatibility between those approaches.

2.2.1 New Opportunities Fund

The New Opportunities Fund²² is a digitisation programme for creating education material. It has set up the NOF-digitise Portal, a Web site that will provide a central point of access for the widest possible audience to the outputs of projects funded by the NOF-digitise Programme.

It includes :

- project descriptions,
- collection descriptions,
- news from projects funded by the NOF programme.

A second stage of development is planned to add:

- item-level search functionality (on distributed databases, harvested through the OAI protocol),
- 'best of breed' images.

The New Opportunities Fund Portal has a larger scope than cultural heritage. It is very much representative of the publishing activities and community creation which is possible around a digitisation programme.



²² <http://www.nof-digitise.org/>

2.2.2 Spanish digital heritage inventory

The Spanish Digital Heritage Inventory is funded by the MCyt (Ministry for Science and Technology). A private company (Ifigenia²³) is in charge of setting up the inventory, after having led a survey and gathered 160 project descriptions. The information has been gathered, mainly from ministerial sources. The Spanish structure of funding for digitisation is not centralised at all and the inventory of existing initiatives has appeared as a very important issue for supporting a global policy. The second step is to make that material available on the Internet. Then, it must be integrated into a Website on Spanish heritage and updated on a regular basis.

The Spanish project has been highly inspired by other countries' experiences and it demonstrates very well a rationalised way of setting such a tool for management issues and resource discovery. The online service will be available in the Spring 2003.

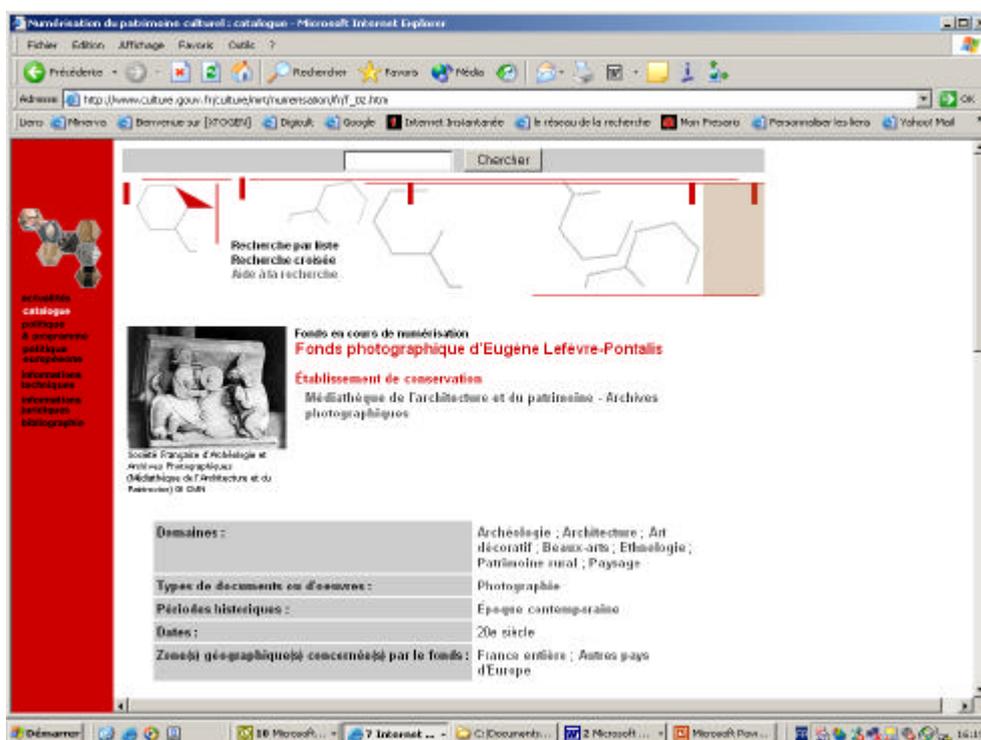
2.2.3 French National directory of digitisation activities

In France, great public institutions have their own digitisation programmes. The ministry of culture and communication has implemented a national digitisation programme led by the Research and Technology Department of the French Ministry of Culture and Communication (MRT). Based on that programme, the MRT has set up a directory of digitised collections²⁴ which has been extended to other digitisation projects, not funded by the national digitisation programme.

A person, in each main ministerial directorate, is in charge of updating the directory, by sending questionnaires to project managers from their sector. Great public institutions have also added information on their own collections.

A central coordination is ensured by the Research and Technology Department.

Future development is expected from a better coherence with the project calls framework and from the extension of the directory to other ministries.

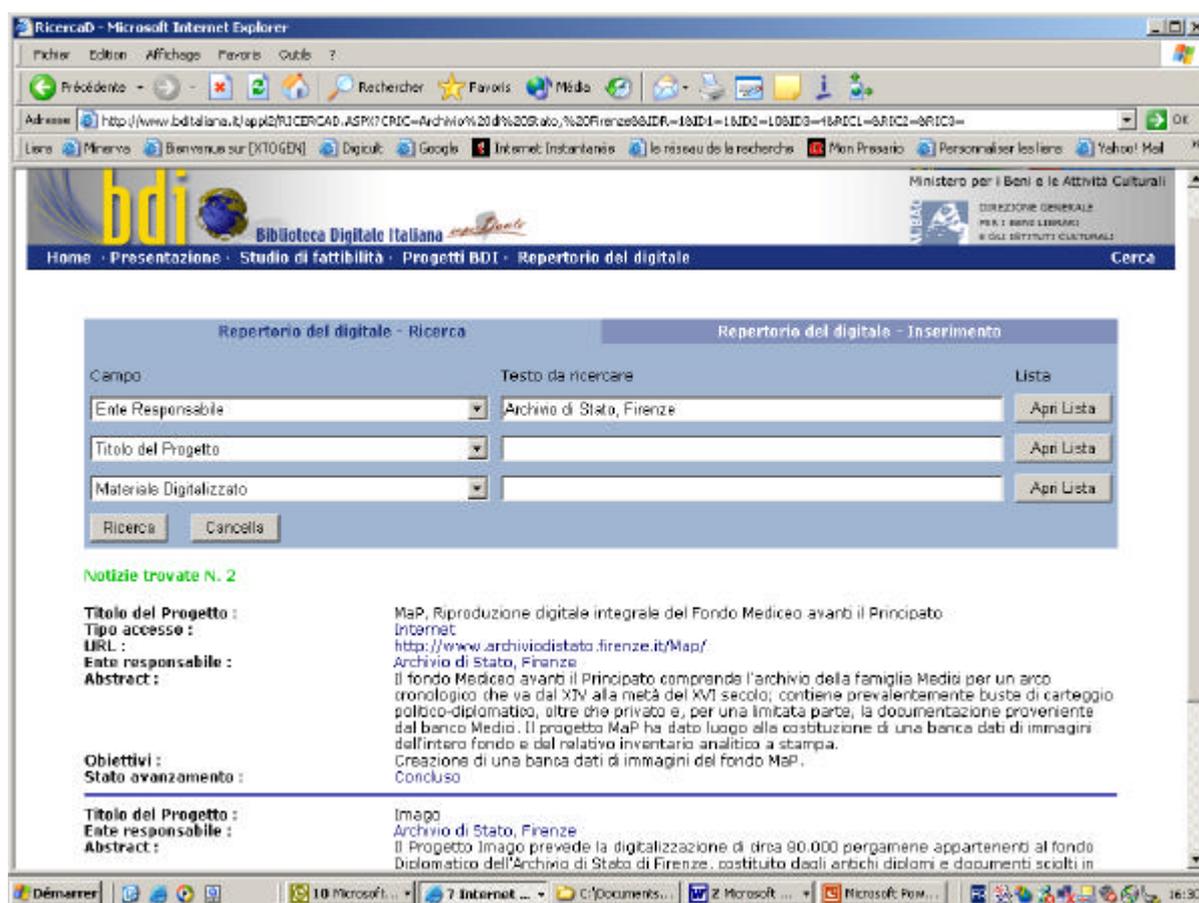


²³ <http://www.ifigenia.es/>

²⁴ http://www.culture.gov.fr/culture/mrt/numerisation/fr/f_02.htm

2.2.4 Italian Digital Library

The Italian Digital Library is a programme articulated in three years and funded by the Italian Ministry of Culture (MBAC) for the period 2001-2003; it aims to put on line the Italian libraries' heritage through digitisation activities²⁵. The project started on the basis of a feasibility study funded by the MBAC in 2000 concerning digitisation initiatives at national and international level and is led by a Steering Committee: this commission has been able to involve several actors, as Universities and Regions, and has also the role of evaluator of the projects presented by state libraries, local libraries, cultural institutions, universities to be founded by the MBAC within the project. ICCU²⁶ participates in the project with a double role: digitising its catalogues and monitoring the advancement of the programme through a questionnaire available on the ICCU web site²⁷.



2.2.5 Irish Cultural Heritage Project

The Cultural Heritage Project on digitisation is an initiative coordinated by An Chomhairle Leabharlanna (Irish Library Council) and funded by the Department of the Environment and Local Government in the Irish cultural sector. It focuses on the digitisation and provision of new modes of access to special collections and local studies holdings in local and national

²⁵ www.bdiitaliana.it

²⁶ Istituto Centrale per il Catalogo Unico delle Biblioteche Italiane e per le Informazioni Bibliografiche, MBAC

²⁷ www.iccu.sbn.it/bidigit.htm.

libraries²⁸. Other parts of the same programme, funded by the Heritage Council involve the museum and the archive sectors.

“It [the Cultural Heritage Project] is intended not only that this project will lead to a common portal for local studies, but that it will contribute to one common libraries, museums and archives’ portal as a single access point for electronic resources and catalogues. The electronic resources would include bibliographic information, databases and digitized materials. It is also intended that the projects funded will be substantive initiatives with long-term relevance. The main objectives of the project are that it will:

- Establish a national set of selection criteria, in order to support a methodical approach to choosing the best material to digitise;
- Identify local studies and other content for digitisation, and prioritise which material should first be digitised;
- Work with local groups to build a national index of important local studies holdings;
- Undertake a pilot digitisation programme in a number of sites with a view to establishing insight, expertise and knowledge in this area;
- Establish guidelines and procedures to assist local authorities and other content holders in their digitisation efforts
- Liaise with national and other cultural heritage institutions to establish areas for cooperation;
- Identify potential user groups;
- Advise on a national funding programme for content digitisation of the significant holdings of public libraries.”²⁹

The Web portal³⁰ presents the Network of Cultural Bodies, the pilot projects funded for developing competence in digitisation and a database of physical collections, digitisation initiatives and in the future digital collections.

That initiative is very well focused on the management of heritage collections and priorities to set for digitisation on the one hand, on the other hand on the creation of competence centres before a national programme of digitisation is launched.

2.2.6 The creation of dynamics

The last status reports presented during the meeting of the National Representatives Group on Digitisation of Cultural and Scientific Heritage in Copenhagen on December 10th, 2002, have demonstrated the existence of a clear orientation towards setting up inventories, both as an indicator to support digitisation policies, as parts of digitisation programmes and to provide access to cultural heritage resources.

That orientation however appears in very different ways, due to the variety of national situations.

Studies and surveys

Surveys have been launched in various countries, to know at a defined moment, what is the digitisation activity in the country. Austria has launched a survey in 2001 as a strategic tool for defining future policy. The French Community of Belgium will set up an inventory to

²⁸ *Branching Out* Steering Committee Cultural Heritage Panel Project - Call for proposal, June 2002

²⁹ *Branching Out* Steering Committee Cultural Heritage Panel Project Implementation Plan June 2002

³⁰ AskAboutIreland Cultural Heritage <http://www.activate.ie/toplevel/>

report on the programme which is on the way. Sweden has carried out a survey in 1999, through the CultureNet Sweden of the Swedish National Council for Cultural Affairs. They now think at using that survey as basis for setting up a full service of inventory. Data will need to be completed and updated, according to common European standards.

Building up a service

In Spain and in Ireland, the process is first to set a sustainable service (online delivery of information), with up-to-date information. Spain already has carried out a survey. In the United-Kingdom, a service is being set up as well, based on the New Opportunities Fund programme. This is also the orientation taken by the Netherlands, on Web access, since the activity is structured around digitisation programmes.

Maintaining a directory

France already has a service working on a day-to-day basis. The challenge is to keep it up-to-date, but also to enlarge its scope, notably towards the research sector, and to consider its content according to the orientation of the digitisation programmes in France.

Enlargement the directory includes the coordination with other activities, such as good practices descriptions and benchmarking of projects, and the integration to a framework for item-level access.

Approaches being taken over Europe can take into account all the work which has been carried out until now, which is listed in the present study³¹. The strategies highly depend upon national organisation of digital policies but models, examples, and good practices can be found and usefully exchanged between European countries, so that it may be possible to build up a common service to access those resources.

2.3 Identification of national observatories

Collecting information is difficult, especially when considering descriptions update. The national observatories represent the information collectors, they must prevent the difficulties identified above³² coordination of efforts, data collection and update, institutional commitment to the maintenance of the inventory.

It is important to identify who, in each country, has both the interest and the ability to prepare the information for setting up the national part of a global information system on digitisation activities.

Those national observatories should have a role, not only in collecting information on digitised content but also on managing the overall digitisation activity. The point is therefore to connect the information flow and the national organisation of the digitisation activity, discussed within the NRG.

2.3.1 Collecting information

The working group has first considered organisational issues of data collection in various countries, interests and approaches to information on digitisation activities and standards for connecting resources.

³¹ see annex 1, National Experiences in Europe

³² see Issues for a European service section

As explained above, the institutions who lead surveys and set inventories usually are either institutional level organisations (state, province, national agency), or national sectoral consortia (ie a national library or a consortium of libraries).

The institutional level clearly has an interest in collecting information on on-going activities. However, those who have up-to-date information on the digitisation activity must be part of a chain which links the decision to the product or the service which is set up. Here is the clear role of relying on funding flows and technical competence centres to keep information up-to-date.

National committees on digitisation

Thanks to the NRG, national coordination of digitisation activities is implemented in most European countries. Most countries indeed constituted joint committees gathering national stakeholders on digitisation of heritage. In some countries, a specific institution has a coordination role for those activities. For example the HPCLab of the Patras university in Greece, Resource in the UK, or the Research & Technology department of the French ministry of culture et communication. They act in the field of digitisation of cultural and scientific heritage like national observatories, with the following features :

- *Legitimacy;*
- *Access to information;*
- *Acting capacity;*
- *Disseminating capacity;*
- *Cross-domain scope of action.*

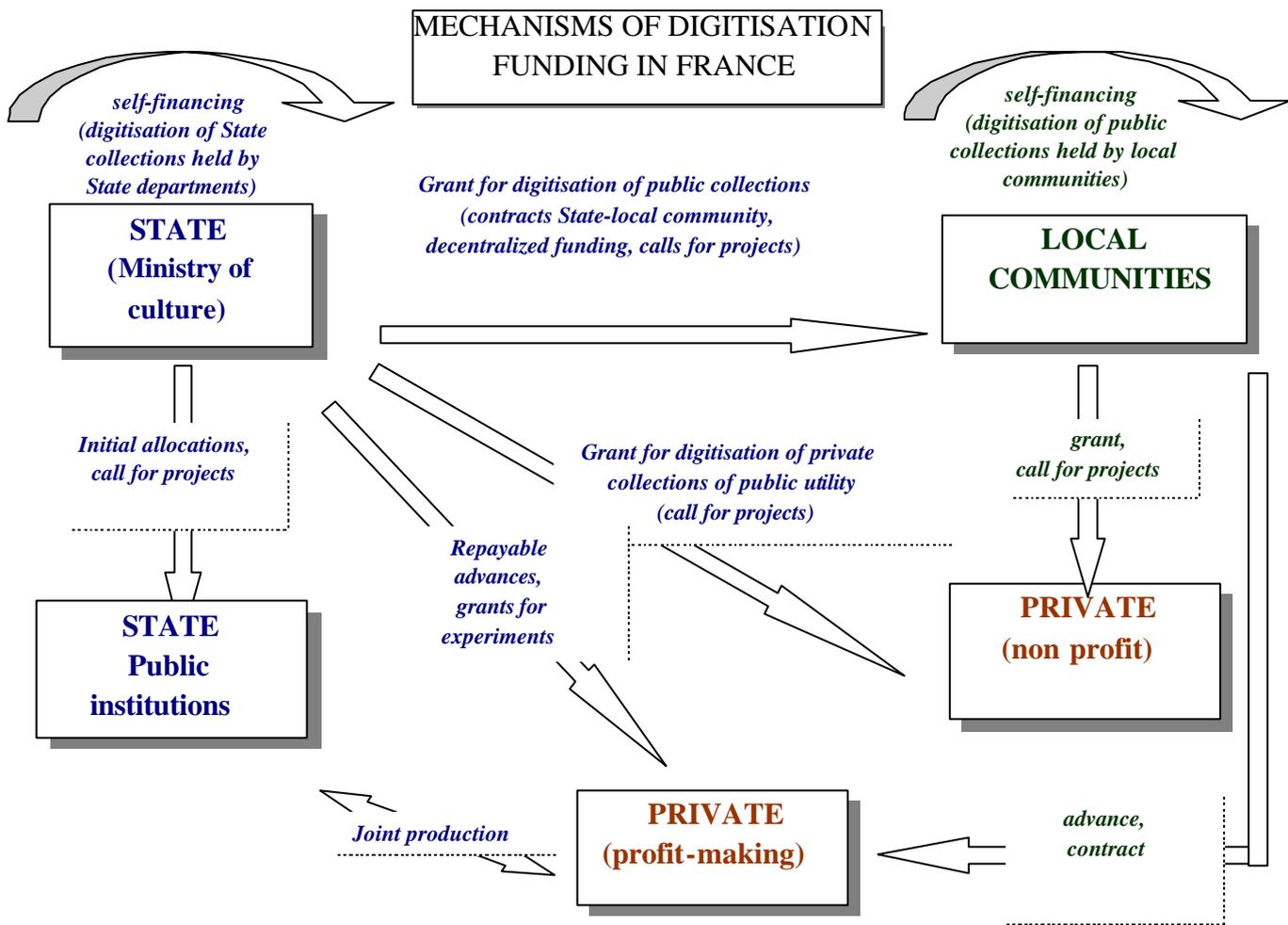
However, their action mode and their role may be very different. To gather the right information on digitisation activity, they may rely on various types of networks, including professional associations, service providers, programme leaders, competence centres, large national institutions and technical cooperation platforms.

Funding and programmes to keep up-to-date information

Funding institutions appear as key references to collect information on digitisation activities since they actively take part to the structuring of a digitisation sector.

State involvement, local communities funding and private funding are unequally participating to the digitisation effort in European countries. For example, in the United-Kingdom, main activities are relying on money distributed to digitisation programmes with specific focus (for example on the creation of learning resources). Those programmes then fund projects. In France, most of the activity in the cultural heritage sector is performed through the national digitisation programme, three great institutions 'programmes and local communities.

Great memory institutions may have large sectoral influence, since they lead professional networks and help defining sectoral standards.



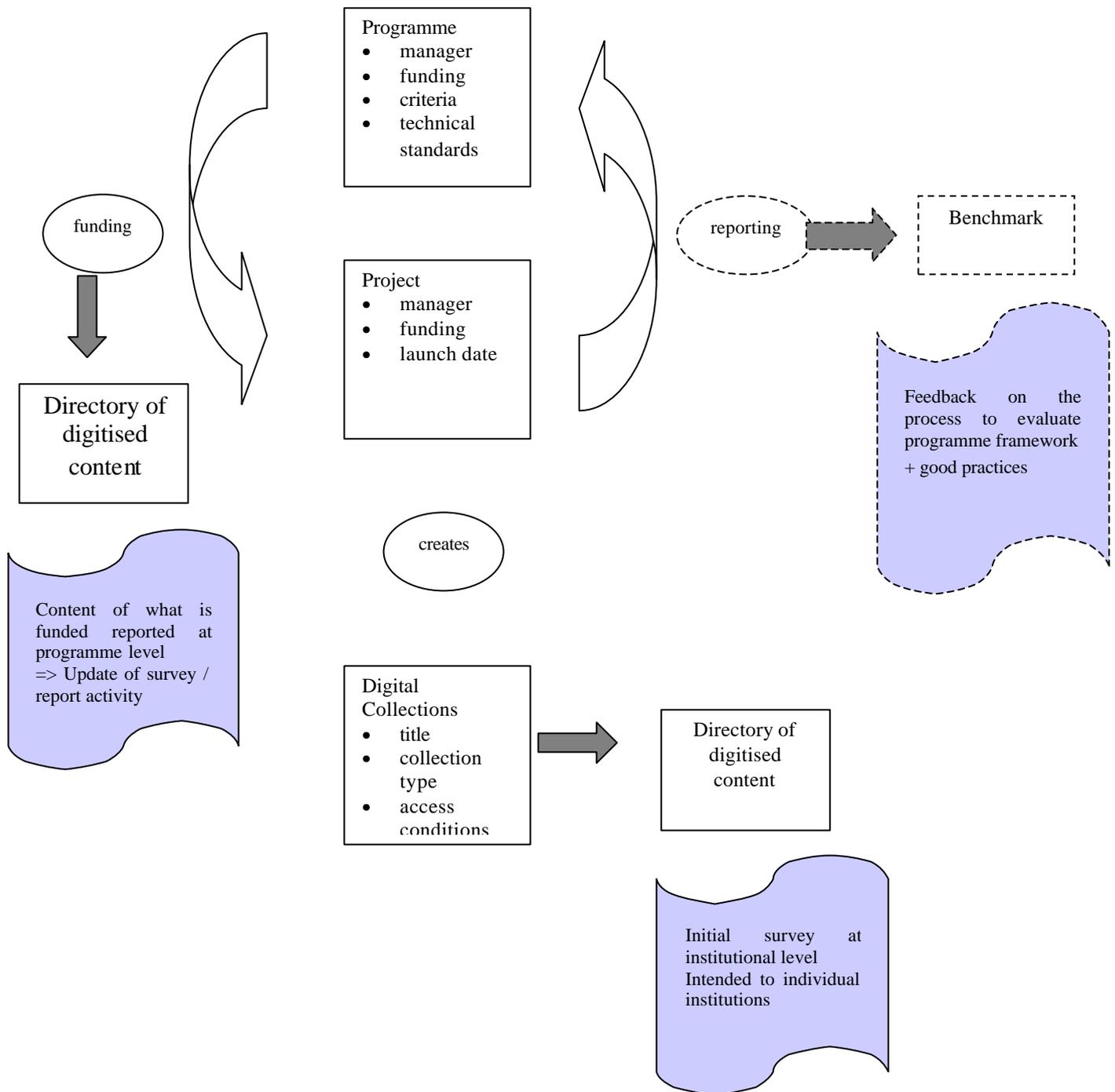
The above figure shows that, even though not exhaustive, the funding flows can provide a great deal of information on the overall activity, if digitisation is considered and clearly identified as an area.

In the case of large institutions such as a national library, they may manage their own programme(s) and they have a control on all projects launched in its internal system. The French national library uses a project management system for its own activities. It merges all unqualified Dublin Core metadata of objects included in the collection being digitised. Those data are not publicly available yet. However, in the digital library created by that programme, the digitisation process is recorded for in each digital object description.

The issues being faced in the management of a programme intended to a single institution are slightly different from those to be considered for a funding programme intended to many individual institutions, both as regards to competences and information collected (process to fill application form...).

The latter case may appear more suitable to focus on because here is the key issue of managing digitisation activities, since great institutions usually belong to the joint committees and / or to the national observatories and their programmes must also apply the policy defined at institutional level.

Information flow in the digitisation process



Technical coordination

The technical coordination of activities also has a key role to collect information. Competence centres can help identifying digitisation projects on a day-to-day basis. The role of the Swedish National Archive to set up a cross-domain platform for archives, libraries and museums is an example of technical coordination. The network gathers representatives from all sectors. Technical competences and agreements are the first step to get a national programme for digitisation. In the meanwhile, the National Archives have initiated, with the support of the cross-domain KulturNet service, a survey of the overall activities in digitisation.

As established in the work on Good Practices and in the work on interoperability standards, digitisation programmes provide a technical framework and often a technical expertise, together with funding. The New Opportunities Fund in the United Kingdom has expert advice from Resource, and commissions technical support from the UK Office for Library and Information Networking (UKOLN³³) and the Arts and Humanities Data Service³⁴. The TASI agency has set up an inventory of digitisation projects on the basis of the information it gathers as a competence center on digital images.

The ability for technical networks and competence centres to access information can be a complementary means of collecting information on a day-to-day basis. Since programmes may also rely on competence centres, the programme's framework appears as the key target for ensuring an effective data collection.

Connecting information sources

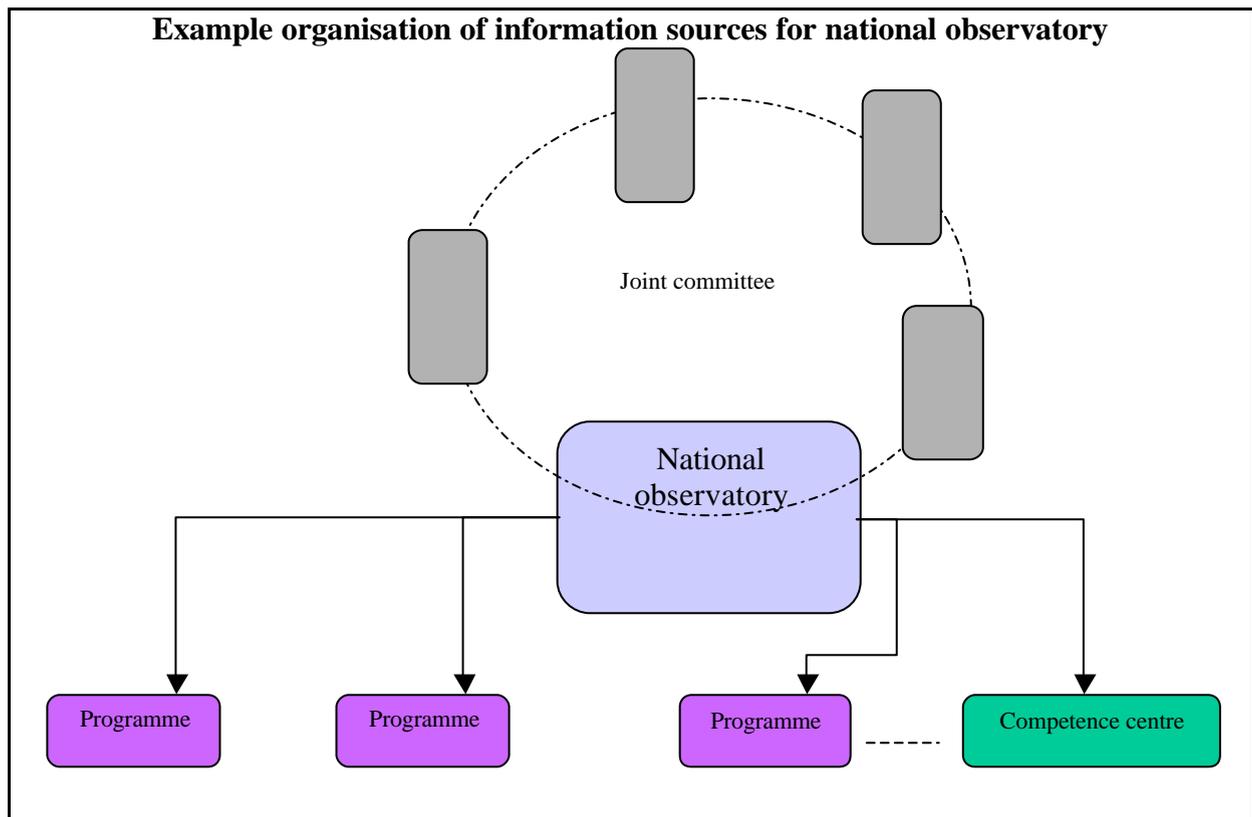
In order to set up a European platform for measuring digitisation activity and managing the creation of digital collections, national observatories on digitisation can use both funding flows (programmes) and technical information flows (competence centres) and take advantage of complementary information sources.

- surveys may be led as an initial process at the institutional level or by a professional consortium;
- then programmes can rely on funding process to inventory new projects : full description of content and project can be obtained before project starts, when it has been accepted for funding;
- data updating is needed on project status when project has started (on-going) and at the end of a project (completed) or when the digital collection grows as a result of another project.

The main challenge is then to identify whether digitisation programmes have such information available for publishing and connecting to other systems. If not, how information can be reached with few additional efforts.

³³ <http://www.ukoln.ac.uk/>

³⁴ <http://www.ahds.ac.uk/>



Digitisation programmes are major instruments of the policies. They have a key role in reporting on digitisation activities. The Minerva benchmarking and interoperability focus will gather information on programmes all over Europe. Digitisation programmes reporting activity could allow to extend the scope of existing inventories across Europe.

The programme set specific priorities and ways of working. It may not be suitable to consider a central system, but rather to re-use existing information, as much as possible. The interoperability focus has raised technical solutions and it is helping defining clear orientations for setting a decentralised framework.

2.3.2 Selecting information

Programmes can provide information on projects they fund for a specific use. The scope of the inventory may be limited to content accessible on-line. However, a collection being digitised with no on-line access is still a digital resource, potentially available on-line and potentially exploitable for advanced content-based browsing tools or publishing products.

The French national directory of digitised collections defines that it will only report projects with “funding ensured”. By designating funding programmes as key actors to inventory activities, the quality criteria match the digitisation programme framework and its own selection criteria.

The Canadian inventory defines strict quality criteria, notably on the strength of the project : “Projects should be significant or substantial, either in terms of the importance or unique nature of the content, or in terms of the amount of material being digitised or produced.”³⁵

In the scope of an initial survey, individual rules and specifications of the survey define the criteria. All projects mentioned in the Swedish “digitaliseringprojekt inom arkiv, bibliotek

³⁵ <http://www.nlc-bnc.ca/initiatives/ecriteria.htm>, see above section on selection criteria

och museer / ABM-området”³⁶ have a URL. The issue must be coherent with other activities to implement digitisation policies.

Each system is built with its own rules, however, common scopes of inventories may be defined according to the following principles :

- the project must create surrogates of physical objects, part of cultural or scientific heritage;
- funding is ensured.

However, Internet availability should not be a selection criteria, since digitisation for preservation of physical objects is a case clearly considered by the NRG when defining digitisation policies.

A dynamic has been created to establish inventories of digitisation initiatives in Europe. Partner countries mostly support the creation of programmes or they allow to report on programme’s activities. Those tools must accompany the structuring impact on the digitisation area.

An important issue being faced is keeping inventories up-to-date, either on projects or on content. The national observatories defined at NRG level must help providing that information, by relying notably on the full organisational framework of digitisation, on the first place, on programmes.

It should be integrated to the national organisational framework and to other activities such as benchmarking, collection of good practices and quality criteria for Websites. A common service to access data must first of all rely on existing systems and allow to include new systems.

This information should also be compared and shared with other activities. In the global information framework being set up in Europe, the coordination of digitisation policies has developed focus on the various issues and it needs information, possibly on a regular basis for various types of activities.

- assessing digitisation processes;
- describing content;
- assessing quality of Websites;
- exchanging good practices.

Those information must be coherent and well defined. A common set of information must be shared, including cultural heritage institutions and general information on projects. Whatever means of gathering information is used, surveys and reporting on programmes should enrich the global framework.

The working group has proposed to start gathering material from existing systems and examine how it could be possible to set bridges between those systems. For newly implemented systems, it is also necessary to define minimum common metadata and requirements in order to ensure compatibility and interoperability with existing services.

³⁶ <http://www.kultur.nu/rapporter/digitaliseringsprojekt.html>

3. Building up a common system

The Minerva project offers to share common standards and strategic tools which can help a better coordination of digitisation activities in Europe. Through the relay of national observatories, a common service to access descriptions of collections and projects in Europe could be built up.

The management of overall activities must be considered in terms of projects or in terms of content. A common reference model for the creation of digital content will help integrating all European situations towards the organisation of digitisation activities.

The working group has analysed national situations and defined how to provide relevant information at European level, including metadata and terminology issues. Since, the working group will take into account both the possibility of mapping existing systems and the development of new initiatives, a common data model must be adopted.

The present study will identify the main issues and assess possible solutions for setting a common service, minimum descriptions and the structure of information needed. It will address the issues of to the lack of common definitions and metadata standards.

The task of creating equivalences between existing national frameworks involves an agreement on conceptual entities which must be described. The reference to a common data model will help define the conditions for organisational interoperability, including two challenges : the organisation of digitisation at national levels, and cross-domain approach of material description.

3.1 A common data model

The national structures for digitisation are key elements in the creation of a European information environment. Since the organisation of digitisation in various countries of Europe is very different, it is very important to ensure that all participants are describing the same concepts. This statement has led to the definition of a conceptual model to describe the digitisation activity. The Minerva interoperability and inventories focus have collaborated to define the common data model.

The working group agreed that a common framework should involve the description of both projects and content created, for both professional (management purpose) and end-user (public content location) audiences.

National organisational frameworks must be compared and possibly connected, so that all entities considered for describing digitisation activities must be gathered in a common data model, including such entities as institutions, projects, physical collections, physical items, digital collections and digital items.

A common understanding of those entities must lead to the provision of interoperable resources. It will help connecting information from various countries, on various sectors and for providing interoperable descriptions of digitisation activities.

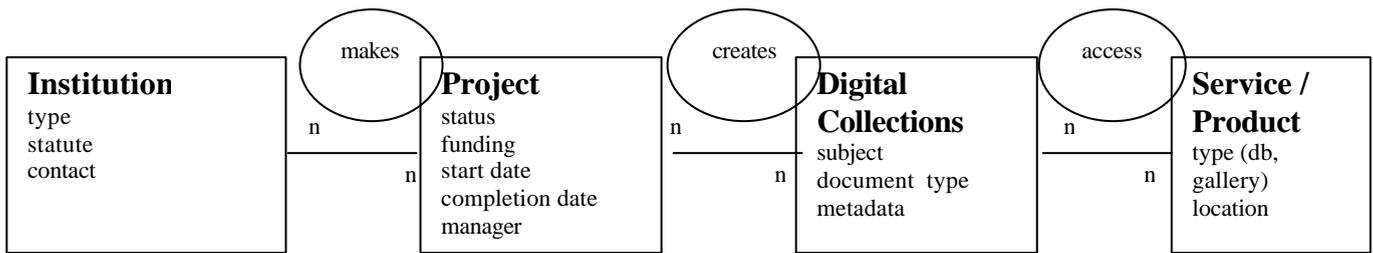
3.1.1 Some definitions

The following definitions are proposed to describe digitisation activities on a common basis :

Policies : set of priorities for actions, signed off by politicians with institutional responsibilities who provide funding for actions based upon those priorities.

Programmes : the entity which is mandated to implement the policy, and which is responsible for the management of the funding.

Data model for representing digitisation activities

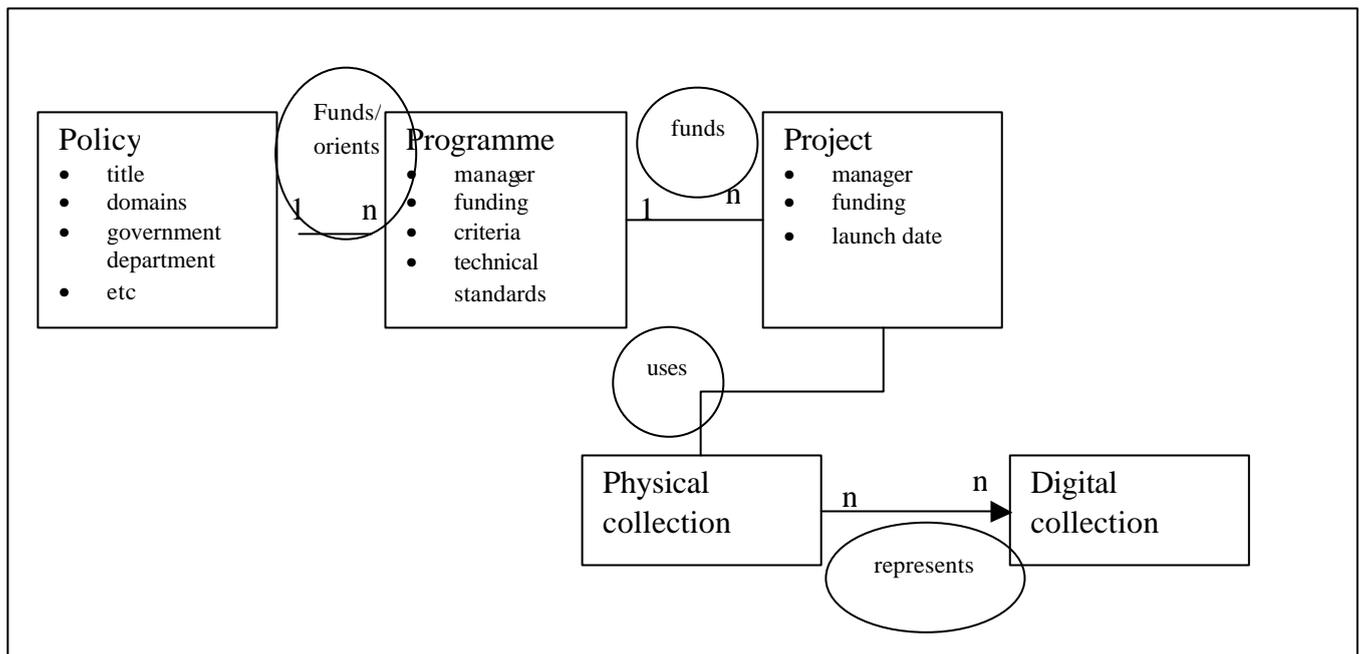


The above model shows the consensus on the necessary entities to represent for inventorying digitisation activity. However, digital content creation must be considered in a larger scope, including relationship with programmes, physical collection, the possibility to share a common finding-aid with the physical objects

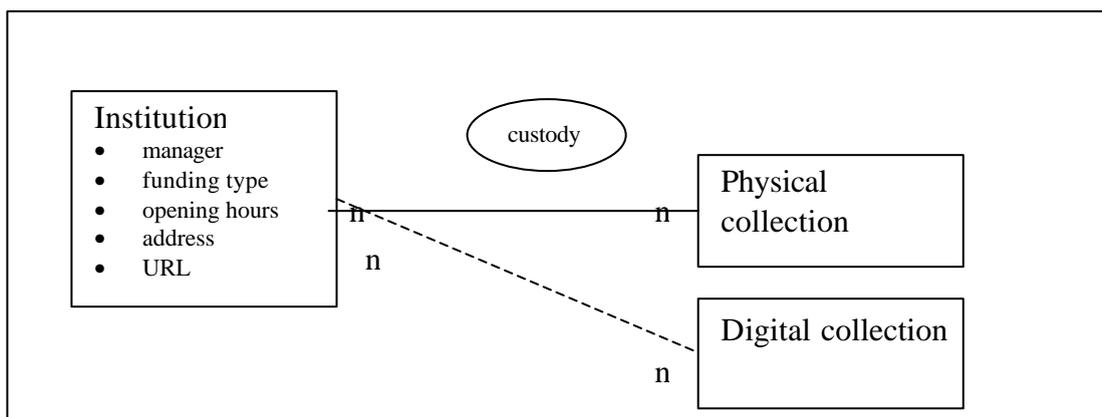
3.1.2 Project description

Projects : receive the money to carry out actions. They include the digitisation activity within one or more institutions. They have a start date and an end date, a clear defined budget, defined goals and operational objectives.

A digitisation project creates one or more digital collection(s)



The institution must custody both collections or get another institution to care digital forms



3.1.3 Collection

Collections : The Dublin Core Type standard terminology includes the definition of a collection as :

“A collection is an aggregation of items. The term collection means that the resource is described as a group; its parts may be separately described and navigated.”³⁷

The DC-Collection working group, inspired by the work carried out for the Research Support Libraries Programme collection description schema also states : “The term 'collection' can be applied to any aggregation of physical or digital items. It is typically used to refer to collections of physical items, collections of digital surrogates of physical items, collections of 'born-digital' items and catalogues of such collections. Collections are exemplified in the following, non-exhaustive, list:

- library collections,
- museum collections,
- archives,
- library, museum and archival catalogues,
- digital archives,
- Internet directories and subject gateways,
- Web indexes,
- collections of text, images, sounds, datasets, software, other material or combinations of these (this includes databases, CD-ROMs and collections of Web resources),
- other collections of physical items.³⁸

To describe overall activities, the “collection” unit is usually applied, as there is no need to consider object-level description. An ambiguity exists however, in the description of collections as no distinct description is provided on virtual collections and physical collections or parts of collections processed in a single project. Also, inventories may point to virtual collections, as the overall result of the projects such as publishing products and services which provide access to the virtual collections. Digitisation projects referenced in inventories may be related to both physical and digital collections.

³⁷ Still at draft stage <<http://dublincore.org/usage/terms/dcmitype/>>

³⁸ <http://dublincore.org/groups/collections/>

The definitions mentioned above appear much larger than what is actually needed for describing digitisation activities, since the focus is on surrogates of physical objects. The present study only deals with one specific type of collections : digital surrogates of physical items. This involves to take into account the relationship with the physical items, the digitisation process and features of the digital collection. A physical collection may not be digitised as a whole in a single project, and a digitised collection may refer to various physical collections. Still, there is a relation between physical and digital collections, since digitisation aims at creating digital surrogates of physical custodies. But, depending on the objective of the digitisation project, the relationship to the physical collection is more or less tight. A virtual exhibition may select a few pieces of work from various physical collections, however, a project launched to preserve collections may create systematic surrogates for a collection.

The whole creation process for a digital surrogate and the possibility to copy the surrogate many times leads to create or refer to a single object in many distinct places, whether for management, preservation or access. Given that the object may be each time considered in a different “group of items”, it may belong to many “collections”. This case already exists for physical items, but it may exist at a larger scale for digital items. Collections may therefore be already re-composed : a project transforms an aggregation of items, then that aggregation of items may be divided and / or gathered with others for storage and management purposes. Part of it may be mentioned in a given gateway, it belongs to the group of items mentioned in that gateway. Finally various Websites may use part of those items. The collection, in this case appears as a very modular and unstable concept. Still, there is a need to describe datasets in order to manage content created.

This a great issue such as demonstrated in the British study on the various definitions of what is a collection in archive, library, museum, Web context ... Collections or fonds have different criteria according to the sector which is considered. Taking into account Web references, the concept may also change. “Almost always, the collections of ‘archives’ delineate themselves: they relate normally to a specific person or institution. The collections of ‘libraries’, on the other hand, should be delineated by the purpose for which the library exists: by the information needs of their user populations. In contrast, the collections of ‘museums’, are - again - delineated somewhere between those two extremes. They can perhaps best be conceived as a bridge between the collecting desires and interests of specific people or institutions; and the information needs - in the widest sense - of those who might use the resulting collections”³⁹. The UKOLN study also takes into account when and how collection level descriptions are used. The report is not focused on digitised collections. It mentions the possibility to manage library collections with the conspectus methodology, “as a means of providing a map of library collections and collecting policies with individual libraries or among a group of libraries”, but also as a strong but time-consuming and very long management tool (for physical collections). The overall conclusion of that work is the absence of real solution to the cross-domain approach and the modification of traditional efforts to gather cross-domain descriptions in the Web environment. The ROADS project, among other purposes, aimed “to participate in the development of standards for the indexing, cataloguing and searching of subject-specific resources”⁴⁰. It has therefore created templates for “services”, also used for describing on-line collections, until the work on collection level descriptions implements a collection template. The project is not developed anymore. But, it shows very well the necessity to take into account both works on physical collections and

³⁹ Andy Powell, “Collection Level Description - a review of existing practice”, 1998, <<http://www.ukoln.ac.uk/metadata/cld/study/>>, p. 8

⁴⁰ <http://www.ukoln.ac.uk/metadata/roads/what/>

works carried out for subject gateways in order to find all necessary concepts and set a logical description of the content creation chain.

According to the type of institution which is considered, whether it is a large or a smaller heritage institution, the granularity level of descriptions may be different. Indeed, the French National Library for example has a workflow system to manage every stage of a digitisation project. That system is not public and they did not start it from the beginning, as a single collection of the digitisation programme. It is then difficult for them to index collections already digitised, as they considered item-level digitisation. The system they make available on the Web contains item-level descriptions, connected to the internal item-level management system⁴¹. The Réunion des Musées Nationaux in France is an agency in charge of digitisation and selling digital surrogates of French national museums. They are not the custodian of the physical collections, so that there is no reference to physical collections when they launch a digitisation project. Institutions in charge of digitising may have a very different role in managing physical collections, digital collections and the projects.

The information which is possible to gather also depends upon the type of inventorying method. Indeed a survey is quite different from the feed-back on projects funded by a programme or the projects which are presented for funding. Indeed, a large institution which answers a questionnaire on collections already digitised, make new descriptions, with no immediate use, then the work entailed has no point. However, information on on-going projects may exist for publishing or (more often) management use. The main issue is then to find where and when it is possible to take most advantage of a survey and include collection description in the digitisation process. The fact that, in various existing systems, most collections are identified to a single project (1 to 1 relationship), shows a clear orientation towards using the concept of collection only when launching a digitisation project (or other type of bulk processes), unless in the archival field where descriptive systems are based on collections and sub-collections.

Experiments have considered pragmatic approaches. The French Ministry of Culture has left the decision of defining collections to the persons in charge of projects. Projects and collections are described in the same entity. Persons in charge of digitisation projects usually refer to the material being digitised as the collection or part of a collection and they therefore declare a collection as the material being digitised with a certain homogeneity (same project or same digitisation process, when a collection must be divided because of the heterogeneity of physical formats).

If the data collection on digitisation activities is oriented towards the programmes frameworks, then the description in a single entity of projects and collections appears indeed logical. If no other proper solution is identified for setting a comprehensive cross-domain definition of a collection, then there is a clear interest in defining that collection according to its definition in the digitisation process and/or according to the service or product therefore created.

3.1.4 Services and products

The Dublin Core Type also has a standard terminology which includes a **service** as : “A service is a system that provides one or more functions of value to the end-user. Examples include: photocopying service, a banking service, an authentication service, interlibrary loans, a Z39.50 or Web server.”⁴²

⁴¹ <http://catalognum.bnf.fr/>

⁴² Still at draft stage <<http://dublincore.org/usage/terms/dcmitype/>>

The sustained activity implies ongoing funding and/or committed central budget. In the case of digitisation, main focus is on services and products to access collections, since this allows to discover resources. For example, a Website is a continuous service to access collections of items. A local database can also provide a different way of accessing the same collection (another service related to the same collection). Usually, inventories focus on available collections, therefore on the possibilities to access them. Even though existing material does not allow to fully describe services and products which provide access to a collection, a common platform should absolutely take it into account. Only on-line location is usually mentioned in this section. However, it is important to anticipate the multiplication of products based on a collection and to enable the access to services/ products descriptions.

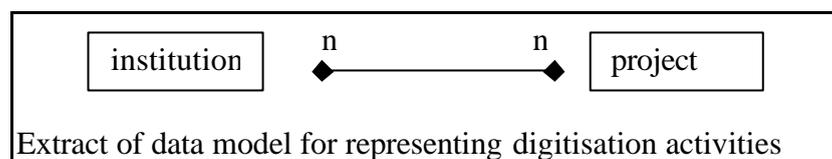
3.1.5 Institutions

Existing systems also refer to institutions in charge of the digitisation project, in charge of administrating the physical collection or in charge of administrating the digital collection. The RSLP collection description model includes for example the creator, the producer, the collector, the owner and the administrator as “agents”, but at collection level, only the owner and the collector are involved in collection management, the administrator administers the “location”.

Theoretically, various institutions can be involved in each of those roles. On the other hand, each of those roles can be handled by distinct institutions. However, the institution(s) which is(are) of interest in the scope the Minerva activity is(are) the one(s) which receive(s) or invests the funding to carry out the digitisation project, although it may be possible to consider other types of institutions linked to a digitisation project (maintenance, content owner...).

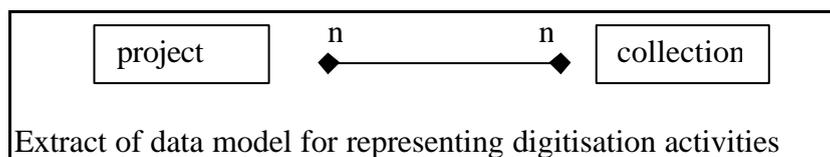
3.1.6 The relationships n to n

The relationship between those entities designs the work process from decision-making to final service/product. However, the central system may not take into account all possible relationships, which means that part of work processes (such as ownership) are not the focus of such a tool.

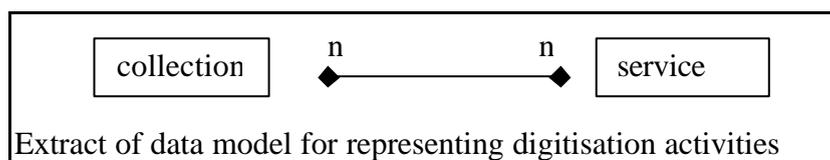


Various institutions can be implied in a digitisation project with different roles, content owner, custodian of physical objects, institution which launches the initiative (which can be the one which build the service), the administrator of the collection ... In the case of the Minerva project, the institution which is of interest is the one(s) which receives (or manages on proper budget) the money to carry out the digitisation process.

All the same, a single institution may receive money to carry out various digitisation projects (or have another role in various digitisation projects).



It is possible to consider that a collection may not be digitised as a whole, within a single project and various projects lead to the constitution of a collection. All the same, a project may aim at digitising various collections.



A collection may be accessed through various services and products, for example a CD-Rom, a learning resource and a general database on regional heritage.

A service can provide access to various collections, defined according to its purpose. All the material to which a service provides access may be considered, in certain cases as a collection whose unity is location, metadata ... but this collection may be constituted of various datasets (HasPart / IsPartOf relationships⁴³). A hierarchical structure may be introduced in collection entities.

3.2 Common descriptions

In order to describe the above entities, the reference to international standards is highly desirable, for both metadata and terminologies, at least for mapping existing systems.

Common descriptions must be the result of analysis of existing systems and allow to set guidelines for implementing new systems.

3.2.1 Metadata standards

In existing systems, the following types of information have been identified :

Digitisation projects

- *project objectives (outcomes and selection criteria)*
- *project funding (sources and share)*
- *project status (completed, on-going, planned and funded)*

Digital collection/ Physical collection / Services

- *documentary information (author, title, subject ...)*
- *coverage (geographic, time)*
- *type of physical resources (related to skills development on specific types of material)*
- *language of collection*

⁴³ see RSLP and Dublin Core working group on qualifiers of “relation” element.

- *copyright on documents*
- *audience*
- *relation to other material*
- *technical and documentary standards*
- *external references to this collection (in a catalogue or a gateway)*

Institution in charge of collection custody

- *contact information*
- *institution type (library, archive...)*
- *responsibility and statute (public, regional scope...)*

Description itself

- *the person in charge of describing digitisation activity*
- *last update*

The aim of interoperability between national systems leads to refer to existing metadata standards for describing all entities : institution, service, project and collection. The RSLP model has led to the definition of schemas to describe : Agent, Collection and Location. These schemata are also used by the New Opportunities Fund and the TEL project ⁴⁴.

- The Agent entity does not take into account the scope of an institution or the type of institution considered which is a key element when managing cross-domain initiatives.
- The RSLP Location entity could partially be considered as “service” or product entity for digital collections. It must however be analysed in the specific context of the access to digital collections⁴⁵.
- The Collection entity is a very good basis for describing collections but no real analysis of the elements applied to digital collections was undertaken in the development of the RSLP schema. The Minerva initiative is only interested in that specific type of collection. Such an element as Custodial History is very much related to physical collections.

Another important work has been carried out by the Dublin Core Metadata Initiative⁴⁶, on both Agents and Collections. But, unfortunately, none of those standard Element Sets have been completed yet.

The DC-Agents is also a way to qualify the Contributor, Publisher and Creator elements of the standard DCMES. The DC-Agents must provide a standard set of elements for describing “a person (author, publisher, sculptor, editor, director, etc.) or a group (organization, corporation, library, orchestra, country, federation, etc.) or an automaton (weather recording device, software translation program, etc.) that has a role in the lifecycle of a resource.”⁴⁷. The elements it contains fit quite well with the existing descriptions used for digitization activities. But no general agreement has been reached for the time being.

⁴⁴ <http://www.europeanlibrary.org/> but the use of RSLP schemas is for describing the whole contribution of an institution. Given that the TEL project gathers European national libraries, the description of an institution’s holding is very large.

⁴⁵ see minutes of Paris meeting January 24th, 2003 <http://www.minervaeurope.org/intranet/wp.asp>

⁴⁶ see DCMI Agents working group <http://dublincore.org/groups/agents/> and DCMI collection description working group <http://dublincore.org/groups/collections/>

⁴⁷ DC-Agents temporary working definition

Draft DC Agent Element Set⁴⁸

Element: Name
 Element: Scheme
 Element: Synonym
 Element: Type
 Element: Jurisdiction
 Element: Description
 Element: Date
 Element: Contact
 Element: Relation
 Element: Identifier

Finally, the Encoded Archival Context elements⁴⁹ on Identity, Relations (fond) and Description (type, administrative statute and location) provide the archival way of working and are coherent with the need to describe a cultural heritage institution.

The need in the Minerva context is well-defined, the suitable elements to describe institutions have been agreed independently by the working group members, with a special attention to mapping possibilities to the DC-Agents Element set and, of course, the RSLP Agent schema.

*Minerva central schema***Institution**

Identifier	
Institution name	Title
Type	Sector (archives, libraries, museums...)
Legal status	Administrative statute - Public / private / non profit
Jurisdiction	(DC Agent) Supervision, including mention of Ministry directorate for example
VCard	Contact information – Vcard standard

The contact element refers for qualification to the entities described in the vCard MIME Directory Profile (RFC 2426⁵⁰).

The Vcard standard notably contains the following elements :

TEL	fax voice
EMAIL	
ADR	pobox
	extadd
	street
	locality
	region
	pcode
	country
URL	

The way to describe institutions is actually different according to the application and the institution considered. Indeed, the supervision is important in the case of a directorate or a department of a ministry of a local community. The scope of action (national, regional) may be a relevant indicator. The statutory basis (public, private, non profit) allows the

⁴⁸ <http://www.nla.gov.au/meta/drafts/dcagent2.html>

⁴⁹ on EAC standard, see <http://www.library.yale.edu/eac/>

⁵⁰ <http://www.ietf.org/rfc/rfc2426.txt> and see representation in RDF/XML <http://www.w3.org/TR/vcard-rdf>

determination of activities related to administrative and legal frameworks, since the programmes have to determine specific measures according to the statutory basis of the institution. Finally the type of institution is an important professional indicator, specifically on custodial environment and descriptive systems applied to physical objects.

This information may not be clearly distinguished and there is some overlap between categories, according to the institution considered. The present solution to keep three categories : institution type (professional sector), legal status (statutory basis) and jurisdiction (supervision) needs to be tested.

For the description of collections, the DC-Collection is very similar to the RSLP collection description schema, and a proposal has been submitted to the DCMI committee. Notably as a result of the activity of the Minerva Working Group, the audience element is being considered for the proposal of DC-Collection. But there is a need for additional elements to describe the type of objects which have been digitised in order to identify specific competence and resources (physical material type).

The proposal for describing digitised collection is therefore very similar to the proposal to the Dublin Core and the RSLP.

The possibility of using an existing schema (such as RSLP) must obviously be encouraged. However, the point of the current work is to state the necessity to refer to commonly agreed schemata and to decide the additional elements needed to describe digitisation initiatives. It is important that the reference to existing standards be ensured.

Minerva central schema

Collection

Identifier	
Name	Collection title
Project	Collector, project which has create the digital collection
Subject	Domain covered by collection
Description	Content description (text or keywords)
Language	Language of collection
Temporal coverage	Temporal coverage
Spatial coverage	Geographic coverage
Original material type	Physical material types – original material
Digital documents type	DC :Type, including terminology
Digital formats	File formats
Standards	Available metadata standards
Illustration	Illustration, for example an image from the collection
Size and Growth	Size and growth of the collection, number of objects, place necessary for storage...
Access control, legal status and IPR	Access control is a sub-property of DC:rights in the RSLP schema. May include the legal status of a collection as well.
Has association	Related collection
Audience	
Has location	Reference to service/product

For projects, no general standard has been identified. The working group has therefore gathered and assessed key elements in use. The ROADS (Resource Organisation And Discovery in Subject-based services) templates, created for gateways to Internet resources⁵¹ contain descriptions of collections, projects, services, access (location in RSLP schema) and organizations. This system, adapted to the description of Internet resources appears interesting, both because it aims at including all Internet resources types and because it provides a quite suitable description of projects⁵². This has inspired our work on project descriptions.

Minerva central schema
Project

Identifier	
Name	Title
Status	On-going, planned, completed
Start date	Launch date
Completion date	End (planned?) date
Description	Including objectives, text or keywords
Digitisation process	Direct / indirect, through microform? Technical description
Funding	Amounts and sources
Programme	Programme funding the project (part of funding)
Institution in charge	Institution identifiers or name of institution funded for carrying out the project
Contact	Project manager Possible reference to Vcard elements
Has association	Related projects, in or out of directory

Some existing systems refer to “project objectives”, such as preservation or Web publishing ... If there is no controlled vocabulary or classification according to this criteria, then this is included in the description field. However, particularly in the design of new inventories, this should be encouraged, and joint working with the Benchmarking Workgroup has identified an initial set of controlled terms.

Finally, services and products that provide access to digital collections must match the need of wide-spread gateways to Internet resources. Content must be specified in the “collection” entity but still the Websites must be correctly described by the service entity.

The current focus is on the way this provides access to a digital collection. The DC.Type element would not be “service” but rather “virtual gallery” for example⁵³, which is much more precise in the context of digitisation initiatives.

⁵¹ The project has been abandoned, but was funded by the JISC,
<http://www.ukoln.ac.uk/metadata/roads/templates/>

⁵² see Annex 3 on Roads templates

⁵³ see DC Type standard terminology

Minerva central schema
Service / Product

Identifier	
Language	Language of service. Ex languages in which a Website is available
Type	gallery, website ...
Description	Text or keywords
Location	URL or indication
Collection contained	Reference to content
Publisher	For access services and products
Technical environment	technical components used
Technical requirements	To read content
Access conditions	If access is not free for example
Administrator	Service administrator
Maintenance	Maintenance conditions
Audience	

The audience element, attached to the collection in the proposal of DC Collection, may be more relevant in the service description (although may be necessary in both).

Digital formats may be required to describe aspects of service/product, just as physical object type is needed to describe the physical aspects of the collections. It is likely that different products or services derived from a collection are implemented in different digital formats. However, this does not necessarily indicate the file formats used for archival storage.

The Minerva central descriptions proposed above are still on-going work, being tested and discussed within the working group. The proposal by Italy to build a national inventory on the basis of the data model will, however, provide a real-life test of the model. They provide a good basis for developing a common system, since they do not exclude additional elements and only aim at being mapped to standard metadata schemata.

Following the global data model, the schema proposed retains the relation between the programme and project entities. The relation to a programme entity is also part of the benchmarking process. The relationship to a physical collection is allowed in the “relations” mentioned in the collection and project entities⁵⁴.

3.2.2 Agreement on access points

Definition of access points may depend upon the type of use of such a directory; whether this is intended to resource discovery, digital resource creation management, skills discovery...

Most common access points identified in existing systems are :

- *full text search in descriptions;*
- *material type (images, text ...);*
- *topic of content, including various vocabularies;*
- *access service type, including various controlled vocabularies (exhibits, catalogue, teaching material...);*

⁵⁴ see RSLP model of collection level description

- *institution and institution type;*
- *geographical coverage;*
- *project status.*

Taking into account the specific purpose and objectives of the common European service, access points have been defined for each type of information.

It appears important to have a modular approach of that information system. If a country is not able to provide descriptions for all elements, it should be possible to search one or several of those elements.

The following access points have been defined :

Minerva central model- access points

INSTITUTION	PROJECT	COLLECTION	SERVICE
Institution name	Project name	Name	Name
Institution type	Project status	Description	Type
Institution country	Project description	Subject	Language
		Original material types	Description
		Digital document types	
		Spatial coverage	
		Temporal coverage	

In order to provide cross-searching functionalities on various systems in Europe, the following additional access points must be provided on all entities:

GENERAL (on the file itself, which is imported from some national system)
Language (of file)
National system (provenance of description)

To ensure better retrieval functionalities, and particularly because of language heterogeneity, there is a need for creating equivalence between those fields, through controlled vocabularies. The terminology issues are both related to multilingualism issues and to original concepts used for terminologies.

All other access points with controlled vocabulary must work according to the following system :

- all fields can have multiple values (check box).
- the reference to a common controlled vocabulary is “optional”, which means that, common terminologies could be adopted, then, for each individual system it should be determined whether it is possible to map existing vocabularies to the single terminology validated in the scope of Minerva, but when no mapping system is possible, free text search on the field should replace reference to the controlled vocabulary.

As regards to access points, the working group will benefit from the on-going work carried out by the Minerva interoperability focus on cultural resource discovery through the proposal of a Dublin Core Culture.

3.2.3 Need for terminology

In order to allow efficient retrieval functionalities, harmonization or mapping tasks must be achieved, whenever possible between existing systems and formal terminologies validated for new implementations.

The terminology issue is very important, as although, existing systems use controlled vocabularies to various extents, none use a formal thesaurus. The benchmarking grid used in the Greek system, in phase I of the benchmarking campaign also uses vocabularies which must be taken into account as well.

National systems use controlled vocabularies for :

- Unesco Memory of the World
 - Institution type
 - Original material type
 - Domains
 - Language of resources

- Canadian catalogue
 - Project status
 - Language of description
 - Language of documents
 - Document types (digital)
 - Location of project, including Canadian regions
 - Subject : Dewey subject terms
 - Genre of resources (Collection, Reference resource, Thematic exhibition)

- NINCH database of Digital Humanities Projects
 - Project category (collaborative spaces, reference tools, software, numeric dataset, teaching materials, research materials)

- French national directory of digitised collections
 - Institution statute
 - Institution sector
 - Domains / subject
 - Original material type
 - Ages
 - Dates
 - Civilization
 - Geographic areas (French regions, otherwise continents)
 - Project status
 - Funding source
 - Digitisation mode / indirect transfer (microfilming ...)
 - Digital documents formats
 - Consultation mode

- Spanish IFI directory
 - Institution status
 - Geographical area
 - Domain
 - Period

- Institution location
- Countries
- NOF portal project
 - UK regions (administrative list)
 - Subjects

- Benchmarking grid

Vocabularies in use must be coherent with the benchmarking grid. This may not be very detailed but the grid used for collecting information in Greece (first phase of benchmarking) provides vocabularies for :

- Audience
- Domains covered by initiative
- Services objectives
- Projects status

By examining those vocabularies, nation specific elements have appeared. Those may be difficult to translate or to link, since they are related to a specific organisational or cultural mode.

A first agreement has been reached on the need to refer to terminologies on the following elements. All are not access points, but a special attention to access points set the priorities for those terminologies.

Minerva central model- terminologies⁵⁵

Terminology	Systems considered
<i>Spatial coverage</i>	IFI French directory NOF Portal Inventory of Canadian Digital Initiatives
<i>Temporal coverage</i>	IFI French directory NINCH NOF portal Crossroads / Cornupia terminology
<i>Subject</i>	IFI French directory Benchmarking grid Unesco / IFLA catalogue Inventory of Canadian Digital Initiatives NOF Portal Crossroads / Cornupia terminology
<i>Document types</i>	IFI French directory Benchmarking grid Unesco / IFLA catalogue Inventory of Canadian Digital Initiatives
<i>Digital document types</i>	French directory Inventory of Canadian Digital Initiatives NOF Portal DC Type terminology
<i>Audience</i>	Benchmarking grid
<i>Project status</i>	General agreement for : completed / on-going / planned
<i>Access services/type (exhibition, database...)</i>	French directory NINCH Inventory of Canadian Digital Initiatives
<i>Institution types (Archive, Libraries, Museums ...)</i>	IFI French directory Benchmarking grid Unesco / IFLA catalogue Inventory of Canadian Digital Initiatives
<i>National system</i>	Origin of the descriptive file – necessary for a common service
<i>Country of institution</i>	ISO 639
<i>Language of descriptive files</i>	ISO 639-2
<i>Language of collection</i>	ISO 639-2

When considering those terminologies, as first analysis has led to identify main difficulties :

- *On time coverage*
Time coverage appears very important but difficult to implement. There is also a confusion between proper periods and civilisations and pre-historic periods which do

⁵⁵ Existing terminologies are listed in Annex

not only refer to dates, but also to geography and subject. The French system for example considers civilisation and age, which may be very different from one country to another. However they appeared extremely important in such fields as archaeology or built heritage. Civilisation should include Egyptian, Roman or Viking civilisation. The age includes Palaeolithic, iron age ... Those elements can be related to topics or dates and they are very specific to certain domains.

To set powerful cross-searching functionalities on various systems, proper dates, even approximate can be very helpful. The NINCH database seems to use that system and to transform every period into proper dates, even approximately, so that all calculations are possible. However, this would mean to use civilization elements as keywords for example and agree on both rules to transform “Middle Ages” into similar dates, and to encode dates.

- *On document types*

These terminologies used in various systems allow to describe original material types which have been digitised. That information may help identifying competences on that specific type of document for which the digitisation process may entail similar issues. Adequate terminology is very difficult first of all because it must encompass all cultural heritage sector but not re-create sector-specific categories⁵⁶.

- *On digital document types*

Two types of information exist : document types such as defined in the DC.Type standard terminology (text, sound, multimedia, images) and the formats. The French directory uses both, the Canadian inventory records 3D objects, plain text, images... as a terminology. However, digital file formats should allow to retrieve digital document types. Still, a textual document stored in image mode can be identified thanks to the physical document type. The Spanish system only provides a free text field, which still should allow to retrieve file formats since there is no specific language problem, and few ways of mentioning a file format. Both digital document type and document format may be useful for describing collections content. The DC.type and DC.Format terminologies used in the NOF portal is going to be a UK eGovt standard – and will be compulsory for UK projects

- *On spatial coverage*

Two geographic references can be considered in a common system : geographic location of an institution and geographic coverage of a collection. Only the latter has been determined as an access point, the first one is only an access point at country level. When trying to identify collections or projects in a geographic place, we may consider divisions of a territory according to institutional organisation of State (example French department, CCAA in Spain) or cultural customs (territory with a specific name but no institutional existence, such as “pays” in France). Relevant division levels may not have counterparts : a land in Germany cannot be compared to a “provincia” in Italy, however they are the first administrative level, under country level. All the same, France usually uses two levels down country (region and department) and can possibly include “pays”, which has a cultural significance in the description. However, other systems may stay at first level down country and do not use similar granularity level for geographic area.

⁵⁶ This issue has been heavily discussed with the French working group in a national meeting of June 25th, 2003

Divisions of a territory may only be significant for management issues or precise search, however, at international level, a specific region may not be a suitable search criteria, when the territory is remote. Common references at European level include the country, possibly the first level down the country, and outside Europe, country or continent. The more remote, the larger the entity can be.

A common system may not need a great level of details on that part, local systems, for local use provide the adequate granularity level of description anyway for local use. One level down the country for European countries may be a valuable scale, other notions can be retrieved through full text search in any case.

- *On institution type*
The most important part for digitisation activities is to identify which type of institutions are leading digitisation projects, whether museums, archives... But the elements institution type, statute and jurisdiction are mixed in the Canadian system for example. This may not be a great problem assuming that multiple values are accepted.
- *On subject terms*
Internal working group in France insisted to avoid defining sector specific categories and have a single level of list (not hierarchical) but multiple values. Setting categories corresponding to a domain appears as a danger to build cross-domain systems with a separation within the system between domains. The New Opportunities Fund portal does not only contain cultural heritage collections, and its subject terminology is rather a list of gateway-like categories. They include spatial and time coverage as well.
- *On service types*
This field should refer to some type of terminology though no complete terminology is currently used and identified. Ad hoc terminology can be extracted from existing material.

For national systems, guidelines should include the possibility to use existing terminologies but, for cross-system retrieval functionalities, any new terminology should provide equivalence to existing one(s).

The proposed schema are mostly an expression of the RSLP schema compared to existing material for specific description of the digitisation activities. The principles adopted for building a common system are non mandatory elements, as long as the reference to a description makes sense.

The metadata model must be tested on existing material, metadata from existing systems must be mapped to the central system for Minerva service and display functionalities and access points must be assessed by the working group.

3.3 Assessing interoperability of existing content

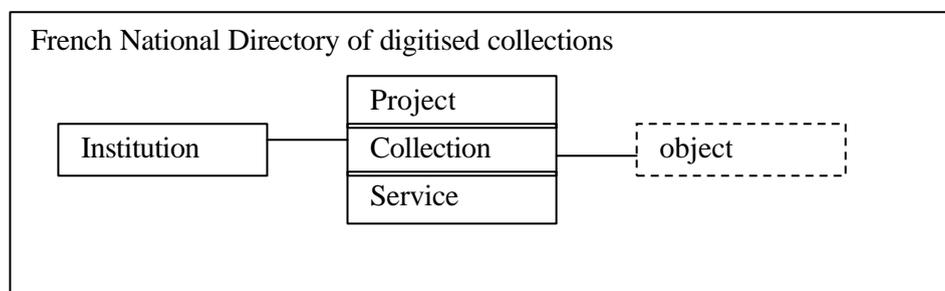
In order to validate the model and assess metadata and terminology issues, the working group has approved a strategy to gather existing material from various systems and to map them to the proposed central schema of Minerva. Existing material must be used to assess relevance of material according to available elements. But, the main problem encountered with existing material was that the functional entities were not equally identified, separated and described. The work carried out to integrate that material into a single framework must demonstrate the relevance of the model considered and minimum necessary data.

Material has been gathered from Sweden, the United Kingdom, France, Spain and Italy which has proposed the mapping to the Italian Digital Library database. The first exercise has been to gather a sample from each system, then include them in the defined model, finally map metadata. Six types of descriptions have been considered.

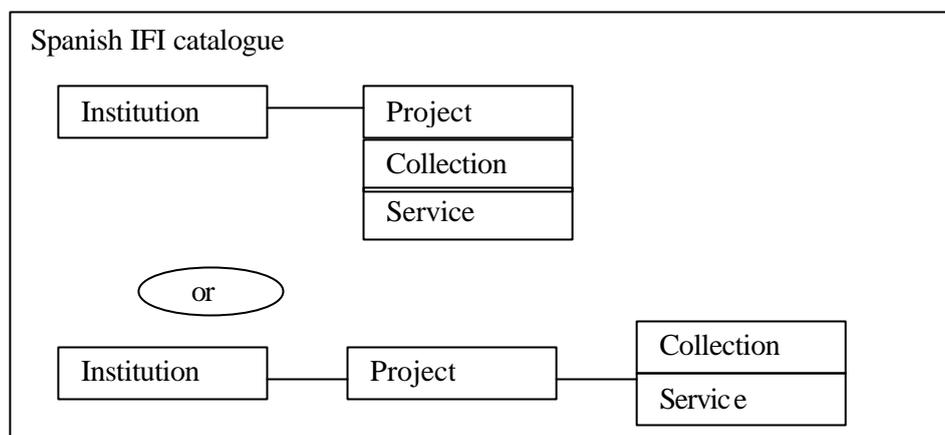
- *French directory*
- *Spanish IFI directory*
- *British Library survey*
- *New Opportunities Fund portal*
- *Italian Digital Library*
- *Swedish Web page (from 1999 survey)*

The diversity of structures and focus has made it difficult to well identify the entities being described.

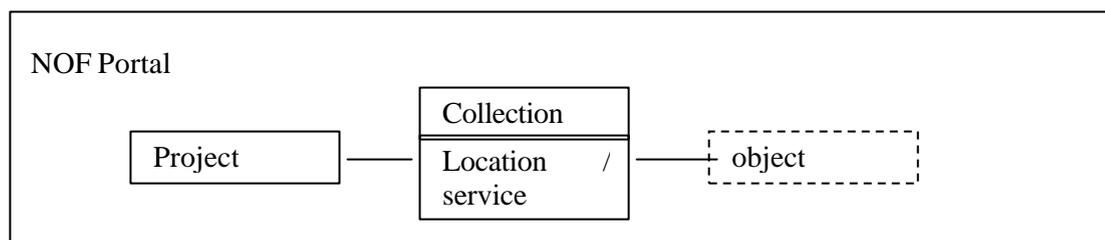
Entities described in national systems



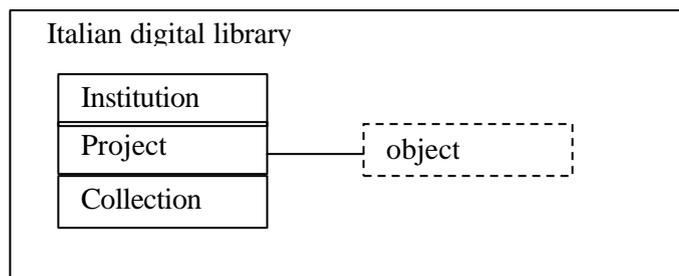
The French directory contains two entities, and, in some case, a link to the query to a national database, providing access to the online collection.



The Spanish IFI system distinguishes a project and a collection, only when various collections are digitised within a single project.



In the NOF portal, an OAI harvesting service should gather objects' metadata related to projects in the future.

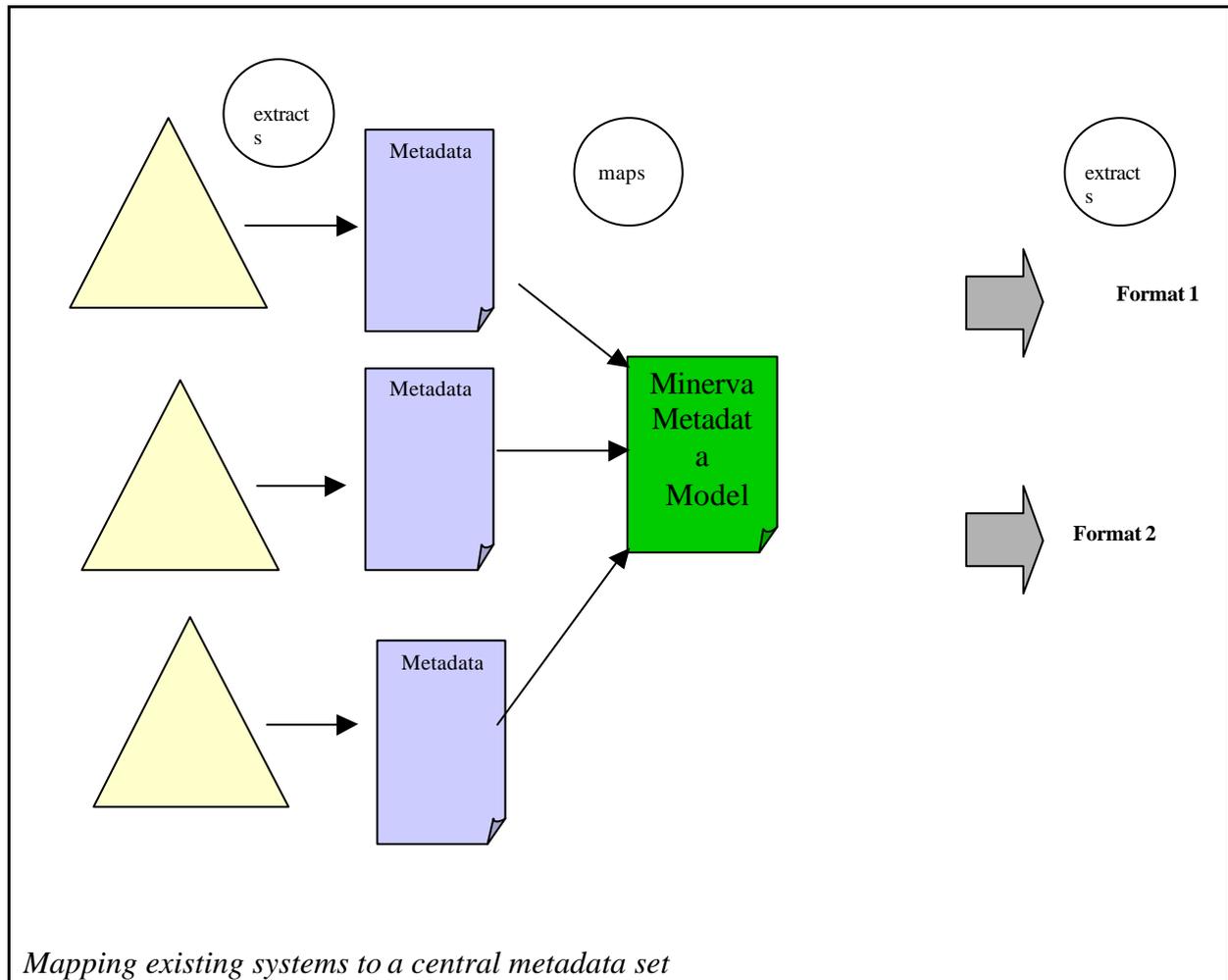


The Italian digital library actually manages projects carried out to provide material to a central database of objects.

Given the diversity of existing material and possible orientations of individual systems, it appears necessary to set up a modular system, which allows to inventory initiatives without making available all entities descriptions (for example, the only description of a service, not related to a project....).

To include the description of an entity, a minimum file can be determined, including mandatory elements, without which, the description does not make sense in the context of an inventory of digitised collections in Europe. Given that the inventory has a first objective to allow the identification of digitisation initiatives, then mandatory elements must be those allowing the identification of an initiative : an identifier such as a title or name and access points.

The clear identification of entities then led to the separation of metadata according to the data model agreed within the Minerva working group. Then processes to map descriptions shall be defined. Mapping task must provide a proof of concept on possible central schema and have an overview of the result of a common service.



This mapping task has included material gathered in the scope of benchmarking exercise phase I. Some elements, shared with benchmarking grid allow to avoid duplication of efforts. Mapping functionalities have been designed from existing benchmarking material.

The mapping task is still on-going work⁵⁷. But it should allow to reach an agreement on the necessary elements for describing all entities.

As described above, to gather all the material, some elements shall be added, on the provenance of the description, language and source identifier. If gathering material from various sources, a question must be raised on identifiers. Indeed, internal identifiers for a specific portal on digitisation can easily be generated, but a global strategy to name entities (institutions, projects, collections, services) could be examined.

Since entities described may be different according to the focus of the system considered, a common platform must be modular. All functional entities may be described according to available information at national level. The system being set up should then be seen, as a way to record all initiatives, but coherent browsing mode may have to take into account the incompleteness of descriptions. The current work is an attempt to take into account all existing ways of recording digitisation activity.

⁵⁷ See annexes

The common system should refer to commonly agreed definitions of entities, common metadata standards and wherever possible, to equivalent terminologies. This will allow to define guidelines for inventorying digitisation activity and digitised content. Specific issues to set up a common platform must be analysed including the validation of mapping processes where needed and functional solutions to difficulties, such as data update, multilingual access and relation to other systems.

4. Conclusion

The conditions for effective interoperability of existing systems require the consideration of the real organisation of data collection structures, and the implementation of a technical framework for a common inventory service. This will take into account the observatories which gathers descriptions, information sources and manages the data collection strategy.

National structures have often focused their activity on the assessment of projects, collections management or access to individual cultural institutions' Web sites. The need to facilitate resource discovery leads to take into account services and products implemented to access resources, such as cultural Websites. This is an important focus for designing programmes framework, since they usually include the whole digitisation chain, content selection, overall activity management, competence improvement and access strategies.

European digital collections management should appear as an overall objective of Minerva. The present work and further developments of applications will lead to better define content creation strategies at national and European level and lead to coordinate the efforts to digitise cultural heritage material.

The present work underlines the different ways in which inventories of digitisation projects and digitised collections form an important focus in the definition of policies and the implementation of programmes. The need to build bridges between those applications should be defined at European level. The main difficulty is to consider all organisational frameworks and to clearly define an area, structured on programmes and sharing a common comprehension of entities implied in digitisation activities, metadata standards and terminologies.

The European coordination must cope with the difficulties identified in the present work, comprising both organisational difficulties, and hand technical issues.

The cooperation between observatories (however they are mandated) will help retain institutional support for inventories of digitised resources. It will ensure exchange of practices and experiences, notably to well define the objectives and audience of the inventory. The role of funding programmes and technical competence centres in gathering information should be encouraged in order to ensure that data is regularly updated. Digitisation programmes often aim at making resources accessible on-line and inventories of digitised resources, as projects, collections and services should allow item discovery.

A common data model, commonly agreed schemata and a common approach to access point shall also help making resources interoperable for building common services on digitisation in Europe.

In order to gather national inventories, the coordination activity must focus on supporting and accompanying national initiatives and to ensure the interoperability of systems for setting a common platform at technical level. Further work based on existing programmes and possible surveys could help supporting the European dynamics, together with other Minerva focuses.

The present study allows the definition of guidelines for launching a survey on digitised content and establishing a proper service of inventory of digitised content at national level, including quality criteria and description issues. It can therefore be extended as proper guidelines, on the one hand, and as technical specifications for setting bridges between future and existing systems to inventory digitised content.

Annex 1 National experiences in Europe

Austria

A survey exists – a platform for inventories is planned but funding unsure

A pilot study published in 2001 gives a general overview on digitisation initiatives in Austria and identifies the need for coordination also in this area:

“Entwicklung von Kenngrößen und Kriterien zur Prioritätensetzung bei der Digitalisierung der Kultur- und Wissensbestände” by Edeltraud Hanappi-Egger.- Wien 2001. (Gz.50.011/2-VIII/9/2000)

A proposal has been done for setting up a platform for inventorying digitisation initiatives but funding is still not ensured.

Belgium

Inventory planned in the museum field, together with a programme – funding unsure

Federal museums have engaged a modernization programme of 6.2 billion euros for “ancient arts and music”. The white paper on modernization includes a digitisation plan in order to prepare the anniversary of Belgium in 2005. This plan schedules an inventory of collections to digitise and the establishment of guidance principles.

Denmark

Existing directory of online cultural products and annual global reporting of funding results for information society

In the Danish context, an important example is the Culturenet Denmark (<http://www.kulturnet.dk/en/omknet8.html>) inventory of existing and on-going digitisation and dissemination projects, including an overview of the projects.

An annual publication, “*Denmark’s IT status 2002*”,

[http://www.videnskabsministeriet.dk/cgi-bin/doc-](http://www.videnskabsministeriet.dk/cgi-bin/doc-show.cgi?doc_id=116190&leftmenu=PUBLIKATIONER)

[show.cgi?doc_id=116190&leftmenu=PUBLIKATIONER](http://www.videnskabsministeriet.dk/cgi-bin/doc-show.cgi?doc_id=116190&leftmenu=PUBLIKATIONER) shows both the present state of development in the Information Society, outlining new policies, and listing relevant on-going projects, including projects within digitisation of cultural and scientific content.

Finland

Many activities but no general reporting

In Finland, digitisation is organised by great national institutions in their sector : Helsinki University Library (National Library of Finland), National Board of Antiquities, National Archive Service, Finnish National Library and the Ministry of Education.

In the past few years, the number of digital and web museums and exhibitions has risen considerably, but there are few significant digital inventories available to the public.

France

**An inventory attached to a programme and extended to other digitisation activities, coordinated by Research & Technology Department of the ministry of culture
Off-line project management system for the National Library programme and online information at object level for documents digitised by the National library
Plan to extend the initiative to the research sector.**

The Bibliothèque Nationale de France <http://catalognum.bnf.fr/html/i-frames.htm> provides information at object-level of objects which have been digitised on the digitisation process. The National library also has a workflow system for managing digitisation projects in the scope of its own programme, but it is still offline. It is intended to become public in order to answer all people asking for not digitising twice the same material : even planned projects should be published.

The French directory of digitised collections from the French Ministry of culture, has been set up through the national digitisation programme of the French ministry of culture. Then it has been extended to all material digitised in the cultural (mainly public) sector. http://www.culture.gouv.fr/culture/mrt/numerisation/fr/f_02.htm

The Centre National de la Recherche Scientifique (CNRS) has planned a survey on digitisation in the scope of a network on digital documents. The aim is to direct research activities according to needs and opportunities.

Germany

Importance of digitisation centres which perform digitisation but no general inventories

As far as it comes to inventories of projects of digitisation of full texts or images, no comprehensive such inventory seems to be available for Germany. Checking the lists of the Deutsche Forschungsgemeinschaft and the Digitisation Centres (University Libraries of München and Göttingen) will yield a first rough overview, however.

Greece

HDC as the role of a national observatory on digitisation and a technical competence centre. It works first on benchmarking digitisation projects

Greece has set up a national observatory, the Hellenic Digitisation Committee (gathering 23 institutions, <http://www.hdpweb.org>), for coordination of digitization activity in Greece. In this framework, the HDC has also carried out a large practice of digitisation projects benchmarking, based on the qualitative grid of the benchmarking group.

The data collection process is based on a technical platform developed for that purpose which is an online form designed according to the benchmarking grid, with multilingual access functionalities. The objective was to benchmark digitisation projects. The results of this first benchmarking practice in Greece are available at <http://www.benchmarking.gr>

Ireland

An inventory being built by Ann Chomlaire as part of a digitisation programme launched by various ministries.

The Cultural Heritage Project

A national website www.askaboutireland.ie / www.askaboutireland.com is under construction which will contain an overview of national policies, programmes and projects. Pilot is available with several digitisation projects <http://www.activate.ie/toplevel/>.

This work will be carried out through local meetings, regional seminars and the use of questionnaires etc. As well as gathering information about holdings, these interactions will provide a forum for exploring the priorities and requirements of the national digitisation project.

Italy

Projects inventory in the scope of a programme for building up a virtual library but a larger inventory is planned. A national observatory based upon ICCU and ICCD.

Italy is scheduling an inventory of digitisation projects. A survey has been carried out on digital libraries and they have established guidelines for digitisation of periodicals (selection, metadata ...).

The Italian Digital Library provides access to projects <http://www.bditaliana.it/appl2/ricercad.aspx>

Netherlands

Key role of main digitisation programmes, immediate interest in process measurements – benchmarking

There is no real coordination of digitisation activities since organisations digitise individually. Funding is provided by the State, corporate funding and local communities. Main national funding organisation is the Mondriaan Foundation, and major programmes include the Memory of the Netherlands programme (<www.geheugenvannederland.nl>), Color of the Netherlands and Cultuurwijzer (<www.cultuurwijzer.nl>).

A national observatory of digitisation has been set up for the Minerva benchmarking group as a cross-sector committee involving major national organisations. The Digital Heritage Association is a very young agency which started a national inventory of digitisation projects for the purpose of benchmarking projects practices and disseminating best practices with quantitative and qualitative data. The benchmarking approach is related to projects and programmes but the government wants to include policies.

Public access to the database will be provided later so as an overview of the material already digitised and the IPR approach.

Spain

Science and Technology department asked for an inventory. A survey has been done and a platform has been built up by a private company (Ifigenia). It will soon become public.

The Science and Technology Department (MCyT) will be contacted to start collaboration regarding activities related with Lund, as the project of building the “Cultural“ Portal for Spain : - Patrimonio.es – (Heritage.es) of cultural Heritage could rely.

As stated before, the Science and Technology Department (MCyT) has started a Profit project where a private company (Ifigenia) will develop a first version of the inventory of Digitisation projects.

Sweden

The National Archives have a leading role to build up a cross-sectoral platform (ALM) together with Kulturrnet. A survey of digitisation projects exists but it is outdated. A more complete and cross-sectoral inventory service will be built up in the scope of a global process to gather good practices.

In 1999 CultureNet Sweden made an inventory on digitising projects in archives, libraries and museums. About 200 different kinds of projects were found - some very small, others very big. This first attempt will serve as a base for a national inventory database of on-going projects within the Minerva-project. Project descriptions are very basic but the list is publicly available at the following address <http://www.kultur.nu/rappporter/digitaliseringsprojekt.html>. It includes title, link, short description and language(s).

The Culturenet platform also provides many information on online cultural heritage resources in all sectors.

Together with the good practices reviewing effort initiated in the framework of the Minerva project, the National archives, the ALM cooperation group and Culturenet will set up a formal system to inventory digitisation projects.

United Kingdom

Existing outdated survey, a specialised platform, various programmes, including the New Opportunities Fund which is setting up a platform for reporting activities (Projects and collections). Resource agency as an observatory (does not perform itself but coordinates actions).

NOF portal : Currently in development is a portal to projects funded through the NOF-digitise programme. This adopts an open standards approach, and has been launched in March 2003, <http://nof.stridebird.com/>. This could be a platform for continued development. This development is being undertaken in parallel with developments in MINERVA.

TASI for images <http://www.tasi.ac.uk/imagesites/images.html>

Report "Sources of Digital Information" (1996, <http://www.ukoln.ac.uk/services/papers/bl/> by Mark Fresko, A Report for The British Library Research & Development Department).

Annex 2 RSLP Collection description schema

<http://www.ukoln.ac.uk/metadata/rslp/schema/>

Collection		
Attribute	RDF property	Definition
General attributes		
Title	dc:title	The name of the collection.
Identifier	dc:identifier	A formal identifier for the collection.
Description	dc:description	A description of the collection.
Strength	cld:strength (sub-property of dc:description)	An indication (free text or formalised) of the strength(s) of the collection.
Physical Characteristics	dc:format	The physical or digital characteristics of the collection.
Language	dc:language	The language of the items in the collection.
Type	dc:type	The type of the collection.
Access Control	cld:accessControl (sub-property of dc:rights)	A statement of any access restrictions placed on the collection, including allowed users, charges, etc.
Accrual Status	cld:accrualStatus (sub-property of dc:description)	A statement of accrual policy (closed, passive, active, partial/selective), accrual method (purchase, deposit) and accrual periodicity (closed, irregular, periodic).
Legal Status	cld:legalStatus (sub-property of dc:description)	A statement of the legal status of the collection.
Custodial History	cld:custodialHistory (sub-property of dc:description)	A statement of any changes in ownership and custody of the collection that are significant for its authenticity, integrity and interpretation.
Note	cld:note (sub-property of dc:description)	Any general information about the collection.
Location	cld:hasLocation (sub-property of dc:relation)	The identifier for the physical or online (digital) location of the collection.
Subject		
Concept	dc:subject	A concept (keyword) of the items in the collection.
Object	cld:objectName (sub-property of dc:subject)	An object name associated with the items in the collection.
Name	cld:agentName (sub-property of dc:subject)	An personal or corporate name associated with the items in the collection.
Place	dcq:spatial (sub-property of dc:coverage)	The spatial coverage of the items in the collection.
Time	dcq:temporal (sub-property of dc:coverage)	The temporal coverage of the items in the collection.
Dates		
Accumulation Date Range	cld:accumulationDateRange (a sub-property of dc:date)	The range of dates over which the collection was accumulated.
Contents Date Range	cld:contentsDateRange (a sub-property of dc:date)	The range of dates of the individual items within the collection.
Associated agents		
Collector	dc:creator	The identifier for an agent who gathers (or gathered) the items in a collection together.
Owner	cld:owner	The identifier for an agent who has legal possession of the collection.
External relationships		
Sub-collection	dcq:hasPart (sub-property of dc:relation)	The identifier or name of a second collection contained within the current collection.
Super-collection	dcq:isPartOf (sub-property of dc:relation)	The identifier or name of a second collection that contains the current collection.
Catalogue or description	cld:hasDescription (sub-property of dc:relation)	The identifier or name of a second collection that describes the current collection (for example, the catalogue for the current collection).
Described collection	cld:isDescriptionOf (sub-property of dc:relation)	The identifier or name of a second collection that is described by the current collection.
Associated collection	cld:hasAssociation (sub-property of dc:relation)	The identifier or name of a second collection that is associated by provenance with the current collection.
Associated publication	cld:hasPublication (sub-property of dc:relation)	The identifier or name of a publication that is based on the use, study, or analysis of the collection.

Location		
Attribute	RDF property	Definition
General attributes		
Name	dc:title	The name of the location.
Identifier	dc:identifier	A formal identifier for the location.
Access Conditions	cld:accessConditions	Hours of access, classes of permitted user, etc.
Held collection	cld:isLocationOf (sub-property of dc:relation)	The identifier for a collection held at this physical or online (digital) location.
See also	cld:seeAlso (sub-property of dc:relation)	The identifier of a resource that provides further information about this location (typically the URL for an organisational home page).
Associated agents		
Administrator	cld:administrator (sub-property of dc:publisher)	The identifier for an agent who has responsibility for the physical or electronic environment in which the collection is held.
Physical location		
Postal address	cld:address (sub-property of dc:identifier)	The full postal address for the physical location of the physical collection.
Post/zip code	cld:postcode	The post code or zip code for the physical location of the collection.
Country	cld:country	The country in which the collection is physically located.
Online location		
Locator	cld:locator (sub-property of dc:identifier)	The online location (URL) of an online (digital) collection.
Agent		
Attribute	RDF property	Definition
General attributes		
Name	vcard:fn	The name of the agent.
Identifier	dc:identifier	A formal identifier for the agent.
Organisation name	vcard:org	The organisational name of, or affiliated with, the agent.
Role	vcard:role	The role (typically an organisational role) fulfilled by the agent.
Telephone number	vcard:voice (sub-property of vcard:tel)	The telephone number of the agent.
Fax number	vcard:fax (sub-property of vcard:tel)	The fax number of the agent.
Email address	vcard:email	The electronic mail address of the agent.
Agent History	cld:agentHistory	An administrative history of, or biographical details on, the agent.

Annex 3 ROADS templates

<http://www.ukoln.ac.uk/metadata/roads/templates/>

Project

ROADS template field	Notes
Template-Type:	PROJECT
Handle:	Automatically assigned
URI-v*:	Usually an URL.
Project-Acronym:	Acronym
Short-Title:	Short title of project
Title:	Full project title
Alternative-Title	Alternative form of title
Description:	Free text description or abstract of the project.
Programme:	The programme under which the project is funded.
Programme -Area:	Any part of programme which the project is part of.
Lead (ORGANIZATION CLUSTER)	For the lead-organisation for the project. See ORGANISATION cluster.
Partner (ORGANIZATION CLUSTER)	For the project partners. See ORGANISATION cluster.
Project-Manager (USER CLUSTER)	For the project-manager. See USER cluster.
Project-Contact (USER CLUSTER)	Contact details for the project. See USER cluster.
Project-Assessor (USER: CLUSTER)	For the project assessor.. See USER cluster.
Keywords:	Appropriate subject keywords.
Subject-Descriptor-Scheme-v*:	The scheme used in the Subject-Descriptor field.
Subject-Descriptor-v*:	A subject heading or classification number
Start-Date:	Start date of project.
End-Date:	End date of project.
Funding:	Funding information.
To-Be-Reviewed-Date:	Automatically assigned
Record-Last-Verified-Email:	Automatically assigned
Record-Last-Verified-Date:	Automatically assigned
Comments:	Comments added by the 'cataloguer'.
Destination:	The database to which the record will be added.
Record-Last-Modified-Date:	Automatically assigned
Record-Last-Modified-Email:	Automatically assigned
Record-Created-Date:	Automatically assigned
Record-Created-Email:	Automatically assigned.

Collection

Attribute	Notes
Template-Type	COLLECTION
Handle	Assigned automatically
Template- Version	0.2
Title	The name given to the collection, usually by the Admin, Owner or Publisher.
Subject-v*	The topic of the collection. Typically, subject will be expressed as keywords

	or phrases that describe the subject or content of the collection. The use of controlled vocabularies and formal classification schemes is encouraged.
Description-v*	A textual description of the content of the collection.
Owner- (AGENT CLUSTER)	The person or organization that owns the collection. See AGENT cluster.
Date-v*	A date associated with the creation or availability of the collection. Recommended best practice is defined in a profile of ISO 8601 that includes (among others) dates of the forms YYYY and YYYY-MM-DD. In this scheme, for example, the date 1994-11-05 corresponds to November 5, 1994.
Language-v*	The language of the intellectual content of the collection. Recommended best practice is defined in RFC 1766.
Source-v*	Information about the resources from which the collection is derived.
Coverage-v*	The spatial or temporal characteristics of the intellectual content of the collection. Spatial coverage refers to a physical region (e.g., celestial sector) using place names or coordinates (e.g., longitude and latitude). Temporal coverage refers to what the collection is about rather than when it was created or made available (the latter belonging in the Date element). Temporal coverage is typically specified using named time periods (e.g., neolithic) or the same date/time format as recommended for the Date element.
Relation-v*	An identifier of a second resource or collection and its relationship to the present collection. This element is used to express linkages among related resources and collections of resources.
Type-v*	The category of the collection. For the sake of interoperability, Type should be selected from an enumerated list.
Notes-v*	Specialized information that cannot be accommodated in any of the other areas.
Purpose-v*	A statement of why the collection is offered and the origin and lineage of the resources held. This attribute may also describe any collection policy associated with the collection.
Identifier-v*	A string or number used to uniquely identify the collection.
Rights-v*	A rights management statement, an identifier that links to a rights management statement, or an identifier that links to a service providing information about rights management for the collection.
UseConstraints-v*	A description of any constraints or legal prerequisites for using the information resource or its component products or services. This includes any use constraints applied to assure the protection of privacy or intellectual property and any other special restrictions or limitations on using the information resource.
Logo-v*	The URI of a logo associated with the collection or the Owner of the collection. If present, this logo must be displayed by any service that provides access to the collection.
Resource- (ACCESS CLUSTER)	Information about access to the collection. See ACCESS cluster.
To-Be-Reviewed-Date	
Record-Last-Verified-Email	
Record-Last-Verified-Date	
Comments	
Destination	

Access

Attribute	Notes
Template-Type	ACCESS
Handle	Assigned automatically
Template-Version	0.1
Admin- (AGENT CLUSTER)	The person or organization responsible for collection administration (administrative contact). See AGENT cluster.
Publisher- (AGENT CLUSTER)	The entity responsible for making the collection available in its present form, such as a publishing house, a university department, or a corporate entity. See AGENT cluster.
Identifier-v*	A string or number used to uniquely identify the collection. Examples for networked collections include URLs and URNs (when implemented). Note that protocol specific URLs for Z39.50 (RFC-2056), LDAP (RFC-2255) and Whois++ (draft-ietf-asisd-whois-url-02.txt) may be used to provide host, port, database and other information necessary for connecting to network accessible collections.
AccessTimes-v*	Time ranges for mandatory or preferred access of service.
Location-v*	If there is physical access to the collection, this attribute gives information about its location, for example a postal address. This attribute may also be used to provide related information, such as wheelchair access.
AccessPolicy-v*	A description of any constraints or legal prerequisites for accessing the information resource or its component products or services.
ChargingPolicy-v*	A description of any charging mechanism in place, an identifier such a description or an identifier that links to a service providing such a description for the collection.
Destination	

Service

Template-Type:	SERVICE
Handle:	Automatically assigned.
Title:	Complete title of the resource.
URI-v*:	Identifier, usually an URL.
Admin- (USER CLUSTER)	For administrator of site. See USER cluster.
Owner- (ORGANIZATION CLUSTER)	For the owner of the site. See ORGANISATION cluster.
Sponsoring (ORGANIZATION CLUSTER)	For the site sponsor/s. See ORGANISATION cluster
Publisher (ORGANIZATION CLUSTER) Publisher-	For the publisher. See ORGANISATION cluster.
Description:	Free text description of the service.
Authentication:	Authentication information, e.g. login and password details.
Registration:	Registration information if the resource is not available for general access.
Charging-Policy:	The charging mechanism in place. Including fee structure.
Access-Policy:	Policies for accessing the service.
Access-Times:	Time-ranges for mandatory or preferred access to the service.
Keywords:	Appropriate subject keywords which apply to the resource.
Subject-Descriptor-v*:	A subject heading or classification number.

Subject-Descriptor-Scheme-v*:	The scheme used in the Subject-Descriptor field.
Short-Title:	A shorter form of Title, e.g. an acronym.
Alternative-Title:	An alternative form of Title.
Language:	The language of the service.
ISSN:	International Standard Serial Number.
Discussion:	Free text discussion of possible discussion forums appropriate to the resource.
Source:	Information about the definitive version of a resource.
Category:	Type of resource [Under discussion].
To-Be-Reviewed-Date:	Automatically assigned.
Record-Last-Verified-Email:	Automatically assigned.
Record-Last-Verified-Date:	Automatically assigned.
Comments:	Comments added by the 'cataloguer'
Destination:	The database to which the record will be added.
Record-Last-Modified-Date:	Automatically assigned.
Record-Last-Modified-Email:	Automatically assigned.
Record-Created-Date:	Automatically assigned.
Record-Created-Email:	Automatically assigned.

Annex 4 Terminologies

Terminology - Digital document types and formats

French directory

Text	ρ ASCII ρ PDF ρ TIFF ρ JPEG/JFIF
fixed Image	ρ TIFF ρ BMP ρ JPEG/JFIF ρ GIF
Map / drawing (vectorial mode)	ρ DXF
Moving picture	ρ MPEG3
Sound	ρ WAV ρ MP3

Spanish IFI catalogue

Digital formats in full text

Inventory of Canadian Digital Initiatives

Full-text
Images (photographs, maps)
Bibliographic records
Audio
Video
3-D objects
Organized links
Numerical/statistical data
Other

New opportunities Fund

AVI video
Bitmap Image
GIF image
.exe
HTML
JPEG file
Macromedia Director
Macromedia Flash
MS Excel
MS Powerpoint
MS Word
Midi audio
Mpeg audio
Mpeg video
PDF
Plain Text
PNG
Postscript
Quicktime video
Real Audio
Rich Text Format
Sun audio (au)
TIFF Image

WAV (audio)
XML
Zip

DC.Type standard terminology for digital resources

Collection
Dataset
Event
Image
Interactive resource
Service
Software
Sound
Text
Physical object

Terminology - Original material types

Spanish / French systems

SPANISH	FRENCH	ENGLISH translation
Carteles	Affiche	Poster
	Cadastre	Cadastre
	Cartes postales	Postcards
	Charte	Deed
Cerámica	Céramique	ceramic
Ciudades y pueblos		Cities and villages
Conjuntos histórico-artísticos		Historic and artistic compounds
Correspondencia	Correspondance	Correspondence
Dibujos	Dessin	Drawing
	Dictionnaires / encyclopédies	Dictionary/encyclopedia
Edificios		Building
	Sceau	Seal
Escultura	Sculpture	Sculpture
Estampas	Estampes	Print
Excavación arqueológica	Site archéologique	Archeological site
Fotografía	Photographie	Photography
Grabaciones sonoras	Enregistrement sonore	Audio recording
Incunable	Incunable	Incunabulum
	Installation	Installation
Instrumento de música	Instrument de musique	Musical instrument
	Enluminures	Illuminated manuscripts
Libro impreso	Livre imprimé	Printed book
Manuscritos	Manuscrit	Manuscript
Mapas	Carte	Map
Mobiliario	Mobilier	Tangible object
Monumentos		Monument
Numismática	Monnaie et médaille	Coins and medals
	Objet	Objects
Partituras de música	Partition de musique	Music score
Patrimonio Natural		Natural heritage
Películas	Film	Film
Periódicos	Périodiques	Serials
Piezas de orfebrería	Pièce d'orfèvrerie	Jewelry

Pintura	Peinture	Painting
Plano	Plan	Plan
Protocolos Notariales	Répertoire de notaire	Notary record book
Publicación oficial	Publication officielle	official documents
	recensements	Census of population
	Register des impôts	Tax registry
	Register des délibérations	Deliberation registry
	Registres militaires	Military recruiting registries
	Registres du commerce	Trade registers
	Registres d'état civil	Registers of birth marriage and death
Revistas	Périodiques	Serials
	Relevés archéologiques	Architecture surveys
Textiles	Textile	Textile
	Verre	Glass
Vídeo grabaciones	Video	Video

English version is only translation

Terminology Finland - Benchmark

Printed works	
	Books
	Articles
	Newspapers
	Serials
	Ephemeral material
	Yearbooks
Manuscripts	
Bibliographic records	
Numerical / statistical data	
Archival records	
	Containing personal data
	Without personal data
Notes , coins and medals	
Maps	
	Printed
	Hand-drawn
Moving image	
Images	
	Printed
	Drawings
	Engravings

UNESCO / IFLA catalogue

- **Audiovisual**
 - Image moving/still
 - moving Films
 - still Photos, Slides
 - Sound

- **Text**

Archival documents, Manuscripts, Printed documents, Maps, others

 - Archival documents
 - Letters, Correspondence
 - Manuscripts
 - Maps
 - Others
 - Printed Documents
Newspapers, Periodicals, Literature

Terminology - Temporal coverage

Spanish / French systems

SPANISH	FRENCH	ENGLISH translation
Prehistoria		Prehistory
Edad de Piedra		Rock Age
Edad de Bronce	Age de Bronze	Bronze Age
Edad de hierro	Age de Fer	Iron Age
	Paléolithique	Paleolithic
	Mésolithique	Mesolithic
	Néolithique	Neolithic
Antigüedad	Antiquité	Ancient times
Tartessos		
Epoca romana		Roman period
Edad Media	Moyen-Age	Middle Ages
Periodo Visigodo		Wisigoth period
Periodo Musulmán		Islamic Period
Reinos Cristianos		Christian Realms
Edad Moderna	Epoque moderne	Modern Times
Descubrimiento de América		America discovery
Renacimiento		Rebirth
Barroco		Baroc
Ilustración		
Época Contemporánea	Epoque contemporaine	Contemporary
Siglo XIX		XIXth century
Siglo XX		XXth century
Siglo XXI		XXIth century

The French system also has indication of the following centuries

- 8 th century	- 3 th century	3 th century	8 th century	13 th century	18 th century
- 7 th century	- 2 ^d century	4 th century	9 th century	14 th century	19 th century
- 6 th century	- 1 st century	5 th century	10 th century	15 th century	20 th century
- 5 th century	1 th century	6 th century	11 th century	16 th century	21 th century
- 4 th century	2 th century	7 th century	12 th century	17 th century	

NINCH

Uses dates

New Opportunities Fund Portal

See list of concepts / subjects

Terminology - Spatial coverage

Spanish system

Controlled list, initially with continents, some European and American countries, the Comunidades Autónomas and Provinces.

French systems

Defines all French regions, otherwise, continents

NOF Portal

See list of concepts / subjects

Inventory of Canadian Digital Initiatives

Defines Canadian Provinces, otherwise, a single category for “Outside Canada”

Terminology – Institution type

Spanish / French systems

Comparison include both statute and sector, since the Spanish IFI catalogue gathers both

SPANISH	FRENCH	ENGLISH translation
Administración Local	Local (statut)	Local administration
Administración Provincial	Regional (statut)	Regional administration
Administración Autonómica		Autonomous administration
Administración Estatal	National (statut?)	National administration
Archivos	Archives	Archives
Bibliotecas	Bibliothèques	Libraries
Centros de documentación		(Special) library
Centros de enseñanza		Education / training centre
Empresa privada		Private company
Entidad de turismo		Touristic institution
	Monuments historiques	Historic monuments
Fundación	Association (statut)	Foundation / association
Instituciones de la Iglesia Católica		Catholic church

Medios de comunicación	Cinéma, télévision, radio	Cinema, television, radio / Communication
	Musique	Musique
Museos	Musées	Museums
	Arts du spectacle	Performing arts
	inventaire	General inventory
	ethnologie	Ethnology
	archéologie	Archaeology
Otros	autre	Other

English version is only translation

Benchmarking grid

museum
archive
library
science
arts
archaeology
other

Unesco / IFLA catalogue

Archives
Libraries
Museums
Other Institutions

Inventory of Canadian Digital Initiatives

Library
Archive
Publisher
Museum
Gallery
Association
International organization
Public
University
College/Cégep
Secondary school
Elementary school
Government
Special
Medical
Law
Science
Business
Not-for-profit
Rare Book
First Nations
National
Provincial/Territorial
Municipal

Terminology – Services / products

French system

Local
Cdrom
Intranet
Extranet (local database)
Extranet (national database)
Internet (local database)
Internet (national database)

NINCH

Collaborative Spaces
Reference Tools
Software
Numeric Datasets
Teaching Materials
Research Materials

Inventory of Canadian Digital Initiatives

Collection
Reference resource
Thematic exhibition

Terminology – Subjects

Spanish / French systems

SPANISH	FRENCH	ENGLISH translation
Arte		
Artes decorativas	Arts décoratifs	Decorative arts
Bellas Artes	Beaux arts	Fine arts
	Art contemporain	Contemporary arts
Arquitectura	Architecture	Architecture
Cine y teatro		Cinema & Theatre
	Cinéma, télévision, radio	Cinema, television, radio
	Arts du spectacle	Performing art
Escultura		Sculpture
Fotografía		Photography
Literatura	Littérature	Literature
Narrativa		Novel
Poesía		Poetry
Teatro		Theatre
Música	Musique	Music
Pintura		Painting
	Objets mobiliers	Tangible objects
Ciencias aplicadas y exactas	Sciences et technologie	Science & technology / exact/ applied ?
Física		Physics
Matemáticas		Mathematics
Medicina		Medicine

Ingeniería		Engineering
Ciencias naturales		Natural science ?
Biología		Biology
Botánica		Botanic
Geología		Geology
Química		Chemistry
Zoología		Zoology
Medio ambiente		Environment (?)
Ciencias sociales		Social science
Antropología		Antropology
Filosofía		Philosophy
Psicología		Psychology
Religión		Religion
Sociología		Sociology
Geografía e historia		Geography & history
Arqueología	Archéologie	Archaeology
Etnología	Ethnologie	Ethnology
Geografía	Géographie	Geography
Historia	Histoire	History
Historia antigua		History - Ancient ages
Historia contemporánea		Contemporary history
Historia medieval		Middle ages
Historia moderna		Modern history
Prehistoria		Prehistory
Turismo		Tourism
Ciudades y pueblos	Urbanisme	Urbanism / cities & villages
Monumentos		Monuments

English version is only translation

Benchmarking grid

Domains covered by initiative (more or less content domain):

Museums
Archives
Libraries
science
arts (visual, performing etc)
archaeology
architecture
landscape
film
other

Unesco / IFLA catalogue

Ancient History
Archeology
Architecture
Art
Botany
Conservation
Dictionaries
Ecology
Economy
Education
Encyclopedia

History
 International History
 Law
 Literature
 Literature for children
 Media Studies
 Medicine
 Music
 New Technologies
 Others
 Philosophy
 Politics
 Religious studies
 Report Literature
 Science
 Sociology
 Spanish History
 Technology
 World War II

Inventory of Canadian Digital Initiatives

Uses the Dewey system

New Opportunities Fund

The scope of this programme is larger than cultural heritage.

concept	subconcept
Arts & Culture	architecture
Arts & Culture	film & video
Arts & Culture	music
Arts & Culture	reading, literature & poetry
Arts & Culture	visual arts
Arts & Culture	theatre & dance
Arts & Culture	photography
Arts & Culture	working in the arts
Environment	conservation
Environment	sustainability
Environment	countryside
Environment	farming
Environment	urban
Health and Lifestyle	Health and Lifestyle
Historical periods	Prehistoric
Historical periods	Roman & Saxon
Historical periods	Medieval
Historical periods	Tudor & Stuart
Historical periods	Georgian
Historical periods	Victorian
Historical periods	Edwardian
Historical periods	20th Century
Historical periods	WW1
Historical periods	WW2
Historical periods	Contemporary
Learning & Skills	personal development

Learning & Skills	key skills
Learning & Skills	business skills
Learning & Skills	finances
Our Past	archaeology
Our Past	buildings
Our Past	working life
Our Past	how we lived then
Our Past	transport
Our Past	migration
Our Past	local history
Our Past	family history
Our Past	famous people
Our Past	law & order
Our Past	education
Our World	coastline
Our World	geography
Our World	bio-diversity
Our World	rivers & waterways
Our World	landscape
People & Community	community information
People & Community	black & ethnic minority groups
People & Community	faith & belief
People & Community	disability
People & Community	migration
People & Community	disability
People & Community	children & young people
People & Community	older people
People & Community	volunteering
People & Community	voluntary services
People & Community	citizenship
People & Community	advice & guidance
People & Community	communities online
Politics & Government	trade unions
Politics & Government	defence
Politics & Government	historical events
Politics & Government	current affairs
Politics & Government	local government
Politics & Government	central government
Science, Nature & Invention	animals
Science, Nature & Invention	plants
Science, Nature & Invention	technology
Science, Nature & Invention	Environment
Science, Nature & Invention	marine life
Sport & Leisure	Photography
Sport & Leisure	Horseracing
Sport & Leisure	Football
Sport & Leisure	Fishing
Sport & Leisure	Swimming
Sport & Leisure	Boating
Working life	Fishing
Working life	Textiles
Working life	Mining
Working life	Glass
Working life	Quarrying
Working life	Shipping
Working life	Ceramics
Working life	food & drink

Working life	business skills
World Cultures	African
World Cultures	Australasian
World Cultures	Caribbean
World Cultures	Chinese
World Cultures	Eastern European
World Cultures	Jewish
World Cultures	Middle Eastern
World Cultures	North American
World Cultures	Oceania
World Cultures	South Asian
World Cultures	Southern & Central America
World Cultures	Western Europe

Annex 5 Draft mapping task on existing material

Mapping system for institutions

<i>Name</i>	<i>Sweden survey</i>	<i>Spain</i>	<i>Greeks - Benchmark</i>	<i>French</i>	<i>Italy</i>
	Ansvarig	Institución	Institution	Etablissement	Ente
Identifier		Identificador		id	
Last update					
title	ansvarig	Nombre de la Institución	institution	Nom de l'institution	ente_responsabile
Institution type		Tipo de institución	Institution activity field Institution Type (e.g. Cultural, Research,...)	Secteur	
Institution statute		Estatus		statut	
Supervision / scope			Directorate of the Hellenic Ministry of Culture that supervises the Institution	tutelle	
Contact information Website Contact location		Dirección Localidad CCAA URL Datos de Contacto	address director telephone number director fax number institution website	rue code-postal ville boîte -postale departement région téléphone télécopie mel	

Mapping for projects

<i>Name</i>	<i>Sweden survey</i>	<i>Spain</i>	<i>Greeks benchmark</i>	<i>French</i>	<i>Italian</i>	<i>NOF</i>
	Collection	colección	Project	Fonds	Progetti	Project
Identifier				id	identificativo	identifier
Institution in charge				Etablissement	ente_responsabile	
Last update			Date			
Name		Nombre del proyecto	Name/title (Project, programme, ..)	Nom	Nome del progetto	title
Status			status	Etat	stato di avanzamento	
Start date			start date	Date de début	data di inizio	Launch date
Completion date			completion date	Date de fin	data ultimo aggiornamento	Completion date
Description	(description)	Descripcion	Domains covered by initiative??? Not really	Sommaire, dépôt	Descrizione o abstract	description
Digitisation process		Proceso de digitalización		Mode de numérisation	tipo di digitalizzazione	
Funding		Financiación	Funding available for the initiative	financement	tipo di finanziamento	
Funding programme						

Contact		Datos de contacto	Person completing questionnaire (name) Telephone No E-mail address Fax No Address	telephone code-postal ville mel		
	Kontakt e-post				nome del contatto indirizzo e-mail del contatto	
					relazioni con altri progetti	

Mapping on collections

<i>Name</i>	<i>Sweden survey</i>	<i>Spain</i>	<i>Greeks benchmark</i>	<i>French</i>	<i>Italian</i>	<i>NOF</i>
	Collection	colección	Project	Fonds	Progetto	Collection
Identifier				id		
Name	(title)	Nombre del Proyecto		nom	Nome del progetto	Title
Subject		Materias		Domaine	Sogetto	Topics Related people
Description		Descripción		Sommaire		description
Language						language
Time coverage		Datación		Date Periode		Region
Spatial coverage		Zonas geográficas		Zone		Date
Original material type	(category) huvudrubrikerna	Tipología de documentos originales		type	materiali digitalizati	
Formats		Formato de la documentación digital		Formats documents numériques	formato del documento digitale	Types
Standards		Metadata estándares utilizados			standard metadati	
Illustration				image		
Size and growth		Tamaño y crecimiento Tipo de actualización	nb of objects	nombre d'images, de son ... numérisés		
Access control Legal status and IPR		Aspectos legales		Mode/conditions de distribution	aspectos legales	
Related collections		Proyectos relacionados		Collection associée		Associated publications
Audience			Target audience/users			
Location	form	Disponibilidad		Mode de consultation	de tipo accesso	tipo accesso

Mapping on services

<i>Description</i>	<i>Sweden survey</i>	<i>Espagnol</i>	<i>Grecs benchmark</i>	<i>Français</i>	<i>Italian</i>	<i>NOF</i>
	Collection	colección	Project	Fonds	Progetti	Collection
Identifier						
Source identifier						
Source system						
Language of file						
URL	Ytterligare information	URL del proyecto	Website	base / adresse Internet	URL del progetto	Website
Technical features		Entorno tecnológico				
Technical requirements for access		Requisitos técnicos				
Language						
Administrator						
Limitation to access						
Maintenance		Mantenimiento y Explotación				
Type						
Description						
Audience			Target audience/users			

Annex 6 List of experts having contributed to the workpackage on inventories of digitisation activities and multilingualism issues

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Annex 7 Form to add a record to the French directory of digitised collections

ORGANISATION(S)

Please fill out that form for each organisation various organisations holding rights on the described collection.

Organisation name :

Address :

Zip Code : **City :**

Telephone : +33 (0)	Fax : +33 (0)	Email : @
----------------------------	----------------------	------------------

Status: check one or more boxes

- | | | |
|--------------------------------------|-----------------------------------|---|
| <input type="checkbox"/> association | <input type="checkbox"/> regional | <input type="checkbox"/> national |
| <input type="checkbox"/> local | <input type="checkbox"/> | <input type="checkbox"/> Public institution |
| Other : | | |

Sector :

- | | | | |
|--|--|---|----------------------------------|
| <input type="checkbox"/> archaeology | <input type="checkbox"/> Fine arts | <input type="checkbox"/> ethnology | <input type="checkbox"/> museums |
| <input type="checkbox"/> archives | <input type="checkbox"/> libraries | <input type="checkbox"/> inventory | <input type="checkbox"/> music |
| <input type="checkbox"/> Performing arts | <input type="checkbox"/> Cinema, television, radio | <input type="checkbox"/> Historical monuments | <input type="checkbox"/> |
| Other : | | | |

Supervision :

- | | |
|--|--|
| <input type="checkbox"/> Ministry of culture | <input type="checkbox"/> Local communities |
| Others : | |

Information for contact

Name :

If different from organization's telephone and email address

telephone : +33 (0)	Email : @
----------------------------	------------------

DESCRIPTION OF THE DIGITISED COLLECTION

Collection title :

B/ INFORMATIONS ON THE DIGITISED COLLECTION

Description :
(mandatory)

Domain(s) : **Please check the box(es) (mandatory)**

<input type="checkbox"/> Archaeology <input type="checkbox"/> Architecture <input type="checkbox"/> Contemporary art <input type="checkbox"/> Decorative art <input type="checkbox"/> Performing art Others :	<input type="checkbox"/> Fine arts <input type="checkbox"/> Cinema, television, radio <input type="checkbox"/> Ethnology <input type="checkbox"/> Geography <input type="checkbox"/> History	<input type="checkbox"/> Literature <input type="checkbox"/> Music <input type="checkbox"/> Tangible objects <input type="checkbox"/> Seaside heritage <input type="checkbox"/> Industrial heritage	<input type="checkbox"/> Country heritage <input type="checkbox"/> Landscapes <input type="checkbox"/> Science and Technology <input type="checkbox"/> Urbanism
--	--	---	--

Documents and pieces Type(s) (mandatory)

<input type="checkbox"/> Poster <input type="checkbox"/> Cadastre <input type="checkbox"/> Map <input type="checkbox"/> Postcard <input type="checkbox"/> Deed <input type="checkbox"/> Correspondence <input type="checkbox"/> Drawing <input type="checkbox"/> Dictionary / encyclopedia <input type="checkbox"/> Legislative document <input type="checkbox"/> Audio recording <input type="checkbox"/> Print (Estampe) Others :	<input type="checkbox"/> Film <input type="checkbox"/> incunabulum <input type="checkbox"/> Installation <input type="checkbox"/> Musical instrument <input type="checkbox"/> Printed book <input type="checkbox"/> Manuscript <input type="checkbox"/> Illuminated manuscript <input type="checkbox"/> Notary record books <input type="checkbox"/> Tangible objects <input type="checkbox"/> Coins and Medals <input type="checkbox"/> Objet	<input type="checkbox"/> Music score <input type="checkbox"/> Painting <input type="checkbox"/> Event <input type="checkbox"/> Serial <input type="checkbox"/> Photography <input type="checkbox"/> Jewellery <input type="checkbox"/> Plan <input type="checkbox"/> Census of population <input type="checkbox"/> Tax registry <input type="checkbox"/> Deliberation registry	<input type="checkbox"/> Military recruiting registries <input type="checkbox"/> Trade register <input type="checkbox"/> Registers of Birth, marriage and death <input type="checkbox"/> Architecture survey (relevé) <input type="checkbox"/> Seal <input type="checkbox"/> Sculpture <input type="checkbox"/> Archaeological site <input type="checkbox"/> Textile <input type="checkbox"/> Glass <input type="checkbox"/> Video
--	--	---	---

Ages (mandatory)

<input type="checkbox"/> Palaeolithic <input type="checkbox"/> Mesolithic <input type="checkbox"/> Neolithic Others :	<input type="checkbox"/> Bronze age <input type="checkbox"/> Iron Age <input type="checkbox"/> Ancient times	<input type="checkbox"/> Middle Ages <input type="checkbox"/> Modern Times <input type="checkbox"/> Contemporary
--	--	--

Dates

<input type="checkbox"/> - 8 th century	<input type="checkbox"/> - 3 ^e century	<input type="checkbox"/> 3 ^e century	<input type="checkbox"/> 8 ^e century	<input type="checkbox"/> 13 ^e century	<input type="checkbox"/> 18 ^e century
<input type="checkbox"/> - 7 th century	<input type="checkbox"/> - 2 th century	<input type="checkbox"/> 4 th century	<input type="checkbox"/> 9 th century	<input type="checkbox"/> 14 th century	<input type="checkbox"/> 19 th century
<input type="checkbox"/> - 6 th century	<input type="checkbox"/> - 1 th century	<input type="checkbox"/> 5 th century	<input type="checkbox"/> 10 th century	<input type="checkbox"/> 15 th century	<input type="checkbox"/> 20 th century
<input type="checkbox"/> - 5 th century	<input type="checkbox"/> 1 th century	<input type="checkbox"/> 6 th century	<input type="checkbox"/> 11 th century	<input type="checkbox"/> 16 th century	<input type="checkbox"/> 21 th century
<input type="checkbox"/> - 4 th century	<input type="checkbox"/> 2 th century	<input type="checkbox"/> 7 th century	<input type="checkbox"/> 12 th century	<input type="checkbox"/> 17 th century	<input type="checkbox"/>

Others :

Civilization

<input type="checkbox"/> Egyptian	<input type="checkbox"/> Roman	<input type="checkbox"/> Precolombian
<input type="checkbox"/> Greek	<input type="checkbox"/> Gallo-Roman	<input type="checkbox"/> Khmer

Others :

Zones géographiques

<input type="checkbox"/> Alsace	<input type="checkbox"/> Champagne-Ardenne	<input type="checkbox"/> Lorraine	<input type="checkbox"/> Rhône-Alpes
<input type="checkbox"/> Aquitaine	<input type="checkbox"/> Corse	<input type="checkbox"/> Midi-Pyrénées	<input type="checkbox"/> Guadeloupe
<input type="checkbox"/> Auvergne	<input type="checkbox"/> Franche-Comté	<input type="checkbox"/> Nord-Pas-de-Calais	<input type="checkbox"/> Guyane
<input type="checkbox"/> Basse-Normandie	<input type="checkbox"/> Haute-Normandie	<input type="checkbox"/> Pays de la Loire	<input type="checkbox"/> Martinique
<input type="checkbox"/> Bourgogne	<input type="checkbox"/> Ile-de-France	<input type="checkbox"/> Picardie	<input type="checkbox"/> Réunion
<input type="checkbox"/> Bretagne	<input type="checkbox"/> Languedoc-Roussillon	<input type="checkbox"/> Poitou-Charentes	<input type="checkbox"/> St-Pierre-et-Miquelon
<input type="checkbox"/> Centre	<input type="checkbox"/> Limousin	<input type="checkbox"/> Provence-Alpes-Côte...	<input type="checkbox"/> France as a whole

<input type="checkbox"/> Other European country	<input type="checkbox"/> South America	<input type="checkbox"/> Middle East
<input type="checkbox"/> North America	<input type="checkbox"/> North Africa	<input type="checkbox"/> Far East
<input type="checkbox"/> Central America	<input type="checkbox"/> Sub-saharian Africa	<input type="checkbox"/> Oceania

Others :

C/ ASSOCIATED DATABASE

YES NO

Description :

.....

.....

.....

D/ PROJECT STATUS (Mandatory)

achieved On-going project

Year of project start : Year of achievement (planned) :

E/ FUNDING

<input type="checkbox"/> National ministerial funding	<input type="checkbox"/> Local community	<input type="checkbox"/> Sponsorship
<input type="checkbox"/> Other public funding	<input type="checkbox"/>	<input type="checkbox"/>

Others :

F/ INFORMATIONS ON DIGITISATION

Digitisation mode

direct

Indirect. detail :

- Tape recording
- Window card (carte à fenêtre)
- Audio disc
- Film

- Microfiche
- Microfilm
- Negative transparent color Phototype
- Negative transparent B&W Phototype

- Positive transparent color Phototype
- Positive transparent B&W Phototype
- Print run (tirage papier)
- Video

Autres :

Digital Documents :

Types

- Text
- fixed Image
- Map / drawing (vectorial mode)
- Moving picture
- Sound

and formats

- ASCII PDF TIFF JPEG/JFIF
- TIFF BMP JPEG/JFIF GIF
- DXF
- MPEG3
- WAV MP3

- Other format :

Other types and formats :

Digitisation

- Internal
- External

Service provider:

Number of digitised images :

Number of digitised pages :

Number of digitised hours (sound) :

Number of digitised hours (film) :

G/ CONSULTATION MODE

- Local
- CDrom
- Intranet
- Extranet (local database)
- Extranet (national database)
- Internet (local database) Address :
- Internet (national database) Name :
- Address :

Others :

H/ DISTRIBUTION MODE

- sale
- loan

Conditions :

.....

.....

.....

I/ RELATED DIGITISED COLLECTIONS

Project(s) title

J/ ILLUSTRATION(S)

Limited to 3 illustrations. Images must be in 192 x 128 pixels, at 72 dpi definition

Please mention caption, photograph and copyright :

Illustration 1 :

Illustration 2 :

Illustration 3 :

To be sent to :

Mission de la Recherche et de la technologie
Ministère de la Culture et de la Communication
3, rue de Valois – 75033 PARIS Cedex 1
Tél. : 01 40 15 84.62 - mél : martine.tayeb@culture.fr
Fax : 01 40 15 83.84

Annex 8 Spanish IFI questionnaire

Estimad@ amig@:

Ifigenia Plus está llevando un estudio sobre el Estado de la Digitalización es España., que cuenta con una subvención P.R.O.F.I.T. del Ministerio de Ciencia y Tecnología.

En el estudio se está incluyendo información sobre colecciones digitales, entre otras, de:

Bibliotecas

Archivos

Centros de Documentación

Museos

Patrimonio Mueble e Inmueble

Y se contempla una diversa tipología de formatos, imagen, sonido, video grabaciones y animaciones, texto, etc.

Si en su organización hay colecciones digitales, por favor rellene el cuestionario adjunto, o bien, indíquenos las personas o instituciones con las que debemos ponernos en contacto.

Puede enviarlo por correo electrónico a: csanchez@ifigenia.es

O por correo postal a:

Ifigenia Plus

Proyecto Estudio de Digitalización del Patrimonio

Plaza de Alonso Martínez, 3. 2º.

28004 Madrid

ENCUESTA

Nombre proyecto:

Institución

Tipo de Institución:

Materias:

Descripción:

Datación:

Disponibilidad y precio:

Tamaño y crecimiento:

Almacén y crecimiento:

Contacto:

URL:

Formatos:

Metadata y estándares utilizados

Actualización:

Software:

Entorno Tecnológico:

Proceso de digitalización:

Aspectos legales:

Tipo de financiación

Descripción de cada uno de los apartados de la Encuesta:

Nombre proyecto: Nombre del proyecto que identifica a la colección digital
Institución: Nombre de la Institución que alberga la colección.

Tipo de Institución: Museo, Biblioteca, Centro de Documentación, etc.

Materia: De 1 a 6 materias que identifiquen la colección: Literatura, Estudios Sociales, Arquitectura, Arqueología, Arte...etc

Descripción: Texto descriptivo que incluya los contenidos, lenguas, usuarios a los que va dirigido.

Datación: Fechas extremas de la colección.

Disponibilidad y precio: Indicación de si está disponible, a la venta en CD, y en caso de que conste, el precio.

Tamaño y crecimiento: Tamaño de la colección, y crecimiento estimado.
Número de páginas, de registros, de imágenes, duración en minutos, según las características de la colección.

Almacén y crecimiento: Requisitos de almacenamiento de la colección, y crecimiento estimado (en MegaBytes).

Contacto: Datos de contacto, incluyendo Persona, Dirección, Localidad, CCAA, Correo electrónico, y teléfono.

URL: Indicación de la URL para las colecciones visibles a través de Internet.

Formatos: texto, imagen, sonido, video grabación, datos(registros). Introduzca datos lo más específicos que pueda sobre los formatos utilizados.

Estándares: Los estándares utilizados para la digitalización: jpg, wav, midi, , tiff, html, mpeg, etc.

Metadata y estándares utilizados (EAD, TEI, etc.)

Actualización: Indicar si la colección es: estática (ya digitalizada y cerrada), o en crecimiento, indicando en este último caso si se van añadiendo elementos, o se corrigen y borran registros.

Software: Aplicación o aplicaciones utilizadas para la gestión de la colección y material digitalizado, aplicaciones comerciales, desarrollos a medida, etc.

Entorno Tecnológico: Descripción del entorno tecnológico, software y hardware utilizado.

Proceso de digitalización: Le agradeceríamos que introdujera información sobre el proceso de digitalización, dificultades encontradas, tanto técnicas como administrativas, etc.

Aspectos legales: Normas de utilización de la colección, política de privacidad, consideraciones sobre el copyright, propiedad, etc.

Tipo de financiación: tipo de financiación, pública, privada

Introduzca en el espacio blanco las consideraciones que desee.

Annex 9 Bibliography

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Annex 10 The Minerva Project

In December 1999 the eEurope initiative was launched by the European Commission to bring the benefits of the Information Society to all Europeans, followed in June 2000 by the eEurope 2002 Action Plan, agreed by Member States to achieve the previously defined targets. In its objective 3 (Stimulate the use of the Internet), the plan underlines the importance of content industries in creating added value by exploiting and networking European cultural diversity. To strengthen this aspect, both Member States and the Commission have the role to facilitate and ensure the availability of content for digital networks. In particular, within that objective, there is a specific action to "Create a coordination mechanism for digitisation programmes across Member States".

The content industries are indeed a fast growing segment of the European economy, and the European Commission, beginning with the Impact and Info2000 programmes and including the current eContent action, has clearly identified this sector as a priority area. The extensive cultural heritage and linguistic diversity of Europe creates the foundations for a vibrant digital content industry, able to fully exploit the opportunities offered by digital technologies. For this reason, support for digitisation of European digital content is essential, to involve the hundreds of thousands of existing museums, libraries, historic sites, arts bodies and archives. The key objective is to make more accessible and more effectively exploited the wealth of information there contained. The key objectives are:

- to make the cultural and scientific heritage more accessible;
- to exploit the educational potential of digital content;
- to create the conditions for a flourishing digital content industry.

The cultural and scientific heritage of Europe has a significant impact on its social and economical development. Digitisation of these resources becomes then a major activity for increasing and improving access of citizens to information and for preserving European cultural heritage. Furthermore the cultural diversity of Europe can receive an important boost from the availability of digital assets, which can play a crucial point in several fields: education, tourism and media industries. They can also be very effective in promoting cultural diversity and enhancing understanding of different cultural, ethnic or religious backgrounds of communities across Europe.

European countries have already invested significantly in programmes for digitising cultural and scientific content. These activities have included several areas, such as museum objects, archaeological and environmentally important sites, music and audio-visual archives, bibliographic materials, documents and manuscripts. The main challenges are now promoting the uptake of new technologies for the digitisation of cultural and scientific content, ensuring lasting accessibility and preservation, the development of new services and job opportunities. Other important objectives include strengthening the European content industry and stronger support for its co-operation with educational communities, with consequent mobilisation of material and immaterial resources.

The achievement of these goals is threatened by some constraints, creating important risk factors:

- the European content market is fragmented, limiting the growth of the sector;
- technology is rapidly changing, and the absence of widely accepted standards can generate a quick obsolescence of digitised resources;
- access and exploitation of public sector information is not homogeneous;
- the various stakeholders in the digitised content (i.e. owners of intellectual property rights, e.g. original owners, intermediaries, and end-users) have different legitimate interests;
- inadequate provision of multi-lingual content; inadequate reflection of the cultural, social and religious diversity of communities across Europe;
- insufficient co-operation between educational and cultural institutions and the content industry.

As previously underlined, the European Commission is playing an active role in promoting initiatives to support the content industries in the new technological environment: the MEDIA plus programme promotes the audio-visual sector, the eContent action - following the previous INFO2000 and MLIS programmes - promotes the use of digital content linguistic diversity in the information society. The Culture2000 Programme is also an important element for involving and making cultural actors aware of the new opportunities, since it aims to promote cultural dialogue, creativity and the transnational distribution of culture, the promotion of cultural diversity and common cultural heritage, and improving public access to culture. This interest also touches co-operation with other Mediterranean governments: for instance EUROMED and EUMEDIS are initiatives aiming at interconnecting the Euro-Mediterranean research communities and at launching pilot projects in several sectors of intervention, including multimedia access to cultural heritage and tourism, and preservation of cultural heritage. In fact, a closer contact between EU and member states' policy in this field is essential to speed up the process: actions at national level should be interconnected, and complemented by a central co-ordination of digitisation programmes across Europe to ensure wider access to Europe's common heritage.

On 4 April 2001, representatives and experts from the Commission and Member States met at Lund in Sweden to discuss these issues and to make recommendations for actions that support coordination and add value to digitisation activities in ways that would be sustainable over time. The present proposal intends to start from the conclusions, the Lund Principles, available on-line in all EU languages, endorsed by Member States and underlining risks of losing the opportunities arising from applying new technologies at cultural and scientific content for the future Knowledge Society in line with eEurope Action Plan, and the following meetings held in Brussels on 17th July and Mons on 22nd September under the Belgian Presidency, and to facilitate the adoption of the Lund Action Plan. For this reason, the Member States partners of the MINERVA project commit themselves to identify solutions in order to:

- co-ordinate their strategies and policies for digitisation of cultural content;
- provide a European dimension to their policies and programmes;
- define, exchange and disseminate good practices across the European Union;
- support the development of national and international inventories of cultural and scientific content.

Outline of the Minerva Project

The **objective** of MINERVA is to create a network of Member States' Ministries to discuss, correlate and harmonise activities carried out in digitisation of cultural and scientific content, for creating an agreed European common platform, recommendations and guidelines about digitisation, metadata, long-term accessibility and preservation. Due to the high level of commitment assured by the involvement of EU governments, it aims to co-ordinate national programmes, and its approach is strongly based on the principle of embeddedness in 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 organise an advisory Group, relying on existing actions to identify and integrate best practices in a pan-European framework, to facilitate the adoption of the Lund action plan.

The **work plan** includes activities to:

- organise work groups to provide the political and technical framework for improving digitisation activities of cultural and scientific contents, and defining a common platform;
- facilitate the adoption of the Lund principles, both in EU Member States and other European countries, to amplify the impact of the eEurope initiative;
- set-up an international Forum, and electronic publication, supporting collaboration on scientific research;
- make visible, promote and exchange information about National Policy profiles concerning digitisation;
- identify users' needs, define training schemes and develop recommendations;
- make available test-beds, defining mechanisms for evaluating models, methodologies, techniques and approaches, aiming at the selection of guidelines for harmonising activities and trying to reach agreement among Member States, on a common basis;
- implement the benchmarking framework on digitisation, able to compare and improve quality of national approaches and promote best practice across Europe;
- organise a plenary meeting every six months, hosting also thematic workshops to present and discuss results achieved by the specific work groups;
- promote concertation events open to both EU and other national projects, to create clusters of projects;
- promote dissemination and training activities at national level, acquisition of new skills and access to existing resources;
- identify Road Maps suitable for activities to be launched in the near future, to support Member States in the definition of their policy, through exchange of experience, priorities agenda and work programmes.

The direct involvement of governmental organisations intends to contribute at bringing together a wide network of research centres, cultural organisations and companies interested in digitisation aspects, to co-ordinate their activities in order to advance towards common strategic goals.