



REGNET

**Cultural Heritage in REGional NETworks
IST-2000-26336**

The REGNET System: System operation

Deliverable D9

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REGNET

Cultural Heritage in REGional NETworks

Deliverable Report D9

System Operation

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Abstract	The deliverable contains the results of the overlapping Work Areas D and E as far as these relate to the Domain and Regional management of the REGNET practical results outcome via the Cultural Service Centres. This pertains mainly to the initialisation of the service and maintenance, the deployment of the services, the documentation of the system behaviour and performance and the methodologies and documentation of the user responses.		
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Executive Summary

This document pertains to the final test, refinement and demonstration efforts carried out within the REGNET project to put the different tools, services and methodologies, developed during the project's lifetime, into practice in a real operational environment via work package 4. This operational environment concerned mainly digitising and e-Business techniques with respect to the Cultural Heritage information resources enhanced with the application of innovative techniques. As well the technological part as the information resources part are covering a very broad spectrum of research, development and information.

A pragmatic approach with parallel action lines was applied to streamline this operation. Based on the outcome of the validation phase and the additions and changes carried out at the technical and content side, two frames of reference were set up: one defined the number and status of the technical modules, another laid down, per content provider, the set of data against which the tests and demonstrations should be carried out. This resulted in 16 technical modules and 11 databases, the latter containing sets of different types of Cultural Heritage data such as object, image and text meta data, thematic texts, images, shopping data, etc. Needless to say that this provokes a combinatorial explosion.

In order to cope with this, the rather strict methodology of the previous validation phase with fixed scenarios and reporting sheets was to a large extent taken over. At the same time content providers were categorised in groups and sets of technical modules were attributed to one technical partner for coordination. All this is reflected in the description of the methodologies applied during the test and demonstration phase and the three ways in which it was done: test beds, dedicated consortium meetings and specific local sessions. In surplus of the more guided feedback reporting, a free style type of reporting was encouraged. This ended up in the production of more written feedback; often in domains where the content providers were not the primary responsables.

In parallel, as stated earlier, a whole legal construct and operational infrastructure had to be deployed to put it all in practice and, even more important, to guarantee continuation after the project's lifetime in a real business environment. This turned out to be not such an easy task, especially the lengthy legal treatment of setting up an organisational structure covering all Europe. Finally, this was solved by setting up different Cultural Service Centres (CSCs) in different European regions. All these centres have a non-profit status and are coordinated by an umbrella organisation, i.e. "CSC Europe", a European Economic Interest Group which turned out to fit the best the underlying envisaged business practices. Currently the following CSCs exist or are in the process of being established: CSC Austria, CSC Low Countries (Belgium and The Netherlands), CSC Spain, CSC Bulgaria and CSC Germany and Switzerland. Plans exist to establish CSCs in Greece and Italy.

During the validation phase we could perceive that the "technological" gap between the technical and the content providers remains important. This was confirmed during the demonstration phase. In this view, the envisaged demonstrations at the content providers sides had to be supported by dedicated consortium sessions under the supervision of the work package leaders. The consequence of this was that part of the foreseen demonstrations for external persons was shifted to more internal personnel of the content providers. De facto test and demonstration groups were formed between technical and content providers, reflecting already the CSC structures. This can be considered as the first prove of the validity of the CSC concept. All possible regulations on licences, copyrights and royalties concerning the CSCs mutually and with their members are conceptualised.

Despite the restricted time frame of the demonstration period, two iteration periods were built in. Valuable feedback could be gathered after the first period, making it possible to rectify malfunctioning and missing elements. Technical refinements by the technical partners resulted in a more integrated and smoothly running system.

During the demonstration phase and because of the special fully attended demonstrations it was possible to apply a supplementary methodology, namely "behavioural observation" for the usability evaluation and for the final assessment. This proved to be an important added value for the input for the final evaluation sessions.



What was really good to see is the fact that the demonstration phase gave rise to a set of real life cases. By this we mean finished products, based on REGNET modules, used by the public in real life circumstances. To name two of these realisations: a Picture Archive Card Catalogue and an Interactive Multimedia Production. The former concerns an integral picture archive card catalogue, including a web storyboard for external users of the card catalogue database including ordering facility, picture records in a separate picture archive platform database for internal use, thematic texts and pictures. The latter is an interactive consulting and navigational aid with rich multimedia content about Cultural Heritage treasures of art and architecture in a city and its locations. It is placed in one of the museums of the city.

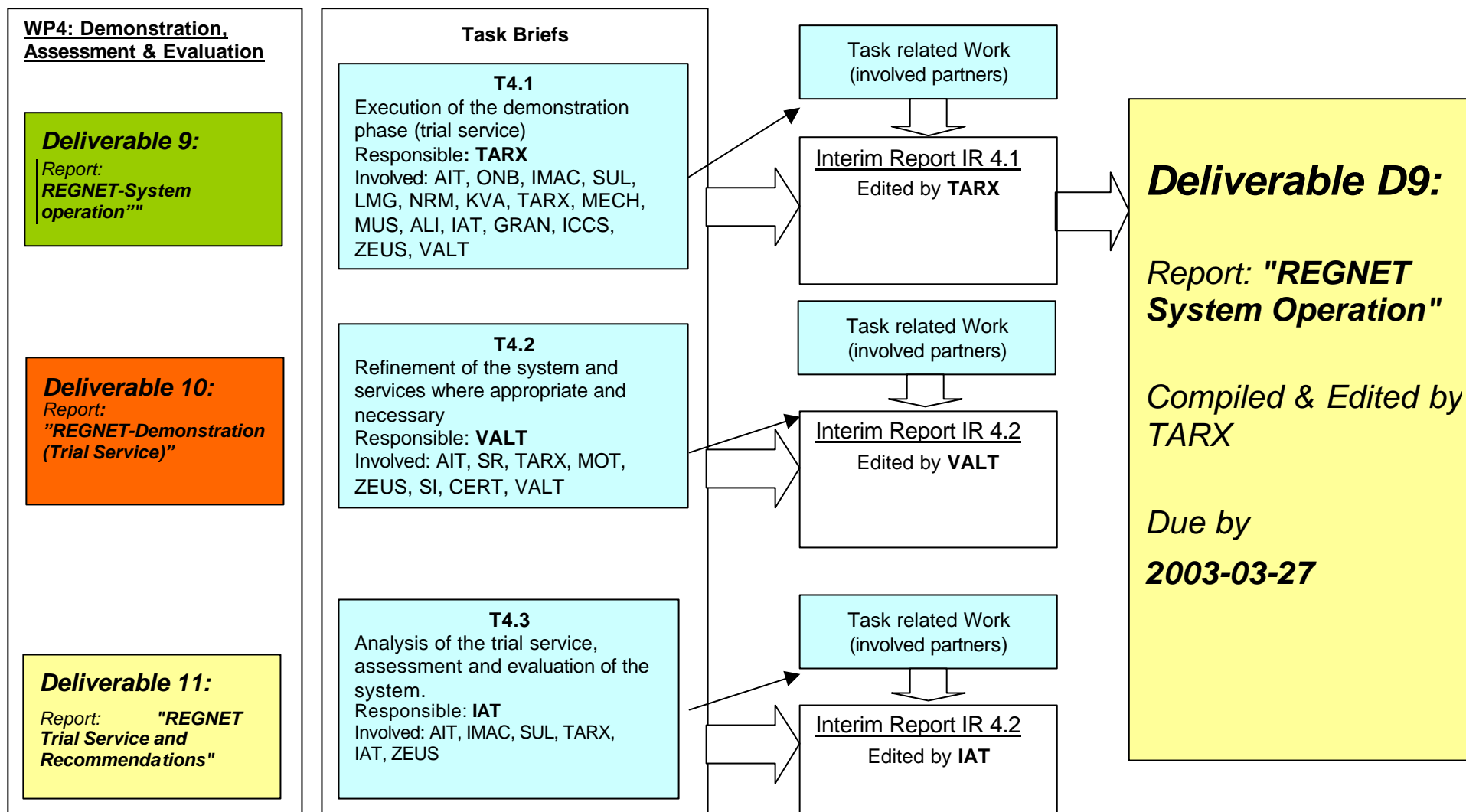
As a conclusion we can state that this phase of the project, which is also the last one, addressed a huge number of things on different domains. The project did not achieve every single objective but went a whole way in the combined domains of Cultural Heritage and Information and Communication Technologies. Not all is done but REGNET provided a firm knowledge base, basic structures to build upon in the future and already very practical results which prove that the chosen approach was the right one.



Situation

	<i>Demonstration, Assessment and Evaluation (WP 4)</i>							
	Task	Leader	Document	MM	Task	Leader	Document	MM
Execution of the demonstration phase (trial service)	4.1	TARX	IR 4.1 → D9	55				
Refinement of the system and services were appropriate and necessary	4.2	VALT	IR 4.2 → D10	20				
Analysis of trial service, assessment and evaluation of the system	4.3	IAT	IR 4.3 → D11	6				

The demonstration efforts and all operational aspects of the trial service through the Cultural Service Centres approach are handled in Deliverable 9. D10 covers the technical refinements and additions carried out following the feedback of the tests while D11 treats the final assessment, evaluation and recommendations of the whole REGNET system.





1 Introduction

This document, deliverable D09, gives a detailed reporting of the way the REGNET project carried out the operational part of the project. All aspects of the constituting parts and their application within the REGNET systems operation during the demonstration phase of the project are treated. It concerns here the products and services portfolio, the legal and regulatory issues, the referential content as a benchmark, the operational characteristics, the demonstration methodologies and experiences, the internationalisation and localisation efforts, the real life cases that were already installed and the conclusions with a roadmap for the future.

A comprehensive view of the transition from the development phase of the REGNET project towards the demonstration and operational phase, mainly represented by the establishment of "service centres" is given in figure 1.

As a reminder to position the content of this document within in the REGNET context, the following domains form the kernel of what follows:

- **Cultural Heritage** related institutions, organisations, initiatives and standardisation bodies as users and clients.
- Use of new **methodologies** for the management and navigation of information resources
- Inclusion of new **technologies** for digitising of content and application of e-Business techniques.
- Service centre approach via Casks, "**Cultural Service Centres**", as means to put it all in practice and to offer a guaranteed continuity.
- **Demonstration and test** sessions planning and organisation
- **Real life achievements**

Keywords on the technical side:

- Data entry
- Search and retrieval
- Meta data generation
- Information engineering
- Knowledge engineering
- e-Shop
- e-Auction
- e-Procurement
- e-Publishing
- Copyright



Keywords on the content side:

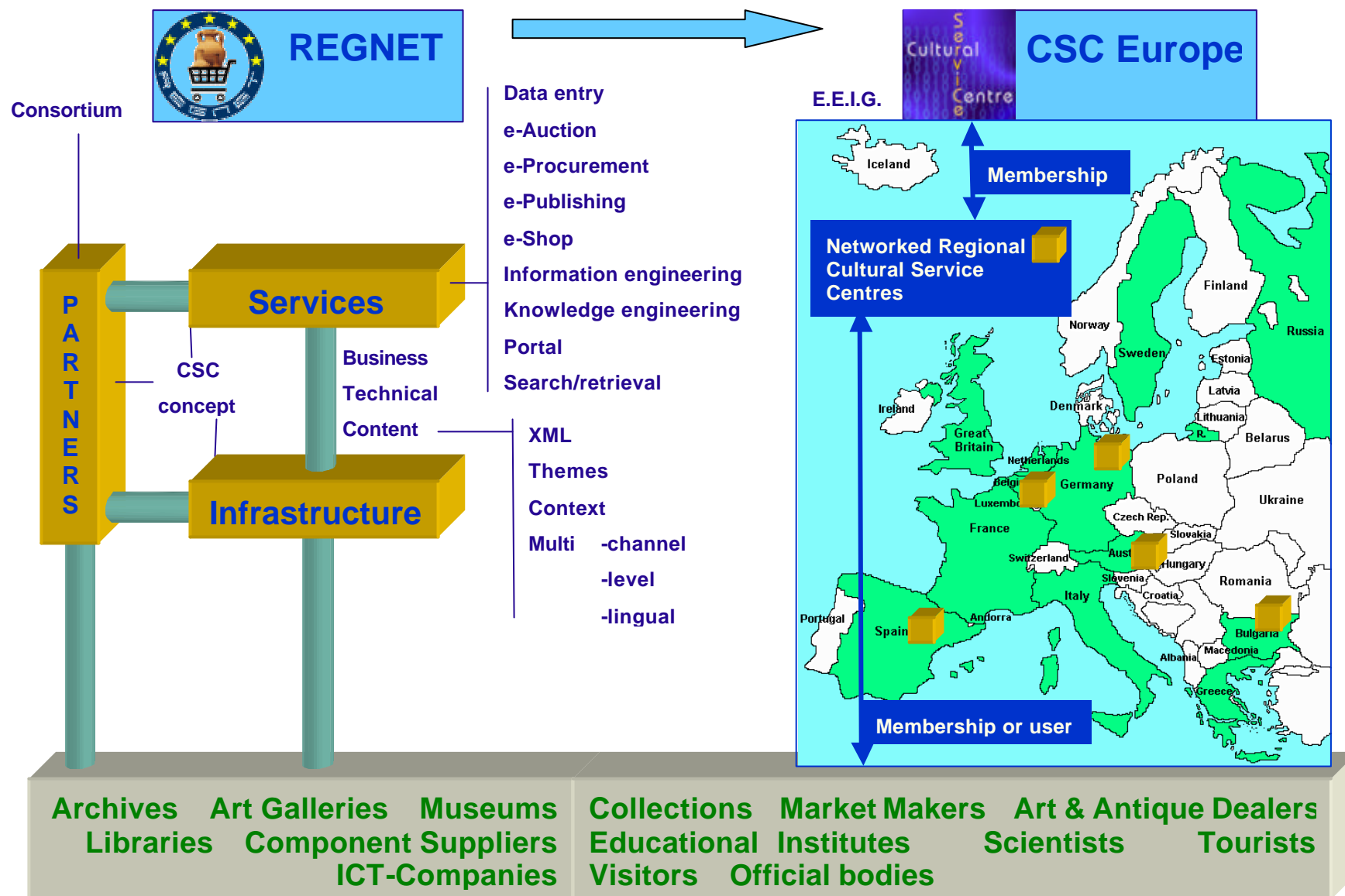
- Object data, pertaining to meta data and data about collection objects
- Thematic data, pertaining to meta data and data on contextual texts around (a set of) collection objects
- Topic map data, the knowledge layer on top of the object and thematic data
- Multimedia productions based on the produced content
- Catalogue management
- e-Business functionalities: e-Shop, e-Auction, e-Procurement

Keywords on the demonstration and test side:

- Rotating test sessions
- Usability testing via fixed format questionnaires
- Usability testing via free format forms
- Behavioural observation
- Third party evaluation
- Real life response
- SWOT analysis



Figure 1 CSC concept





2 Products and services portfolio.

Out of the REGNET project came a series of products and methodologies that a CSC can use in its envisaged market. As well methodologies as pure technical modules and services will be briefly described in the following points. A more elaborated view on the technical aspects can be found in the deliverable 10 "REGNET - Demonstration - Trial Service".

2.1 Information management.

Relevant and substantial content forms the cornerstone of the system. The best technical solution without intelligently navigable content remains useless. But content needs management in order to get an efficient use and exploitation of it.

Within REGNET the benchmark for the necessary cultural heritage information resources was generated through the **digital content production** by museums, libraries, art galleries and partly by archives of their full collection or parts of it. This digital content production was partly realised from scratch and partly from extraction from existing digital sources or collection management systems.

Meta data was produced via different standards, typical of the underlying disciplines. In order to obtain a common denominator for all types of cultural heritage data, an extra set of meta data, Dublin Core, was generated per digitised item. Additional elements had to be generated for compliance with **e-Business** specifics. Another set of additional elements were defined in order to make differentiated content suited for different audience levels, different languages and different end user equipment. A **native XML** database forms the heart of the overall meta data management.

In surplus of the "normal" cultural heritage data a new type of data was introduced: **thematic texts**. The introduction of this type of information made it possible to add contextual information related to collection or archival objects (additional texts and images). The advantage of those "independent" thematic texts is that they can be reused at several occasions and in different contexts.

The REGNET project developed a range of **methodologies** and **technical modules** to cope with all the above-mentioned items.

2.2 Knowledge management.

Originally not foreseen but quickly considered as becoming very important

After the study of the most appropriate way to tackle this issue, the decision was made to use a semantic net approach through the paradigm of **topic maps**. Topic maps consist mainly of topics, associations between topics and occurrences, the latter being the cultural heritage information resources. Topic maps proved to be extremely suited to add knowledge about cultural heritage information. Moreover, because a topic map can be completely separated from the information resources, different topic maps can be connected to same set of information resources and vice versa different sets of information resources can be connected with the same topic map. This allows one to



offer different views on the same information and to apply the same view on different sets of information. Hereby, a high degree of **personalisation** can be reached.

As for the information engineering, the necessary methodologies and technical modules were studied and developed. For the service centres this gave the necessary ground and means for consultancy and development assignments.

A detailed description of snapshots, representative for the currently available content produced by every content provider within the REGNET project is given in the section "Content frame of reference - benchmark".

The following diagram recaps the relationships between all the data types used within the REGNET data structures and databases.

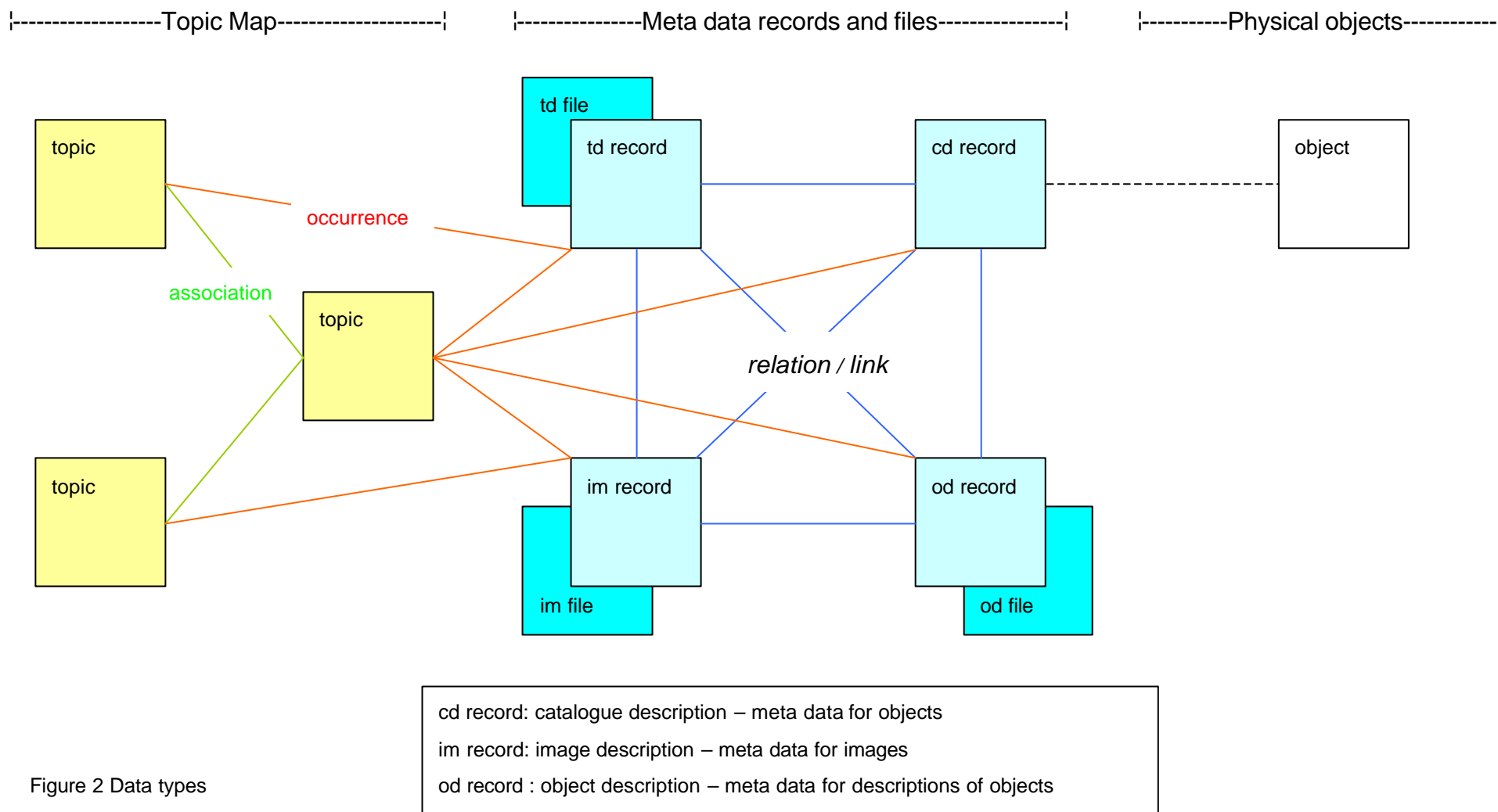


Figure 2 Data types

2.3 Data entry - meta data - topic maps

Several data entry modules were developed in order to cope with the variety of requirements put forward by the content providers community.

On line data entry of meta data

Tool for data entry of meta data related to physical objects, images, object and thematic descriptions. The use of established standards, extended standards or own classifications is possible with storage in a native XML database.

Off line data entry of meta data

Tool for data entry of meta data related to physical objects, images, object and thematic descriptions. The use of an own classification is possible. The tool contains a conversion to XML feature for integration into the native XML database. Further editing is done via the on line data entry system.

On line data entry of topic maps type 1

Data entry in files following certain concepts (ontology – taxonomy). Separate files contain taxonomy topics and their classification, concept topics, association templates and their associations, base names of topics, occurrences and public subject indicators. The tool contains a conversion to XTM feature (the XML topic map representation) and storage in the knowledge base.

On line data entry of topic maps type 2

One by one entry of topics with their scopes and occurrences, and associations. The tool contains a conversion to XTM feature (the XML topic map representation) and storage in the knowledge base. This reflects other commercially available products of the same nature.

Off line data entry of topic maps

Data entry in a spreadsheet workbook following certain concepts (ontology – taxonomy). Separate worksheets contain taxonomy topics and their classification, concept topics, association templates and their associations, base names of topics, occurrences and public subject indicators. The tool contains a conversion to XTM feature (the XML topic map representation) and integration in one of the steps of the on line data entry of topic maps type 1.

2.4 Search and retrieval

The current search and retrieval mechanism is constructed on the following principles:

- separate data bases per content provider
- information groups according to standards:

OBJECTS	MuseumObject – AMICO Archival – EAD Bibliographic – MARC MediumObject – AMICO Media Metadata
THEMATIC DATA	Themes – own standard ThemeImage – own standard ThemeObject – own standard

**AUXILIARY DATA**

Vocabulary
Thesaurus
e-Shop
Name
Place

METADATA

Objects and thematic data are also mapped into Dublin Core for full compliance to a standard reason.

- searches can be carried out
 - per database
 - per type and element of information group
 - via full text feature

2.5 Topic map visualisation

The topic map data entry modules offer the possibility to construct a topic map around a theme and to store this into an XTM file. Out of an XTM file representing a topic map, this topic map visualisation module can generate a graphical navigation means for topic maps. Topics, associations and occurrences are represented as nodes in a web browser. Zooming in and out, moving and exploding nodes are some of the features offered by this tool. This way the user can tailor his view on the concerned theme he is looking at. Clicking on the occurrences will reveal the corresponding information resources connected to a particular topic such as texts, images, multimedia productions, etc.

2.6 PCM - e-Shop - e-Auction

2.6.1 Product Catalogue Management (PCM).

This subsystem includes meta data describing products (real or digital) offered by content providers up to services offered by service providers (e.g. consultancy, digitising projects, etc). Product Catalogue Management allows also search and retrieval of distributed product (and service) catalogues which are stored in different location (different servers) by using the SOAP protocol..

The main functions the user can get are:

- Access to the distributed catalogues that contain the items and the specific services.
- The ability to each supplier to manage the content of the catalogues automatically.
 - Update the attributes of the catalogues
 - Insert new products or services to the stored catalogues.

In the following paragraph there is a description of the steps the user follows.

First of all, the user has to register in the portal by giving the specific username and password. Then our component will connect with the ontology system in order to take and store in our database the full profile of the user. Then users have the possibility to use the functionalities of the system but only users who have catalogues can use the system. In addition, the user is given the ability to put his items in the e-shop in order to sell them providing the potential buyers with picture of the items. What is required is to choose the "retail" index in the price type field. By default, the items are not inserted in the e-shop. So the suppliers can modify their own items or services (for example, to insert new items, to delete existing items, to edit information about the items, or even add information about warehouses to PCM or their database).

As we have mentioned above the system can search in distributed databases by using the SOAP protocol. So any catalogue must be stored in a specific location. If we want to manage the different catalogues in the system, there is an administration part of the product catalogue management system that the administrator can use, in order create or edit new catalogues.

2.6.2 e-Shop

In this subsystem, all registered users can get basic functionalities such as searching for products or using the basket and many other specific services. The system is connected with the ontology system.

The system provides the users with the following functionalities:



➤ Free Search. The user fills the empty field and he/she can specify:

- i) Name of the product / description etc.
- ii) Category of the product
- iii) Specify the predefined supplier.
- iv) The user can provide a price range for the search.

➤ Shopping Cart (Basket)

- Add an item to the shopping cart
- Remove item from the shopping cart
- View item details (all information regarding the product)
- Move item to wish list
- Change the quantity of a product
- Calculate the total amount of the order
- Check out mechanism – Payment

As mentioned before, all users can proceed with the above functionalities.

➤ Search through the different categories. The user is able to see all the different categories of the products that are stored in the Product Catalogue Management System (the system can connect with distributed databases by using SOAP protocol) and he/she can navigate him/herself to the web pages where all the products of the specific category are stored.

➤ Wish List. This functionality is very important when users want to make a future transaction.

- Move to basket. A product may be transferred from the wish list to the basket
- Update the wish list View wish list, the client may access and manage his/her wish list Delete from wish list
- Buy from the wish list
- Request item details

➤ Order History

- View order history Review order before the final transaction Cancel order Request user's info from the user's profile
- E-Payment

In order to provide more wide range services, the system was extended with B2b services. This extension has been added in order to allow users to find business partners via a multi-objective search and fulfil their agreements.

The functionalities are the same as described above.

2.6.3 Auction system.

The purpose of this subsystem is to provide the users with the service of e-bid. The system handles the users in different way according to their right. That means that not all the users have the ability to put products/items for bidding. There is also a mechanism of checking products so that the system can ensure the validity and security of the bidding procedure.

In general, the system provides the users with functionalities such as:

- Add products for bidding (only the registered users)
- Manage their list of products and their bids
- View current or future lots
- Search for products using many criteria (e.g. according to products, description, category, date of auction)

The auction subsystem has its own administrative mechanism (LOGIN: admin and Password: 123) giving the administrator the permission to:

- View list of users and manage them
- View the list of products and manages it
- Add categories to the system
- Can forbid a user selling products

2.6.4 Development choices.

The PCM system can connect and manage distributed databases storing all data about items and other information. The central database and the remote databases are connected with the SOAP protocol.

The ebusiness subsystem uses the same databases as the PCM's databases. In order to connect the e-business system with the PCM system, the SOAP technology is used.

All databases are built with MySQL and the use of PHP programming language enables the users to add, edit or remove data from the databases.

As we have mentioned, our components can connect with the ontology system in order to take the full profile of users. So we have developed an Ontology Client that is in developed with Java Programming because the ontology system uses Jakarta Tomcat Server.

As it is obvious, one of the most important issue of the project was the interconnection among all the components in the most effective way. While each subsystem is implemented or uses different

technologies, the SOAP protocol was chosen for the connections in contract with the Z39.50 protocol which was the initial proposal. Such a decision was based on the specific characteristics of this protocol:

- Flexibility
- Effectiveness
- Simple implementation
- Speed of transactions

MySQL, which was chosen to be the databases, ensures the stability and the security of the data. A relational database built on MySQL with the combination of PHP scripting language (as it was used in this project) has been proved one of the most effective and stable schemas.

2.6.5 Alternatives

e-Shop adaptation to REGNET system

During a testing phase AIT used the open source software Phpshop to create an e-Shop.

Features adapted/realized:

1. Treatment of bugs that occurred.
2. Integration of a data exchange feature from TeXtML Server XML data into MySQL of the shop.
3. Addition of the feature of sending the web page describing one item via e-mail.
4. Adaptation of browsing mode: via a button in the browsing mode the user can now add the requested number of the item and thus directly order from this mode.
5. Adaptations of the design.

Now this shop is available as an alternative within the REGNET system

The shop is accessible via <http://193.80.249.122/probst/shop/>

e-Auction adaptation to REGNET system

AIT also performed tests with the open source product Phpauction (similar to the ones described above – e-Shop) and this tool is now available too.

The Auction is accessible via <http://193.80.249.122/auction/>



2.7 e-Procurement

The aim of the procurement sub-system is to support relation between suppliers and buyer in order for the last one to obtain best prices and for the first one to have access to a large community of potential buyers.

The supplier creates his virtual showcase: he enters the references and information of his offer according to the configuration of market place model. He can modify his showcase: add, modify or delete product.

The buyer shops on market place; he creates a shopping list that he can modify, and finally he validates it, the suppliers of shopping list products receive automatically an order request.

The buyer and the supplier have to finalise the terms (shipping, timeframe and payment terms).

This module has been developed in Java. It uses Tomcat as Web server. Connection with others modules (ontology, delivery) is based on SOAP.

2.8 e-Publishing

e-Publishing in the REGNET context pertains mainly to the interactive digital presentation of cultural heritage themes. This publishing is aimed at kiosks, CD/DVD and the Internet.

The e-Publishing module makes use of:

- storyboard and scenario templates developed during the REGNET project (the methodology)
- third party software, Macromedia Director (the tool)

The scenario templates represent several sequences that are typical for several Cultural Heritage presentation schemes. The combination and parameterisation of these sequences can produce tailor made electronic productions suited for use in different contexts.

Typical characteristics for this approach are the dynamic interaction on one page lay out (instead of sequential changing of full pages) and the multilingual capabilities at any time at any place during the navigation of the multimedia production.

For Web publications, the well-known and wide spread plug in "Shockwave" of Macromedia has to be downloaded and installed. This way the same multimedia production can be viewed through a browser.



2.9 Portal

The functionalities of the portal are described via an extract of the user manual because this reflects best all features that it possesses.

Layout

Three main areas constitute the Portal structure:

- Upper area
- Left area
- Central area

The upper area contains main functions menu, language selector and login form. This area is always present in the page.

The menu is organized in two levels: The former shows links to the home page, to a page with details about REGNET project, to the site map, to the registration form and finally the on line help. The second level is visible only for registered users and links to the customisation functions, the editing of the user profile and the logout command.

Portal customisation means the choice of contents in each section of the central area and of some presentation properties. Customisation is available both for WEB browsers and for WAP browsers.

The contents of the Portal are available in a number of European languages (internationalisation). In order to get the list of the available languages, click on the selector. In order to choose a language, just click on one of the languages listed in the pull down menu that will open.

The registration form is available only if the user has not logged in yet. For registered users it is enough to provide the username and password into the respective fields and to click the login button. For user without the REGNET profile it is necessary to create the account first.

Left area contains the illustrative menu about the contents available through the Portal, and the email address to get further support. The illustrative pages are loaded in the central area.

All the contents and the support functions are loaded in the central area. The support functions (i.e. the site map) occupy the entire area. Contents are organized in "panes" (a sort of sections, highlighted in green) and each pane can contain one or more "portlets" (highlighted in). Panes and portlets selection can be customized. Portlets contain resources, links or applications with the same theme. The Portal exposes them and the user can select them.

Language Selection

The contents of the Portal are available in a number of European languages (internationalisation). To the left of the upper area a language selector can be found. In order to get the list of the available languages, click on the selector.

In order to choose a language, just click on one of the languages listed in the pull down menu that will open.

If in the user's profile a preferential language is indicated, the Portal will change the language by switching to the one indicated as soon as the user logs in. It should be noted that the change of



language may cause a return to the main page of the Portal, depending on what was the current page at the moment of the selection.

Portlets

Portlets are containers of resources, of links or of applications centred on the same subject. The Portal manages the portlets as modules that can be activated and positioned in accordance with the user's selection (personalization or customisation). Portlets are stored in sections, that are special container portlets themselves.

The contents of the portlet may vary depending if the user has or has not been registered. In particular, whether the registration has occurred, the portlets can expose customisation actions.

Create New Account

In order to access the major part of the services supplied by the Portal, one has to be registered, i.e. there must be a user's profile in the Portal database. A role is associated to each profile, and from this role depends the user's visibility on the system resources. The role predefined at the moment of the profile creation is the basilar one. In order to expand the role, one must contact the administrator of the portal.

The profile is shared by all the Portals that constitute the infrastructure of REGNET. Therefore, the user can access the Portal of any CSC (Cultural Service Centre) with the same "user name" and the same "password". The user name and password are chosen by the user. If the user name has already been utilized in the system, an error message appears.

The other fields are optional and can serve to personalize the services offered. In particular, indicating the native tongue, the Portal will change language by switching to the one selected as soon as the user logs in.

The indication of the terminal signals what device is preferably used by the user in order to access the Portal. WEB devices are the typical browsers of the personal computer. WAP devices are the browsers of the cellular phones or the palmtops compatible with the WAP system.

Edit account

All data of user's profile, except the user's name, can be modified after the creation of the profile. It should be noted that to change the role assigned to the profile is not allowed. To do this the administrator of the portal must be contacted.

The profile is shared by all the Portals that constitute the REGNET network. As a consequence, the modifications made to the profile are transferred in the Portals of all CSCs, included a modified password. To access any Portal with the old password would not be allowed any longer.

All pre-existing data are loaded in the form when opening the page. The minimum information that is loaded and that, even if modified, must always be present in submitting the module is:

First name
Surname
Email Address

The password is not necessary. The fields concerning the password are optional and need to modify the existing password.

The other facultative fields can be utilized for customizing the offered services. In particular, indicating the native language, the Portal will change the language by switching to the one selected as soon as the user logs in.



Customize WEB

The customisation is applied to a number of elements of the Portal: the single portlets, the sections that contain them, or the whole central area that includes the sections. The WEB personalization impacts only on the navigation done through the browsers of the PCs but not the cellular devices. On this point consult Customize WAP. It should be noted that a restore function to return to previous settings is not available.

Customize WAP

The customisation is applied limited to the selection of portlets available for the user. The GUI is similar to that for portlet adding in the web context.

2.10 The REGNET broker

In order to combine and synchronise data generated in the eShop module and the Cultural heritage database a special tool "REGNET broker" was developed. This was required because the two concerned data structures were based on different environments: one on Linux - MySQL and the other on Windows - TeXtML. Through this "REGNET broker" the required synchronisation can be carried out.

2.11 Services matrix

The main goal of the CSCs is the operation of the infrastructure respectively the offer of products and services which are adapted to the needs of CH organisations. The product and service portfolio was already described in the context of the business engineering (D6). To point out the resulting competence areas the CSCs will cover all envisaged products and services for national markets concerning Information management, Knowledge Management and eBusiness – all to be accessed by the central REGNET Portal respectively the CSCs-related information and service platforms.

All validation and demonstration activities carried out within the consortium and for selected external user (customer) groups reveal that indeed data management is an important functionality needed. This refers to the main tasks of CH organisations in general; besides a consultancy about how to handle data and objects, how to structure and how to use and adapt to existing standards, tools are needed which support all aspects of data management („full service system“). This is not only object data but also related data e.g. addresses, events, restoration reports. A separate service to be offered – and not clearly foreseen as a stand-alone solution for certain kinds of CH organisation – is the integration of remote applications e.g. Z 39.50. It is attracting, especially for bigger organisations with an existing online catalogue, to use the REGNET network for the promotion of separately handled object information. Related to this also initiatives like OAI (Open Archive Initiative) should be addressed.

Perhaps not to be seen as core services but important for specific target groups could be services and products referring to copyright management: an image server, watermarking solutions and practical guidelines are of use. There is a need for consultancy, e.g. about handling of images in the Internet, copyright issues. To address this need short dossiers could be created and offered as part of the "knowledge base" which is accessible by all participants (later CSC members) as an added-value service.

The following matrix list serves as a starting point for potential products and services to be offered by the CSCs. This first "collection" reflects mainly the comments given during the content provider meeting in Mechlin (together with some additions made on the basis of the CSC template etc.).

Important main starting points:

- ASP approaches: Combination of different tools, innovation, total cost of ownership
- Requirements: REGNET brand
- Specialisation: All possible service aspects should be focused on as primary aim/task of the CSCs.
- Focus: Thematic productions and exhibitions, highly interactive products for the end user, e-learning products/services.

**Overview**

I. General Services	
Knowledge Base ICT-infrastructure guidelines CH-related standards Digitising methodologies Best-practise examples Thesauri, Guidelines for terminological work (see also CH services) ...	Information (Portal): For free/add-on for community membership
Seminars, Workshops For training purposes (tools) Specialised topics	Free - Basic Service Special fees
Support/reference services Training (see above), also online help desk Guaranteed reference for all kind of services ...	Free - Basic Service
II. CH Data(base) Services	
Data management system: Data management (Built up catalogue) & search facilities for the database/catalogue (e. g. museum database, library catalogue, artist works ...) Online Offline	Basic Service (all domains) Advanced: Collection Management Functionalities
Database Hosting	
Search services (Distributed) catalogue searches Search & analysis images online (=> XLIImage) In-depth-studies e. g. of rare books Searches for exhibition preparation Personalized searches (save, re-run => SDI)	Basis Service (portal) For special target groups Value-added service (special fee/service level/membership)



Digitising and cataloguing services Cataloguing on demand High resolution scanning services ...	
Built up of vocabulary/thesaurus/topic maps methodological guidance (see knowledge base) tools to generate (thesaurus management, topic map generator) use (offer) existing thesauri, topic maps ... (on the basis of a licence etc.)	
Kiosk approach: Built up of contact points in museums/churches/tourist offices etc. (tools, consultancy, ?)	
Consultancy: How to manage/structure the data, information about relevant standards, database design, how to digitise, image management ... (see also Knowledge base, here: individual, personal consultancy)	
III. E-Publishing Services	
Macromedia products can be used for realisations ranging from simple prototypes to sophisticated multimedia publications depending on the team and the money that will be behind the production.	
Web Publishing, tools for preparing Virtual galleries Thematic catalogues Individual publications Guidelines for visitors	Basic Service (domain-specific services/products)
Offline/Print-Publishing, tools CD production Print publications (e. g. print catalogue) Exhibitions catalogue Postcard, Poster production	Possible products, but: most of the partners expressed no urgent and actual need ...
Personalized publications (storage & hosting)	
(Thematic) Exhibitions, e. g. exhibition catalogues online, offline, shared exhibitions (online/offline) etc.	To be specified, related to different service categories.
E-Learning products/publications	To be specified
Provision of design (services), storyboard writing (in order to define individual multimedia publications)	
IV. B2B-/B2C-Services	
E-Shop: System for entry, publishing and order management to sell items in the museum shop and also „new“ digital products like postcards, reproductions etc.	Basic Service (domain-specific)



Organizing (finding partners, virtual cooperation etc.) for (broad) exhibitions (many participating institutions on a certain theme). Also E-Publishing (end product)	Community Service	
Consultancy: E-commerce for CH institutions ...		
V. Marketing		
Portal for an access to distributed databases – for the „end user“: comprehensive information base (see search services); for the cultural institution: more visibility (therefore listed here)	Platform (Add-on)	
Consultancy: Marketing concepts & instruments for CH institutions.		



3 Legal issues

3.1 The overall structure

3.1.1 The EEIG concept

This section treats the general introduction to the European Economic Interest Group concept

The EEIG company structure was created in 1985 by Council Regulation (EEC) No 2137/85 which came into force on 1 July 1989. The European Economic Interest Group is intended to form an association between companies, other legal bodies, firms or individuals from different EU countries who need to operate together across national frontiers.

Quoting a note by the DGXXII of the European Commission the should EEIG function "as an instrument to assist companies and other organizations wishing to participate in cross-border co-operation. The trans-national measure (available since July 89) was needed to assist companies which had previously been hampered by single-national legal systems. It aims to allow companies to overlap some of their economic activities whilst developing new and complementary functions for which they intend to cooperate. The EEIG supplements joint venture agreements and contractual agreements of co-operation. It assists in particular, smaller enterprises to exploit the advantages of the Single Market, by combining the legal capacity of a company with the freedom of form and function which comes from simple contractual agreements."

Therefore the EEIG works as a trans-national legal instrument within the European Community for a light cooperation between companies. It allows legal entities from different Member States to join activities and benefit from creating synergies between themselves. While the member companies retain their legal and economic independence the formation of the EEIG also establishes an independent legal entity with an own legal capacity. By registering in the State where it is based (a notice also being published in the Official Journal of the European Communities), the EEIG acquires full legal capacity and can conclude contracts in its own name and execute them.

According to a statistics of the European Commission there had been set up around 1186 EEIGs by the beginning of 2002 and the creation has been evaluated as being very successful.

The EEIG has to be related to the activities of its members and its principal objective is to look after the interests of its own members; unlike a company, it is not directed at third parties. Its aim is to develop and facilitate its members' economic activities by a pooling of resources, activities or skills.

It is also not intended to make profits for itself and any profits will be apportioned among the members and taxed accordingly.

Within this short introduction we want to point out the main features of an EEIG which led finally to the decision to found the Cultural Service Centre Europe EEIG.

Upon registration the EEIG gains full legal capacity in all Member States. It can act in its own name, has full rights and may conclude contracts throughout the Community, as well as with organisations based outside the Community. Members of the EEIG must come at least from two different Member States and might be companies, businesses or natural persons. An EEIG must never be a member of another EEIG and cannot have more than 500 employees.



The members will conclude a formation contract in which they declare the object, the EEIG's name (the acronym "EEIG" has to be included), seat, duration (if foreseen), and name, business name, official address and legal form of the members of the EEIG. The formation contract also establishes a committee of members and the management of the organization. In addition the contract might also organise other features of the cooperation like the way of financing, the share of profits and losses, the EEIG bodies, the appointment of managers and other. The EEIG's official address can be transferred quite easily from one Member State to another. Within the formation contract the members will also decide how the EEIG will be run. They are free to decide on the votes (usually one vote per member) and the voting procedures, provided no member holds a majority of the votes. Certain important decisions, like the alteration of objects, number of votes, extension of duration, contributions, transfer of official address or other alterations to the formation contract will require unanimous decisions.

The bodies of the EEIG are the members and the managers. Full members must have their official address within the European Community and must also carry out an economic activity within the Community. This economic activity is being interpreted very broadly and thus allows also certain public bodies, or semi public and public scientific organizations (universities, research institutes etc...) to become member of the grouping. The EEIG may subcontract or conclude joint-venture contracts with non-Community organizations. And non-community organizations might be included with associated member agreements.

The managers are nominated by the members and responsible for the administrative management of the grouping. No start-up capital is required for the formation of the EEIG, but if contributions are being made they can be in form of cash, skills, services or property, etc.. It is not taxed as a corporate identity but through the individual members and national provisions.

Due to this financial flexibility the EEIG's members also have joint and several unlimited liability. This liability might be regulated within the statutes of the EEIG.

3.1.2 The Regional Cultural Service Centres

In view of the large degree of dispersion of pieces of art within Europe and the highly fragmented knowledge and management of the collections, REGNET offers the services to create a global view based on a contextual and thematic approach. Further more the high level of accessibility combined with various levels of consultation of the information will suit the requirements of the occasional visitor, educational institutions and scientists/researchers. The different views of the same information will range from a quick referential search towards educational purposes.

The easy access and availability of this global information will boost the cross-cultural knowledge within European regions and stimulate Europeans to visit the objects in situ they discovered via the REGNET-service. This will substantially increase the culture stimuli of the citizen and at the same time contribute to a multicultural and more European awareness and feeling.

REGNET intends to reach some basic aims:

- The dissemination of the European Culture Heritage facilitating to European citizens the access to catalogues of intellectual, cultural and scientific heritage stored in archives, libraries and museums and galleries
- Integration of e-business into the information systems used in Cultural Institutions
- The development of new and exploitation of existing cultural infrastructures
- The use of standards in the field of information structure, retrieval and e-business



- The interoperability between systems (interoperable access to distributed resources/catalogues: cultural & scientific content and products & services) based on the complementarities of the capabilities of each partner (group).
- The establishment of a service infrastructure which allows to develop a network of (cultural) service centres throughout Europe.

The partners of the REGNET project are grouped in:

Group-1:	Content Providers:	ONB, LMG, NRM, KVA, ALI, MECH, GRAN, MUS, SUL
Group-2:	Developers:	SR, SI, CERT, VALT, TINC, MOT
Group-3:	Regional Poles:	SUL, CC, IAT
Group-4:	Developers/Poles:	AIT, IMAC, TARX, SPAC, ZEUS, ICCS

Members of group-4 have two roles combined. Regional Poles are providing the technical infrastructure to run a REGNET-System and the necessary coordinating facilities within a region and can be considered as 'nodes' of the REGNET-service network.

REGNET will set-up service infrastructure in 4 European regions with a potential of an extension into 2 additional regions. Due to the real European dimension of the REGNET partners this project has the potential to be the kernel of a fully functioning network of service centres in the field of Cultural Heritage. The partners are coming from following countries: Austria, Belgium, Bulgaria(Russia), France, Germany, Greece, Netherlands, Italy, Spain, Sweden, UK. The regions which will be covered by a REGNET system are:

Region 1 - Middle and Northern Europe:

AIT, ONB (Austria), IMAC (Germany), SUL, LMG, NRM, KVA (Sweden)

Technical Infrastructure provided by AIT and IMAC

Coordination done by AIT and SUL

Region 2 - Western Europe:

TARX, MECH (Belgium), MUS (Netherlands)

Technical Infrastructure provided by TARX

Coordination done by TARX

Region 3 - Southern Europe-1:

SPAC, ALI, CC (Italy)

Technical Infrastructure provided by SPAC

Coordination done by CC

Region 4 - Southern Europe-2:

ZEUS, CERT, SI (Greece), IAT, GRAN, SIE (Spain)

Technical Infrastructure provided by ZEUS

Coordination done by ZEUS and IAT



The possible extensions are:

Region 5 - Southern Europe 3: (separation of Greece and Spain)

IAT, GRAN

Technical Infrastructure provided by IAT

Coordination done by IAT

Region 6 - Eastern Europe:

ICCS (Bulgaria), SUSU (Russia; subcontractor to ICCS)

Technical Infrastructure provided by ICCS

Coordination done by ICCS

The service centres will offer the latest technical infrastructure and perform IT services dedicated for CH users and content providers; and store and deal with the cultural digital objects. This level is the general service/application provider to the REGNET users and customers. Their current work is done in networking manner by exchanging and performing tasks, originating from the REGNET servicing network.

The concept of a non-profit organization is estimated the most appropriate for this kind of service and service network cooperation envisaged.

The establishment of the regional CSCs will in this regard be determined by the diverse national legislative requirements.



3.2 Regulations on licences, copyright, royalties

Within the first working phase of Deliverable 6 initial versions of the following agreements have been generated:

Regional Pole Agreement

Cultural Organization Agreement

Individual Agreement

Full Membership Agreement

REGNET License (for educational, commercial and private purposes)

These agreements are the ones needed most in the starting phase of the REGNET Network. They might be further developed and extended during their first phase of adoption.

3.2.1 REGNET membership agreement

This agreement is developed for the high level of the organizational structure of REGNET. It defines the decentralized network structure of REGNET as a unique entity which operates on international basis. The REGNET membership agreement concerns all REGNET participants, who are in charge of the management, development and support of the REGNET infrastructure and services. The membership agreement determines the bodies, their functions and rights which operate on international basis. As extension and regulation rules for the application of the REGNET membership agreement, the document "Statutes of the non-profit organization European Cultural service centre " can be applied.

3.2.2 REGNET Regional Pole Agreement

The REGNET pole are the executive entities, which perform the REGNET functionalities and services and are mostly organized in cultural service centres. Each legal entity, willing to act as a pole has to accept the agreement named REGNET Regional Pole Agreement. It has to be applied between the REGNET international level, level 1, and the level of the REGNET Poles, level 2. The Regional Pole is the general executive of services, which are offered to users over a corresponding geographical area. The management of the Regional Poles are described in the document, REGNET Regional Pole Specification. This document presents the regulation rules under which the Poles operate on.

3.2.3 REGNET System Cultural organization Agreement.

This agreement defines the negotiation between the regional poles/CSC Europe EEIG and the content providers.

3.2.4 REGNET System Individual Agreement

This agreement sets the conditions under which legal entities and individuals may utilize the REGNET services and functionalities.

The relations between the suit of agreements and the actual agreements are cited in the REGNET Deliverable 6.

3.2.5 Consolidated overview

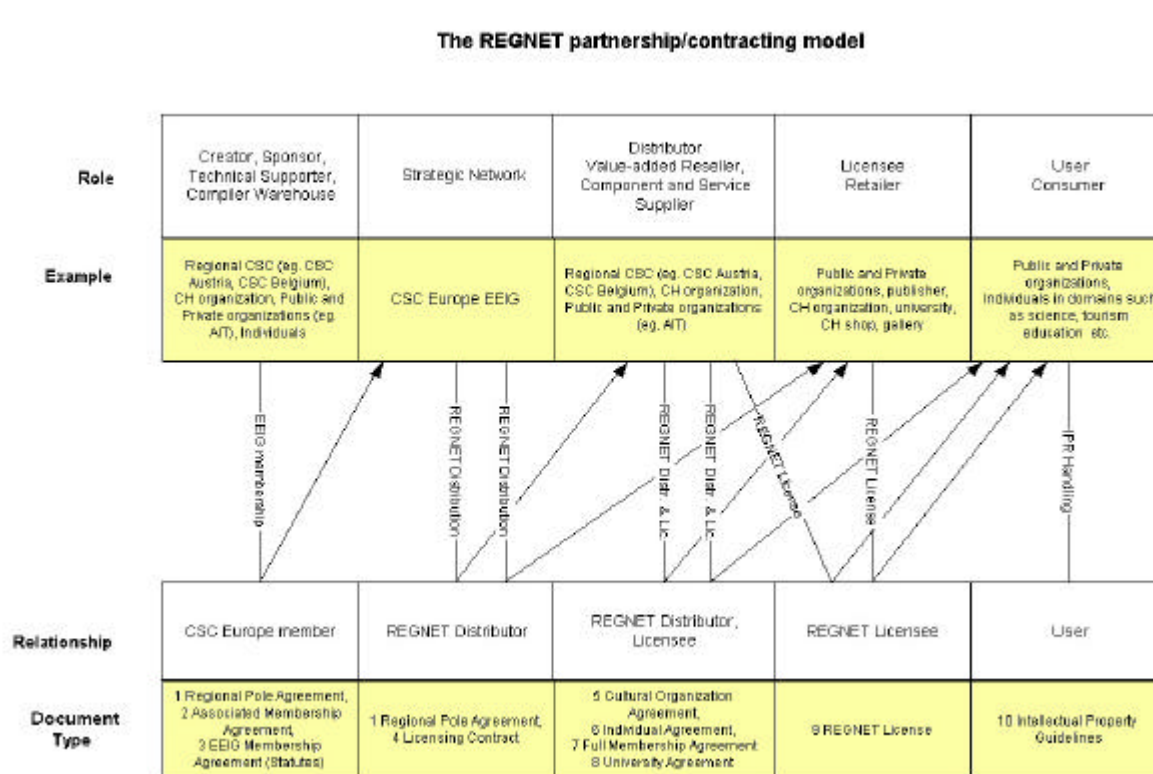


Figure 3 REGNET Partnership and Contracting Model

Starting from the left hand side of the graphic we find the creators, sponsors technical supporters etc. which are members of the CSC Europe EEIG. These organizations (e.g. The regional CSCs, cultural heritage organizations, other public and private organizations etc.) or even individuals conclude membership agreements with the CSC Europe EEIG. According to the membership types these agreements can be: (1) Regional Pole Agreements (with CSCs etc.), (3) EEIG Membership Agreements (for full EEIG members) or (2) Associated Membership Agreements (e.g. for sponsors).

The CULTURAL SERVICE CENTRE Europe EEIG itself forms the REGNET strategic network. It governs REGNET and can license the REGNET distribution to regional poles/CSCs and to other external License Retailers via a (4) licensing contract.

The regional CSCs, and qualified cultural heritage organizations (museums, archives, libraries etc.) and other public and private organizations can further distribute the REGNET system or license parts of it to REGNET Distributors, Licensees or License Retailers. This will be done through the (5) Cultural Organization Agreement, the (6) Individual Agreement, the (7) Full Membership Agreement, the (8) University Agreement, or the (9) REGNET License.

The (9) REGNET License can also be purchased at a sole License Retailer, like a cultural heritage organization, educational organizations, CH shops etc. The User and Consumer will purchase the REGNET license and will be refer in its usage to national and international intellectual property guidelines. This user of the REGNET license might be any organization or individual, from the science, tourism, education field etc., interested in the REGNET services and products.

4 Operational issues

4.1 Constituting elements

4.1.1 Functions.

Besides the standard, classical functions needed to operate a ICT service centre, some specific experience and skills are needed to deploy and exploit systems and services for the Cultural Heritage domain.

As classical functions can be categorised:

Management

Overall technical

Content management

Sales and Marketing

Administration and Finance

Among the specific functions are:

Information engineering coping with cultural heritage data

Editorial board for consistency and coherence

Domain knowledge

Strong internationalisation requirements

Knowledge engineering for thematic approaches

Rich Multimedia development

e-Business aspects for museums for instance

Some of the latter functions comprise subdivisions reflecting more granular functions (graphical design, domain scientists, (eb)XML specialists, etc.)

A typical approach, certainly in the early stages, is to outsource most but not all classical functions and to keep some of the specific, core functions within a CSC, complemented by a temporary third party staff covering the needed skills on a case-by-case base.

It is obvious that the spread of technical competences amongst different CSCs will cover most of the needs of potential project requirements.



4.1.2 Technical and services

The CSC approach determinates also the way the technical infrastructure has to be set up. It is clear that a CSC has to set up a server infrastructure with the necessary communication links towards the outside world. Every CSC has a generic portal interface towards the market place containing all necessary functionalities to cope with the communities that are active or interested in Cultural Heritage. The technical REGNET modules reside on the same server or are spread over and evoked on remote servers. A differentiation is made in the used interfaces. Every CSC has a generic interface (type PostNuke e.g.) treating as well general, often more regional or local issues as the typical portfolio of services that REGNET provided. Once in "REGNET-mode" the REGNET portal is evoked and depending on the type of the user, i.e. the standard, looking for information, end user or the more professional oriented one, often contributing to the content, a corresponding appropriate interface is launched with connections towards all specific modules.

As already stated in other points, the CSCs form a network of services, not only technical but also logical and business-wise. This means that a CSC does not have to contain all functionalities provided by the REGNET project. Every CSC will have its specific functionalities and competences. However, via the interconnections with the other CSCs all functionalities and competences are at the disposal of every single CSC. The matrix list as presented in the previous chapter can be a guidance for the definition of every CSC's services portfolio.

A CSC must also have the potential to offer an adequate off line infrastructure in order to carry out presentation, demonstration, education and test sessions to dedicated groups of persons or potential customers.

Mutual back up between CSCs databases should guarantee all issues related to redundancy, safety and security.

As far as the services are concerned, every CSC has to make a choice out of the matrix list presented in the previous chapter.



4.1.3 Logistics

For the logistics side, the following small charter applies:

Every CSC has to:

- be located in one of the regions it is covering
- have an individual postal address
- possess an individual telephone and fax number
- get a domain name reflecting its CSC status and the region it is addressing;
cscxxx.org wherein "xxx" reflects the operational region of the CSC
- get an individual e-mail address of the form "info@cscxxx.org"
- foresee a reception area
- be capable to offer a small demonstration and education facility
- be always reachable during normal working hours
- install the necessary server(s) and communication lines (can be hosted or housed with an external service provider but in that case a stable and speedy Internet connection is requested.)
- be able to organise large workshops (can be in external premises)



4.2 Installation - Phasing

The progressive installation of the Cultural Service Centres was carried out in several phases and will be an ongoing process for a while till all European regions will be covered.

Within the REGNET period of the CSCs, the installation process was dictated by the availability of the technical modules, which caused some delays, the results and the feedback of the testing procedures and the legal, logistic and operational issues involved in the creation of a CSC. Especially the legal issues had the tendency to become a lengthy undertaking.

Roughly, we can say that we lived three phases in the development of the Cultural Heritage Centres out of REGNET. In this part we will treat the more technical influencing factors while in other parts of this document the more legal and umbrella organisation issues are covered.

Phase 1 - The loose parts

The first phase was characterised by individual developments by individual partners on their own servers. Most testing was carried out internally and some modules were reachable through an Internet connection. The operational platform consisted of servers located at the premises of AIT-VALTECH-ICCS-ZEUS-MOT-CERT.

Phase 2 - The consolidation

After the incubation period with loose parts, the more mature technical modules were consolidated into three centres. VALT hosted most of the modules and did the further integration based on the Open Source approach while CSC AUSTRIA contained all XML related data bases and their related tools (data entry and search and retrieval) under the Windows operating system and ICCS ran its own Z39.50 service and databases.

Phase 3 - The extension and real deployment

At the time of writing (mid Feb 2003) we are in the middle of the process of extension and deployment of the regional service centres or CSCs. The VALT operational platform was distributed via CD to the responsables of the respective CSCs in Europe. The aim is to become an interconnected network of service centres composed of CSC Europe, CSC Austria, CSC Low Countries, CSC Spain, CSC representation in Germany & Switzerland and CSC Bulgaria.

Plans exist to start with CSCs in Greece and Italy.

5 The Cultural Service Centres (CSCs)

5.1 CSC Europe

Research on the establishment of the REGNET legal and partnership framework mainly focussed on the adoption of an very open and flexible structure which would allow the cooperation of a wide variety of partner types (as museums, archives and libraries, cultural heritage professionals, research institutes, technology providers, independent committees etc.). At the end of the evaluation process it was found that the company model of the European Economic Interest Group, EEIG, would support such a specific type of light trans-national cooperation that allows the partners to keep their legal and economic independence but nevertheless establish an independent legal entity with own legal capacity. The common activity of an EEIG should be mainly ancillary to its members and this is exactly in the spirit of REGNET.

The CSC Europe is intended to form the international platform for all CSCs already established or in the process of being established. In order to start the network at the earliest possible date the EEIG has already been founded with its seat in Graz in June 2002 by AIT, IMAC, TARX and CSC Austria (mainly the technical Region 1 and Region 2 partners). It is open for everybody from the project to join, and especially for every REGNET CSC that will be established. In a future step even only the CSCs might remain as full members of the CSC Europe EEIG. The legal framework of the CSC Europe EEIG is constituted by internal agreements and the CSC Europe EEIG statutes (the statutes can be found in the IR2.3 and D6).

Find below an excerpt of the CSC Europe EEIG contract (regarding the object of the EEIG):

§ 3. OBJECT

(1) The primal target of the Cultural Service Centre Europe EEIG is to develop and promote a set of cultural service centres throughout Europe providing services dedicated to cultural heritage and related organisations. These centres will operate by networking their services, repositories and technical infrastructure. This aim will be reached by means of research, promotion and the development of new concepts, services and products for the digitisation, widespread circulation and establishment of cultural heritage networks.

(2) The purpose of the Cultural Service Centre Europe EEIG is to assist its Members in:

building and maintaining a distributed REGNET European Digital Library of multimedia resources documenting works of art and culture;

achieving a critical mass of digital or physical goods to be promoted through the REGNET portal;

enabling the trading services/products to be offered and sold on-line through its e-Business infrastructure.

(3) In addition, the Cultural Service Centre Europe EEIG may carry out any actions that serve directly and indirectly its purposes and/or those of its members. Its activities must, however, be linked to those of its members and the EEIG must act solely to support them. It is not the purpose of the EEIG to generate profit for its own ends.

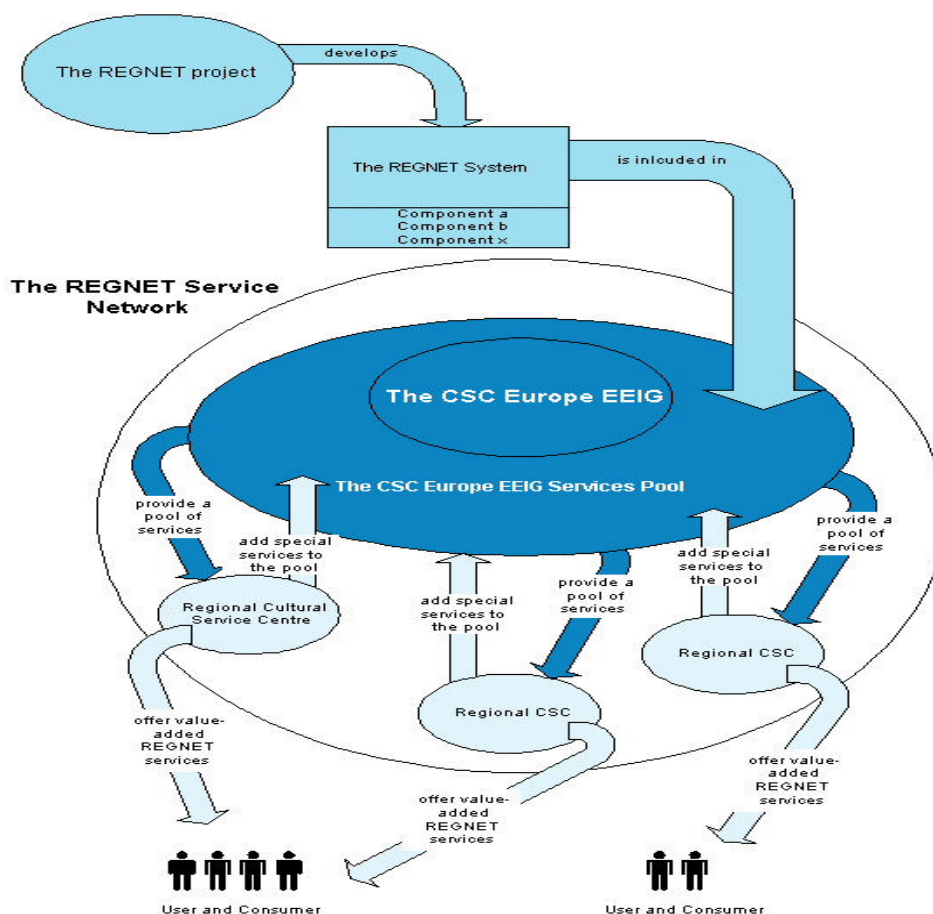


Figure 4 Services flow between CSCs

The figure shows the pool of services which will be generated through the cooperation of the different regional service centres with the CSC Europe EEIG and the input of the REGNET project. While the CSC Europe EEIG governs and further develops the REGNET system and provides it to the Service Centres, the Service Centres themselves contribute other value-added services not included in the basic REGNET System to the CSC Europe EEIG Services Pool. These services might be for instance special knowledge in standards, theme-based research, Topic Map Generation, digitalizing or other. Being member of the CSC Europe EEIG each Service Centre can profit from this wide variety of services which otherwise would be nearly impossible to offer.



5.2 CSC Austria

REGNET takes as baseline the concept of the CSC Austria which is a spin off of the MOSAIC Project.

Its registered office is:

CSC Austria

Klosterwiesgasse 32/I

A 8010 Graz

Austria

This CSC is already established and called: "Enterprise for development and application of modern Information Technology as well as Information Networking in the Cultural Heritage domain."

It is "a non for profit enterprise (Verein) and its mission is targeted to support the improvement of existing data services of Austrian Archive, Libraries, and Museums or similar organisations by doing research, support and development of innovative concepts, offering services and products in the field of digitisation, distribution, and networking of Cultural Heritage related data."

See: <http://www.cscaustria.at/>

The CSC Austria Services within REGNET are:

Creation of electronic catalogues: transformation and import of existing data into the REGNET data entry system,

Transformation and import of existing data from other systems into an online XML database,

Search and retrieval over distributed databases,

Co-operative work on thesauri, semantic webs, etc. via the web,

Consulting for the use of international standards,

Support for building-up digital assets,

Production of metadata,

Support with e-Publishing,

Support with e-business,

Presentation of the institution in the web,

Information services: forum, newsletter, mailing list,

A continuous helpdesk service (phone, e-mail).

Personnel for REGNET services: 2 scientists



5.3 CSC Low Countries

Registered office: CSC Low Countries - CSC Lage Landen
 Brusselsesteenweg, 107
 2800 Mechelen
 Belgium

CSC Low Countries consists of three founding members: Stedelijke Musea of the city of Mechlin in Belgium, Museon of Den Haag in the Netherlands and Tarx nv, a private company from Belgium. As on February 2003 this CSC is in the process of being founded. The following points reflect the main issues as laid down in the drafts for the statutes and the by laws of this non-profit organisation.

Objectives.

- research of new concepts, standards, technologies and applications in the ICT-area (Information and Communication Technologies) for the cultural heritage sector (museums, archives, libraries, etc.)

- support on the ICT-level for institutions, organisations, initiatives and persons engaged in art and culture and more particular in cultural heritage

- exploitation of a technical infrastructure offering the possibility:
 - to test new ICT-technologies
 - to host or house digital services for cultural institutions (collection management systems, image banks, web sites, e-Business, e-Publication, etc.).

Special attention will be put on regional institutions.

- take common initiatives with respect to cultural heritage in an area corresponding grosso modo with "The Low Countries" (parts of Belgium, The Netherlands, Luxembourg, the North of France); virtual exhibitions, cultural-tourist realisations, etc.

- development of new concepts in the cultural heritage domain concerning the educational and cultural-tourist use of existing information resources.

- form a forum and consortium to apply for participation in projects initiated by regional, national or European bodies.

- organisation of van colloquiums, seminars and workshops with respect to ICT and cultural heritage

- become member of a European Economic Interest Group (EEIG) within the scope of ICT-activities in the domain of Cultural Heritage



Legal structure.

CSC Low Countries is a non-profit organisation according to Belgian law and has its seat in Mechelen Belgium, Brusselsesteenweg 107.

The statutes will be submitted via a notary and will be completed by rules and regulations or bylaws. The latter forms the reference for the execution of projects wherein (part of) the members are involved.

A synopsis of the non-profit organisation regulations for Belgium can be found in the annexes.

Technical infrastructure.

CSC Low Countries has opted for a housing approach of its technical infrastructure within the premises of an Internet service provider. The REGNET modules will be installed on a TARX-owned computer configuration and put at the disposal of CSC Low Countries.

All operational issues will be carried out via remote management procedures. In this approach, flexibility and guaranteed uptime are combined in a cost effective way corresponding with the current (not heavily transactional oriented) requirements of the cultural heritage institutions participating in the CSC. Quick response to evolving needs becomes also possible through this approach.

The basic configuration consists of:

DELL Powerededge 2650

Linux Red Hat

Remote management

MySQL

PHP

PostNuke

Regnet modules

Interconnection with other CSCs

Services.

In compliance with the outcome of the REGNET project the following services and systems are offered:

- Data entry
- Search and retrieval
- Information engineering
- Knowledge engineering
- e-Shop
- e-Auction



- e-Procurement
- e-Publishing
- Topic map tools

In addition to this, other and more regional oriented services are worked out:

- management and organisation of physical and virtual exhibitions with participation of several museums
- coordination of interregional initiatives such as "Cultural Heritage traces of Flemish regions or cities in England and vice versa".
- organisation of thematic cultural heritage journeys

Main competences.

Although all the modules developed within the REGNET project will be offered, CSC Low Countries is focussing primarily on:

- Information engineering; the thematic, multilingual, multilevel approach
- Knowledge engineering; knowledge layers on top of information resources; topic maps
- e-Publishing; interactive multilingual multimedia productions
- management and organisation of (virtual) exhibitions
- development of educational cultural heritage programs

Through the CSC-network, these main competences will be put at the disposal of the other CSCs and the same applies for the other way round where other CSCs put their competences at the disposal of CSC Low Countries.

Operational functions.

During the starting phase all functions required to run a CSC, as pointed out in section "4.1.1 Functions", will be distributed among the founding members. Staff of these members will be allocated on part time base to the CSC in order to perform the necessary tasks on a case-by-case base as they will occur.

The technical infrastructure and communication lines reside with TARX.

As soon as a substantial business volume is reached, extra personnel will be engaged that will be dedicated solely to the CSC.

5.4 CSC Representation Germany Switzerland

The CSC Middle and Northern Europe 2 was planned as part of the REGNET Network of CSCs responsible for the mentioned parts of Europe and affiliating content partners within the REGNET Consortium (SUL, LMG, NRM, KVA) as well as external organisations. To start accordingly CSC operations in this region and to collect first experiences at first a smaller, geographic market were addressed: Germany & Switzerland – without establishing the CSC as originally foreseen but using the brand and umbrella of CSC Europe as a CSC Representative. This was mainly due to practical reasons and the importance of a specific appeal of the (national) target groups. All aspects related to the CSC Representative "Germany & Switzerland » will be described shortly in the following chapter.

Objectives and target groups

The main objective of the CSC Representative "Germany & Switzerland" is and will be in future the offering of products and services to support the improvement of existing and the development of new data services of archives, libraries and museums. At the run time of the project all activities of the CSC Representative "Germany & Switzerland" respectively the project partner IMAC aimed to demonstrate the REGNET system to potential users and later customers and thereby prepare the market. Although all activities were restricted to Germany & Switzerland, in cooperation with established multipliers mainly addressing museums, the future goal is of course a geographical expansion and the search for further co-operation partners for selective target group activities.

Legal structure and naming

As said before no independent legal entity was established until now. IMAC followed the model to operate – or act – as a regional CSC using the existing CSC Europe respectively the project umbrella "REGNET". All activities were introduced as part of the project goals and foreseen tasks; IMAC positioned itself as the German project partner and member of the EEIG. The future naming were intensively discussed considering among others the following names:

- CSC Central Europe
- CSC DACH (DE-AT-CH) – German-speaking countries
- CSC Suisse, CSC Germany

The goal should be to assure clearness in language and status, the usage of as much synergy as possible, the prevention of too much new approaches and the coverage of at least Germany and Switzerland as the main geographic markets at the moment due to the location of the CSC. In order to reach these goals also a more general approach was considered, e.g. "Culture in Europe" with sub sections for the different countries. This model refers to the approach to create also in future only one brand "CSC Europe". Below this brand the user should be directed to the one which is in charge for his region, e.g. de.csceurope.org (or net) etc., for regions e.g. central.csceurope.org respectively www.csceurope.de, etc.

Technical infrastructure

During the demonstration phase of the project all preparations necessary and possible (with regard to the status of technical development) for the operation of an own CSC according to the contract were made. Actually the technical infrastructure for the CSC Europe is integrated in the existing one at the side of IMAC (Microsoft Windows environment). Due to the fact that the REGNET System was not in a status for complete implementation and operation merely an own web site (hosted on the existing web server) was set up in order to promote the REGNET test bed site. Actually this static site is enhanced to become a "service and product platform for CH organisations", the later entry page of the CSC (Representative) Germany and Switzerland.



The preparatory work comprised intensive testing of system components, evaluation of open source applications to expand the IT-service portfolio; own adaptations of existing tools were mainly made using the installations on the CSC Austria Server. The same for the Tested operation and the elaboration of combined efforts to participate in relevant calls for bids.¹

Services and competences

Services will be offered according to the expertise of CSC-related staff; in the case of the CSC representative Germany & Switzerland mainly data management, knowledge engineering and e-commerce. The perspective is of course to offer all products and services required by the target groups – where needed in co-operation with other CSCs. First demonstration activities revealed that a (first) focus on data management (import/export/convert data, consultancy in data structuring and employment of modern technology, develop and maintain databases) and e-Commerce-based products and services (museum shop applications) is justifiable. Due to the innovative potential of knowledge engineering methods and products a special focus will be laid on this e.g. by developing generic topic maps, conceptual workshops on knowledge management and taxonomy and consultancy in the usage of new approaches in order to improve navigation in web-based information bases. For a detailed product portfolio to be offered see also the CSC profile given in D6.

Functions (required personnel)

The focus of the CSC Representative will be accompanying consultancy for all CH organisations, not primarily technical operation and development. Accordingly especially personnel are needed familiar with the domain, used methodologies within and technological aspects (1-2 consultants). In order to process data assistance work is needed. For a later full service CSC technical staff should be trained. During the run of the project most of these requirements could be fulfilled: consultants were trained in order to demonstrate the REGNET system components (especially the TEXTML database, Topic Map Generation and Visualisation tools) and to process data as for instance collected during the REGNET Tested action. Technical staff evaluated the REGNET Tools, underlying technologies and additional solutions (open source content management systems like PHP and Typo3, e-commerce applications like PHP shop and auction) in order to be able not only to operate the system (or parts of it) but also to assure a further adoption and development with regard to the needs of the customers.

¹ In December 2002 IMAC was invited to prepare an offer based on the REGNET system. All calculations were made assuming that at first a co-operation between CSCs will also refer to technical infrastructure and competencies, e. g. offer a solution for data management, hosted on an existing (data) server, advised by the regional CSC (customer care and service).

5.5 CSC Representation Bulgaria

Objectives – clientele

ICCS-Bulgaria participates in the REGNET project like Content Provider and Developer of Regional Pole for e-services, related to Bulgarian culture heritage (CH). Contemporary Bulgarian Art presents Bulgarian culture heritage in REGNET. The CH objects are designed and given by the Union of Bulgarian Artists – the largest Bulgarian union, gathering about 2700 artists of all generations in different sections of art: painting, graphics and illustrations, sculptures, ceramics, textiles, woodcarving, etc. That is why the activities of ICCS to attract potential users in Bulgaria to REGNET system were directed to the customers, related to Artists, Art Galleries, Exhibitions, users, dealing with the art domain. There were organized meetings and workshops, presenting the targets of REGNET system to deploy informational services in the culture domain. Thus we tried to disseminate the goals of the REGNET project and to raise interest from the Artists' auditory.

Subcontractor of ICCS is the Southern Ural State University (SUSU), Chelyabinsk, Russia. SUSU participates in REGNET like Content provider, supplying Russian Art. Thus the regional objects, concerning the art domain has been extended with the region of Russia. SUSU established links with famous Russian Galleries and Museums and acted in the REGNET project as a content provider. Thus the collections of art objects have been extended with world known art objects and reproductions.

Till now the potential Users of CSC-Bulgaria, being acquainted with the functionalities of the REGNET system and which expressed their will to use REGNET system, are the following institutions:

- The Union of Bulgarian Artists
 - Ethnographic Institute and Museum - Sofia
 - Bulgarian Secondary Applied School of Art – Sofia,
 - Silvena Art Gallery- Russe city of Bulgaria
 - Sofia City Art Gallery Hall
 - Southern Ural State University (SUSU), Chelyabinsk, Russia
- with LOCAL PARTNERS in the REGNET project
- SUSU Division of WAN Technologies
 - Chelyabinsk Region Picture Gallery
 - Perm State Art Gallery
 - Nevyansk Museum of Local Lore and History
 - Museum of Nevyansk Icons (Ekaterinburg)
 - Fine Art Museum (Ekaterinburg)
 - Contemporary Art Gallery "OkNo" (Chelyabinsk)

Legal structure

Regnet membership agreement

This agreement is developed for the high level of the organizational structure of REGNET. It defines the decentralized network structure of REGNET as a unique entity which operates on international basis. The REGNET membership agreement concerns all REGNET participants, who are in charge of the management, development and support of the REGNET infrastructure and services. The membership agreement determines the bodies, their functions and rights, which operate on international basis.

REGNET Regional Pole Agreement

The REGNET poles are the executive entities, which perform the REGNET functionality and services. Each legal entity, willing to act as a pole has to accept the agreement named REGNET Regional Pole Agreement. It has to be applied between the REGNET international level, level 1, and the level of the REGNET Poles, level 2. The Regional Pole is the general executive of services, which are offered to users over a corresponding geographical area.

REGNET System Cultural organization Agreement

This agreement defines the negotiation between the regional poles and the content providers.

REGNET System Individual Agreement

This agreement sets the conditions under which legal entities and individual may utilize the REGNET services and functionalities.

The relation between the suite of agreements is given in the figure below

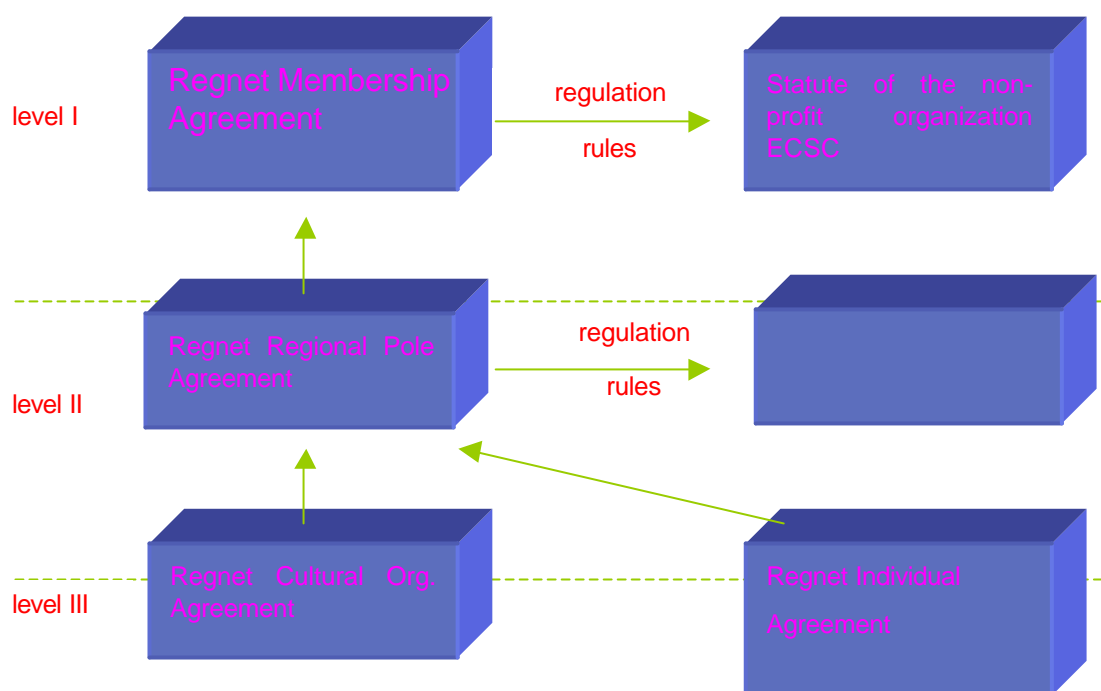


Figure 5 Relations between the REGNET suite of agreements



Technical Infrastructure

The technical REGNET solution is presented in the figure below. Two ZEBRA servers, which implement Z39.50 protocol are established in the premises of AIT (Austria) and ICCS (Bulgaria). These servers have functional search and retrieval relations with the databases DB AIT, which deals with placards and posters data and DB ICCS, which support art gallery and art images. The metadata, stored in the DB is in Dublin Core standard form. Additional connections are established for the Russian database (SUSU partner) and Z39.50 server. The user may perform distributed searches in both databases using the portals. He can enter in the portal of AIT and to perform searches in DB-AIT and or to the distantly situated DB-ICCS and DB-SUSU.

The user can enter the Bulgarian portal and can have access to the databases from Bulgaria (DB-ICCS, DB-SUSU) as these ones from Austria. Thus a virtual environment is created for the user, who can operate in all available set of databases. The solution for the implementation of such distributed multi-search and retrieval facility is the implementation of the standard Z 39.50. This standard addresses the communication protocol and the negotiations between the databases. The current solution of the Z 39.50 protocol applies software operating in LINUX environment. Additional open source modules are used like Apache Web server, YAZ module, ZAP module (which are extensions to the PHP suit of the APACHE web server). Appropriate PHP based middleware has been developed, which influences the right graphical interface between the user and the portals in Bulgaria and Austria.

CSC-Bulgaria offers additional information services, based on the developments of the REGNET consortium.

The data entry is operable with TeXtML technological infrastructure, established on the URL address of the CSC-Bulgaria. The search and retrieval functionality of the TeXtML repositories are also available for potential users and customers. Now three databases are under developments:

- contemporary Bulgarian art – in English;
- contemporary Bulgarian art – in Bulgarian;
- Russian art – in English.

CSC Bulgaria supports e-business functionalities. Two e-shops are under operation:

- the e-shop of the Union of Bulgarian Artists;
- the e-shop of the National Ethnographic museum .

It has been deployed a joint solution for e-shop search and communication between the CSC Bulgaria e-shops and the developments of ZEUS-Greece ones, applying SOAP communication protocol.

CSC-Bulgaria performs also general informational services. It supports the web sites of 3 institutions: the Union of Bulgarian Artists, the National Ethnography museum, the Secondary Applied arts School. Links to the REGNET portal and project web site are presented. The flowchart of the CSC-Bulgaria functionalities is given below.

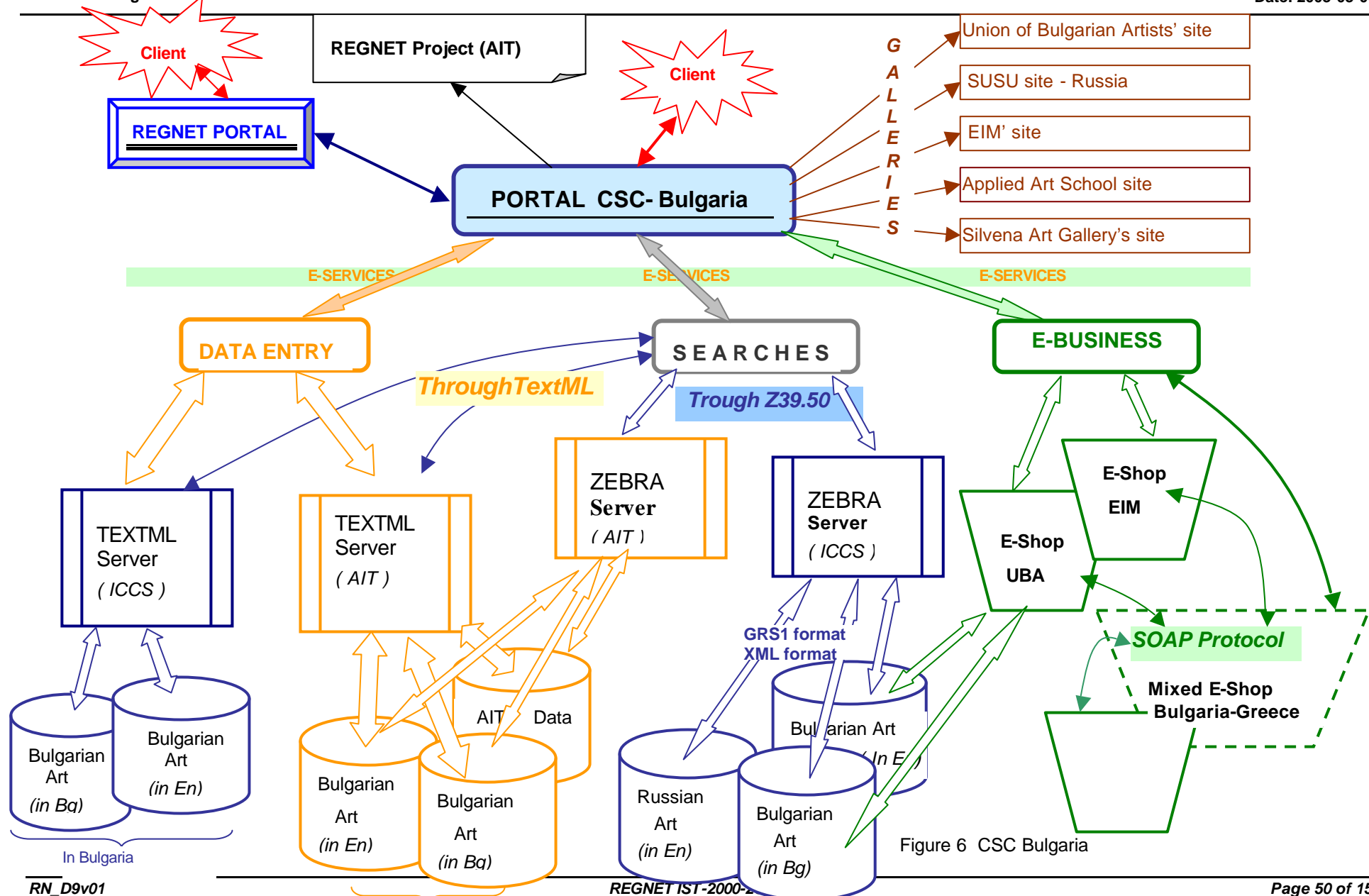


Figure 6 CSC Bulgaria

Services

CSC-Bulgaria has the following main infrastructure and services, presented in the figure above

1/ Infrastructure

ICCS has designed a hardware and software infrastructure of Bulgarian Portal of E-services :

<http://www3.iccs.bas.bg>



Figure 7 Portal of the Culture Service Centre - Bulgaria

Here are the Websites of some of the potential users of REGNET like

- The Union of Bulgarian Artists : <http://hs39.iccs.bas.bg>

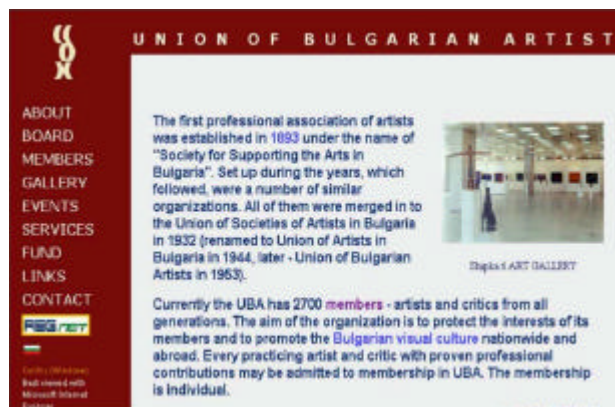


Figure 8 Union of Bulgarian Artists' site – “About us”

- Ethnographic Institute and Museum : <http://hs41.iccs.bas.bg>

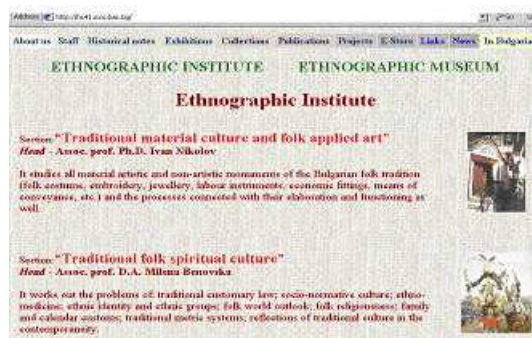


Figure 9 Ethnographic Institute and Museum's site

- Secondary Applied School of Arts : <http://hsh.iccs.bas.bg>



Figure 10 A part of Secondary Applied School of Arts - Sofia

- Russian Art Gallery – Chelyabinsk : <http://regnet.org.ru>,

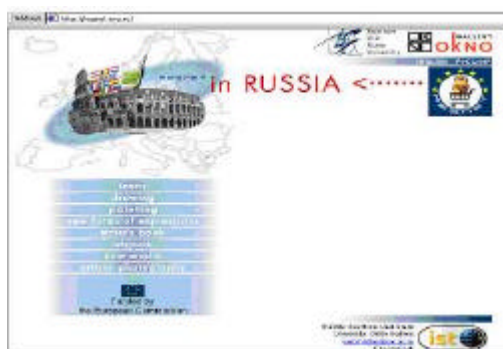


Figure 11 Russian Art Gallery "OKNO" – Chelyabinsk

- Gallery in town of Rousse-Bulgaria: <http://www.silvena.net/>



Figure 12 Silvena Gallery in town of Russian-Bulgaria

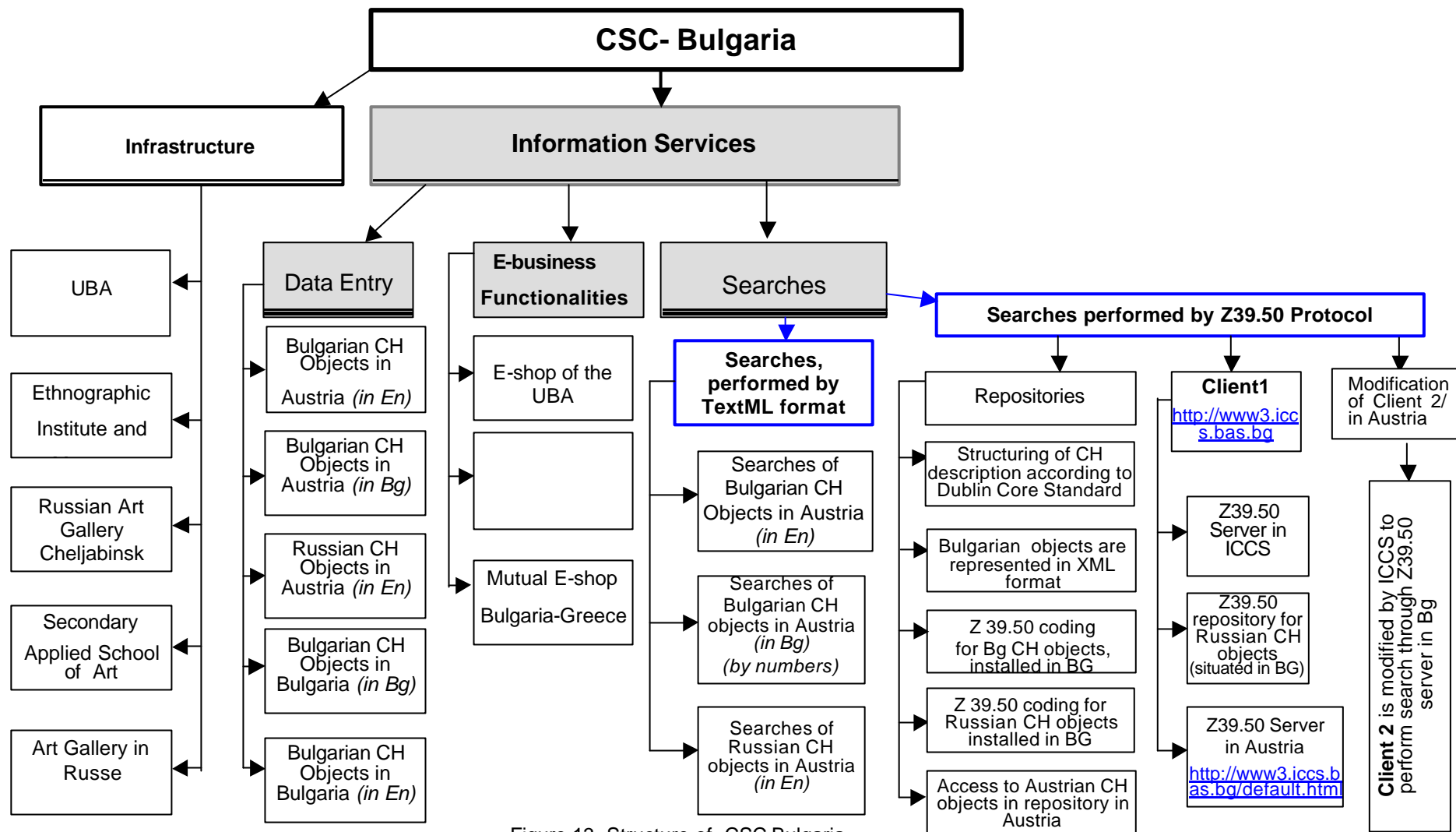


Figure 13 Structure of CSC-Bulgaria

2/ Information Services

Some of the main developments of REGNET project are presented here:

Data Entry in Culture Heritage repositories

Here are presented in TextML format Bulgarian and Russian CH objects as follows:

- Bulgarian CH objects in Austria (in English): <http://csc000.cascaustria.at/iccs>
- Bulgarian CH objects in Austria (in Bulgarian): <http://csc000.cascaustria.at/iccs-bg>
- Russian CH objects in Austria (in English): <http://csc000.cascaustria.at/susu>
- Bulgarian CH objects in Bulgaria (in English): <http://hsi.iccs.bas.bg/iccs>
- Bulgarian CH objects in Bulgaria (in Bulgarian): <http://hsi.iccs.bas.bg/iccs-bg>

E-Business functionalities

- E-Shop of the Union of Bulgarian Artists – http://hs19.iccs.bas.bg/UBA_Shop



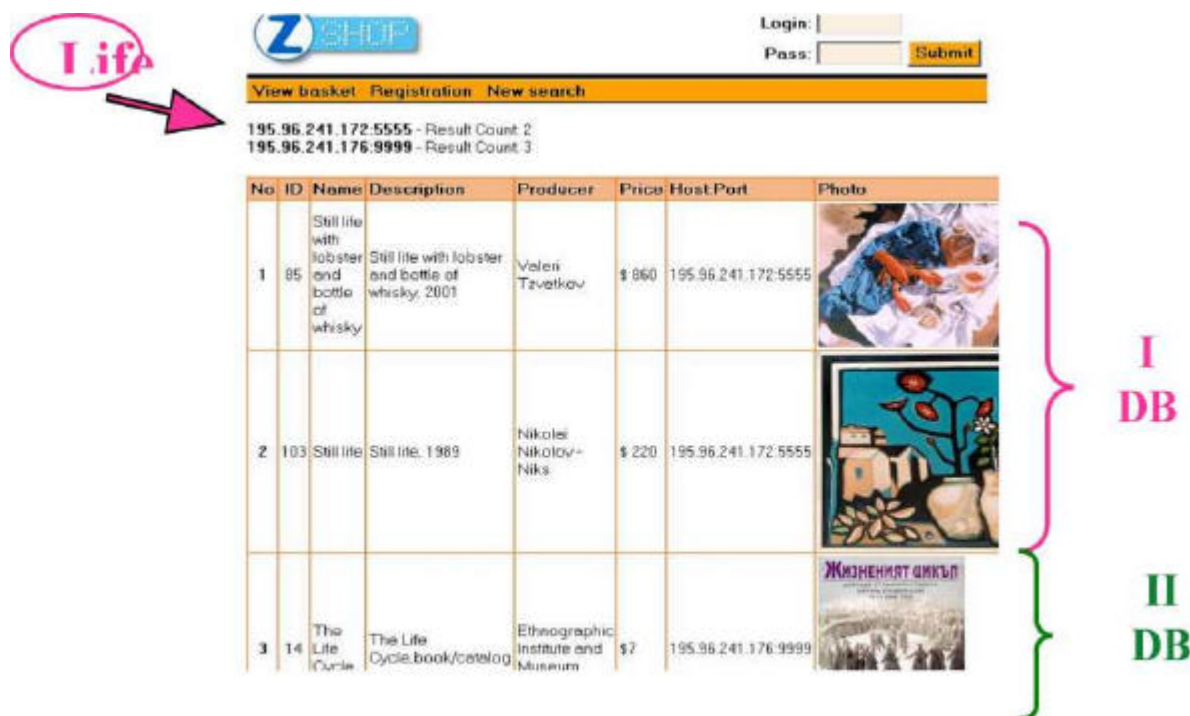
Figure 14 E-Shop of the Union of Bulgarian Artists

- E-Shop of the Ethnographic Institute and Museum – http://hs19.iccs.bas.bg/Eth_shop



Figure 15 E-Shop of the Ethnographic Institute and Museum




- Mutual E-shop Bulgaria-Greece - <http://hs19.iccs.bas.bg/e-shop>



I.life

View basket Registration New search

195.96.241.172:5555 - Result Count: 2
195.96.241.176:9999 - Result Count: 3

No	ID	Name	Description	Producer	Price	Host	Port	Photo
1	85	Still life with lobster and bottle of whisky, 2001	Still life with lobster and bottle of whisky, 2001	Valeri Tzvetkov	\$ 860	195.96.241.172:5555		
2	103	Still life, 1989	Still life, 1989	Nikolai Nikolov-Niki	\$ 220	195.96.241.172:5555		
3	14	The Life Cycle	The Life Cycle book/catalog	Ethnographic Institute and Museum	\$ 7	195.96.241.176:9999		

I DB

II DB

Figure 16 Mutual E-shop Bulgaria-Greece

Searches

There are realized two kinds of searches: using Textml format and applying Z39.50 protocol. In that way distributed search can be performed. It is realized distributed search between Bulgarian and Austrian data objects and between Bulgarian and Greek data objects, which is one of the main achievements of CSC-Bulgaria.

Main competences

Two kinds of searches are performed in CSC-Bulgaria : Searches, performed by using TEXTML format and searches, performed by using Z39.50 standard.

Searches, performed by using TextML format.

- Searching of Bulgarian CH objects in Austria (In English) - <http://csc000.csaustria.at/iccs>
- Searching (by numbers) of Bulgarian CH objects in Austria (In Bulgarian) <http://csc000.csaustria.at/iccs-bg>
- Searching of Russian CH objects in Austria (In English) <http://csc000.csaustria.at/susu>

Searches, performed by using Z39.50 protocol

A) Repositories

- Structuring of CH descriptions according to Dublin Core standard is performed
- The Bulgarian objects are presented in XML format
- Z39.50 coding for Bulgarian CH objects, installed in Bulgaria
<http://www3.iccs.bas.bg/default.html>
- Z39.50 coding for Russian CH objects, installed in Bulgaria
<http://www3.iccs.bas.bg/default.html>
- Access to Austrian CH objects in repository in Austria
<http://www3.iccs.bas.bg/default.html>

B) Client 1

This Client is developed by ICCS and can be seen at <http://www3.iccs.bas.bg/default.html> .

It allows access to :

- Z39.50 server in ICCS, Figure 2.5.13.



Figure 17 Search, performed by Z39.50 server in CSC- Bulgaria

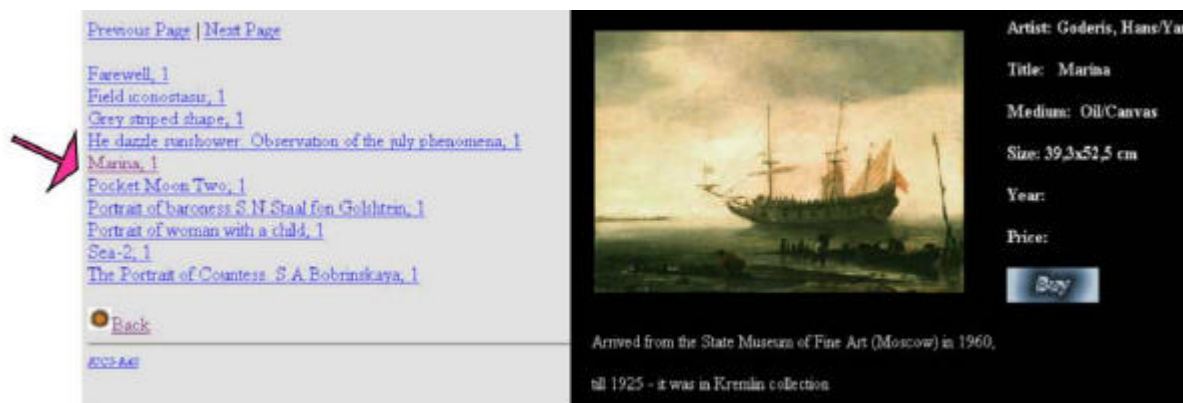
Z39.50 repository for Russian CH objects (situated in Bulgaria)

Figure 18 Search, performed by Z39.50 server in CSC- Bulgaria for Russian DATABASE

- Z39.50 server in Austria – <http://www.cscaustria.at/demo/z3950.05>

C) Modification of Client2 allowing access to Bulgarian Z39.50 repositories

Client2 is situated in Austria and it is working by Z39.50 standard for searching. It is modified by ICCS to perform search through Z39.50 server in Bulgaria

<http://www.cscaustria.at/demo/z3950.05>

Functions (required personnel)

The main functions, maintained by the CSC-Bulgaria are related with services of Art objects like:

- digitising the objects using photograph data
- data entering the objects . Here are needed two types of data: in TextML format and in XML format for storing the data in a different databases for the both types of searching – through TextML server and trough Zebra server using Z39.50 Protocol.
- Storing the CH content in appropriate form.
- E-business functions, related with entering the data in the E-shop, checking the clients' needs and purchases. Giving access to the e-auctions
- Administration of the CSC, containing servers' maintaining, common functionalities of the system, links and developments.
- Giving on-line access to the system of the users.
- Realising access to the other poles of the REGNET system
- Realizing searches

Required personnel depends on the users' requirements, usability of the centre and the system's loading.

5.6 CSC Spain

Objectives

Our CSC's objectives are mainly focussed in the promotion and dissemination of the emerging contemporary art of the artistic project called INCívics, promoted by the City Council of Granollers since 1996. The main goals are next:

- The RegNet portal must to foster an **easy and thematic access** to the art services and other services linked to INCívics.
- The RegNet portal must to be useful like a **dissemination** platform of emergent contemporary artists' works.
- The RegNet portal must to be useful as a **sale** platform of emergent contemporary artists' works.
- The RegNet portal must create an **Intranet** for the work in the net of the INCívics artists.
- The RegNet portal must to be useful as a platform **to carry out multimedia productions**.
- The RegNet portal must to foster the work in network for the creation of cultural products together with the other RegNet partners.

The specific objectives that we expect to achieve setting up the CSC Spain are next:

- To Catalogue and to edit the artworks in the portal. The same artists and content managers (art dealers) will develop this task.
- To promote the dissemination of the artists and their works.
- To foster the dissemination of new artists, offering the possibility to create and request derived products with the image of some of the works (for instance: to create posters and postcards).
- Audience's segmentation. Faithful users.
- To foster the introduction of new artists in the commercial market (through de e-commerce)
- To foster the access to professionals (art dealers, curators, museums, critics) to the new artistic production and to the direct contact with the artists.
- To foster educational resources in the visual arts' field, that contribute to make more accessible the contemporary art for a common audience.
- Like an educational resource in schools as complement in their curricular program.

In a near future IAT expect to sell the system to further regional cultural institutions and our main objective then will be to work with them to integrate their contents and to give them access to a wider market so to promote their products, as well as the main goals previously mentioned.

Clientele

We distinguish between two types of users. Those who are going to use the system in an inner level: artists and managers, and those who are going to use the system in an external level: other users.

Inner Level:

- INCívics: Cataloguing and editing the artworks in the database in order to be showed in the Art Gallery Entry or Virtual Exhibitions.
- Art dealers: Management of the contents' sale and editors of the e- Procurement.
- Future members of CSC-Spain. They will have their own database in order to catalogue the contents

External Level:

- Art Galleries: Meeting of new artists and new works. Carrying out exhibitions. Distributing works, selling works and disseminating.
- Museums: Exhibitions, acquiring works and disseminating.
- Curators: Exhibitions, meeting new artists and new works.
- Collectors: Acquiring works.
- Buyers: Acquiring works.
- Students and Schools: Didactic use.
- Academics: Didactic use.
- Visitors – Regulars Users: Edutainment interest.

Legal structure

The legal structure of the CSC Spain will be defined as a non-profit organisation composed by two institutions: IAT (Instituto Andaluz de Tecnología) and GRAN (City Council of Granollers).

The Spanish Law sets what is understood as a non-profit organisation: the foundations, the associations that has been declared for public use, the non-governmental organisations, Spanish sports federations of Foreign foundations registered in the “Registro de Fundaciones” and the federations and associations of the non-profit entities previously mentioned.

Apart from their juridical form, these entities need to fulfil a set of requirements in order to be able to apply regulations of the “Ley de Mecenagos”. Among them it is emphasised the pursue of final own interests, destined the 70% of the obtained results as a consequence of the economic exploitations, once the expenditures are deduced, to the attainment of the end. Furthermore, the Law introduces a novelty in the field of business values, as the entity must renounce to the right to vote, which is inherent to the participation in mercantile entities that pay contributions in a secondary official market if they exceed the limit of 3%.

In a first stage the CSC Spain will be joined to CSC Austria like measurement in order to participate in future projects. Once the CSC is established we will break contact with the CSC Austria in order to operate from our region.

By means of an agreement-contract IAT and GRAN will be joined in order to develop the new CSC, establishing specific clauses, where it's going to be explained the main functions and responsibilities of each partner and the organisation responsible at the top of the project. It has to be defined.

Technical Infrastructure

The CSC Spain will consist in two different interfaces, one addressed to the regular user and the other one addressed to the managers for an inner use or Intranet. This last one will be visualised by means of the official RegNet portal. The interface for the user is being designed by IAT and will contain a number of services already specified in the Services-Matrix of the CSC Spain.



Figure 19 Mock up of the CSC Spain

About the portal's hosting, this will be stored in the installations of IAT in Seville, together with the technical and informational help.

Services

The services that the CSC Spain will offer are next:

- Theme Explorer
- Collection
- Virtual Tours
- Virtual Exhibitions
- Search
- Search Guide
- Search Profile
- Copyright information
- **Topic Map Entry**
- **Data Entry**
- Event Calendar
- Guest Book
- Address Book
- Feedback
- Personalise
- E-Shop
- **E-Procurement**
- **Delivery**
- **E-Publishing**
- WAP access

Those that are in black are exclusively for the managers and the other one are for the regular users.



The viability of these services will depend on the benefits obtained from the transactions and commercial use of the system. These incomes will be used to improve the quality of the services provided and to promote the CSC for future new customers.

Main competences

The main competences, that the CSC Spain is going to develop, will be the contemporary art promotion and dissemination. Therefore it will be necessary to create and to develop a useful interface to exhibit and to sell the products that will be spread in the portal. For this reason the tools that RegNet provide to us will be high-priority for our objectives and development.

Functions (required personnel)

- | | |
|-----------------------------|--|
| 1. Digitisation: | a/ Some responsible artist
b/ Company to be hired |
| 2. Translation – Correction | To contract a translator or corrector |
| 3. Update: | The same artists through the Intranet. We will provide to those who aren't able to login or to have a computer, the necessary material in the Technological Centre in Granollers (computers, digital camera, and scanner) in order to update their data in the portal. |
| 4. Formal agreement | GRAN - IAT |
| 6. Work appraisal | Galleries: <i>Galeria AB + El Quatre Sala d'Art</i> |
| 7. Work sale | Galerias de arte (ídem supra) |
| 8. System technician | IAT |
| 9. Project's coordinator | IAT y Ayuntamiento de Granollers |



6 Content frame of reference – benchmark

This section gives a snapshot overview of the types and a full overview of the quantities of the contributions of the respective content providers used in the demonstration phase of the REGNET project. The test and demonstration efforts have used this as a benchmark guidance for the content features to test and evaluate.

6.1 ALI

Alinari contributed mainly in images related to the SAINTS theme. Especially the multi-figure images were sought out.

The meta data structures delivered for the Saints images contained an elaborate pattern of links between related figures.

The watermarking system used by Alinari was put forward as one of the potential solutions for copyright issues within the REGNET project.

6.2 CC

The CC partner has supported the REGNET content provision through the works stored in two of the most important Italian museums:

- Musei Capitolini (MC)
- Museo degli Argenti (ARG)

which have joined on a voluntary basis the Regnet project.

The two Museums have produced digital contents using the same structures:

- Tour d'Horizon, a collections' presentation
- Themes for Topics Map (Musei Capitolini: 4 themes – Museo degli Argenti: 3 themes)

Each of them include 3 different fragments:

- Thematic Text
- Object Description
- Object Image

All digital contents have been provided in Italian language (full version) and in English language (short version).

It follows a short description of their works contributions in Regnet:

MUSEI CAPITOLINI

The Musei Capitolini of Rome are the most ancient public collection (1471) in modern world and one of the most important Italian cultural institution.

The Musei Capitolini collections are preserved in the three buildings delimiting Piazza del Campidoglio: Tabularium, the Palazzo Nuovo and the Palazzo dei Conservatori .

The collections are of archaeological and historic-artistic kind, closely linked to the city of Rome and its history, and most of the exhibits come from the city itself.

The works date back to different period: from 5th century BC to Modern Age. Anyway, the most representative and famous masterpieces are those which date back to ancient Roman Age.

Short description of the delivered data for REGNET and/or CSC operations

CC provided digital contents to be available for the Regnet demonstration phase.

Particularly, the material produced by Capitoline Museums consists in:

- *Tour d'Horizon*: a Capitoline Museums collection's presentation and a selection of the most representative art pieces, called Top Ten Pieces.

- *Topic Map*: 4 themes related to
 - Materials
 - Portraits
 - History
 - Religion

Each of them includes three different fragments:

thematic text: an introduction with general explanation of each item

object description: notices about each object

object image: notices about the images of each object.

Totally, Capitoline Museums has produced 9 thematic texts, 61 object descriptions and 61 object images, both in Italian and English languages. To do this we have generated separate text files in the Data Entry of the RegNet system.

The Italian version is more detailed (full version) than English one (short version).

Themes and fragments are strictly linked in their contents by primary and secondary keywords.



Figure 20 Capitoline Museum object

Reason(s) for the choice

Capitoline Museums is the most ancient public collection in modern world and it contains hundreds of wonderful art-pieces.

So, our objective has been to offer a wide and coherent picture of Ancient Rome, from its origin to the Imperial period, both from an artistic and historical-religious viewpoints.

To achieve this main objective we started to select themes and fragments strictly linked, like for example "Marble" and "Portraits of Roman Emperors and Empress".

Then, we selected a sample of works that we thought were the most representative of this reach collection in each delivered theme.

The nature and number of the delivered items

Totally, Capitoline Museums has produced 9 thematic texts, 61 object descriptions and 61 object images, both in Italian (full version) and English (short version) languages.

The digital contents consists in:

- *Tour d'Horizon*: a Capitoline Museums collection's presentation and a selection of the most representative art pieces, called Top Ten Pieces.

Tour d'Horizon is divided in:

- 1 thematic text
- 10 object descriptions (Top Ten Pieces)
- 10 object images

- *Topic Map*: 4 themes related to

Materials

Portraits

History

Religion

These 4 themes are divided in:

- 8 thematic texts:

2 for Materials ("Marble", "Bronze")

2 for Portraits ("Portraits of Roman Emperors and Empress", "Portraits of philosophers and writers")

3 for History ("Rome's origin", "Republican Rome", "Imperial Rome")

1 for Religion ("Mythology")

- 51 object descriptions (13 for Materials, 12 for Portraits, 14 for History, 12 for Religion)

- 51 object images (one for each object and everyone in jpg version).

MUSEO DEGLI ARGENTI

The Museo degli Argenti is located in the Pitti Palace of Florence, ancient residence of the Medici family.

The basic core of the collection has Medici origins, originally gathered in the palace in the Larga street (Cavour street now) where Cosimo the Elder begun a large and diverse assembly of works of art.

The temporal coverage of the collection is compound by a few thousands of objects from ancient times to XIX century that for their diversity reflect the tastes, fashion and working methods of the fourth centuries of collecting and patronage which went to make it up.

The project

The director of the museum, Dott.ssa Marilena Mosco, and its deputy director, Dott.ssa Ornella Casazza, decided to join the Regnet Project believing that a cooperation with other European Institutions could bring profitable exchanges of knowledge and experiences among the involved institutions and foreseeing that this project could be a good occasion to carry out a new organization of the data of the Florentine museum. At the moment the museum do not have a database, so at the

beginning of the work all the data, still on paper, were analysed to decide which of them to start transforming in digital format. Some of the images already accessible on paper were scanned but most of them were acquired directly from the works of art by a digital camera. This was a good input looking forward a future digital data collection.

The direction charged *Artconservation* to develop the project and to rationalize the contents provided by the museum.

Contribution

Logical Structure

The first objective was to give to the final users an overview of the museum by a short description of the building, its history and its works of art, a so-called *Tour d'Horizon*.



Figure 21 Museo degli Argenti - Tour d'Horizon

Ten different objects were also chosen to represent the various types collected in there, providing one image for each object and the related metadata.

Then, three different Topic Map were created with associated objects divided in sub-groups by Thematic Text.

A list of Key Words were also sorted out to browse and search into the text, creating a navigation which could help creating a connection with the contents provided by other institutions through predefined links.

Topic Map:

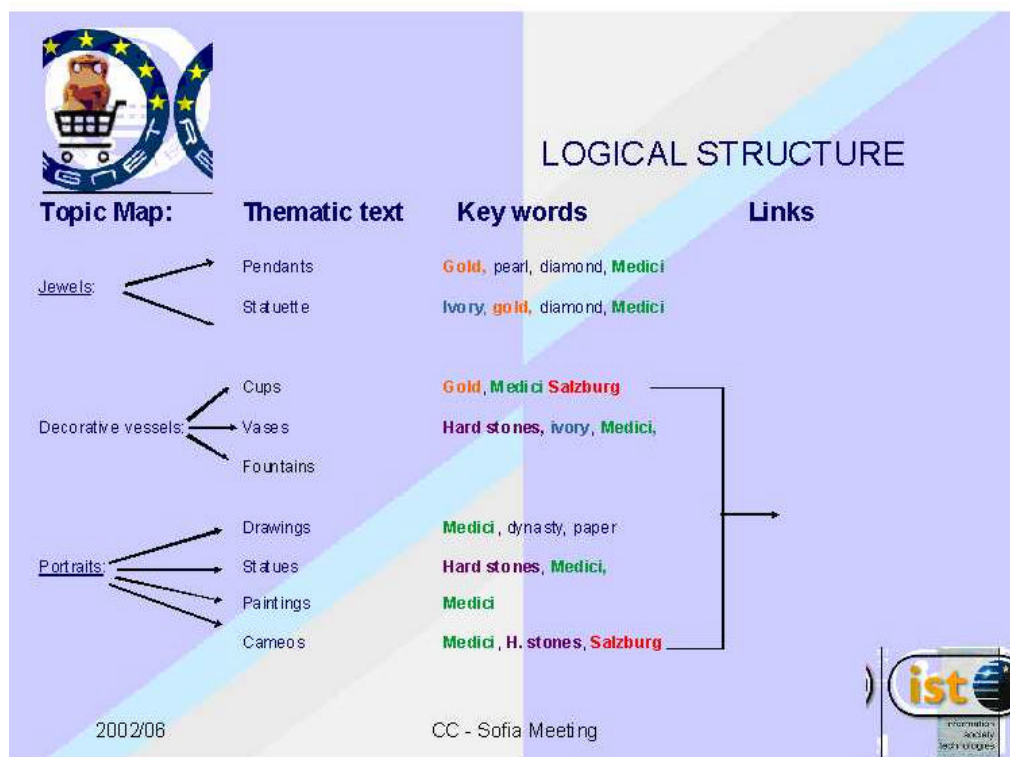


Figure 22 Museo degli Argenti - Topic Map

In a second stage the searching of a predefined numbers of objects started grouping them under different common themes.

Jewels: 13 objects (jewels and treasures) belonged to the collection that the last Medici, Anna Maria Luisa, Electress Palatine(1667 -1743), left to the town of Florence in her will.

Decorative vessels: 10 objects. The Museum houses a precious and rich variety of vases and goblets of different provenance and materials (glass, hard stones, ivory, amber, silver).

Portraits: 11 objects (some cameos, one painting, one drawing, one sculpture) portraying the Medici's. The Museo degli Argenti fortune is intrinsically bound to the history of this family, the works commissioned by them and their passion for collecting.

Thematic Text:

Each Theme has been divided in Thematic Texts to display the variety of types collected, the techniques and the manufacture:

The Jewels: Pendant and Statuette.

The Decorative Vases: Cups, Vases and Fountains.

The Portraits: Paintings, Drawings, Sculptures and Cameos.

Each theme was compound by:

- 1 Fragment: an introduction with general explanations of each item.
- N Objects Description: notices about each object
- N Images Description: notices about the images of each object
- N Images: one image for any single object. The images have been digitised with a digital camera: the size level is medium resolution, JPEG format.

For each theme complete versions in Italian and in English have been provided.



THEME: Jewels

Rooster Pendant

Pendant
Flemish manufacture
Date of production 16th C. (1570-80)
Silverworks Museum
108 x 57 mm.

Material:
Enameled gold, two baroque pearls, thirty-four diamonds, two rubies.

2002/06 CC - Sofia Meeting

Figure 23 Museo degli Argenti - Object - Jewel



6.3 GRAN

Short description of the delivered data for REGNET and/or CSC operations

From GRAN (City Council of Granolas) we have delivered some data about our “special” collection of emerging art called INCívics. INCívics is a project that gathers a group of young artists that are carrying out art in the area of Granollers. They are developing contemporary art in a broad range of disciplines: sculpture, photography, painting, video-creation, net.art, engrave, ceramics and so on.

The main goal that the City Council of Granollers seeks, has been to disseminate the work of these artists abroad Europe using this new medium called Internet. We wanted to experiment with new ways of dissemination and new possibilities to practice the B2B and the B2C. To achieve these main objectives we started to select a sample of works that we thought were the most representative of this special collection. Finally we collected a number of works and their consequences explanations or thematic contributions and images that we are going to number hereafter.

Reason(s) for the choice

Following with the above quoted, and extending it, the reasons of our choice was to spread the art created in the Granollers’ area and region. We think that we have a very good group of artists that represents the cutting edge art of the moment.

The opportunity that RegNet gave to us, was a great opportunity that we couldn’t waste. It could be a way to let people know about what we are generating in Granollers, the cultural activity that from the Culture Department is encouraged, and overall the great bet that this department have done with the visual art’s policy.

We think that we are a City Council that promotes a very innovative policies involved in visual arts and contemporary art. In this way we create more democratic tools to spread all kind of art.

Also we wait to achieve some business in order to prepare virtual exhibitions and also to sale some of the artworks displayed.

Our first priority is to disseminate the work of these young artists in a broader audience.

**The nature and number of the delivered items**

Texts: 90 Word documents

40 documents are cave's and the others (20 in English and 20 in Catalan) 40 are thematic text, it means descriptions of the work (20 in Catalan and 20 in English) + organisations' profiles and other documents.

Images: 120 images jpeg.

Topic Maps: 1 from spreadsheet till XTM and visualization

Video: 1 - The language of the video is in Catalan with English subtitles.

Hereafter a summary of all of this:

COLLECTION (Collection Data)		Word	Excel	jpeg
	Object data*	90		
	Images related to the objects			120

* Object data: This means 40 CV's (20 in English and 20 in Catalan) and 40 object descriptions (20 in English and 20 in Catalan) + organisation profiles and so on. You'll find it in more detail hereunder.

THEMES (Thematic Text)		Word	Excel	jpeg
	Definition of the art's fields related to the INCÍVICS collection	1		

SHOP ITEMS	Sellable art objects with basic description and prices	Number of works	Excel templates	jpeg
		97	97	120

PROFILES		Word	Cat	Eng.
	Collection Profile	2	1	1
	Company Profile	2	1	1

ARTISTS		Numb.	Encod.	Cat.	Eng.
	CV's	40	doc	20	20
	Description of work	40	doc	20	20
	Managers: galleries	4	doc	2	2

TOPIC MAP	INCivics	Num.	Eng.
		1	1
EVENTS	Information of exhibitions	Num.	Eng.
		1	1
VIDEO	INCivics in RegNet	Num.	Cat.
		1	1

One relevant example per type of addressed items, including multilingual ones.

Example of thematic text (CV) in English and Catalan language.



Curriculum Pere Báscones

Born in Saragossa, on June of 1970.

Bachelor in Fine Arts. Until 98, he mainly works in photography, but he's working in infographies and inter-media's techniques from the design's world to arrive at the creation of own pictures. Little by little is carrying out different proposals and projects: installations, net-art...

He's interested to be moved in the field of public art and to be approached to the human landscape, discovering and returning to discover the ties lost with the environment and the nature, is also interested for the literary relations and the secondary arts.

He has done different exhibitions, he takes part in the 'INCivics' project of Granollers and in the RegNet European's project. His artwork is tied of travelling, walking, experiencing places and taking portraits of his personal relations. He uses camera, computer in network and digital video.



Curriculum Pere Báscones

Nek a Saragossa en juny de 1970.

Llicenciat en Belles Arts. Fins al 98, treballa principalment amb fotografia, però cada cop més, s'introdueix en les tècniques infogràfiques i inter-mediàtiques des de el món del disseny, per arribar a la creació d'imatges pròpies. Poc a poc va realitzant diferents propostes i projectes: instal·lacions, web_art...

L'interessa moure's en el camp de l'art públic i apropiant-se el paisatge a l'home, descobrint i re-descobrint els lligams perduts amb l'entorn i la natura, també s'interessa per les relacions literàries i les arts secundàries.

Ha fet diverses exposicions, forma part del projecte INCivics de Granollers i del projecte RegNet europeu. La seva obra està lligada al fet de viatjar, de caminar, d'experimentar llocs i de retratar les relacions personals. Utilitza la càmera de fotos, l'ordinador en xarxa i el vídeo digital.

Figure 24 Granollers - thematic text

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of the REGNET Consortium.

**The way the multilingualism is implemented (generation of separate text files, use of different versions (instances) of an existing collection management system, etc.)**

We have done for each document an English version and a Catalan one. To do this we have generated separate text files kept in the Data Entry of the RegNet system.

Other internationalisation/regionalisation/localisation implementations (if addressed, such as local language, etc.)

The official language in Spain, country that is located Catalonia, is the Spanish. Catalonia as an autonomous region has its own language and culture. For this reason and in order to protect them we want to express our information in Catalan in order to disseminate our language and culture, at least in languages terms.

We assume that most of the European Community doesn't know that Barcelona and Catalonia has its own language, we want to influence in it, to let people know about it.

Editorial issues.

The partner's personnel and others (translators or local bodies for instance) involved in the editorial efforts.

The same staff that is working in the RegNet project has carried out the translation's tasks. We don't have problems with the Spanish or Catalan translation because they are our mother tongues. In the case of the English version, also we have had the help of a City Council's translator.

Used thesauri, dictionaries, standards, etc.

Catalan/English's dictionary of the Encyclopaedia Catalana (most prestigious Catalan language's organisation)



6.4 ICCS

Short description of the delivered data for REGNET and CSC operation

During the REGNET project ICCS activities as content provider are related to the domain "Artists". This domain generally insists functional services for data entry, search, retrieval for

- virtual gallery
- e-procurement
- e-shop
- general information services

Related to these three cases, ICCS directs its activities both for supporting the content providing tasks and the regional CSC implementation.

Reasons for the choice

As a sequence of the Artists' domain, ICCS supports in general the following themes of the Art objects:

- painting,
- graphic arts and illustration,
- sculpture,
- design,
- monumental arts,
- ceramics,
- textiles
- wood-carving
- icons
- others (new forms of expression, artistic processing of metals and leather, restoration, etc.).

This thematic decomposition is based on the current practice of the Union of Bulgarian Artists to shape the Art objects. Following their Topic Map, our work for the content creation is strongly influenced by this topic hierarchy. It is included both in the virtual Gallery description as in the E-shop composition. Particularly our virtual exhibitions are prepared in collaboration with the participation of prospective REGNET users: both individuals and institutions.



Till now our prospective users are:

- **Individuals.** They have been acquainted, concerning REGNET functionality by the administrative help of the Union of Bulgarian Artists. The last is a non-profit body, which gathers about 2700 artists from Bulgaria.
- **Institutions.** Institutions willing to collaborate in the REGNET system have been identified and invited. Now we have the following list:
 - ? National Ethnographic Institute and Museum
 - ? Sofia City Art Gallery Hall
 - ? Secondary School of Applied Art

Thus for the purposing of content providing, ICCS acquainted both individuals as representative national institutions in the Art domain.

The nature and number of delivered Items

Following our particular policy in supporting three virtual galleries, eshops and general information services, the current status is presented bellow.

Virtual Galleries

The Virtual Galleries intend to present art objects from the regions of Bulgaria and Russia in the CSC network of REGNET. Now Galleries have been established on institutional level, which means every institution has been devoted individual gallery. Now content is available from the following galleries.

Union of Bulgarian Artists

The Gallery is supported as a part of individual web site, which refers to the Union. Thus both general information services and virtual gallery services are presented as a common information services. The Gallery consists works of 120 Bulgarian artists. The data of these objects is cataloguing in Dublin Core Standard. Additional fields, related to the picture representation are added.

Ethnographic Institute and Museum


A web site is implemented with general information services. The virtual gallery is a thematic chapter in this site. The art /museum objects are recorded in Dublin Core standard.

Secondary School of Applied Art

A web site is established. As a chapter, the Virtual Gallery will take place. Now the art objects are collected and digitised.

E-shops

The eshops are functional independent components, which are included in the institutional web sites. They are accessible indirectly, through the site chapters or directly by search and retrieval functionality. The last is implemented by Z39.50 protocol.



The screenshot shows a web browser window with the address bar displaying `http://hs19.iccs.bas.bg/Eth_shop/`. The page features the REGNET logo at the top center, followed by the text "INSTITUTE OF COMPUTER AND COMMUNICATION SYSTEM" and "ETHNOGRAPHIC INSTITUTE AND MUSEUM". Below this, a welcome message reads "Welcome to the Shopping Center." and provides instructions: "Login to enter the Ethnographic Item Shops. New users, please get yourself registered!!". The interface is divided into three main sections: "Guest login :" with a "guest" button and a user icon; "Register user login :" with input fields for "User Id" and "Password", an "Enter" button, and a "Registration" button with a key icon; and "User registration :". At the bottom, the text "Ethnographic Institute and Museum" is on the left, a Bulgarian flag is in the center, and the website "www.regnet.org" is on the right.

Figure 27 ICCS - e-Shops

Now two e-shops are supported: one for the *Union of Bulgarian Artists*



Figure 28 ICCS - e-Shop UBA

and one for the *Ethnographic Museum*.



Figure 29 ICCS - e-Shop Ethnographic Museum

Data Entry

This functionality is given by the Search and retrieval subsystem, developed by AIT. Using the TextXML tool, art objects are catalogued in <http://csc000.cascaustria.at> premises. Metadata, related to the Dublin Core standard is introduced as follows:

? <http://csc000.cascaustria.at/ICCS> - consists art objects and Metadata entered by ICCS for the region of Bulgaria



Figure 30 ICCS - Data entry in English

? <http://csc000.cascaustria.at/ICCS-Bg> - consists of art objects and Metadata entered by ICCS for the region of Bulgaria in Bulgarian language



Figure 31 ICCS - Data entry in Bulgarian

? <http://csc000.csc Austria.at/SUSU> - consists art objects and Metadata entered by SUSU for the region of Russia

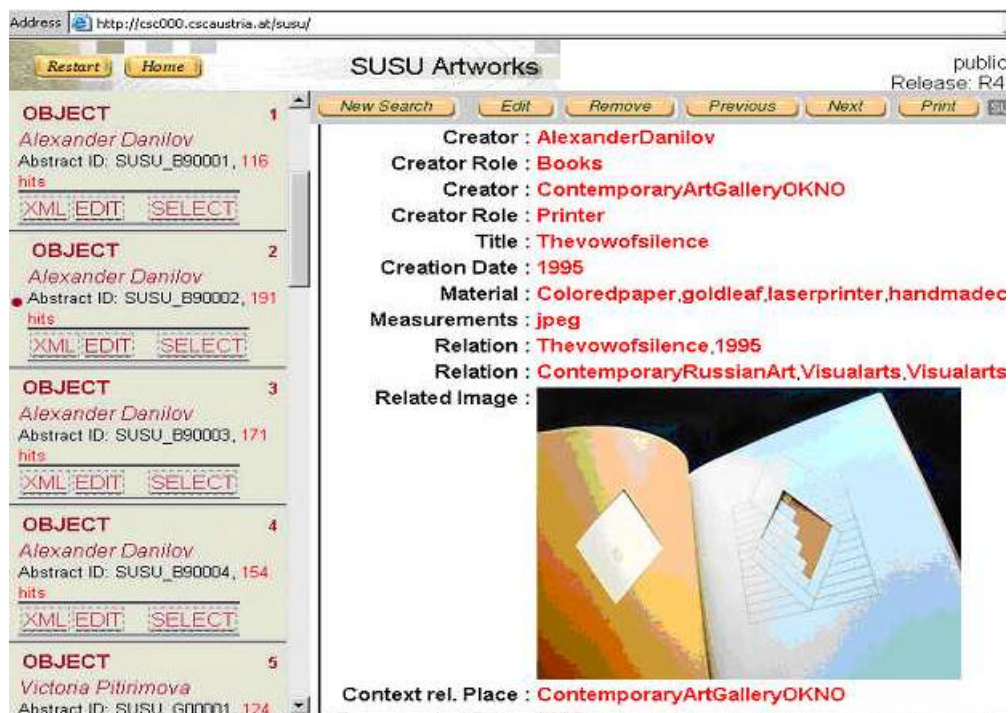


Figure 32 ICCS - Russian art

Relevant Examples

The CSC – Bulgaria functionality is introduced by a portal , addressed by <http://www3.iccs.bas.bg>

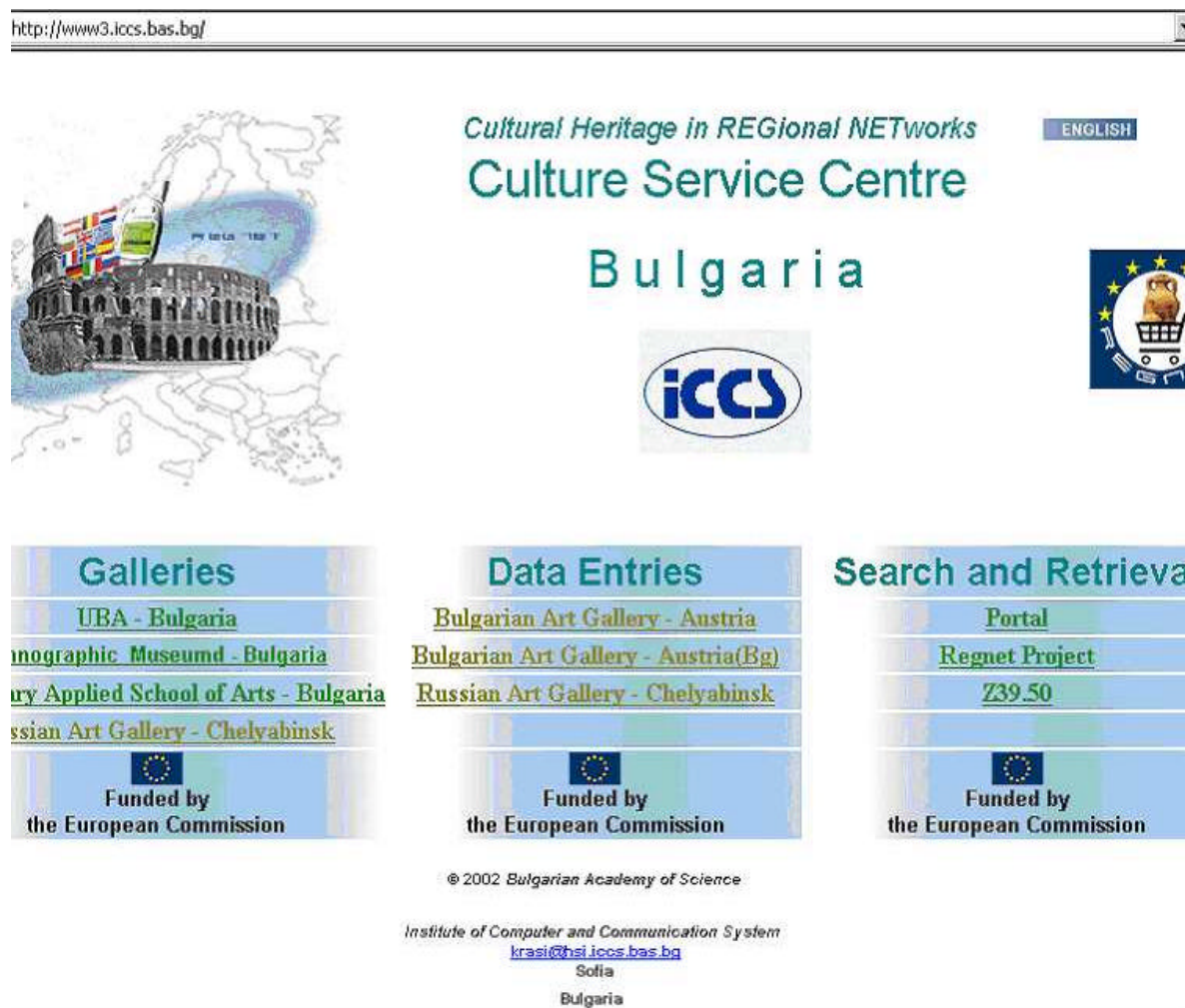


Figure 33 ICCS - Portal

Three functional links are supported

- Galleries
- Data Entry
- Search and Retrieval

The **Gallery** links direct to sites and virtual galleries as

- ? UBA – Bulgaria
- ? Ethnographic Institute and Museum - Bulgaria
- ? Secondary Applied School of Arts – Bulgaria
- ? Russian Art Gallery – OKNO – Chelyabinsk



Figure 34 ICCS - Art Galleries



Figure 35 ICCS - Art Gallery UBA

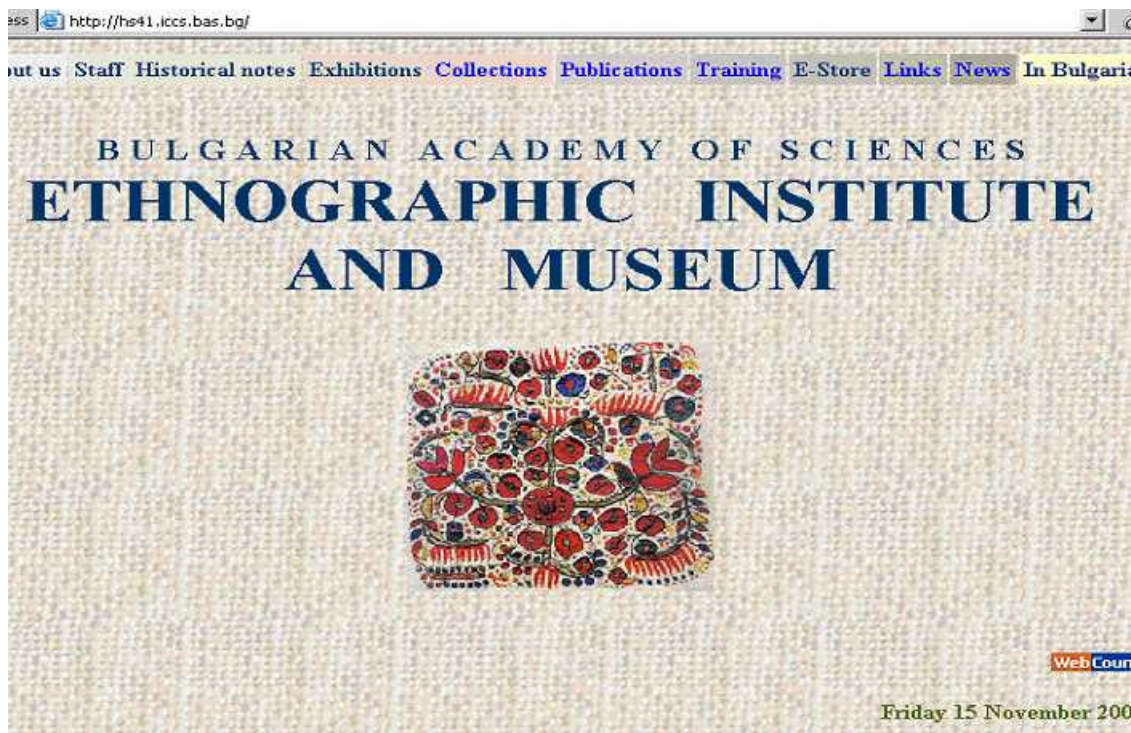


Figure 36 ICCS - Ethnographic Institute and Museum

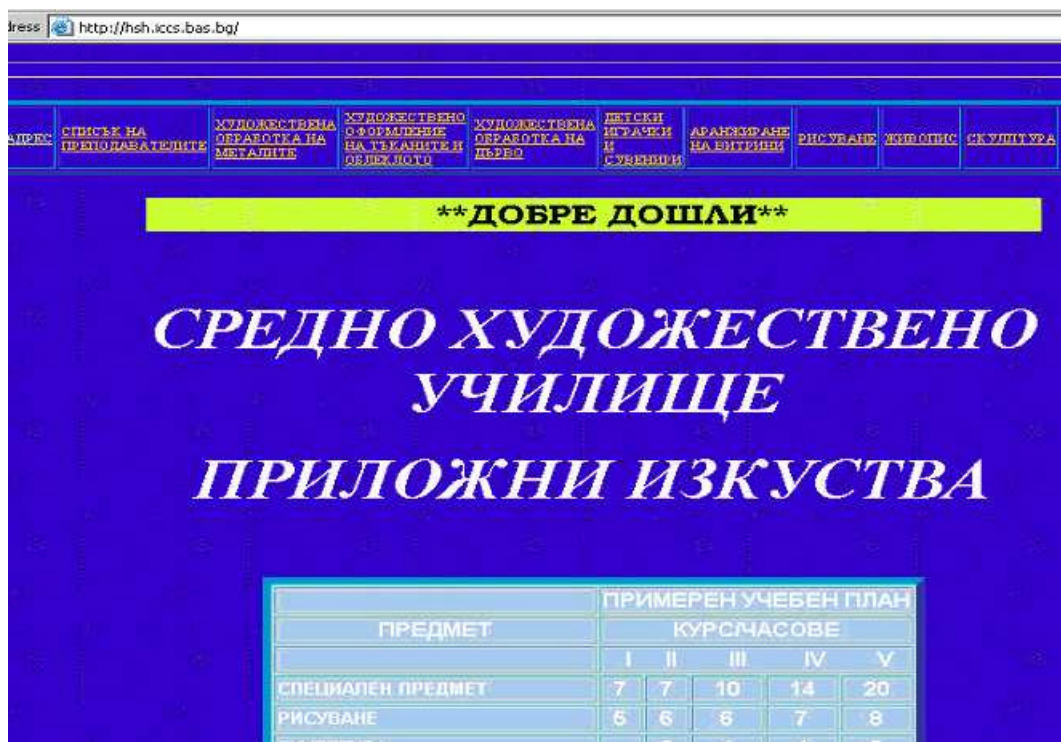


Figure 37 ICCS - Secondary Applied School of Arts – Bulgaria



Figure 38 ICCS - Russian Art Gallery – OKNO – Chelyabinsk

The **Data Entries** are related to the Data Entry subsystem of REGNET, supported by AIT.



Figure 39 ICCS - Data entries

The **Search and Retrieval** is represented now by the solution implementing the Z39.50 protocol.



Figure 40 ICCS - Search and retrieval

It performs searches between data of Austria, Bulgaria and Russia.



Figure 41 ICCS - Multisite search



General information is supported also by the links towards the REGNET portal - <http://www.regnet.org> or other temporary gateways.



Figure 42 ICCS - Portal in Bulgarian



Multilingualism

Now the multilingualism is implemented in general by separable text files but using one instance of picture. Thus the Data Entry is supported by separate metadata descriptions:

<http://csc000.cascaustria.at/ICCS> - in English

<http://csc000.cascaustria.at/ICCS-bg> - in Bulgarian

The general information services are supported in two languages – English and Bulgarian.

The E-shops are supported only in English because the virtual market is expected to be all over the European region.

Editorial Issues

The CSC – Bulgaria now is developed by ICCS – the responsible REGNET partner for the Eastern European region. All translations and localizations are done by the ICCS team.

The functional services, offered by the CSC-Bulgaria are gathered according to the ICCS potential and from the REGNET subsystem modules. Thus the CSC – Bulgaria gives functional abilities to the REGNET users from a set of services, available till now and developed by the REGNET team.

6.5 KVA

Short description of the delivered data for REGNET and/or CSC operations

Object data

KVA has provided its entire scientific instrument collection database, consisting of ca. 3 600 objects kept in the academies building and partly exhibited at the Observatory Museum, both in Stockholm. Yet to be delivered is a collection of nearly 900 digitised portraits of scientists & the corresponding data base info.

Thematic texts

KVA has worked on the Linnaean theme with SUL. The themes are grouped around the Swedish botanist Carl Linnaeus – his work, travels, him being one of the founders of the Royal Swedish Academy of Sciences, etc. Other themes concern other academies, astronomy, zoology, etc. KVA also provided some texts to MUS for the measurement theme.

Images

Most objects are accompanied with an image. In some cases though, no image is presently available.

Multimedia productions

No multimedia production is currently available.

Reason(s) for the choice

Object data

The reasons for providing the instrument collection are mainly, that the collection in itself is large and unique. It consists of more than 3,600 items divided in to almost all different fields of science, such as astronomy, chemistry, physics etc. The collection has been brought together from the 1750s and onwards and is still expanding through donations and purchases. It should be pointed out, that practically all of the collection has been provided to the REGNET system.

Thematic texts

The theme 'Linnaeus' has been chosen due to different reasons. First of all, KVA together with others Swedish partners i.e. contempt providers, such as SUL, NRM and LMG, have tried to find a common denominator as a starting-point. Which could also attract people outside of Sweden. As a consequence the obvious choice was Linnaeus. The NRM houses for instance the Linnaean herbarium, the SUL keeps a wide range of botanical prints and the LMG is situated on Gotland – an island visited by Linnaeus in 1741. In a more general sense Carl Linnaeus is without doubt one of the most internationally famous Swedish scientists ever and on top of that an excellent representative of the scientific boom Sweden went through during the 18th century. For these reasons the themes of the KVA, group around the common denominator Linnaeus, his work, travels and so forth.

**The nature and number of the delivered items***Thematic texts and images*

Thematic texts 32 (Linnaeus)
14 (Measurement)

Images 3 390

Object data

Collection objects 3 657

One relevant example per type of addressed items*Examples of a multilingual thematic text:*

KVA_0004_short_en

The Swedish naturalist and physician Carl Linnaeus (1707–1778), later ennobled von Linné, achieved world-wide fame for successfully doing two things: classifying and naming living things. The writings of, and of, him are numerous and some of his works has had a major influence on the botanical works of other scientists. The 10th ed. of his *Systema Naturæ* (1758–1759) still remains the starting-point for modern biological classification.

KVA_0004_short_se

Den svenske naturalhistorikern och läkaren Carl von Linné (1707–1778), före adlandet Linnaeus, erhöll världsomfattande berömdhet för att framgångsrikt ha gjort två saker: klassificerat och namngivit levande ting. Skrifter av, och om, honom är många och flera av hans skrifter har haft stort inflytande på andra forskares botaniska arbeten. Den 10:e upplagan av hans *Systema Naturæ* (1758–1759) utgör än idag utgångspunkten för modern biologisk klassifikation.

Example of an object-record

FÖREMÅLSDATABAS.fp5
 Kungl. Vetenskapsakademins föremålsamling

KVA-nr **16** PLACERING **A5:25**
 Annars tillfällig placering

BENÄMNING **Latema Magica**
 GRUPP **Kameror**
 KATEGORI **Teknik**

TILLVERKARE **J. L. Koch verksam 1750-talet**
 LAND **D** ORT **Berlin**
 PROVENIENS **Ingår i Gustav III:s donation 1772, Adolf Fredriks**
 FÖRSÄKRING

DATERING TIDIGAST **1740**
 DATERING SENAST **1750**
 LÄNDO mm **280**
 BREDD mm **230**
 HÖJD mm **420**
 DIAMETER mm
 Negativnr **1489**
 ID **0016**

MATERIAL **Olivfaner, mässing**
 MATERIAL-STATUS **Skador på faner, torkspickor metall oxiderad lampa, sidstycke saknas, tub fastsländ.**
 Status: 2 (smuts)
 ANMÄRKNING **Hus, se delar till latema magican KVA-nr 16 - 18.**



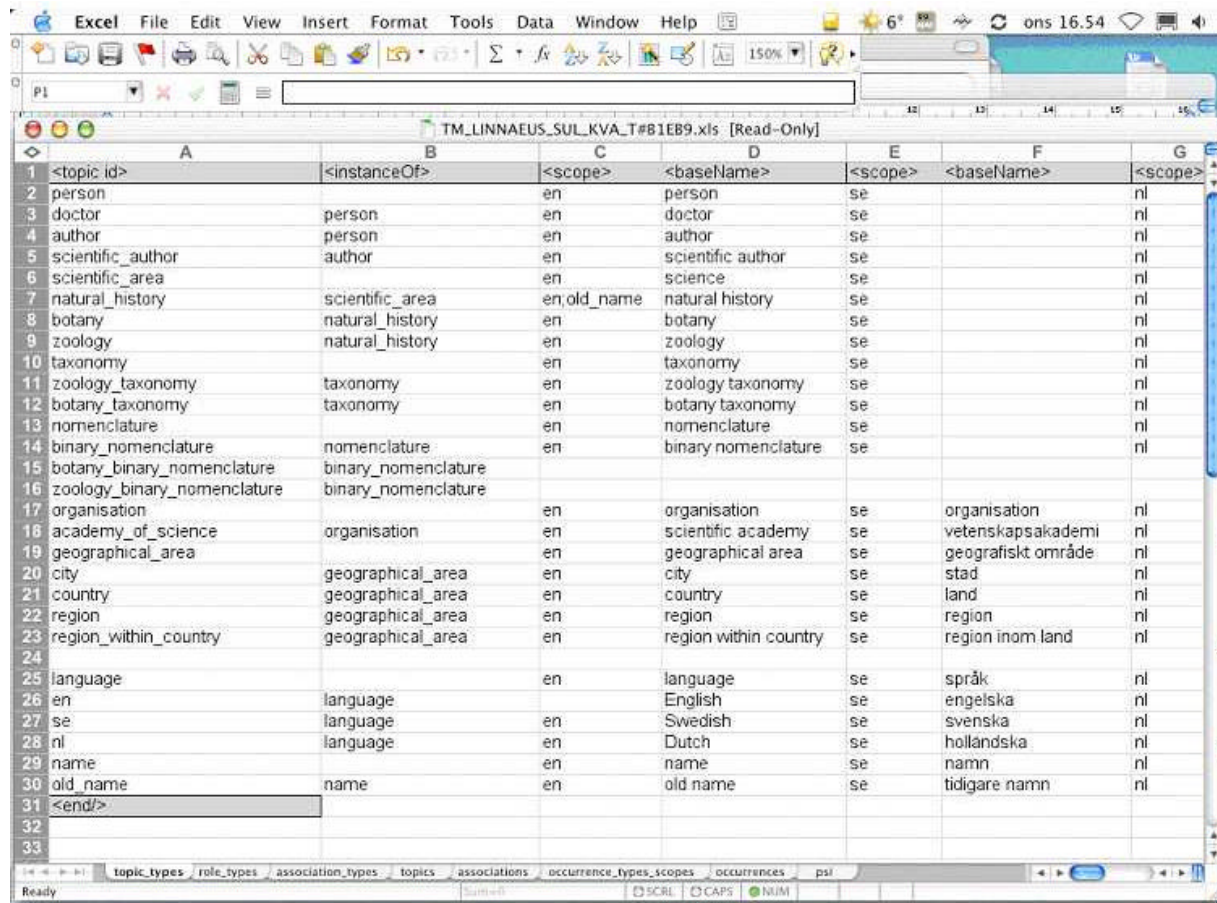
Figure 43 KVA - Object record

Example of a Dublin Core record provided by KVA in Word converted to the REGNET database

THEMATIC TEXT (FRAGMENT)	
Thematic text name	Natural history
Language	en
Audience level	generic
Size level	full
Author	Christer Karlsson
Contribution	
Date	2002-03-25
Modified by	
Modif. date	
Modif. description	
Copyright	KVA, Sweden
Cost	X
Content	<p>For centuries natural history has been defined as the (descriptive) study of the three kingdoms nature used to be divided into, i.e. the kingdoms of animals [1], plants [2] and minerals. Natural history also included certain aspects of neighbouring subjects such as anthropology, archaeology, astronomy[3], chemistry, geography and geology.</p> <p>The focus of natural history was the description of separate objects in nature – 'history' is to be understood as the former general meaning of 'investigation'. The aim was thus, from antiquity to the 18th century, essentially to describe living things with their particular uses so that others might use them. The studies of nature was therefore limited to the production of 'catalogues', for example the mediaeval 'bestiaries' depicting animals. The increased knowledge of the world outside Europe, due to foreign travel in general and the colonial expansion of Europe, most notably in the New World, led to an accumulated number of species which stimulated e.g. the horticulture of exotic plants, notably flowers in botanical gardens. It also encouraged 16th, 17th and 18th century naturalists to catalogue the natural world in even greater detail [4] as scientists conducted scientific travel themselves. During this time, classification within the three kingdoms of nature was far from consistent. This was reflected by the growing complexity of taxonomic systems and the escalating desires to find order in nature[5].</p> <p>As a set of specialized scientific disciplines developed during the 18th and 19th centuries – consisting primarily of physics, chemistry and biology – natural history became less a subject area of its own and more an umbrella term for the life and Earth sciences. Whilst the separate scientific disciplines, usually named the 'natural sciences', primarily was focused on the overall conformity in nature, natural history was focused on the specifics of each object in nature [6].</p> <p>During the 18th century, in some aspects the century of 'transition from 'natural history' to 'natural sciences', Swedish science experienced somewhat of a golden age. Most known is perhaps Linnaeus [7] in botany and zoology[8]. Other known names are Polhem, Linnaeus, Celsius, Wargentin, Klingenshierna, Swedenborg, Cronstedt, Bergman, Scheele and Berzelius, who all contributed significantly to the work of finding order in nature and who also, like Linnaeus, were members of the Royal Swedish Academy of Science[9].</p>
Links	<p>(1): KVA_0008_short_en, KVA_0008_full_en (2): KVA_0007_short_en, KVA_0007_full_en (3): KVA_0006_short_en, KVA_0006_full_en (4): SUL_Catesby_en, SUL_Ehret_en, SUL_Frisch_en, SUL_Hill_en, SUL_LinnaeusJort_en, SUL_Merian_en, SUL_Renard_en, SUL_Thornton_en, SUL_Trew_en, SUL_Weinman_en, ANI_Lambert_en, ANI_Lambert_fra, ANI_Lambert_ger, ANI_Dehamel_en, ANI_Duhamel_fra, ANI_Duhamel_ger, ANI_Humboldt_en, ANI_Humboldt_fra, ANI_Humboldt_ger, ANI_Jacquin_florae_en, ANI_Jacquin_florae_fra, ANI_Jacquin_florae_ger, ANI_Jacquin_plantarum_en, ANI_Jacquin_plantarum_fra, ANI_Jacquin_plantarum_ger, ANI_Jacquin_selectarum_en, ANI_Jacquin_selectarum_fra, ANI_Jacquin_selectarum_ger, ANI_Martius_en, ANI_Martius_fra, ANI_Martius_ger, ANI_Redoute_en, ANI_Redoute_fra, ANI_Redoute_ger, ANI_Redoute_roses_en, ANI_Redoute_roses_fra, ANI_Redoute_roses_ger, ANI_Franzl_florilegiumA_en, ANI_Franzl_florilegiumA_fra, ANI_Franzl_florilegiumA_ger, ANI_Trew_en, ANI_Trew_fra, ANI_Trew_ger, (5): SUL_Hill_en (6): SUL_Redoute_en, SUL_Wright_en, SUL_Körner_en, (7): KVA_0004_short_en, KVA_0004_full_en, (8): SUL_LinnaeusSpec_en, SUL_LinnaeusSyst_en (9): KVA_0009_short_en, KVA_0009_full_en,</p>
Primary keywords	natural history, animals, plants, minerals, Sweden, scientists
Secondary keywords	catalogue, order, travel
Number	KVA_0001_full_en

Figure 44 KVA - Dublin Core record

Example of an excel sheet with meta-data on thematic text



	A	B	C	D	E	F	G
1	<topic id>	<instanceOf>	<scope>	<baseName>	<scope>	<baseName>	<scope>
2	person		en	person	se		nl
3	doctor	person	en	doctor	se		nl
4	author	person	en	author	se		nl
5	scientific_author	author	en	scientific author	se		nl
6	scientific_area		en	science	se		nl
7	natural_history	scientific_area	en,old_name	natural history	se		nl
8	botany	natural_history	en	botany	se		nl
9	zoology	natural_history	en	zoology	se		nl
10	taxonomy		en	taxonomy	se		nl
11	zoology_taxonomy	taxonomy	en	zoology taxonomy	se		nl
12	botany_taxonomy	taxonomy	en	botany taxonomy	se		nl
13	nomenclature		en	nomenclature	se		nl
14	binary_nomenclature	nomenclature	en	binary nomenclature	se		nl
15	botany_binary_nomenclature	binary_nomenclature					
16	zoology_binary_nomenclature	binary_nomenclature					
17	organisation		en	organisation	se	organisation	nl
18	academy_of_science	organisation	en	scientific academy	se	vetenskapsakademi	nl
19	geographical_area		en	geographical area	se	geografiskt område	nl
20	city	geographical_area	en	city	se	stad	nl
21	country	geographical_area	en	country	se	land	nl
22	region	geographical_area	en	region	se	region	nl
23	region_within_country	geographical_area	en	region within country	se	region inom land	nl
24							
25	language		en	language	se	språk	nl
26	en	language		English	se	engelska	nl
27	se	language	en	Swedish	se	svenska	nl
28	nl	language	en	Dutch	se	holländska	nl
29	name		en	name	se	namn	nl
30	old_name	name	en	old name	se	tidigare namn	nl
31	<end/>						
32							
33							

Figure 45 KVA - Thematic text meta data

Example of topic map – Linnaeus theme

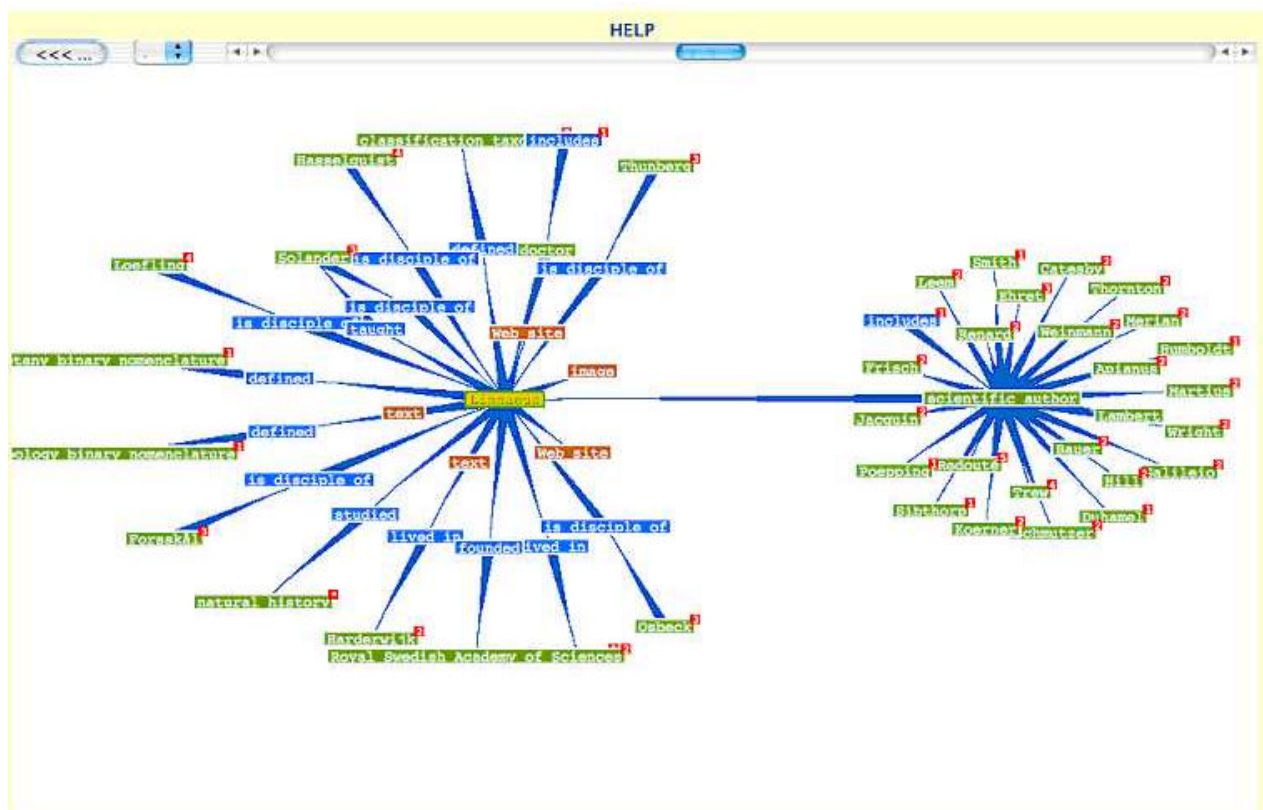


Figure 46 KVA - Linnaeus topic map



Multilingualism

Thematic texts are written in both English and Swedish, though object data is written in Swedish. The reason for this is that the object texts were exported from the KVA object database, while the thematic texts from the beginning were written in both languages.

Other internationalisation/regionalisation/localisation implementations

KVA has together with SUL and NRM translated the REGNET system into Swedish.

Editorial issues

Different staff members of the KVA have written object texts, while the project manager together with other co-workers within the REGNET-project have produced the thematic texts. All images have been provided by the object database of the KVA.

Used thesauri, dictionaries, standards, etc.

Nationalencyclopedien

Norstedts Swedish-English dictionary

6.6 LMG

Object data

E-shop objects	110
Images	25

Thematic texts and images

The theme *Saints*

Thematic texts:	58
Images:	56

Example of two of the shop items to be incorporated in the E-shop.

- Jewellery, Birdman, Silver. Repro from picture stone. Hammars, Lärbro parish. The Viking Age



Figure 47 LMG - Jewellery - Pendant - Birdman

- Jewellery, Pendant, Ship, Silver. Repro of picture stone. Lillbjärs, Stenkyrka parish. 700 - 800 AD



Figure 48 LMG - Jewellery - Pendant - Ship

Example of one of the Saints items:

SCULPTURE, SAINT MADONNA

OAK-WOOD. 106 CM HIGH. RIGHT ARM OF THE MADONNA MISSING. RIGHT ARM OF THE CHRISTCHILD MISSING, THE LEFT ARM DAMAGED.



Figure 49 LMG - Sculpture - Saint

6.7 MECH

Short description of the delivered data for REGNET and/or CSC operations

Object data

MECH has provided a part of the museum collection database supplemented by a part of the collections kept in the Michelin churches

Thematic texts

MECH has worked on three main themes: Saints, Gilt leather and Lucas Faydherbe. Contributions were also made for a smaller theme 'Tour d' Horizon' with most important pieces of the collection. Some items of the theme Faydherbe are integrated in the theme Saints when his sculptures are representing saints.

Images

Each object is accompanied by at least one image

Multimedia production "Faydherbe's traces in Mechlin"

Based on the thematic texts and images related to Faydherbe a multimedia production was realised for being used as an interactive guided tour of the realisations of Faydherbe, a Mechlin sculptor and architect, in the city of Mechlin.

Reason(s) for the choice

Object data

Objects are selected in function of the chosen themes 'Saints', 'Gilt leather' and 'Lucas Faydherbe'. As well objects from the museum collection as from the Mechelen churches are mentioned. Attention is also paid to the relation between different Mechelen collections concerning the same themes.

Thematic texts

The theme 'Saints' has been chosen because of the presence of a prominent amount of statues and sculptures representing saints or religious scenes in the Mechelen Museum collection. Moreover the starting up of the disclosure-project of the Mechelen churches with their important religious collections gave an immediate link with that part of the museum collection. A theme description about one specific saint concerns three parts: life, cult and iconography.

The theme 'Saints' can be related with the Museon-theme "Gods and Amulets".



The theme Gilt leather was chosen because of the important collection of gilt leather in the Mechelen museums. This collection has to be restored and will be in future one of the more remarkable items in the museum portfolio.

This theme can be related to the Museon-theme "Leather". MUS approached the theme on a general level and MECH worked out one of the more specific uses of leather. This seemed to be a good example of co-operation by contributing with regional expertise to one larger part of content for the general public.

The theme Faydherbe has been chosen because the 17th-century Mechelen architect-sculptor Lucas Faydherbe constructed several important buildings in Mechelen including some churches. The Mechelen Musea own some works of him while in most Mechelen churches some of his statues, altars or tombs can be visited. His architectural realisations can also be linked with his sculptural work, limited by the Mechelen frontiers. This theme can also be linked to the broader theme 'Saints', because of most subjects of his work are religiously inspired.

The nature and number of the delivered items

Object data

Museum objects + church objects 200

Thematic texts and images

The theme *Saints*

Thematic texts: 44 (38 in Dutch, 6 in English)

Images: 44

The theme *Faydherbe*

Thematic texts: 90 (45 in Dutch, 45 in English)

Images: 87

The theme *Tour d' Horizon*

Thematic texts: 0

Images: 10

The theme Gilt *leather*

Thematic texts: 4

Images: 40

One relevant example per type of addressed items

Example of the first tab-page of an object-record (+ first page of catalogue-description) in the Mechelen Collection management system ADLIB

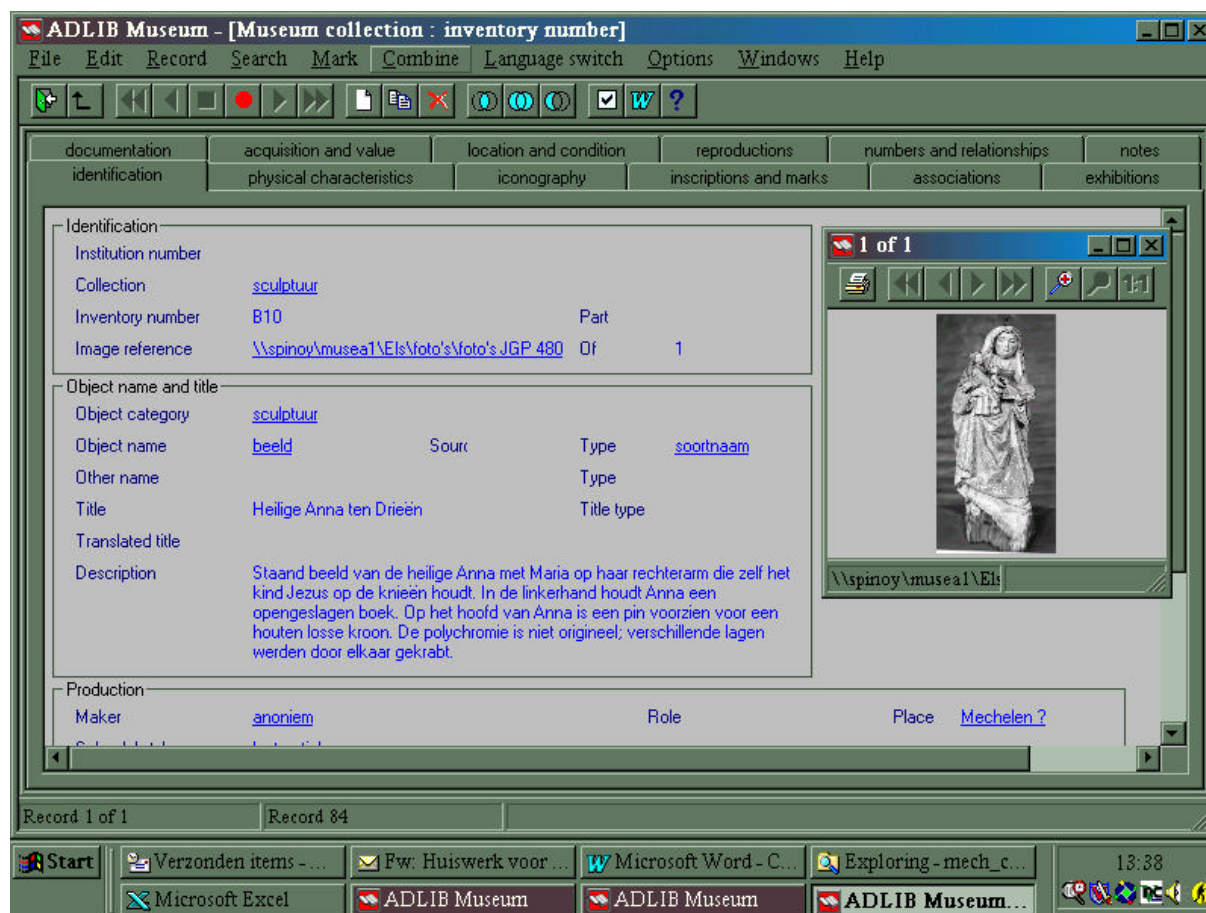
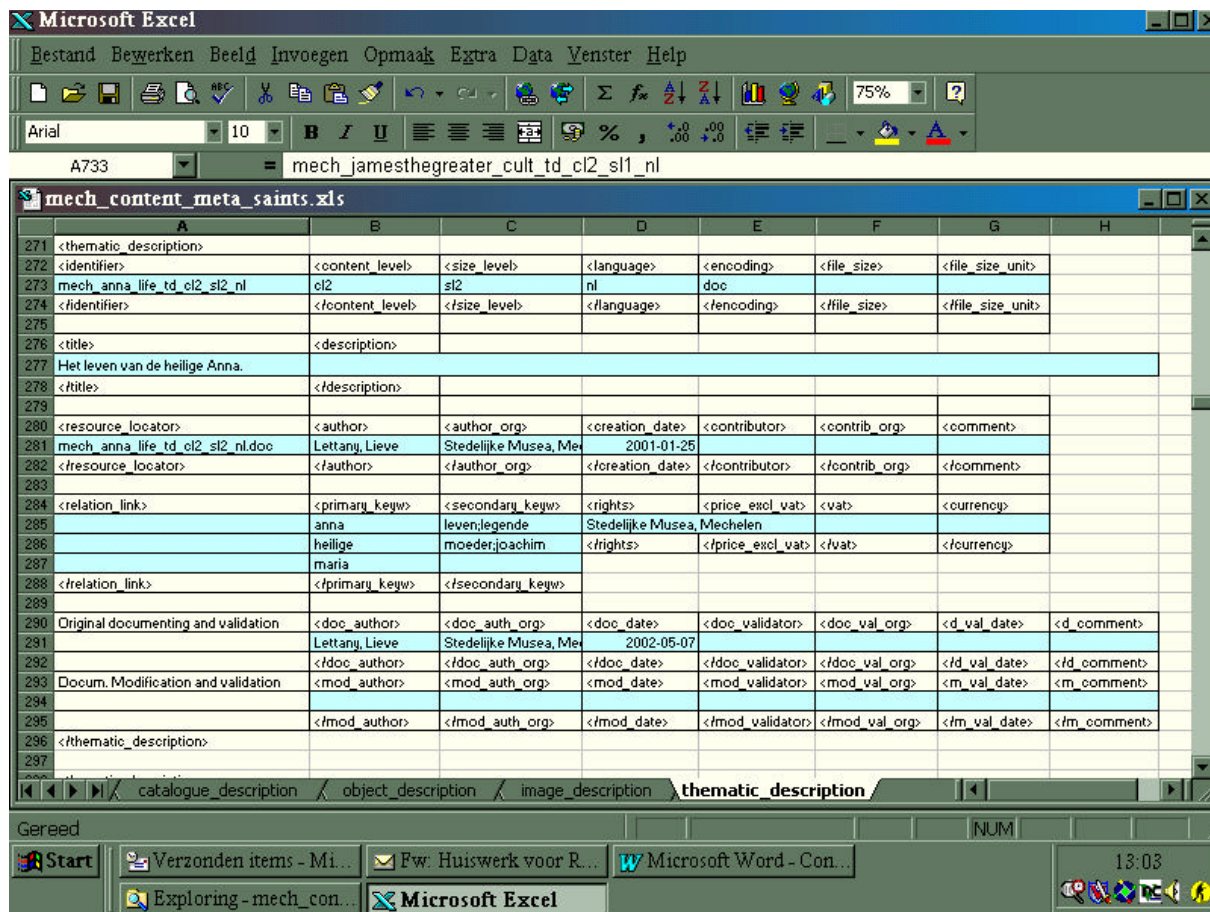


Figure 50 MECH - Collection management record

Example of one of the excel sheets with meta data on the thematic texts



	A	B	C	D	E	F	G	H
271	<thematic_description>							
272	<identifier>	<content_level>	<size_level>	<language>	<encoding>	<file_size>	<file_size_unit>	
273	mech_anna_life_td_cl2_sl2_nl	cl2	sl2	nl	doc			
274	</identifier>	</content_level>	</size_level>	</language>	</encoding>	</file_size>	</file_size_unit>	
275								
276	<title>	<description>						
277	Het leven van de heilige Anna.							
278	</title>	</description>						
279								
280	<resource_locator>	<author>	<author_org>	<creation_date>	<contributor>	<contrib_org>	<comment>	
281	mech_anna_life_td_cl2_sl2_nl.doc	Lettany, Lieve	Stedelijke Musea, Me	2001-01-25				
282	</resource_locator>	</author>	</author_org>	</creation_date>	</contributor>	</contrib_org>	</comment>	
283								
284	<relation_link>	<primary_keyw>	<secondary_keyw>	<rights>	<price_excl_vat>	<vat>	<currency>	
285		anna	leven/legende	Stedelijke Musea, Mechelen				
286		heilige	moederjoachim	</rights>	</price_excl_vat>	</vat>	</currency>	
287		maria						
288	</relation_link>	</primary_keyw>	</secondary_keyw>					
289								
290	Original documenting and validation	<doc_author>	<doc_auth_org>	<doc_date>	<doc_validator>	<doc_val_org>	<d_val_date>	<d_comment>
291		Lettany, Lieve	Stedelijke Musea, Me	2002-05-07				
292		</doc_author>	</doc_auth_org>	</doc_date>	</doc_validator>	</doc_val_org>	</d_val_date>	</d_comment>
293	Docum. Modification and validation	<mod_author>	<mod_auth_org>	<mod_date>	<mod_validator>	<mod_val_org>	<m_val_date>	<m_comment>
294								
295		</mod_author>	</mod_auth_org>	</mod_date>	</mod_validator>	</mod_val_org>	</m_val_date>	</m_comment>
296	</thematic_description>							
297								

Figure 51 MECH - Thematic text meta data



Example of a multilingual thematic text:

Mech_sebastian_life_td_cl2_sl2_en.doc

Saint Sebastian is a martyr who was killed for his faith during the persecution of the Christians at the end of the 3rd century during the reign of emperor Diocletianus. Originally an officer of the special guard of the emperor he has been accused about his faith and transfixed by arrows at the Coliseum. He did not die and was looked after by a Christian widow and his wounds healed. But when he met the emperor afterwards, he reproached him his cruelty. So he was taken again and beaten to death by clubs. His body was thrown in the sewer 'cloaca maxima'. Later on, Christians buried him on a place near to the Via Appia.

Mech_sebastian_life_td_cl2_sl2_nl.doc

De heilige Sebastiaan is een martelaar die tijdens de christenvervolgingen op het einde van de 3^{de} eeuw ten tijde van keizer Diocletianus om het leven werd gebracht omwille van zijn geloof. Hij was oorspronkelijk officier van de keizerlijke garde. Omwille van zijn geloof werd hij aangeklaagd en in het Coliseum met pijlen doorboord. Hij was echter niet dood en dank zij de goede zorgen van de weduwe van een andere martelaar genas hij van zijn wonden. Toen hij later de keizer ontmoette, verweet hij hem zijn wreedheid tegenover het christendom. Hierop werd hij gegrepen en met knuppels doodgeslagen. Zijn lijk werd in de riool, de Cloaca Maxima gegooid. Christenen begroeven hem later echter op een plaats bij de Via Appia.

Example of a sequence of the Faydherbe multimedia production

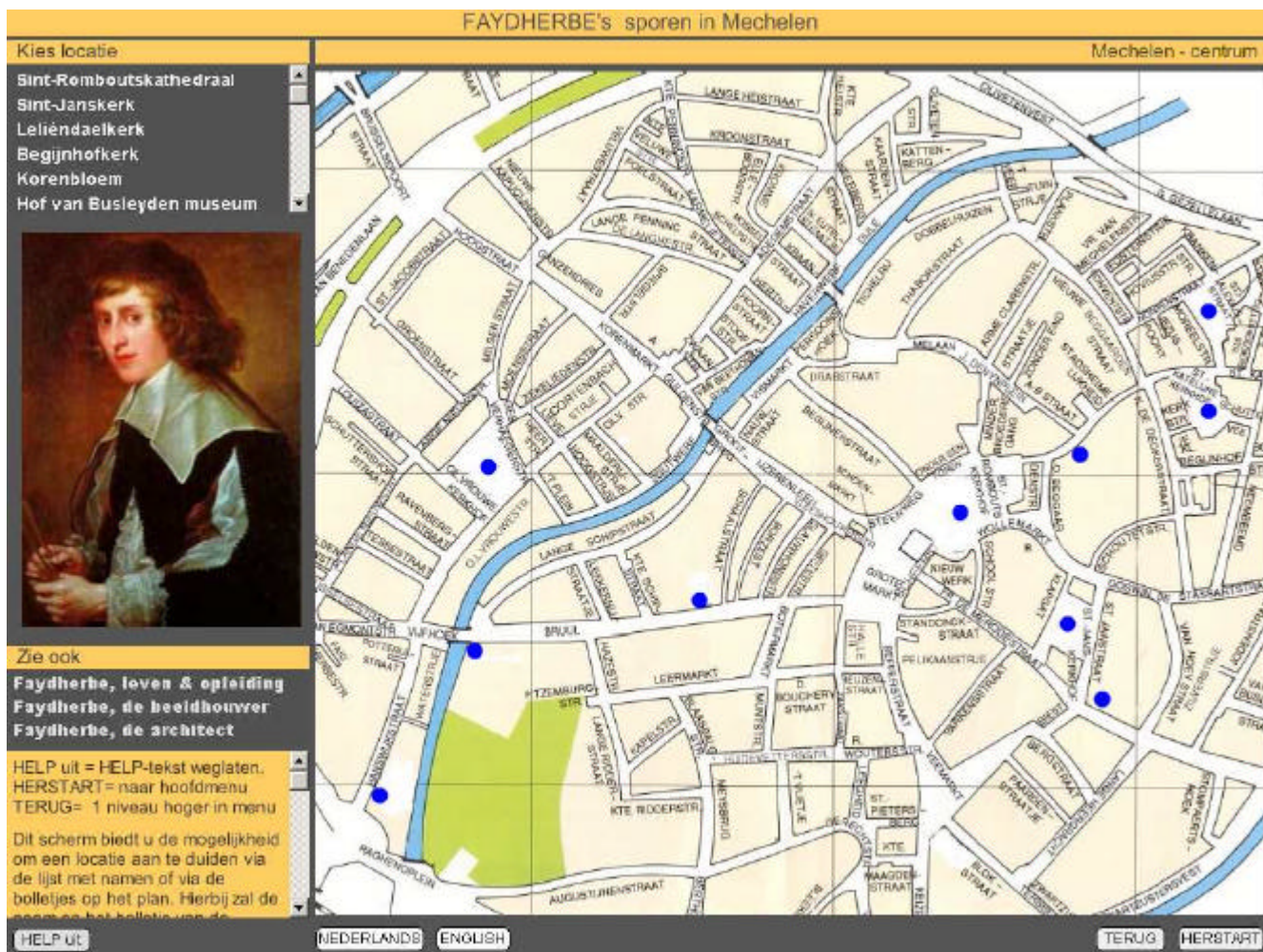


Figure 52 MECH - Screenshot Multimedia Production

Saints Topic map visualisation

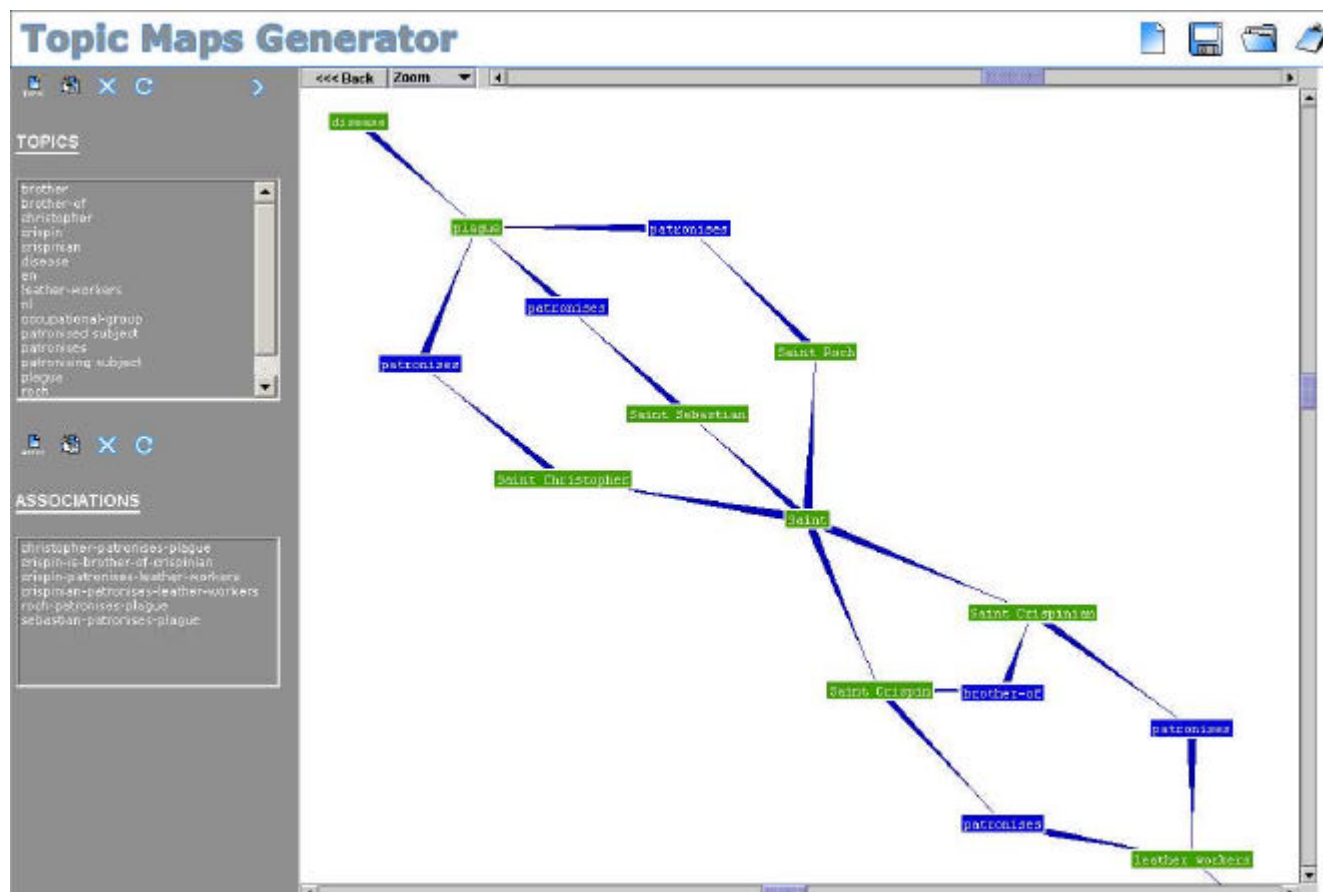


Figure 53 MECH - Topic map Saints - Visualisation



Multilingualism

Whereas most of the object data are in Dutch, because of the extraction of them out of an existing collection management system ADLIB, MECH together with TARX worked out a fully bilingual multimedia production in Dutch and English. The methodology used in this case permits to easily add other languages. A language switch can be done at any moment and at any place during the interactive navigation.

The SAINTS topic map was also set up in bilingual way, Dutch and English, via the base names features of the off line data entry tool for topic maps. MECH and TARX delivered also the Dutch translation of the base names of the LINAEUS topic map.

Other internationalisation efforts

For the content contribution of the REGNET system, special attention was given to those items that had a strong impact at the local, regional level and at the same time some corresponding importance at other partners' regions. It concerned here:

Saints: MECH, MUS, LMG, ALI

Gilt Leather: MECH, MUS

Habsburg: MECH, ONB

Editorial issues

Almost all written contributions and images were produced by the curators and staff of the Municipal Museum of Mechelen. Additional contributions came from the Archives of Mechelen (Linnaeus) and TARX (Saints and Faydherbe).

The English translation of the multimedia production was jointly carried out by MECH and TARX.

Used thesauri, dictionaries, standards, etc.

Encyclopaedia Britannica

Encyclopaedia Catholica (Internet)

Encarta Encyclopaedia

Art and Architecture Thesaurus (Getty)

Van Dale Dictionary Nederlands-Engels

Van Dale Dictionary Engels-Nederlands



6.8 MUS

Short description of the delivered data for REGNET and/or CSC

Object data

The Museon has provided its collection database comprising data in the area of Biology, Geology, Physics, History and Anthropology.

Thematic texts

Museon has worked on three themes: Measuring (time), Leather and Masks & Amulets. A minor contribution was made to the theme Linnaeus.

Shop items

Museon has made a selection of shop items, it concerns anthropological items.

Collection profiles

Museon has made a few examples of collection profiles: Indonesia, Inuit and (Time)-Measuring.

Events

Museon has entered two events in the systems (temporary exhibitions).

Profile

Museon has entered one profile.

Address

Museon has entered one address.

Reason(s) for the choice

Object data

No real selection has been made. The main purpose was to enable testing of the Regnet-system with a large number of data.

Thematic texts

The theme Masks & Amulets was chosen as to link to partner MECH. Since their collection of religious and more specifically saints (statues, paintings etc.) has a clear relation with the religious background of the users and designers of masks and amulets this seemed a sound choice. In another aspect one might consider the regional collection of MECH to complementary to that of MUS when regarding a topic such as religion.



The theme Leather was also chosen to relate to one of the themes of MECH, Gilt Leather. MUS approached the theme on a general level and MECH worked out one of the more specific uses of leather. This seemed a good example of co-operation by contributing with regional expertise to one larger part of content for the general public.

The theme Measurement was chosen on the one hand since the Museon has a large collection in this and second this theme is rather 'broad' and therefore other organisation can contribute rather easily.

Shop items, Collection profiles, Events, Profile, Address were addressed to have data in the Regnet-system so it can be tested.

The nature and number of the delivered items

Object data

The amount of records delivered is 55.000, about 17.500 of which also have an image with it.

Thematic texts

The theme *Leather*

Thematic texts:	17
Images & image descriptions:	0
Catalogue descriptions:	15

The theme *Measurement*

Thematic texts:	15
Images & image descriptions:	13
Catalogue descriptions:	11

The theme *Masks & Amulets*

Thematic texts:	3 (also in English)
Images & image descriptions:	4 (also in English)
Catalogue descriptions:	5 (also in English)

Shop items

No items entered yet.

*Collection profiles*

3 collection profiles: Indonesia, Inuit and (Time)-Measuring. Some with images. Also in English.

Events

2 items; with images. Also in English.

Profile

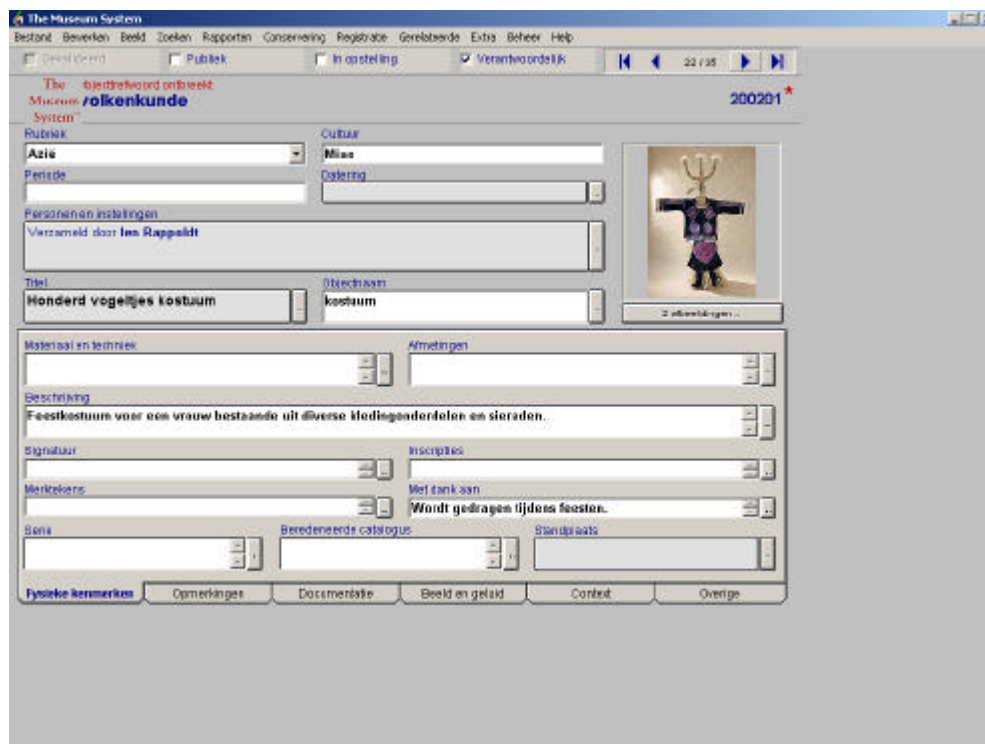
1 profile; with images. Also in English.

Address

1 address

One relevant example per type of addressed items, including multilingual ones.

Example of an object record in the Museon Collection Management System TMS.



The screenshot shows the 'The Museum System' interface. The main window displays an object record for a costume. The title is 'Honderd vogeljes kostuum'. The description is 'Feestkostuum voor een vrouw bestaande uit diverse hedingenderdelen en sieraden.' The image shows a person wearing the costume. The interface includes various tabs and fields for metadata, description, and physical characteristics.

Figure 54 MUS Collection management record



Figure 55 MUS - Collection management image - Tower clock

Example of one of the excel sheets with data on the thematic texts.

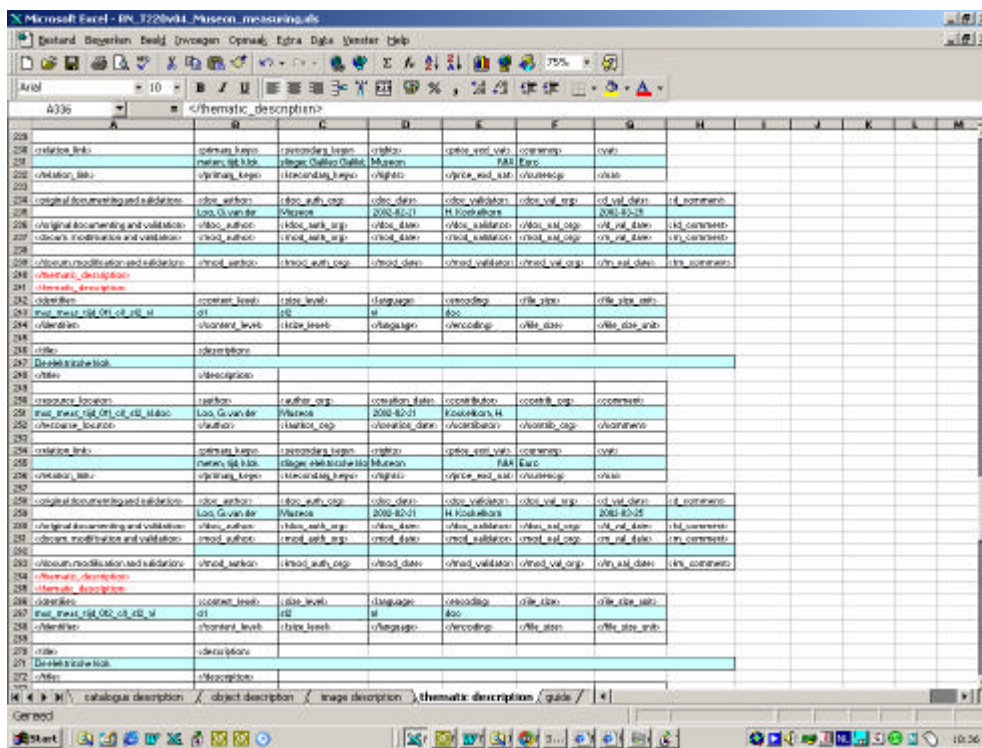


Figure 56 MUS - Thematic text meta data

Example of a multilingual thematic text:

mus_masks_amulets_003_c11_sl2_en.doc

Amulets: protectors against evil

Already in prehistoric times people believed to be protected by certain objects against evil. Objects carried on or with a person are called amulets or talisman. Various materials, a tooth, hair, claws or grasses can be incorporated into the amulets. They strengthen the power of the amulet.

Sacred or magical texts but also images of saints and shamans or their symbols can play the role of an amulet.

mus_masks_amulets_003_c11_sl2_nl.doc

Amuletten als beschermers tegen het kwaad

Sinds mensenheugenis gelooft men dat bepaalde voorwerpen bescherming kunnen bieden tegen kwade geesten. Worden die voorwerpen op het lichaam gedragen, dan spreken wij van amuletten of talismannen. Tandens, klauwen, haren, nagels of grassen zijn vanwege de aan hen toegeschreven kracht verwerkt in tal van amuletten.

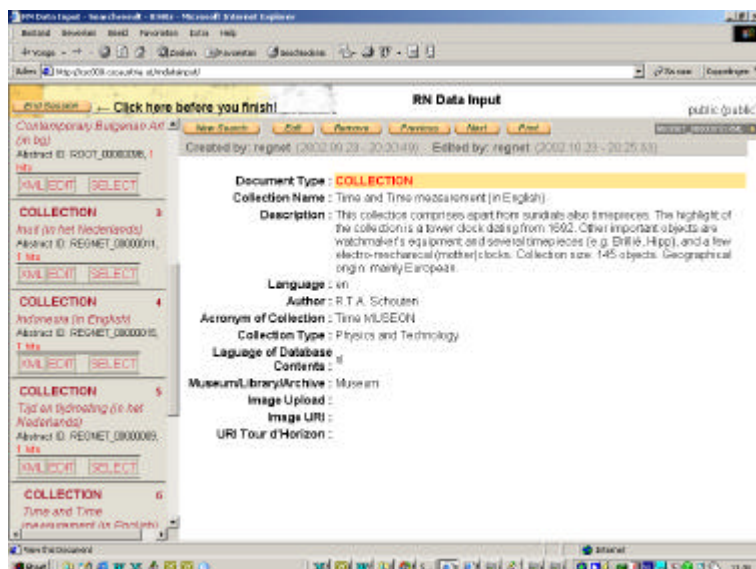
Ook heilige of magische teksten en afbeeldingen van als heilig beschouwde personen of symbolen kunnen dienst doen als amulet.

Example of one of the shop items to be incorporated in the E-shop.



Figure 57 MUS - Shop item

Collection profile, English version



RN Data Input public (public)

Click here before you finish!

Created by: regnet (2002.09.23 - 20.00.49) Edited by: regnet (2002.10.23 - 20.25.53)

Document Type: COLLECTION

Collection Name: Time and Time measurement (in English)

Description: This collection comprises apart from sundials also timepieces. The highlight of the collection is a tower clock dating from 1662. Other important objects are watchmaker's equipment and several timepieces (e.g. Briel's Hippo), and a few electro-mechanical (mother) clocks. Collection size: 145 objects. Geographical origin: mainly Europe.

Language: en

Author: R.T.A. Schouten

Acronym of Collection: Time MUSEON

Collection Type: Physics and Technology

Language of Database: Contents

Museum/Library/Archive: Museum

Image Upload:

Image URI:

URI Tour d'Horizon:

Figure 58 MUS - Collection profile - English

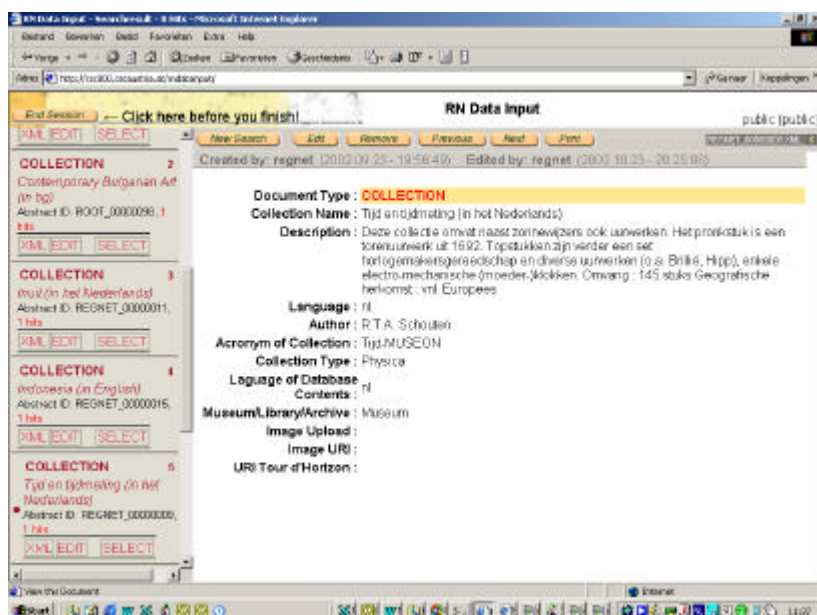
Collection profile, Dutch version

Figure 59 MUS - Collection profile - Dutch

Events, Profile and Address have the same interface as the collection profile.

The way the multilingualism is implemented

The data for the Museon have been traditionally translated.

A search is still going on to find a suitable automated translation software tool. A few tests were done, without any satisfying results.

Other internationalisation/regionalisation/localisation implementations

None

The partner's personnel and others (translators or local bodies for instance) involved in the editorial efforts.

The translation efforts can be separated in two parts. Firstly the translation is done at the spot by the Curators. Secondly in a few cases the English version of data was already available since the texts were translated externally by professional translators in relation to the production of exhibitions.

Used thesauri, dictionaries, standards, etc.

Thesauri used are the AAT and also the Dutch SVCN (previously called the OVM) thesaurus. The last mentioned thesaurus is mainly dealing with Anthropology. It is now in the process of being officially integrated into the AAT. For geographical names the TGN thesaurus is used.

Dictionary: Dutch-English "van Dale Groot woordenboek Nederlands-Engels, 1986"

and English-Dutch "van Dale Groot woordenboek Engels-Nederlands, 1989".

6.9 NRM

NRM was mainly active in the eBusiness related modules of REGNET and more precisely in the e-Shop module.

The existing and new NRM eShop data were tested against the originally developed e-Shop module and more recent developments in the Open Source domain.

The NRM museum shop sells approximately 2000 different items. We have chosen 127 of these items to be our contribution to test the CSCs' database and REGNET's e-shop.

An external company has digitised all of the 127 items.

CSC database:

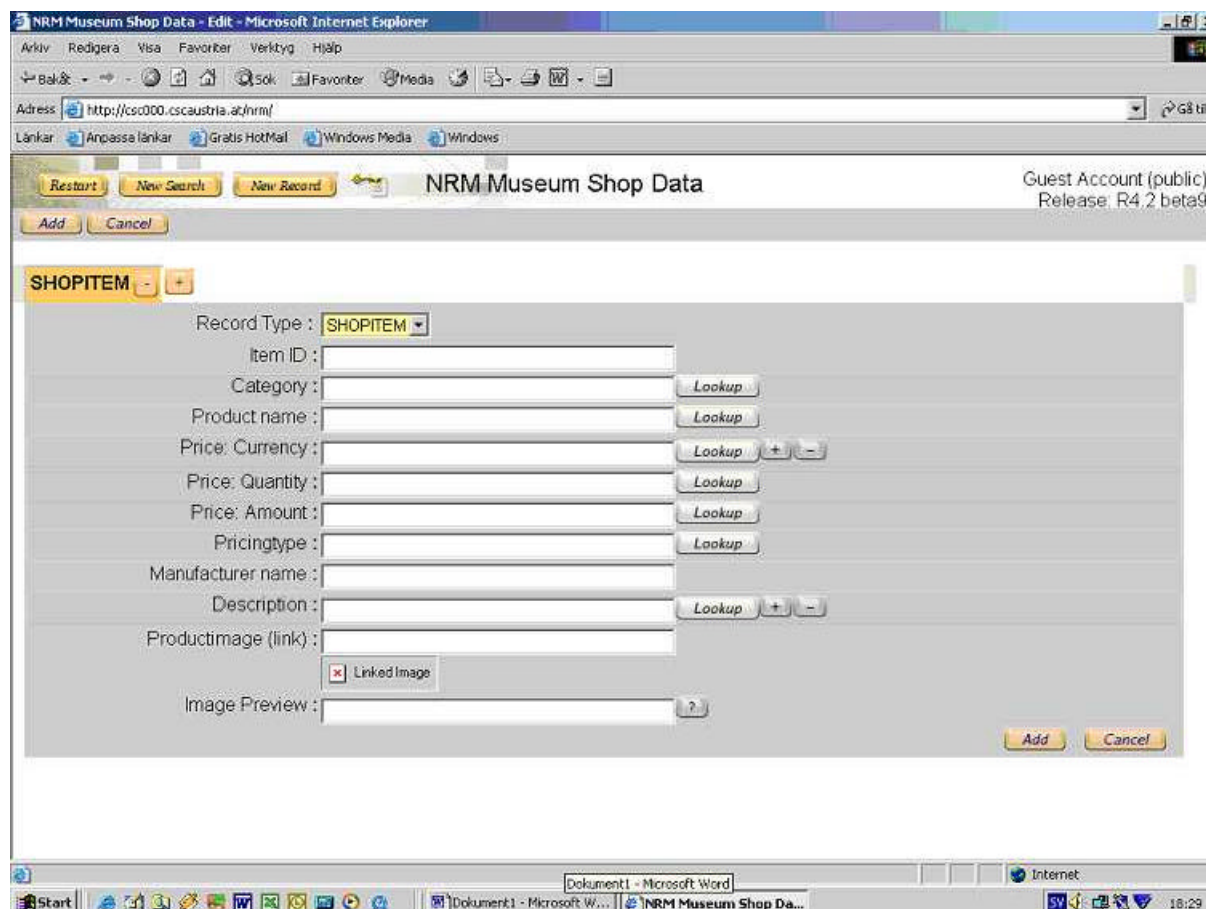
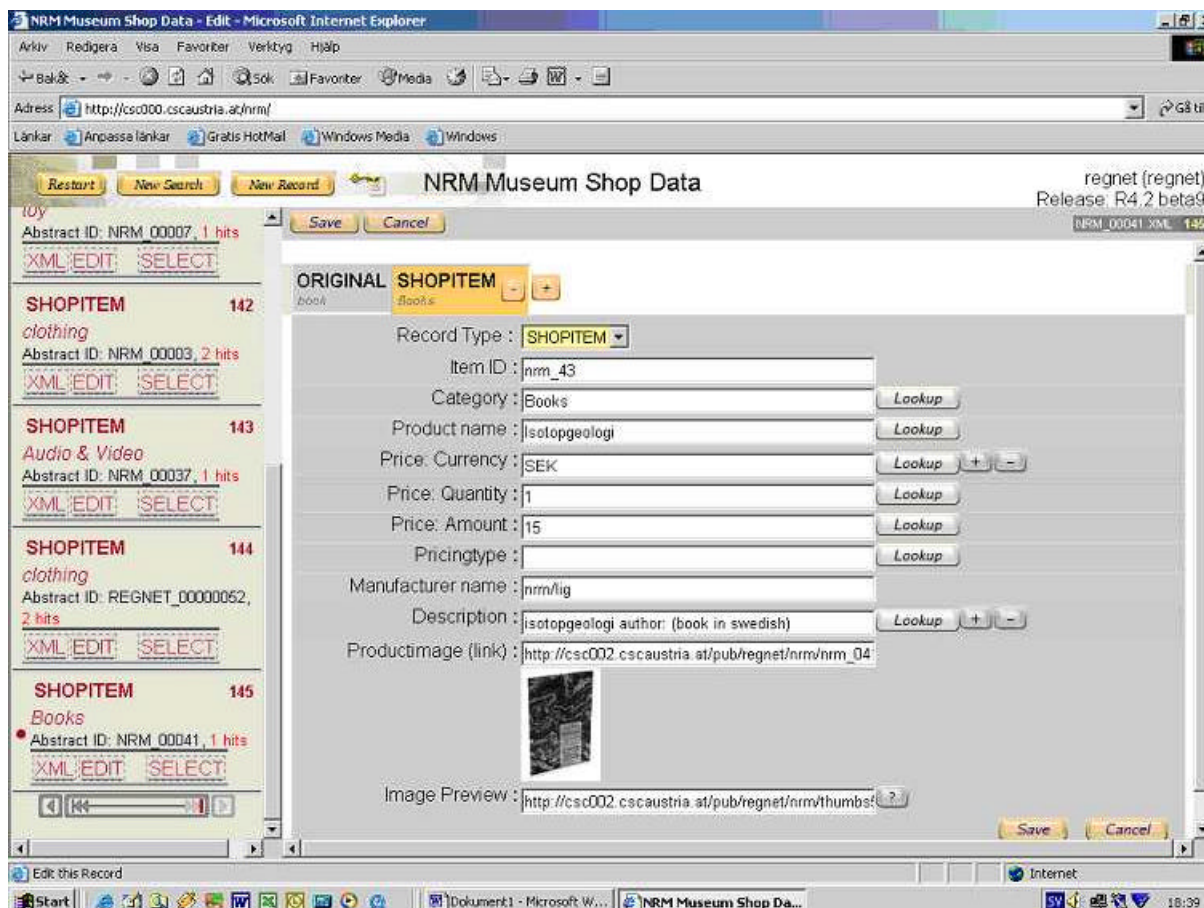


Figure 60 NRM - Shop item template

In the database we can add new items in an easy way. We can also add the items images both as thumbnails (preview/small images) and as product/large images. We can store images on our own server.




The screenshot shows a web browser window titled "NRM Museum Shop Data - Edit - Microsoft Internet Explorer". The address bar shows "http://csc002.csc.austria.at/nrm/". The page has a menu bar with "Arkiv", "Redigera", "Visa", "Favoriter", "Verktyg", and "Hjälp". Below the menu bar are buttons for "Bakåt", "Föråt", "Sök", "Favoriter", "Media", and "Gå till". The main content area is titled "NRM Museum Shop Data" and includes buttons for "Restart", "New Search", and "New Record". On the right side, it says "regnet (regnet) Release: R4.2 beta9" and "NRM_00041.XML 145".

The left sidebar displays a list of items:

- 142: SHOPITEM, clothing, Abstract ID: NRM_00007, 1 hits. Buttons: XML EDIT, SELECT.
- 143: SHOPITEM, Audio & Video, Abstract ID: NRM_00003, 2 hits. Buttons: XML EDIT, SELECT.
- 144: SHOPITEM, clothing, Abstract ID: REGNET_00000052, 2 hits. Buttons: XML EDIT, SELECT.
- 145: SHOPITEM, Books, Abstract ID: NRM_00041, 1 hits. Buttons: XML EDIT, SELECT.

The main form for editing item 145 is titled "ORIGINAL SHOPITEM" and includes the following fields:

- Record Type: SHOPITEM (dropdown)
- Item ID: nrm_43
- Category: Books (dropdown) with a "Lookup" button.
- Product name: Isotopgeologi (dropdown) with a "Lookup" button.
- Price: Currency: SEK (dropdown) with a "Lookup" button and a "+" button.
- Price: Quantity: 1 (dropdown) with a "Lookup" button.
- Price: Amount: 15 (dropdown) with a "Lookup" button.
- Pricingtype: (dropdown) with a "Lookup" button.
- Manufacturer name: nrm/lig
- Description: isotopgeologi author (book in swedish) with a "Lookup" button and a "+" button.
- Productimage (link): http://csc002.csc.austria.at/pub/regnet/nrm/nrm_04
- Image Preview:  with a "Lookup" button and a "+" button.

At the bottom of the form are "Save" and "Cancel" buttons. The status bar at the bottom shows "Edit this Record" and "Internet".

Figure 61 NRM - Example of a shop item

Besides this eShop we had the opportunity to try another one based on PHP and Open Source. We found that the latter is more suitable for our purpose

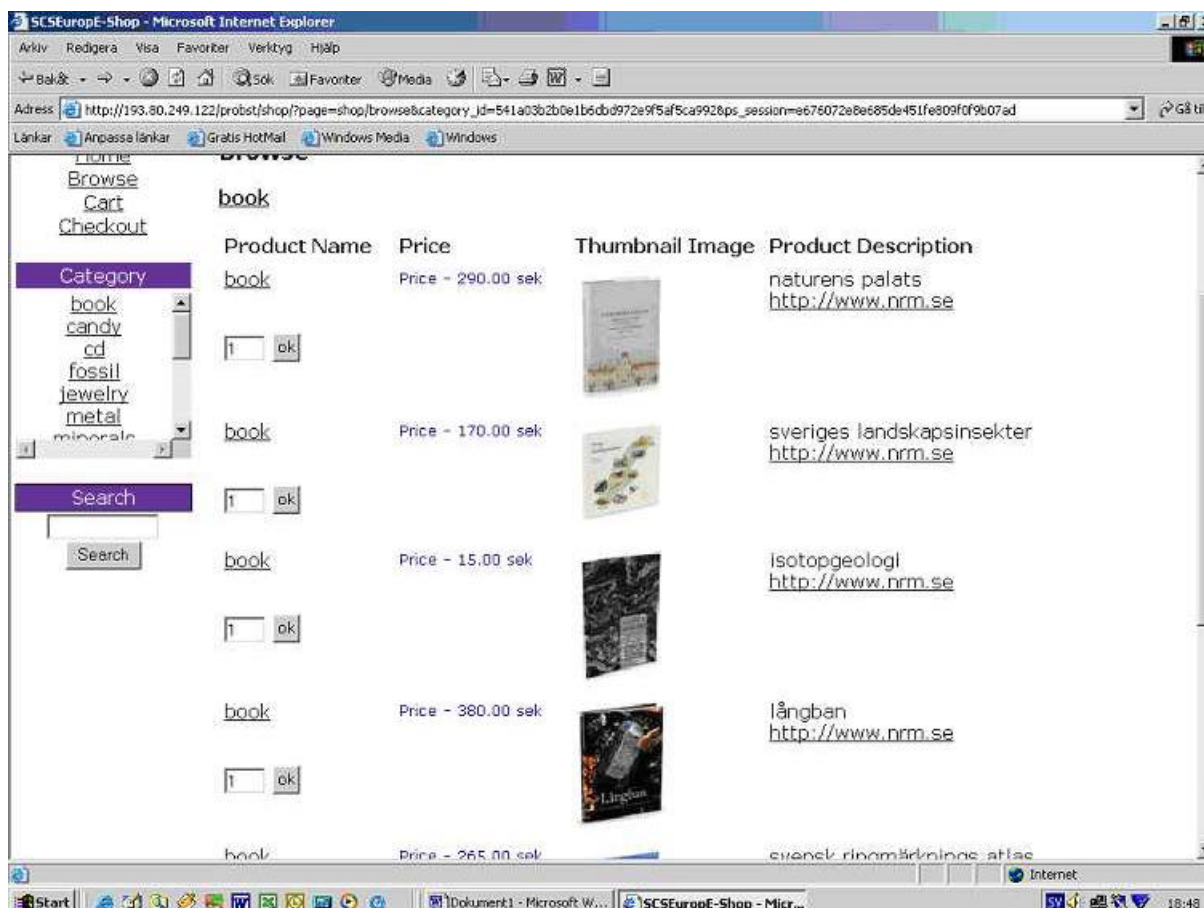


Figure 62 NRM - Lay out with PHP Open Source e-Shop

It is easy for the customer to navigate through the e-shop and choose items.

By clicking on the product name or thumbnail image you get more details of the chosen item with a larger image of the item.

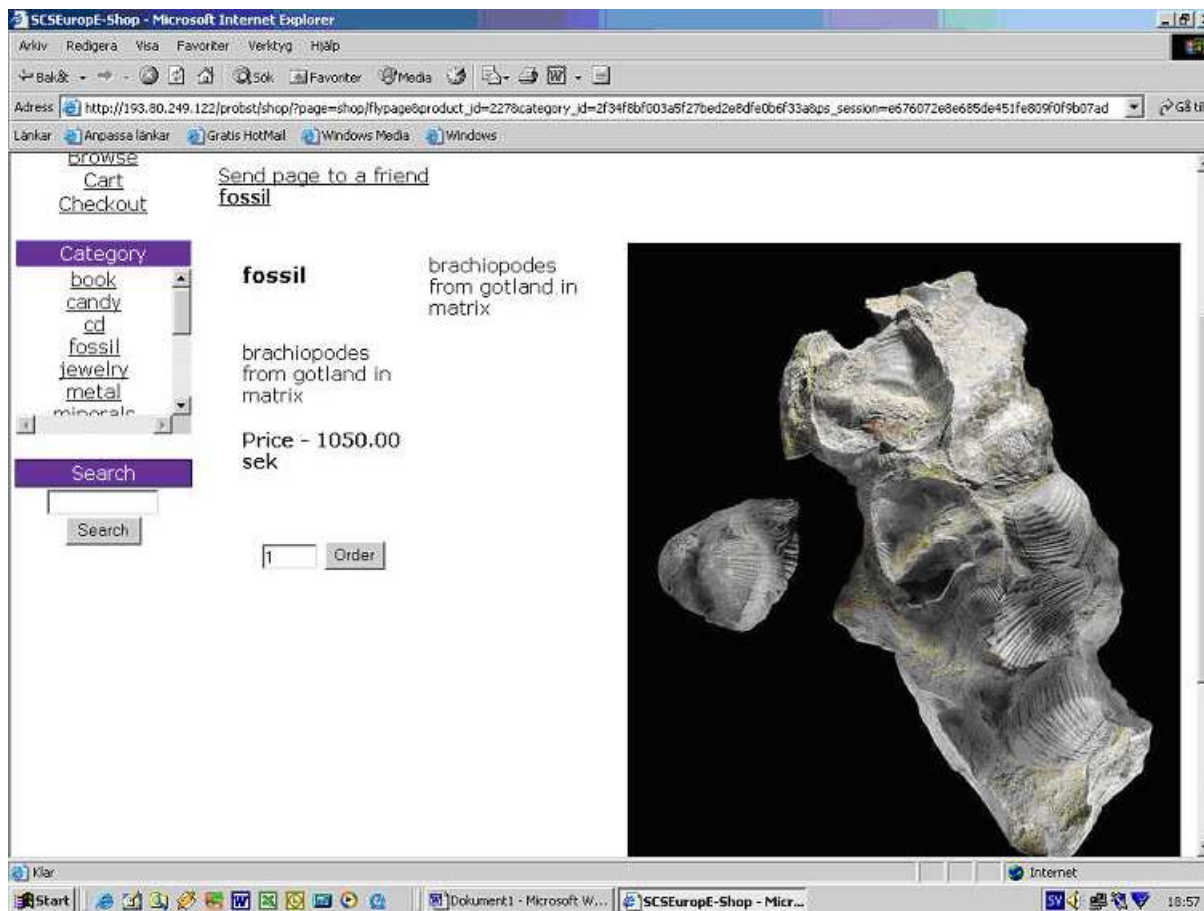


Figure 63 NRM - Feature of PHP Open Source e-Shop

Conclusion:

We feel that the PHP based eShop fully provides the service we want to offer our visitors. We conducted a series of tests including;

- browsing
- searching for different items
- adding and deleting items from cart
- creating an account
- placing an order
- purchase using a credit card

All of the above actions worked to full satisfaction.

Our conclusion is that the e-shop is fast and reliable and is easy to navigate and gives as well a good overview.



6.10 ONB

Short description of the delivered data for REGNET and/or CSC operations

Object data

ONB has provided the integral picture archive card catalogue, including a web storyboard for external users of the card catalogue database including ordering facility, picture records in a separate picture archive platform database for internal use, thematic texts and pictures.

Thematic texts

ONB has worked on two main themes: Habsburg (genealogical tree Primisser, Empress Elizabeth) and Botany. Contributions were also made for a smaller theme 'Tour d' Horizon' with the most important pieces of the collections of ONB.

Images

ONB provided images to every object of the themes it worked on and to every ONB picture record in the picture archive platform database.

Reason(s) for the choice

Object data

Objects were selected in function of the chosen themes 'Habsburg' and 'Botany / Linnaeus'. All objects mentioned are owned by ONB.

Thematic texts

ONB as the former imperial library of the Habsburgs has chosen the theme 'Habsburg: Empress Elisabeth' because of the presence of a prominent amount of pictures representing members of the Habsburg family, especially Empress Elisabeth, within the ONB picture archive collection, and also because of the knowledge of the library staff concerning the House of Habsburg. As an addition to the Habsburg theme, ONB has chosen the Primisser genealogical tree of the Habsburg family (from 13th to the 16th century), as this was deemed to be an interesting document for representing family relationships via a topic map with clearly defined relationships and enabling other project partners to contribute more easily by broadening the focus.

The theme 'Botany / Linnaeus' was chosen because of ONB's remarkable collection of historical botanical drawings and paintings by the most prominent artists in this area, thus cooperating by contributing unique local holdings and expertise to a larger theme. The pictures and thematic texts (in three languages) were a major contribution to the theme 'Linnaeus' which is coordinated by the Swedish project partner SUL.



The nature and number of the delivered items

Object data

Card Catalogue records	1,1 mio
ONB platform records	2128

Thematic texts and images

The theme *Habsburg: Empress Elisabeth / Primisser genealogical tree*

Topic Map structure (Excel file):	1
Thematic texts:	81 (German)
Images:	187

The theme *Botany / Linnaeus:*

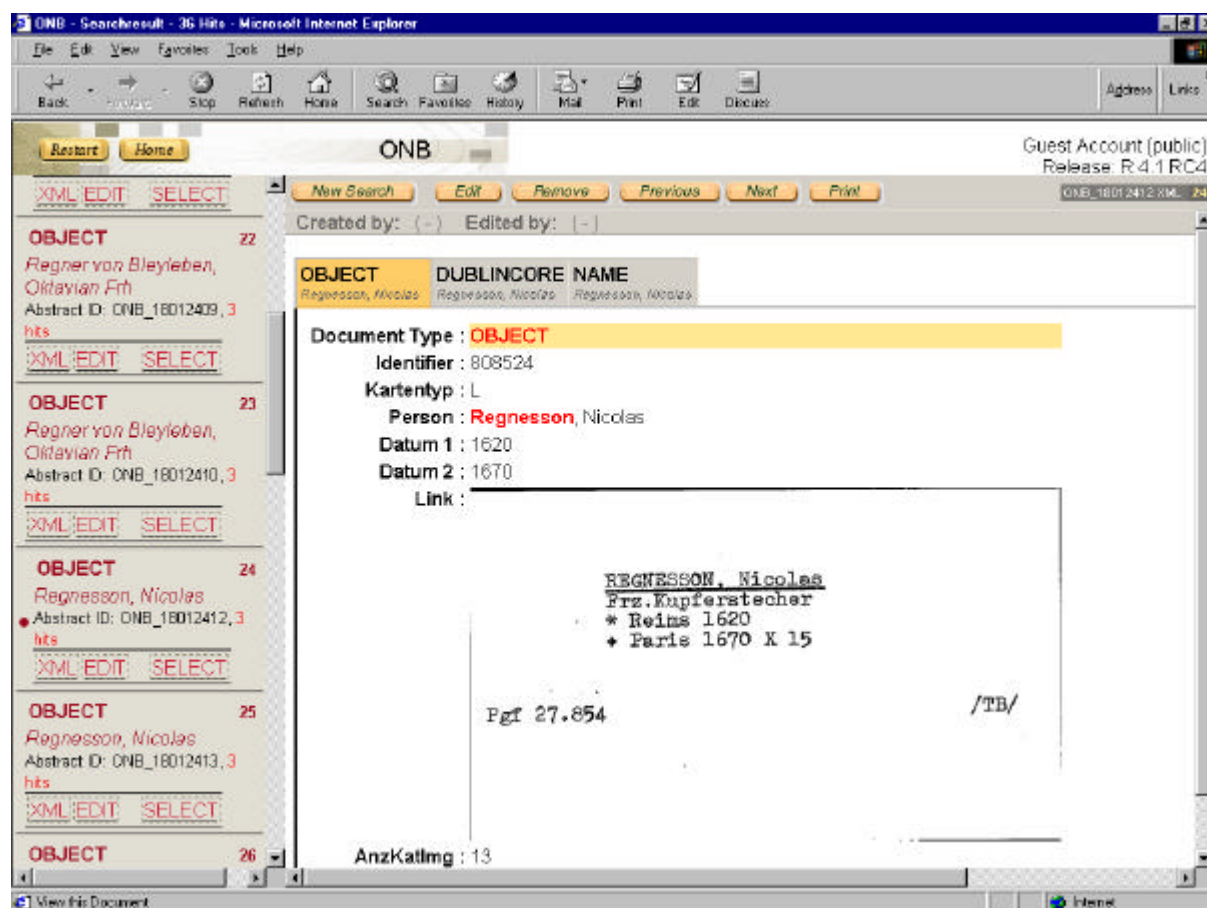
Thematic texts:	69 (23 in English/French/German)
Images:	33

The theme *Tour d'Horizon*

Thematic texts:	10 (German)
Images:	10

ONB picture archive Card Catalogue

Example of the internal view of a catalogue card record (header card / object section) in the XML-based database (TeXtML-Server) :



ONB - Searchresult: 35 Hits - Microsoft Internet Explorer

Guest Account (public)
Release R 4.1 RC4

ONB_18012412.XML 24

Created by: (-) Edited by: (-)

OBJECT 22
Regner von Bleyleben,
Oktavian Frh
Abstract ID: ONB_18012409, 3
hits
XML EDIT SELECT

OBJECT 23
Regner von Bleyleben,
Oktavian Frh
Abstract ID: ONB_18012410, 3
hits
XML EDIT SELECT

OBJECT 24
Regnesson, Nicolas
Abstract ID: ONB_18012412, 3
hits
XML EDIT SELECT

OBJECT 25
Regnesson, Nicolas
Abstract ID: ONB_18012413, 3
hits
XML EDIT SELECT

OBJECT 26

OBJECT DUBLINCORE NAME
Regnesson, Nicolas Regnesson, Nicolas Regnesson, Nicolas

Document Type: OBJECT
Identifier: 808524
Kartentyp: L
Person: Regnesson, Nicolas
Datum 1: 1620
Datum 2: 1670
Link:

REGNESSON, Nicolas
Frz. Kupferstecher
* Reims 1620
+ Paris 1670 X 15

Pgf 27.854 /TB/

AnzKatimg: 13

Figure 64 ONB - Catalogue card record

Example of the bilingual (English / German) web end-users view of the same card catalogue record:

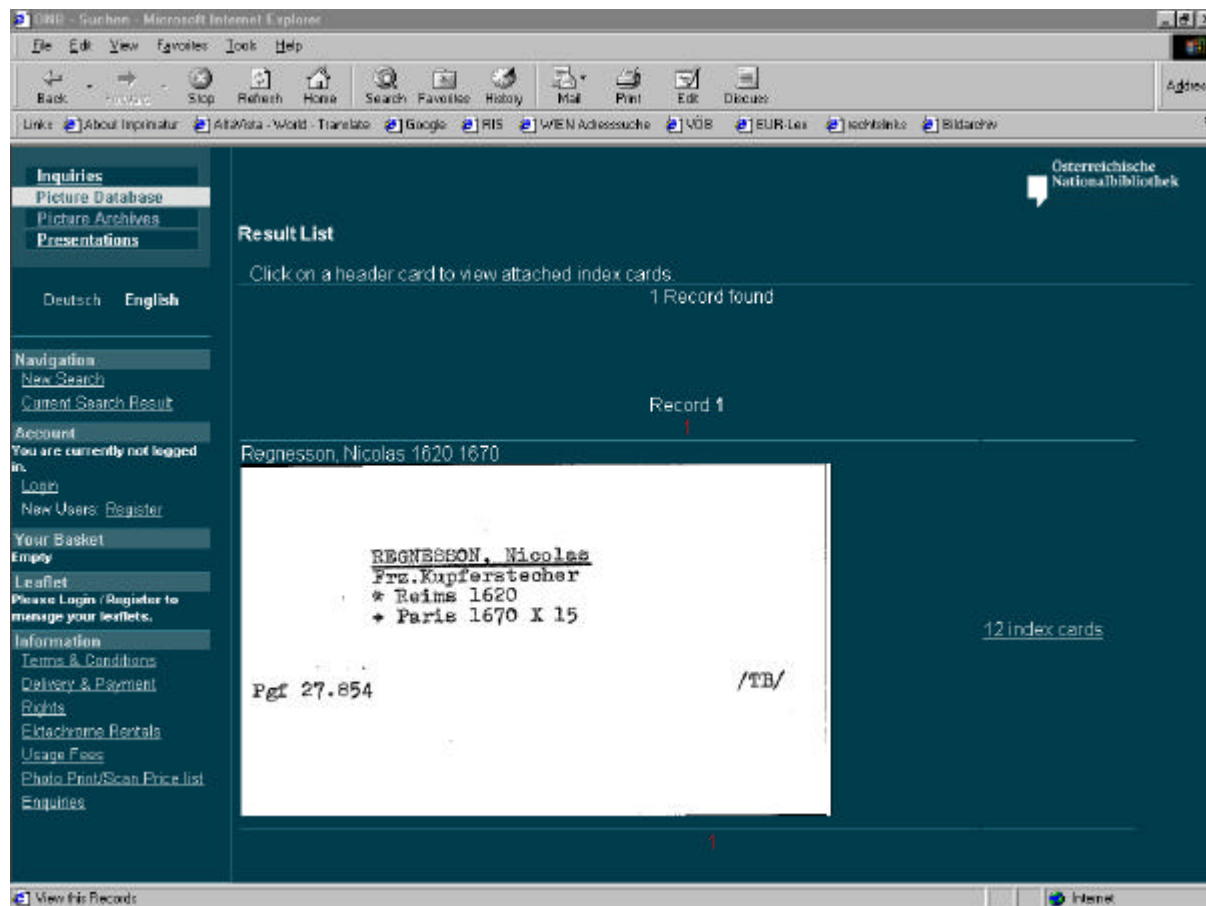


Figure 65 ONB - Catalogue card record - Web view

Example of an ordering process: Selection

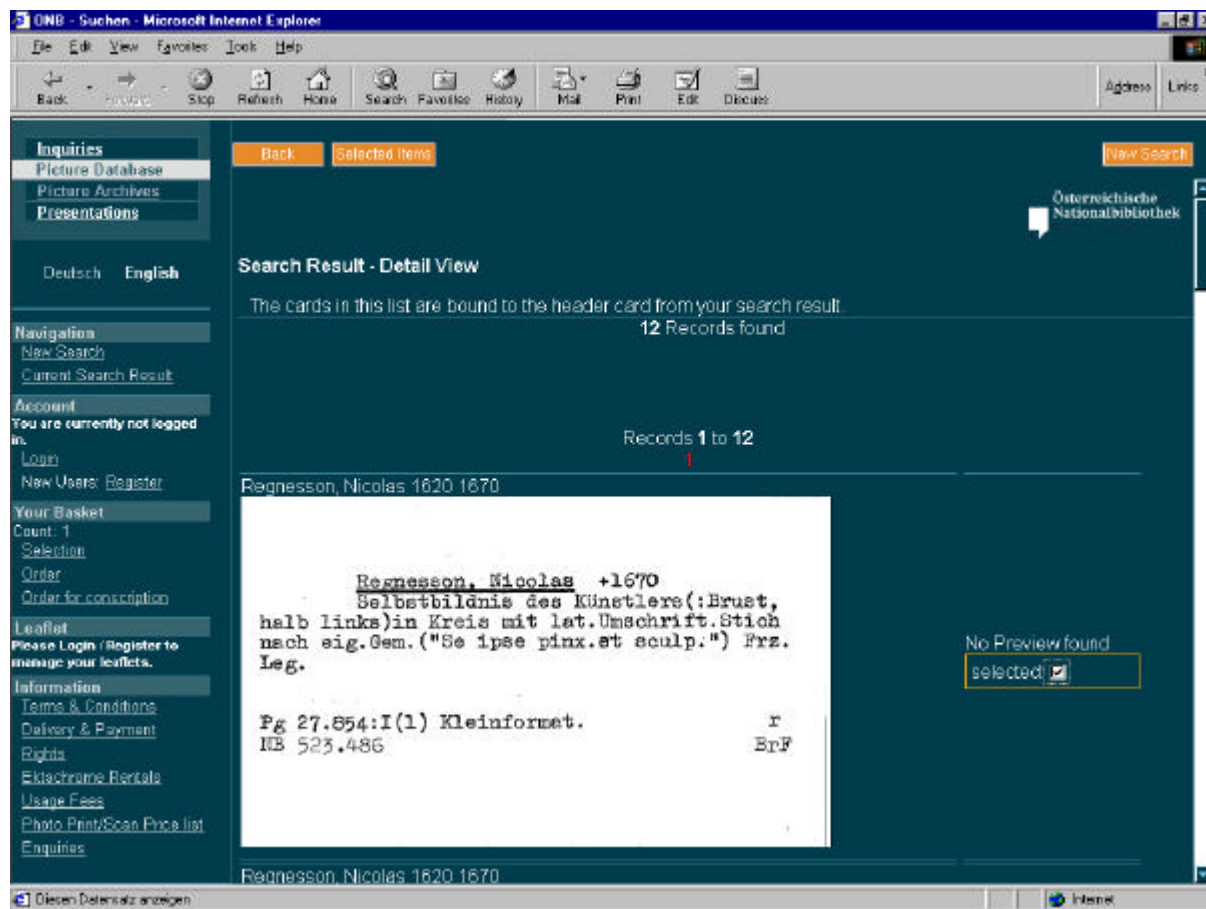


Figure 66 ONB - Ordering process - Selection

Example of an ordering process: defining pre-settings

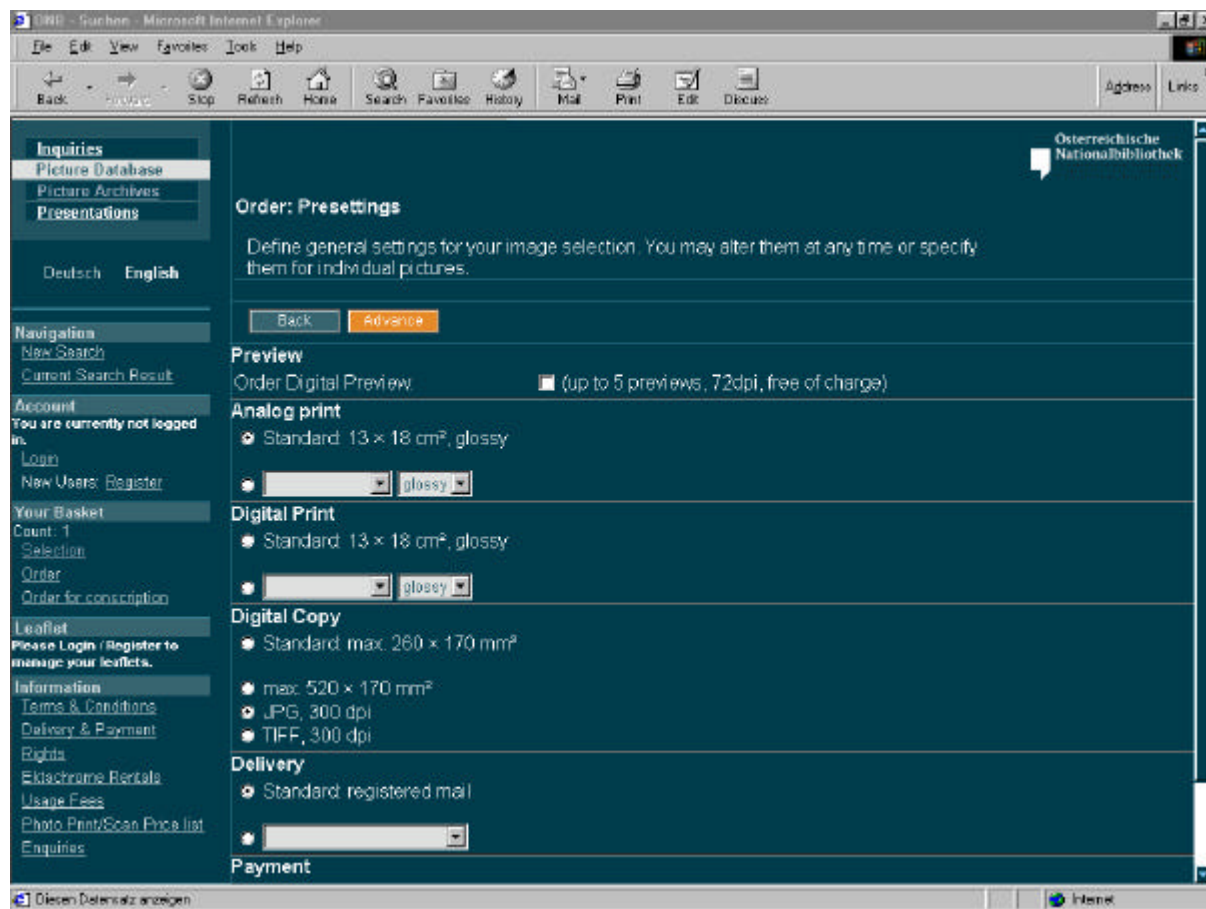
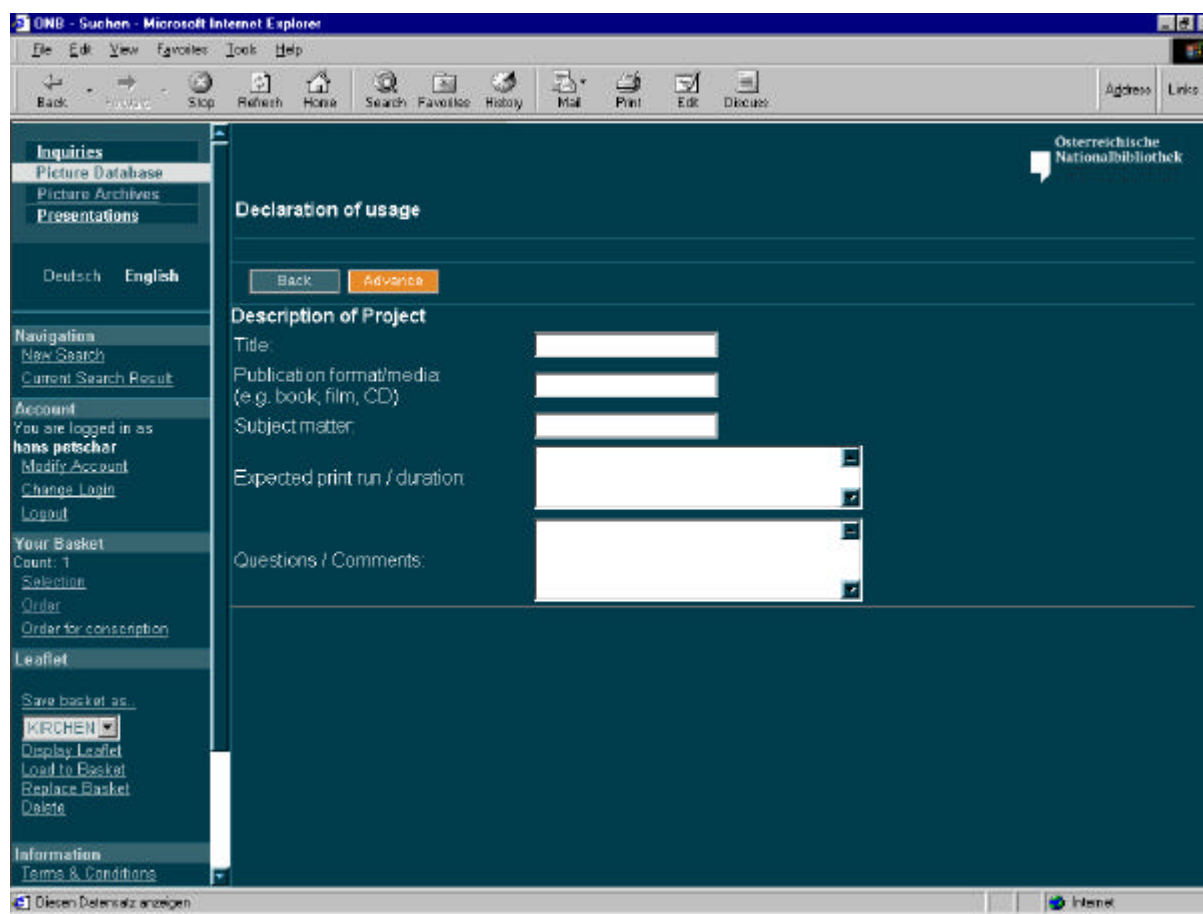


Figure 67 ONB - Ordering process - Pre-settings

Example of an ordering process: Declaration of usage



The screenshot shows a web browser window titled 'ONB - Suchen - Microsoft Internet Explorer'. The address bar shows 'http://www.onb.at/'. The page is titled 'Declaration of usage' and features a 'Back' button and an 'Advance' button. The form includes the following fields:

- Title:
- Publication format/media (e.g. book, film, CD):
- Subject matter:
- Expected print run / duration:
- Questions / Comments:

The left sidebar contains the following links:

- Inquiries
- Picture Database
- Picture Archives
- Presentations
- Deutsch English
- Navigation
- New Search
- Current Search Result
- Account
- You are logged in as **hans.patscher**
- Modify Account
- Change Login
- Logout
- Your Basket
- Count: 1
- Selecting
- Order
- Order for conscription
- Leaflet
- Save basket as...
- KIRCHEN
- Display Leaflet
- Load to Basket
- Replace Basket
- Delete
- Information
- Terms & Conditions

Figure 68 ONB - Ordering process - Declaration of usage

System behaviour and performance:

ONB users and external users alike made very favourable experiences with the Regnet TeXtML-Server system, which has succeeded ONB's former database system. The new system has been very stable and reliable. No problems such as time-outs were ever encountered even though mass data and complex search requests have been made extensively both by internal and external users.

External User response was very favourable to the usability of the system and its personalisation features (such as saving search results). Additional user reproduction orders for over hundred photographs, more than average, were received within the first weeks of installation of the REGNET system, including orders from Japan and the United States, obviously due to the new English interface.

**ONB themes contribution:**

Example of a multilingual thematic text (Botany / Linnaeus):

ONB_theme_linnaeus_Jacquin_plantarum_en.doc

*"It is therefore to be considered as a botanical treasure chamber, as a truly imperial repository of living plants, which flourishes most splendidly under... the scientific leadership of the master of the great botanists of Europe, Nikolaus von Jacquin," wrote a traveller in 1805 about the Imperial Royal Dutch Garden at Schönbrunn near Vienna. The piece of land (see No. 32) that had been acquired by the Emperor Francis I Stephan in 1753 was extended by his son, Emperor Joseph II. Rarities from the entire known world grew in the famous glasshouses, the contents of which were listed for the first time in a handwritten catalogue compiled by the master gardener, Franz Boos. On the instructions of Emperor Leopold II, the younger brother of Joseph II, Nikolaus Joseph von Jacquin, the Professor of Chemistry and Botany at the University of Vienna, produced a magnificent, abundantly illustrated work on the plants cultivated in the garden. Publication, however, came only later, under Emperor Francis II (reigned 1792 – 1806; as Francis I, Emperor of Austria, reigned 1804 – 1835). Among the plants illustrated are some which Jacquin had collected on the Caribbean Islands (see No. 32, 39), as well as material sent from other regions of the world, for example two specimens of traveller's tree (*Ravenala madagascariensis* J. F. Gmel.; t. 93) that came as a gift to Joseph II at Schönbrunn via a garden on the island of Mauritius. At least in the last decade of the 18th century, the imperial garden was accessible to the public, for another eyewitness reports, "It is a very fine thing that anyone is allowed into this garden".*

ONB_theme_linnaeus_Jacquin_plantarum_fra.doc

*«On le considère donc comme un trésor botanique, comme un véritable cabinet impérial de plantes vivantes qui se développe magnifiquement ... sous la direction scientifique du senior des grands botanistes d'Europe, Monsieur Nikolaus von Jacquin» écrivait un voyageur en 1805 à propos du jardin hollandais austro-hongrois de Schönbrunn près de Vienne. Le terrain acheté par l'empereur François I^{er} Étienne (voir n° 32) avait été agrandi par son fils Joseph II. Des plantes rares provenant du monde entier, c'est-à-dire des régions connues à l'époque, poussaient dans les célèbres serres. Le contenu de ces dernières fut consigné pour la première fois en 1799 dans un catalogue écrit à la main par le maître jardinier Franz Boos. C'est pour l'empereur Léopold II, frère cadet de Joseph II, que Nikolaus Joseph von Jacquin, professeur de chimie et de botanique à l'Université de Vienne, réalisa un herbier somptueux et richement illustré de plantes cultivées dans ces serres. Cet ouvrage ne parut toutefois que lorsque Jacquin fut mis à la retraite sous le règne de François I^{er} qui avait succédé à son père Léopold II. Parmi les plantes reproduites on trouve certains échantillons que Jacquin avait rapportés des Caraïbes (voir n°s 32, 39) ainsi que du matériel provenant d'autres parties du globe – comme ces deux exemplaires de l'arbre du voyageur poussant à Madagascar (*Ravenala madagascariensis* J. F. Gmel. ; t. 93), qui furent envoyés en cadeau à Joseph II depuis un jardin de l'île Maurice. Le jardin de Schönbrunn fut ouvert au public au moins dès la dernière décennie du XVIII^e siècle. Un autre témoin rapporte en effet: «C'est une très bonne chose que chacun soit autorisé à aller dans ce jardin.»*

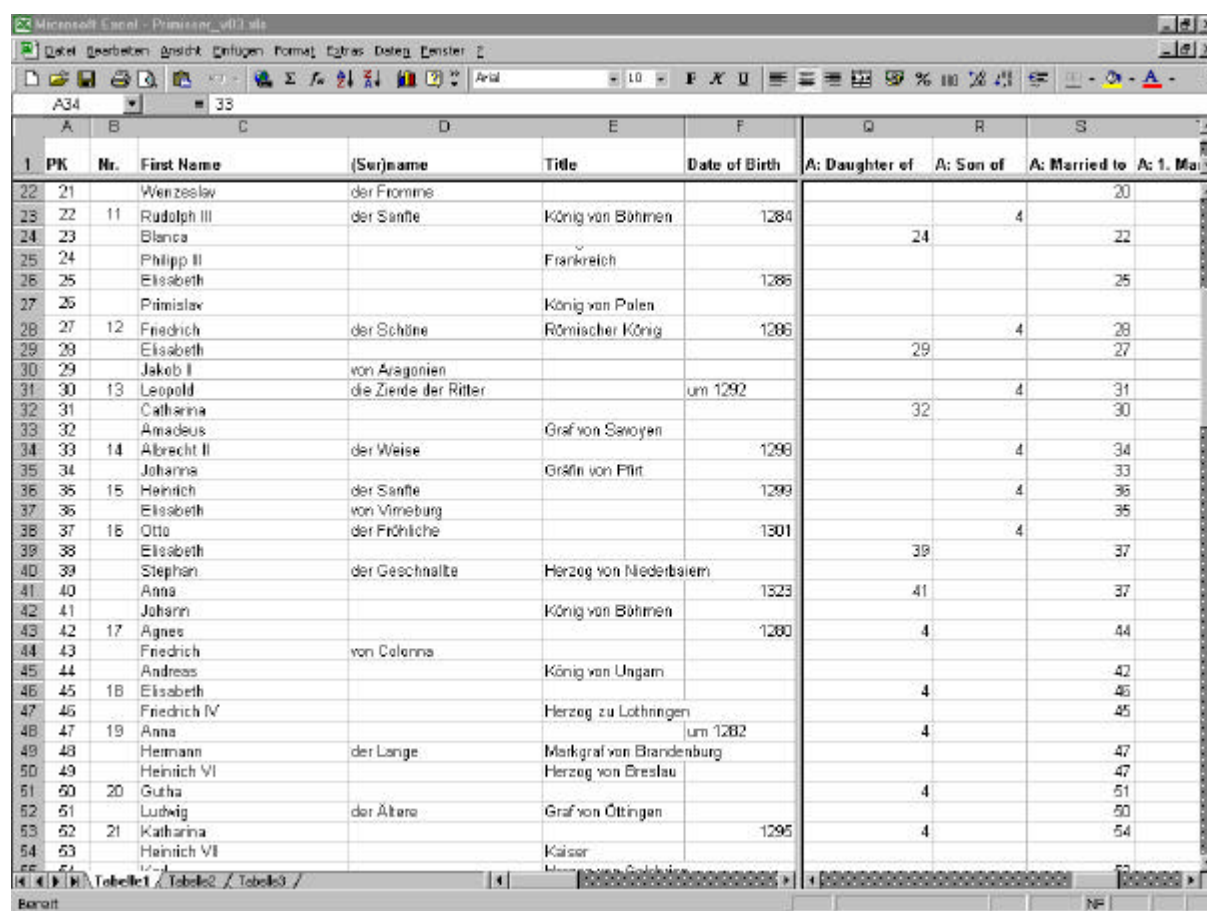
ONB_theme_linnaeus_Jacquin_plantarum_ger.doc

"Man betrachte ihn daher als eine botanische Schatzkammer, als ein wahrhaft kaiserliches lebendes Pflanzenkabinett, welches unter ... der wissenschaftlichen Leitung des Seniors der großen Botaniker Europas, des Herrn Nikolaus von Jacquin ... auf das herrlichste gedeiht", schreibt im Jahre 1805 ein Reisender über den k. k. holländischen Garten in Schönbrunn bei Wien. Das im Jahre 1753 von Kaiser Franz I. Stephan erworbene Grundstück (siehe Nr. 32) war durch seinen Sohn, Kaiser Joseph II., erweitert worden. Seltenheiten aus der gesamten damals bekannten Welt wuchsen in den

berühmten Gewächshäusern, über deren Inhalt erstmals ein handgeschriebener, vom Gärtnermeister Franz Boos geführter Katalog aus dem Jahre 1799 Auskunft gibt. Im Auftrag von Kaiser Leopold II., dem jüngeren Bruder von Joseph II., verfaßte Nikolaus Joseph von Jacquin ein reich illustriertes Prachtwerk über hier kultivierte Pflanzen. Zur Veröffentlichung kam es allerdings erst nach der Emeritierung Jacquins unter der Regierung von Kaiser Franz II. (regierte 1792 – 1806; regierte 1804 – 1835 als Franz I., Kaiser von Österreich). Unter den dargestellten Pflanzen finden sich einige, die Jacquin auf den karibischen Inseln gesammelt hatte (siehe Nr. 32, 39), sowie Material, das aus anderen Erdteilen geschickt worden war – so zwei Exemplare des in Madagaskar beheimateten Baums der Reisenden (*Ravenala madagascariensis* J. F. Gmel.; t. 93), der über einen Garten auf der Insel Mauritius als Geschenk an Joseph II. nach Schönbrunn gekommen war. Zumindest im letzten Jahrzehnt des 18. Jahrhunderts war der kaiserliche Garten allgemein zugänglich, denn ein weiterer Augenzeuge berichtet: "Daß es einem Jeden erlaubt ist in diesen Garten zu gehen, ist ein sehr schöne Sache."

ONB topic map contribution:

Example: *Primisser genealogical tree of the Habsburgs: excel sheet defining relations*



1	PK	Nr.	First Name	(Surname)	Title	Date of Birth	A: Daughter of	A: Son of	A: Married to	A: 1. Ma.
22	21		Wenzeslav	der Fromme						20
23	22	11	Rudolph III	der Sanfte	König von Böhmen	1284		4		22
24	23		Blanca		Frankreich		24			
25	24		Philipp II							25
26	25		Elisabeth			1286				
27	26		Primislav		König von Polen					
28	27	12	Friedrich	der Schöne	Römischer König	1286		4		28
29	28		Elisabeth				29			27
30	29		Jakob II	von Aragonien						
31	30	13	Leopold	die Zierde der Ritter		um 1292		4		31
32	31		Katharina				32			30
33	32		Amadeus		Graf von Savoyen					
34	33	14	Albrecht II	der Weise		1296		4		34
35	34		Johanna		Gräfin von Pfirt					33
36	35	15	Heinrich	der Sanfte		1299		4		36
37	36		Elisabeth	von Vimeburg						35
38	37	16	Otto	der Fröhliche		1301		4		38
39	38		Elisabeth				39			37
40	39		Stephan	der Geschmalte	Herzog von Niederbayern					
41	40		Anna			1323	41			37
42	41		Johann		König von Böhmen					
43	42	17	Agnes			1280	4			44
44	43		Friedrich	von Colonna						
45	44		Andreas		König von Ungarn					42
46	45	18	Elisabeth				4			46
47	46		Friedrich IV		Herzog zu Lothringen					45
48	47	19	Anna			um 1282	4			
49	48		Hermann	der Lange	Markgraf von Brandenburg					47
50	49		Heinrich VI		Herzog von Breslau					47
51	50	20	Gutka				4			51
52	51		Ludwig	der Ältere	Graf von Öttingen					50
53	52	21	Katharina			1295	4			54
54	53		Heinrich VII		Kaiser					

Figure 69 ONB - Topic map - Primisser

Primisser Topic map visualisation:

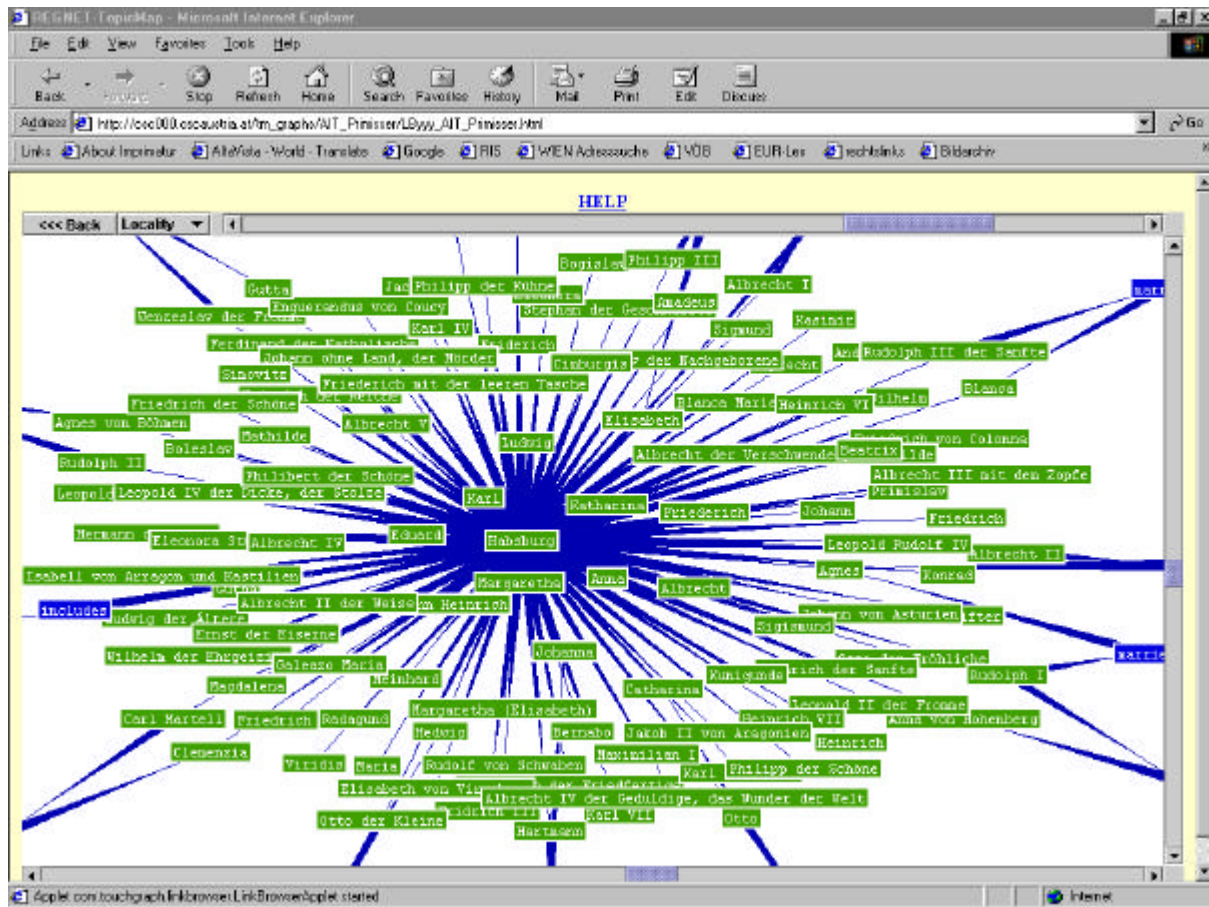


Figure 70 ONB - Topic map visualisation



Multilingualism

Whereas most of the object data is in German, ONB has put strong emphasis on multilingualism and internationalisation setting up a bilingual web front end for external users, with an easy and all time ready switch between the English and the German language, and providing the contributions to the Botany / Linnaeus theme in three languages

Other internationalisation efforts

For the content contribution of the REGNET system, special attention was given to themes enabling trans-national cooperation. This concerned:

Habsburg: ONB, ALI, MECH

Botany / Linnaeus: ONB, SUL

Tour d'Horizon (suggested by ONB): All content partners

Editorial issues

All written contributions and images were produced by the staff of the Austrian National library, also the translations of all texts and user interfaces.



6.11 SUL

Short description of the delivered data for REGNET

Object data

SUL has chosen books from the Rare books collection in the library, digitised 110 images from those books and provided 250 records in English and Swedish describing images and authors according to the Dublin Core format.

Thematic texts

SUL has worked on the Linnaean theme with KVA. Other contributors to the theme has been ONB and Museon.

Images

Most of the records are accompanied by a image.

Reason(s) for the choice

Object data

The Rare books collection, owned by the Royal Swedish Academy but housed and cared for by Stockholm University Library, features valuable and unique older books in the Natural Sciences. The Academy and the collection were founded in 1739, when Carl von Linnaeus donated his first book, the important botanical work *Hortus Cliffortianus*, to the Royal Swedish Academy. The selection of books from this collection for the REGNET system has been done to illustrate the Linnean theme but also to market the collection, which meant that we also considered images of general interest to a broader community.

Thematic texts

Thematic texts in the Linnean theme has placed Linnaeus in the scientific context, described his disciples, life and works. Detailed descriptions of scientific authors in botany, zoology and etymology have been provided.

The nature and number of the delivered items

Object data

Images	110
--------	-----

Thematic texts and images

The Linnaean theme	310 occurrences
Thematic texts:	52 (in Swedish and English)
Images:	150 (SUL and ONB)

One relevant example per type of addressed items

Example of a Dublin Core record provided by SUL in Word converted by AIT to the REGNET database

Example of a Dublin Core record provided by SUL in Word converted by AIT to the REGNET database

Title	The natural history of Carolina, Florida and the Bahamas islands
Creator	Catesby, Mark (1683-1749)
Subject	Natural history
Subject	Botany
Subject	Flowers
Subject	Zoology
Subject	Animals
Subject	Birds
Subject	Carolina, USA
Subject	Florida, USA
Subject	Bahamas
Description	<p>Sometimes the Englishman Mark Catesby (1683-1749) is referred to as the "father of American ornithology", and he is said to have laid the foundation of American natural history.</p> <p>Catesby went to America on two occasions. On his first visit he went to stay with his sister Elisabeth and her husband who had emigrated to Virginia. He stayed there from 1712 to 1719, and took part in expeditions in Virginia, Bermuda and Jamaica, sketching and collecting specimens. In 1722 he returned to America and remained until 1726 when he returned to England to settle in London. Catesby was encouraged by the Royal Society and by persons such as Sir Hans Sloane, Dr Richard Meads and others to bring back specimens of plants and animals to England.</p> <p>Back in England he started to work with his monumental publication <i>The natural history of Carolina, Florida and the Bahamas islands</i> and he spent almost the rest of his life with this project. The book was published in parts, each containing twenty plates with descriptive text. Catesby did almost all the work himself including etching the plates and the handcolouring. In the second volume though, Georg Dionysius Ehret supplied Catesby with two plates, number 61 and 96. The <i>Magnolia altissima</i> (<i>Magnolia grandiflora</i> Linnaeus) is probably the most beautiful picture of the entire work.</p> <p>His <i>Natural History of Carolina</i> is one of the first comprehensive surveys of the flora and fauna of America and is the earliest book to include coloured plates of American birds. It was greatly admired by both learned and aristocratic communities when it appeared. Catesby's importance concerning the development of Anglo-American scientific illustration remains considerable.</p>
Publisher	Mark Catesby
Date	1731-1743
Type	Text
Format	2 volumes, 220 col. plates with accompanying text
Identifier	SUL, Catesby_en
Language	en
Language	fr
Relation	(Libris / Bibliographic record)
Relation	KVA0001B
Relation	KVA0001A
Relation	KVA0003A (short)
Relation	KVA0003B (full)
Relation	KVA0004B (full)
Relation	KVA0004A (short)
Relation	KVA0005A (short)
Relation	KVA0005B (full)
Relation	KVA0007B (full)
Relation	KVA0007A (short)
Relation	KVA0008A (short)
Relation	KVA0008B (full)
Relation	SUL, Catesby_appendix_image_13
Relation	Tout d'Horizon
Coverage	18 th century

Figure 71 SUL - Dublin Core record - Text

Example of record describing image provided by SUL in Word converted by AIT to the REGNET database

Title	PL 16, Largest white bill'd woodpecker ; Willow oak
Creator	Catesby, Mark (1683-1749)
Subject	Botany
Subject	Trees
Subject	Willow oak
Subject	Zoology
Subject	Birds
Subject	Woodpeckers
Description	Handcoloured engraving of a Large white billed woodpecker (<i>Picus principalis</i> Linnaeus) sitting on a Willow oak
Publisher	Catesby, Mark (1683-1749)
Date	1731
Type	Image
Format	26 x 38 cm
Identifier	SUL_Catesby_I_image_16
Source	SUL_Catesby_en
Language	en
Language	fr
Location	Stockholm University Library
Rights	Stockholm University Library
Price	

Figure 72 SUL - Dublin Core record - Image

Details of high resolution scan



Figure 73 SUL - Scan

How pictures are displayed in search result

<div> Restart New Search New Record </div> <div> Detailed View next </div>					
Stockholm University Library					
Guest Account (publ) Release: R4.2 bel					
Pl. 61, Magnolia altissima (The Laurel tree of Carolina)	Catesby, Mark (1683-1749)	Handkolorerad gravyr av en magnolia (Magnolia tripetala Linnaeus)	1743	Image	
Pl. 16, Largest white bill'd woodpecker ; Willow oak	Catesby, Mark (1683-1749)	Handkolorerad gravyr av en stor hackspett (Picus principalis Linnaeus) som sitter på en ek (Willow oak).	1731	Image	
Pl. 61, Anas platyrhynchos	Catesby, Mark	Handkolorerad gravyr av en drackfågel (Mareca americana Linnaeus)	1731	Image	

Figure 74 SUL - Search result

The post in Dublin core

Created by: root (1/14/2003 - 1:40:35 PM)
Edited by: root (2002-11-18 - 16:59:28)

DUBLINCORE
Pl. 16, Largest white ...


Record Type : DUBLINCORE
Identifier : SUL_Catesby_I_image_16s
Title : Pl. 16, Largest white bill'd woodpecker ; Willow oak
Creator : Catesby, Mark (1683-1749)
Publisher : Catesby, Mark (1683-1749)
Date : 1731
Subject : Botanik
Subject : Träd
Subject : Ekar
Subject : Zoologi
Subject : Fåglar
Subject : Hackspettar
Description : Handkolorerad gravyr av en stor hackspett (Picus principalis Linnaeus) som sitter på en ek (Willow oak)
Type : Image
Source : SUL_Catesby_se
Format : 26 (38 cm)
Language : en
Language : fr
Relation (Link) :


Figure 75 SUL - Search result - Dublin Core

Examples of one of the excel sheets with meta data on the thematic texts

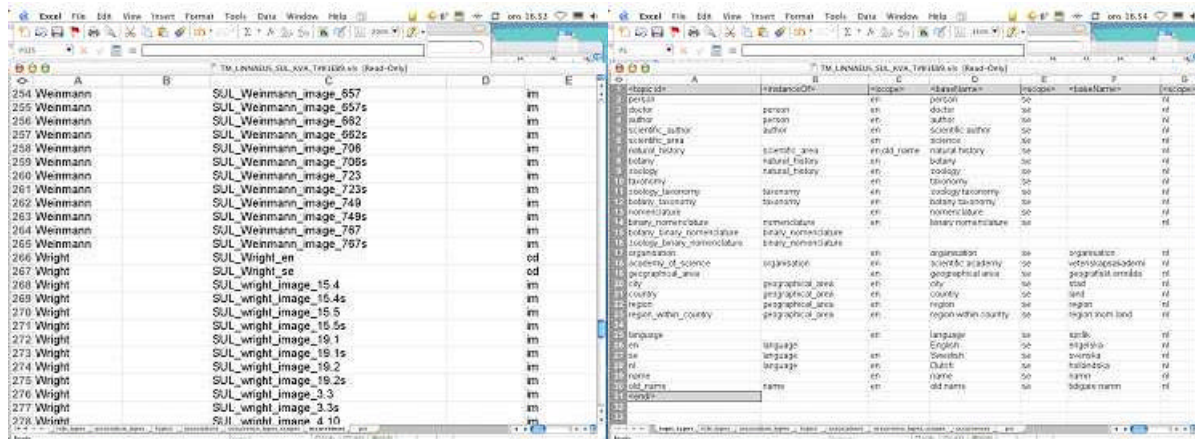


Image File	SUL Code	Subject Name
SUL_Weinmann_image_657	en	person
SUL_Weinmann_image_657's	en	person
SUL_Weinmann_image_662	en	author
SUL_Weinmann_image_662's	en	author
SUL_Weinmann_image_706	en	scientific area
SUL_Weinmann_image_706's	en	scientific area
SUL_Weinmann_image_723	en	botany
SUL_Weinmann_image_723's	en	botany
SUL_Weinmann_image_749	en	botany
SUL_Weinmann_image_749's	en	botany
SUL_Weinmann_image_767	en	botany
SUL_Weinmann_image_767's	en	botany
SUL_Wright_en	en	botany
SUL_Wright_se	en	botany
SUL_wright_image_15.4	en	botany
SUL_wright_image_15.4's	en	botany
SUL_wright_image_15.5	en	botany
SUL_wright_image_15.5's	en	botany
SUL_wright_image_19.1	en	botany
SUL_wright_image_19.1's	en	botany
SUL_wright_image_19.2	en	botany
SUL_wright_image_19.2's	en	botany
SUL_wright_image_3.3	en	botany
SUL_wright_image_3.3's	en	botany
SUL_wright_image_d.10	en	botany

Figure 76 SUL - Thematic text

Example of a multilingual thematic text:

English

The herbarium belonging to George Clifford, a wealthy Anglo-Dutch merchant, is highly significant, partly for its comprehensive representation of plants then newly cultivated in Europe, but particularly through its connection with Carl Linnaeus. Linnaeus worked for Clifford at the latter's estate, near Haarlem, between 1735 and 1737. Linnaeus supervised the hothouses and named specimens and classified them according to his own system. During the stay he produced the important botanical work *Hortus Cliffortianus*, in which he described many new species from living and dried specimens in Clifford's possession. The work was commissioned by Clifford as a catalogue of the plants in his garden and herbarium. Linnaeus arranged them according to his own Sexual System, classifying them into groups based on the numbers and form of their male and female parts. Each species was allocated to a genus, and given a short phrase-name in Latin, describing the features which served to distinguish one species from another. Linnaeus also included synonyms of earlier authors and distributional information. The significance of these entries lies in the fact that when Linnaeus, fifteen years later, introduced the consistent use of binomial nomenclature in his *Species Plantarum*, he took many of his species concepts direct from the accounts in this work. *Hortus Cliffortianus* was published in Amsterdam in 1737 and Ehret supplied the 36 illustrations for the work. Although the title page has the publication year 1737, it was not published until the year after.

Swedish

George Clifford var en förmögen anglo-holländsk köpman, vars herbarium är mycket betydelsefullt, dels för att växter, som då var nya i Europa var rikt representerade där, men framförallt på grund av att det förknippas med Carl Linnaeus. Linnaeus arbetade för Clifford på dennes egendom, nära Haarlem, 1735 till 1737. Linnaeus övervakade växthusen och namngav arter och klassificerade dem enligt sitt eget system. Under vistelsen utarbetade han det viktiga botaniska verket *Hortus Cliffortianus*, i vilket han beskrev många nya arter av både växande och torkade växter i Clifford's ägo. Clifford beställde verket som en katalog över växterna i sin trädgård och sitt herbarium. Linnaeus arrangerade dem enligt sitt eget sexualsystem och klassificerade dem i grupper. Varje växt hänfördes till ett genu, och förlänades ett kort namn på Latin, som beskrev de egenskaper som särskiljde en art från en annan. Linnaeus inkluderade även synonymer av tidigare författare. Dessa tidiga beskrivningar av växter har stor betydelse, därför att, när Linnaeus, femton år senare, introducerade den konsekventa användningen av binomial nomenklatur i sin *Species Plantarum*, tog han många av sina benämningar och sitt koncept direkt härifrån. *Hortus Cliffortianus* publicerades i Amsterdam, 1737. Detta utgivningsår anges på bokens titelsida, men egentligen gavs den inte ut förrän året efter, 1738. Ehret försåg verket med 36 illustrationer.

Linnaeus Topic map visualisation

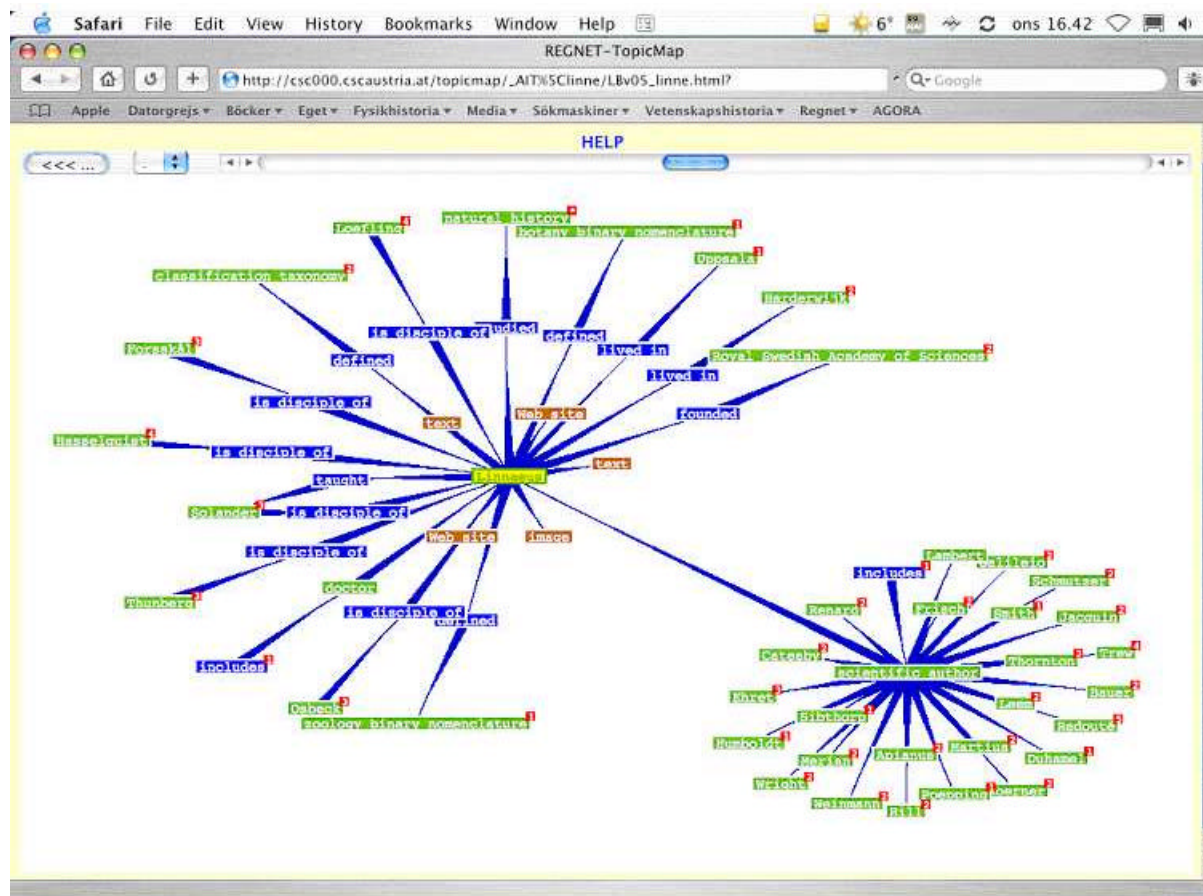


Figure 77 SUL - Topic map - Linnaeus

Multilingualism

All records and thematic texts delivered by SUL are in two languages – English and Swedish.

Other internationalisation efforts

SUL has together with KVA and NRM translated the REGNET system into Swedish.

Editorial issues

All written contributions were produced by staff employed for the project by the library also permanent staff wrote contributions. Images were digitised by an external firm.

Used thesauri, dictionaries, standards, etc.

Nationalencyklopedien

Encyclopaedia Britannica

Zoologisk uppslagsbok

7 Demonstration methodologies

The main objective of the demonstration phase was the offer of services on a regular basis - under real conditions and by at least a number of three service centres. The user groups should be extended by taking appropriate marketing efforts prepared under T2.5. Selected users should be invited to test special functionalities while the normal user should be offered the whole system in a unique way. The main goal was to provide access to digital contents, services and products, the use of the REGNET facilities and the collection and analysis of further user feedback and documentation of user responses and system behaviour. Demonstration in this context comprises different players (content partners, CSC operators and technical developers) and results in different kinds of activities. In the context of this deliverable a short introduction to the overall approach should be given (Chapter 4.1). Concrete actions will be described in this chapter as far as they belong to WP 4.1 Execution of the demonstration phase – mainly REGNET Test bed activities and special demonstration sessions with the full consortium. All issues mainly related to validation (usability testing, analysis of test results etc.) belong to D11 and will be described there.

7.1 Demonstration approach

7.1.1 Overall demonstration strategy

In order to streamline the demonstration activities a rather elaborated task brief was set up for the guidance of the involved partners.:

Description of Work:

All available services have to be offered and should be used at least by selected user groups. User interactions and system behaviour should be logged and different marketing actions should be undertaken to test user reactions on new or changed functions. Selected user groups are invited to test special functionalities while to the normal user the whole system should be offered in a unique way. Services should in general be offered in a unique way regardless the way of access (wireless, fixed line). The user reactions will be grouped into classes of services which already can be distinguished in the portal design (data entry, search, e-Business).

Detailed Schedule: see "WP 4.1. Course and scheduling.

Critical Path: In order to reach the goals of the contract – that is for the CSCs to offer services on a regular basis - the necessary software components must be available and stable.

Quality Gates: In order to assure an optimal course and working together of all action lines (tasks) within the overall work package a reference model should be provided in order to describe the REGNET demonstrator. Moreover it must be assured that all demonstration strategies will be synchronized and that the material (checklists, questionnaires) already worked out would be adapted in order to produce "comparable" results.

Description of Component:

**Methodology:**

All requested feedback/contributions should be structured as much as possible. Therefore a set of various documents will be provided mainly by the task leaders.

Especially:

- questionnaires for usability testing within and outside the partners' organisations, for print-delivery and online-provision (qualitative online review as a potential addition – to be discussed),
- checklists for supporting new partners (registration form, data analysis checklists and forms, data integrity check etc.),
- guidelines and descriptions,
- templates for (internal) reporting and preparation of case studies.

Case studies should be introduced as a „new“ method to describe specific approaches/solution for the given situation (to demonstrate and thereby promote the REGNET Demonstrator). These case studies could also be used as a valuable input for the REGNET Knowledge Base – and as a potential means to enhance the attractiveness of the REGNET System for future members (see "WP 4.1 List of tasks considering the different roles").

Behavioural observation techniques should be used to give additional and comparative input for the evaluation process.

Dependencies: This task is strongly related to WP 4.3 (feedback will be collected also by the CSCs), methodologies must be synchronized, and reporting procedures must be clearly defined.

Goals: demonstration of all functionalities of the REGNET system with accompanying marketing efforts in order to obtain a full assessment of the system leading to a fully operational version after possible adaptations provoked by the feedback of the end user community. Different reports related to all the involved processes have to be delivered.

7.1.2 Course and scheduling

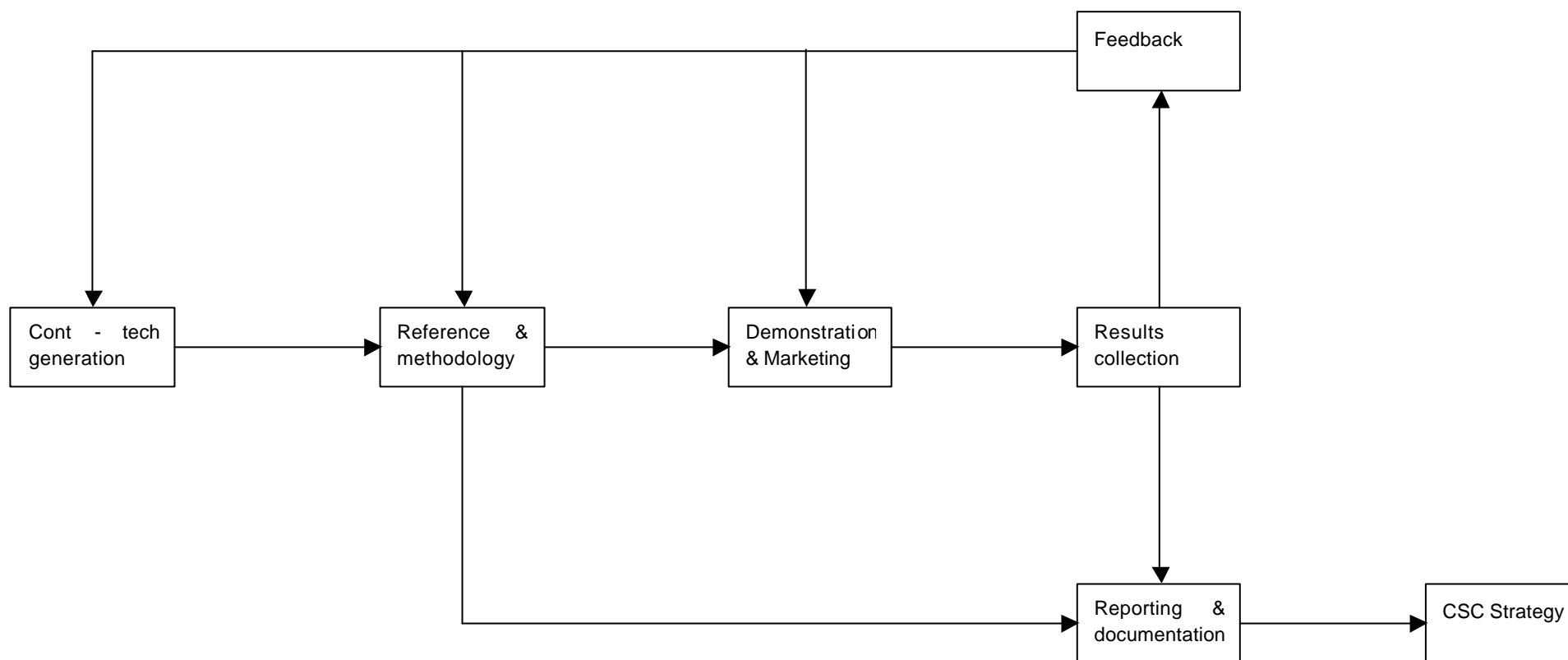


Figure 78 Course and scheduling of work package 4

7.2 Practical guidance

The reference as stated in previous chapter (Services portfolio and Content frame of reference) is the central point from which tests and demonstrations should be carried out. At least two iterations should be foreseen in order to give the technical partners the possibility to refine eventual malfunctioning via the feedback given by testers and demonstrators. At the same time missing elements at the content side can be added. The same results serve as input for the reporting and documentation of deliverables and for adapting the strategies of the Cultural Service Centres.

The way to organise test and demonstration sessions should be diverse in order to obtain as much as possible views and reactions on the system. Hereby the following should be achieved:

- dedicated test bed actions
- one to one sessions between technical and content partners
- free testing at the content partners premises
- a series of special test and demonstration meetings with the consortium partners

The channels to gather feedback should vary:

- pre-formatted questionnaires
- free filled in return forms
- behavioural observation by WP 4 responsables

Concrete demonstration activities were defined taking different roles into account:

Content providers:

Demonstration for all content providers involved in this task refers to the usage of the REGNET facilities – for the management of their data (thematic texts and object information), for the operation of an own museum shop, for the representation of their data related to themes etc.. By doing this the provision of access to a substantial part of content should be assured and concrete products being created to „demonstrate“ benefits of the system. In order to improve the REGNET components they should support the definition of concrete workflows and products by giving examples of existing products (e. g. the structure of exhibition and product catalogues to used for the style sheet definition) and by testing the REGNET system starting with real-life working scenarios. With regard to a later demonstration (promotion) how the REGNET tools could be used within given process chains and – again – an improvement of the system feedback should be given stating own experiences (e. g. writing case studies), document test user feedback (usability testing) and collect also first opinions of external user groups by demonstrating the system to colleagues, related organisations and other external user groups. The effort (tasks) of the content providers could be summarized as follows:

- provide access to a substantial part of their content,
- use facilities of the REGNET system,
- demonstrate the system to others (usability testing, promotion),
- give feedback about own experiences & test user reports,
- promote the project (organise events, distribute material etc.).

CSC operators:

The main (demonstration) task of CSC operators was to operate and offer the infrastructure covering the installation of available software, the set-up of test bed sites, databases (for new users, Test bed participants) as well as the promotion of the project and the documentation of (user) feedback. In order to do this responsible staff must be trained and appropriate activities and material be prepared, e. g. posters, brochures, fact sheets, web sites. Examples for appropriate promoting activities are the organising of information events, road shows, newsletters and the establishing of contact to relevant organisations for the envisaged target groups. In order to assure a documentation and „re-use“ of all experiences the creation of a knowledge base was added to the original concept: for project know-how and experiences (case studies, forum/discussion boards, guidelines FAQs). To sum it up: CSC operations should:

- operate and offer the REGNET infrastructure,
- collect and document feedback,
- promote the project and test phase,
- contribute to the REGNET knowledge base,
- strategic development: product and service definition.

Software developers:

Software developers were not directly responsible for demonstration activities. They should rather support CSC operations (and operators) and the improvement of the REGNET system based on the user feedback collected. The delivery and adaptation of the software components is specified in WP 4.2 and will be reported elsewhere. Of importance for the given context is the training in effective usage of the tools and the guidance for the integration in the work flows of the content providers, that's to provide guidelines and/or training pointing out how and when to use the tools, e. g.:

- how to enter and retrieve data
- how to generate topic maps
- how to generate a thesaurus
- how to make an electronic publication
- how to manage an e-Shop/e-Auction

8 Demonstration cases

In this chapter a number of demonstrations, representative for the applied methodology and carried out by the REGNET partners, are described.

8.1 The REGNET Test bed

The REGNET Test bed is a campaign established to support the demonstration activities as outlined before. The main goal is the preparation of the regular operation (respectively the market preparation) by attracting potential customers. All interested cultural institutions (i.e. museums, libraries, archives etc.) should get the possibility to participate between 1st of October 2002 - 31st of March 2003 - free of charge. All tools developed within the project (and available in an appropriate form) could be used during the testing phase – in return participants should give feedback. Test data (bibliographical data/object data and digitised images) provided will be converted and stored in an XML-database on the central web server.

Besides the national test bed sites a central entry page was designed to get information about the campaign, to access the tools and to search in the different collections. This test bed site could be accessed using the following URL: <http://www.regnet.org/testbed/> (screenshot in **Fehler! Verweisquelle konnte nicht gefunden werden.**):

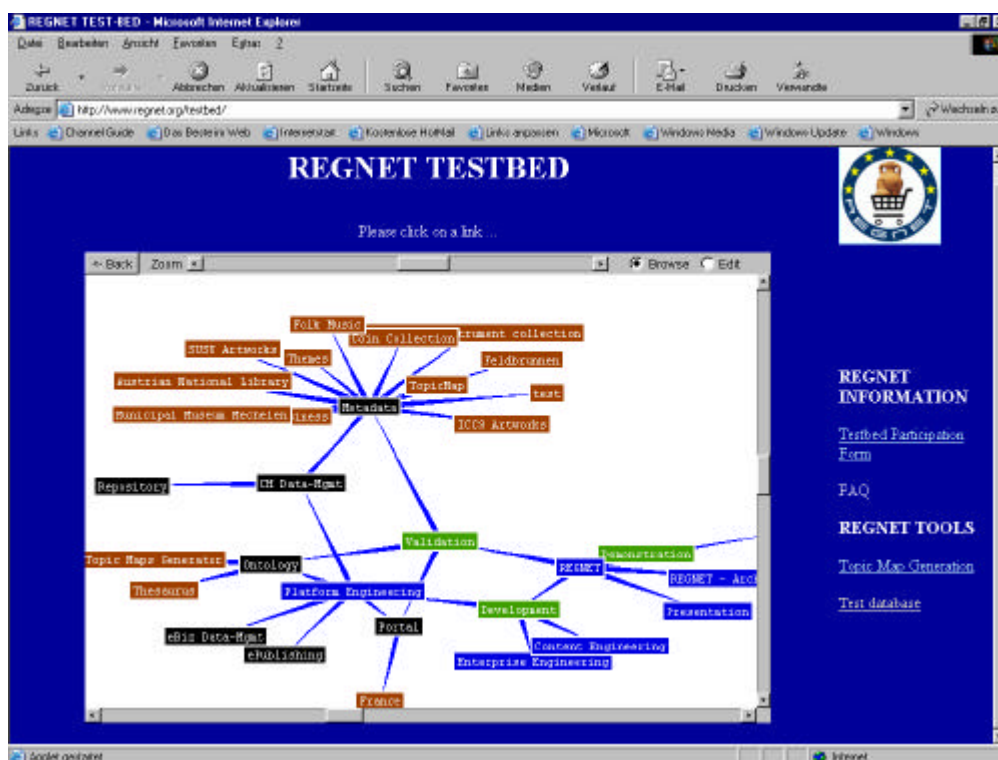


Figure 79 Central test bed entry page



Although all CSC operators running a test bed developed specific approaches the overall procedure of test bed participation could be outlined by pointing out the following 5 steps:

Confirm participation	Participant
Give information about data & data structures (test data)	Participant
Set-up of XML-database, convert/import test data	CSC Operator
Work with the system	Participant
Feedback (Test Report)	Participant

Material developed to support all communication between CSC operator (Test bed operator) and participant includes the registration form, guidelines/questionnaire for the provision/description of test data, a checklist for the integrity check as well as a questionnaire for user feedback. All material could be found in Appendix. Some of them are actually only available in German.

Demonstration Case „Test bed Germany & Switzerland“

The „Test bed Germany & Switzerland“ was established by the CSC Representative Germany & Switzerland (IMAC), the hosting of concrete applications was provided by the responsible technical partners (no own application server used). The campaign started in October 2002 and was mainly introduced by two means:

an information event for Swiss CH organisations, Zürich, Landesmuseum (2002-10-24)

a booth and presentation during EVA 2002, Berlin (2002-11-06 – 2002-11-08)

Information event: The event was dedicated to the presentation of the project and the demonstration of the tools developed so far. Using different address pools (including museums, libraries, archives and other organisations and companies) potential interested parties were invited. The goal was to find (external) partners to participate in the REGNET Test bed for German-speaking countries; that means to integrate new collections (test data) and test users in order to get feedback to the tools and the needs of cultural organisations. The participants mainly belonged to the domain “museums” (mostly, but not only small museums), moreover representatives of archives, libraries and universities attended the event (about 60-70 participants). More information about the event could be found in D6 (case study).

EVA conference: The conference EVA (Electronic Imaging & Visual Arts) Berlin 2002 belongs to a series of conferences which take place around the world to bring together especially scientists and interested people from museums, galleries, libraries and public administration. The main topics of EVA 2002 event in Berlin were: Digitisation and Visualization, Preservation of the Cultural Heritage, Edutainment and Transfer of Cultural Knowledge, Use of Mobile Information Technologies, Communicating and Navigating in Digital Worlds and Internal Cooperation. The event, which runs 3 days, was divided in a 1. Workshop day, 2. Conference Day (with an accompanying exhibition of PC and Internet applications) and 3. Cooperation Day (for the presentation of EC-projects and networks). 37 exhibitors presented their products and projects, approx. 50-80 attendants visited conference and exhibition - mainly museum & heritage organisations, research institutions and university representatives and suppliers of databases, online information services and multimedia & processing systems. The REGNET project was presented in two ways: 1. During the exhibition with an own booth organised by IMAC and 2. During the cooperation day with a presentation of the actual status and the test bed activities. The main goal was to enhance the publicity for the project and with regard to the test bed campaign to find new partners. The exhibition included facilities for the demonstration of the REGNET system (online). Project flyers in English and German were laid out together with registration forms for the participation in the test bed campaign.

For the information and online-registration a web site was set up (in German) covering the follow subject matters:

project information

test bed information

registration form

contact form

To be accessed by URL: <http://regnet.arte24.ch> it was meant to be an interim solution, later on to be detached by a more comprehensive service platform under the brand of the CSC (Europe). **Fehler! Verweisquelle konnte nicht gefunden werden.** shows screenshots of the interim site as well as of the envisaged new site (actually under construction).

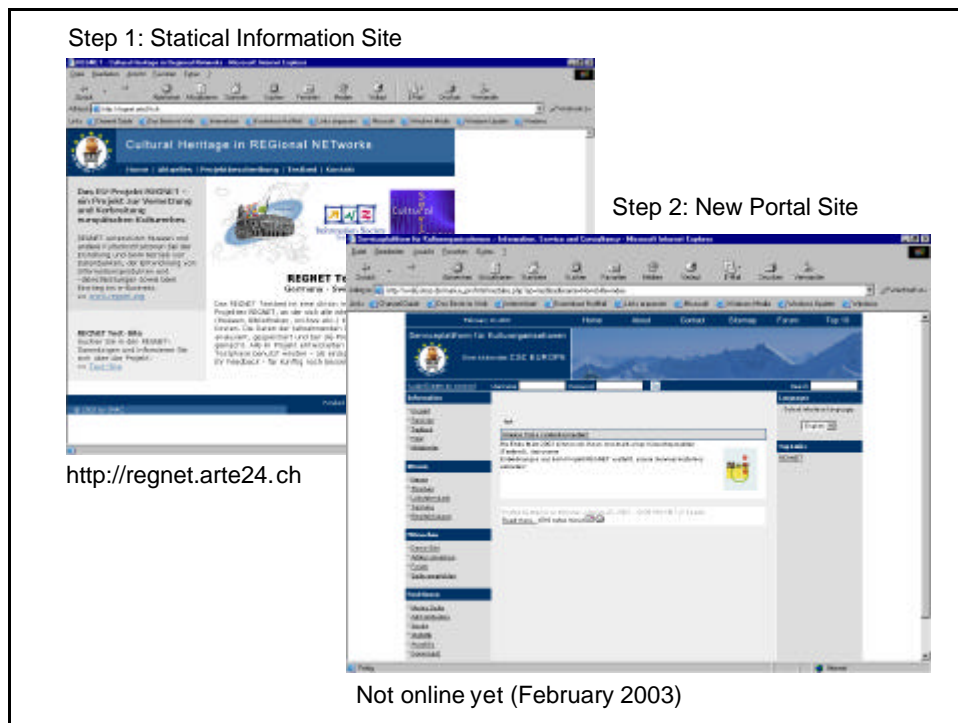


Figure 80 Test bed Germany & Switzerland – Web access

The new portal site should be augmented in order to service all information and communication needs of interested parties, participants and customers. Using an open source portal management and content management system (Postnuke) highest possible interactivity should be guaranteed. The information base contains product and service information, FAQs concerning the REGNET system solution as well as news, articles about related themes, events and recommendations. All visitors could contribute using the forum/discussion board, transmitting links and articles and customize the site according to their needs (registration required). It is planned to position this site as a central access point to all matters related to the CSC Representative in Germany & Switzerland. Offering information not only in German the platform can easily be enhanced and adapted to the needs of other geographical target groups (markets). Other accompanying activities were carried out to promote the test bed campaign, e.g. a distribution of registration forms and project flyers during the „Herbsttreffen zur Museumsdokumentation – German Museum Organisation“ (2002-10-21 – 2002-10-23).

Assessing the test bed campaign as one possible demonstration activities it could be concluded that this is/was an adequate mean to attract potential customers. In general a great interest was detected and a lot of valuable feedback collected. Taking this as a further input not only conclusions could be drawn for the functionality and usability of the REGNET-System but also for the re-definition of the product and service portfolio of the Cultural Service Centres. Further experiences and concrete comments given will be described in Chapter 8 „Demonstration experiences“. Concrete results will be described as a real life case in Chapter 9.

8.2 The dedicated test and demonstration meetings

Mechelen

Mechelen was the first location where a full content partners meeting was organised together with a number of technical partners covering all modules developed and installed. During this meeting the focus laid still more on "ex cathedra" explanations and use of the different modules. A rotation principle was used whereby 4 workstations, manned by one technical partner representing a series of technical modules, were occupied by a small group of content providers for carrying out test and demonstration actions during a limited period of time, a session.

Session 1	Session 2	Session 3	Session 4
Workstation 1	Workstation 1	Workstation 1	Workstation 1
Modules A, B, C	Modules A, B, C	Modules A, B, C	Modules A, B, C
Content group 1	Content group 4	Content group 3	Content group 2
Workstation 2	Workstation 2	Workstation 2	Workstation 2
Modules D, E, F	Modules D, E, F	Modules D, E, F	Modules D, E, F
Content group 2	Content group 1	Content group 4	Content group 3
Workstation 3	Workstation 5	Workstation 3	Workstation 3
Modules G, H, I	Modules G, H, I	Modules G, H, I	Modules G, H, I
Content group 3	Content group 2	Content group 1	Content group 4
Workstation 4	Workstation 4	Workstation 4	Workstation 4
Modules J, K, L	Modules J, K, L	Modules J, K, L	Modules J, K, L
Content group 4	Content group 3	Content group 2	Content group 1

Den Haag

The same methodology was applied during the Den Haag meeting. However, two major changes were applied. Firstly, the workstations were located in four separate rooms, every equipped with two workstations, one off line and one connected with the Internet. Secondly, there was an important shift the previous "ex cathedra" behaviour towards a more "hands on" approach. The introduction of stronger guidance concerning reporting provoked more substantial feedback material for the evaluation process.



Toulouse

The methodology applied during the Mechelen and Den Haag meeting was further refined and elaborated in the Toulouse meeting. Rotating sessions were not longer necessary because every participant had now an individual workstation at his disposal with connection to all modules and the Internet. Contrary to the previous meetings, this time the full duration of this meeting was devoted to exhaustive "hands on" by the individual partners. A more free style reporting was adopted here in order to gather the comments and remarks of the content providers.

8.3 The specific local test and demonstration sessions

Although more difficult to carry out technically, a lot of local tests and demonstrations took place at the partners' premises. Often this happened with small groups or for individual persons. Sometimes persons external to the project attended these tests but the majority of these were carried out by internal personnel of the REGNET partners.

Often a combination of one technical partner and a series of persons of a content provider defined scenarios for tests and carried them out accordingly.

In some cases this close collaboration between technical and content partners resulted, for a few scenarios in very elaborated cases, into a solution that turned out to be suited for immediate real life public use or ended up in business cases with cultural heritage institutions or public bodies not being part of the REGNET consortium.

Most of these relationships appeared to reflect already the combinations proposed for the Cultural Service Centres partnerships. This approach proved automatically its viability for the continuation of the REGNET results. A few of these real life cases are shortly described in the following chapter.

9 Real life cases

In this section, some effectively installed realisations of REGNET are described together with some other modules which are ready to market. The main criteria to be mentioned here were: it must be accessible to the public and it must concern a real service reflecting one fully finished product (no partial solution) reusable by other clients.

9.1 The Cards Collection case

Starting position:

The Austrian National Library, a REGNET content provider, contributed amongst other data sample data from their digitised card catalogue. This card catalogue consists of the digitised images of the catalogue cards and one index term (person or place or keyword) belonging to the card as digital text.

In the first phase we just integrated the data into the REGNET standard database application. During summer 2002 AIT started to develop a new interface based on TeXtML server providing the same feature as the at that time running ONB Picture archive application.

Features realised:

1. the search access had to be adapted: a two-staged access to the search access was realized in accordance to the internal structure of the card catalogue. This catalogue provides the user first of all with an so-called header card. This header cards contain general information about the requested person, place or keyword. By clicking on the index card link the user gets all relevant cards of images displayed.

2. bi-lingual web page access: the pages are available in English as well as in German.

2. some kind of content management system for the web pages. There has to be a lot of complementary information in addition to the core database functionalities, e.g. some texts at the top of pages giving guidance, the terms and conditions, and the text for ordering images. This problem is managed with the database itself. The texts (English and German) are to be entered into the database via the standard interface accessible for ONB members and are automatically added to the according web-pages.

3. ordering images: the steps for ordering images were implemented in accordance to the storyboard delivered by ONB. The ordering process ends with sending the specific order to ONB and includes a shopping basket function.

4. leaflet feature: the users are able to create, change and remove a leaflet, that contains items from the database search result.

5. user management: a user has to register or to log in for relevant ordering and leaflet processes.



6. implementation of the design predetermined by ONB.

The result:

The system provides two interfaces, one for the public end user for search & retrieval and ordering and one for the expert user (ONB) for administration of data, ordering information and web page contents.

The system currently contains more than 1.100.000 records and provides fast access via the web.

This application developed within the REGNET project has currently replaced the old system and is accessible via the hyperlink: <http://www.bildarchiv.at>.



9.2 The Interactive Multimedia Production case

For the demonstration phase of the REGNET project MECH and TARX evaluated different types of demo-candidates. From the beginning of the project the thematic approach prevailed. The most elaborated theme with MECH Cultural Heritage data was "SAINTS" and to a lesser extent "GILT LEATHER" and the "TOUR d'HORIZON" (top ten pieces of art). In order to combine as much as possible earlier efforts within the REGNET project with a very practical, useful demonstration with clear relationship to the region of Mechlin and also aimed at a broad range of end users, it was decided to go for an interactive multimedia production: "Faydherbe's traces in Mechlin" designated to be installed in a kiosk or public terminal.

The basic rationale behind this is quite obvious when you consider the fact that Faydherbe was a Mechlin sculptor and architect being extremely active in religious related works of art in the 17th century. Many of his realisations are still visible and can be visited in the streets, museums and churches of Mechlin. So, the above-mentioned "SAINTS" theme delivered already a substantial part for the input material of this production. A natural inclusion of this production into the existing workflow of the museum activities could be achieved.

A second reason to go this way was the strategy of MECH to boost the city of Mechlin as one of the Flemish "Culture cities". This production could be as well a supporting aid for visitors as a marketing tool to attract interested persons or organisations.

The third reason relates more to the educational and scientific applications of such productions. Initially the production is aimed for the "standard, interested" visitor. The way the underlying structure and data is build up allow to extend easily the current level to a level suited for educational or scientific purposes.

Once decided on the theme and the objectives, MECH and TARX started to develop respectively the content and the content structures (MECH) and the multimedia authoring and the Dutch-English translations of the texts. In surplus of the existing material in the REGNET database, supplementary items had to be generated in order to comply with a pleasant look and feel and a comprehensive navigation structure.

The "Faydherbe's traces in Mechlin" multimedia production is fully bilingual Dutch-English. This means that at any moment and at any place during consultation the language can be switched from one to the other.

There are four main parts constituting the main menu:

Traces in Mechlin

Life and schooling of Faydherbe

Faydherbe the sculptor

Faydherbe the architect

The main focus lies on the first part: "Traces in Mechlin". Starting from a city map of Mechlin, different places, containing "traces" of Faydherbe, can be chosen. On clicking on the name in the list of



locations or the location itself on the map, an image of the location will appear. Every location can then be "entered" by a simple click. The same scenario applies for visiting these individual locations. A map or ground plan is presented wherein a specific location can be chosen. On clicking on the location or the name in the list, an image and an accompanying text is shown.

The three other parts, life and schooling, sculptor and architect, are more contextual contributions concerning the person of Faydherbe and his works and serve as supporting material for the interested visitor or navigator.

At the final stages of the production cycle and after thorough testing, MECH and TARX realised that the result surpassed the pure demonstration level. It was decided to put the production immediately at the disposal of the public in one room of the Busleyden museum, Busleyden being the museum that contains most of the Faydherbe sculptures.

Because the production spans locations all over Mechlin, copies or part of the production could also be installed at other places. This pertains mainly to other museums, main churches and buildings and tourist offices.

At the same time another decision was made to reuse the same scenario with minor adaptations for other productions characterised by great similarities. Possible candidates are:

same city but other artist and his works of art

same location with all the residing works of art (not only Faydherbe)

same city but other topic (archaeological findings)

The most urgent following step is to make the current production available on the Internet. This will be realised though the Cultural Service Centre Low Countries wherein TARX and MECH are founding members. This CSC will offer the means and experience to cultural institutions to realise, among other functions, similar productions.

The experience gained with this ePublishing effort allows as well MECH as TARX to extend their current potential to realise their objectives in the Cultural Heritage World. Commonly developed (virtual) exhibitions with partner museums and delivery of new productions for other cultural institutions are only two of the potential benefits that both partners can realise.



10 REGNET's and CSCs' role in the workflow of CHIs

Cultural Heritage Institutions (CHIs) have some specific workflow components, which are characteristic for the domain they are active in. In order to position the REGNET modules and the CSC activities within the workflow of a Cultural Heritage Institution the following example is worked together with a graphical representation of the process in the figure on the next page.

In the figure the following action lines are worked out:

- From analogue collection management to digital collection management
- From newly acquired object to digital cataloguing
- The publication of a CD/DVD, kiosk application and Web presentation.

and the scenario of a multimedia production will be described.

When a museum decides to produce a multimedia production, several lines of its work flow activities are activated. Prior to the generation of the production, some editing and scanning of texts and images has to be carried out. All the results of these digitising efforts have to be stored in some place. Here REGNET and the CSCs come into play because they offer the "meta data" data entry and storage and the texts and images storage facilities.

Then comes the process of assembling the content for the production. Here again REGNET modules offered by the CSCs, search and retrieval - storage in a work space - export, give the solution.

Setting up the scenarios and authoring the production are again respectively REGNET methodologies and third party modules used to obtain the required objective.

As an end result the finalised product can be stored in turn into the storage features of REGNET.

So, the cycle is closed.

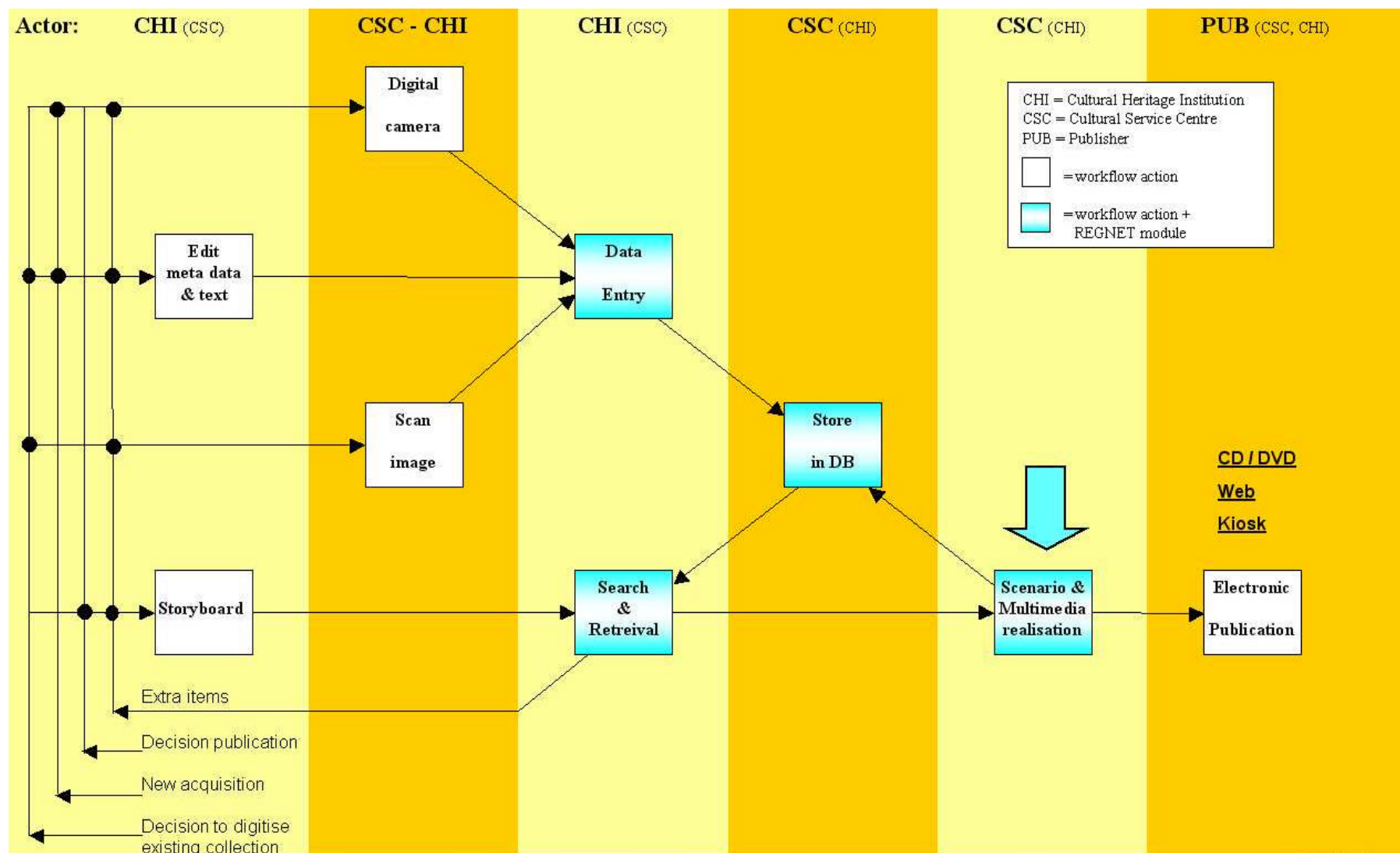


Figure 81 REGNET and CSC in the workflow of Cultural Heritage Institutions

11 Internationalisation

A lot of attention was paid to the internationalisation aspects within the REGNET project. For the technical realisation of this we refer to Deliverable 10, here the more content related aspects will be treated.

The internationalisation aspects mainly pertain to three domains:

- User interface
- Information resources
- Knowledge resources

User interface

No less than 11 languages are used in the user interface of the portal and the connected modules. Via different iterations the quality and correctness of every expression in the respective languages reached a respectable level without being perfect. This remains a continuous effort to cope with new terms, the right contextual expression, etc. As a result of the internationalisation efforts, REGNET owns now a substantial dictionary in 11 languages containing terms related to eBusiness practices. Most of the user interface related internationalisation aspects reside in the technical documents.

Information resources

Multilingual user interfaces are a good thing but the real challenge and added value lies in the multilingual cultural heritage data offered by the content providers. And a challenge it is when we consider the elements we must take into account to realise this.

First of all we must face the fact that most cultural heritage data kept in existing collection management systems is unilingual. The translation effort to convert all this into another language would be huge. The approach that REGNET adopted in this area was to choose, for demonstration purposes, well defined themes with a cross-border (thus multilingual) reach of interest whereby newly written thematic texts were needed. The motivation to produce a first level of more generic multilingual texts turned out to be viable. As a result of this approach, the cultural heritage data base of REGNET contains texts in 11 languages. The big difference with the user interface is that not every single text is available in 11 languages but only in 2 languages, the native language and English. Some texts are available in 3 languages. In the e-Publishing area, the multimedia production Faydherbe reflects a full multilingual character Dutch-English whereby at any moment and at any place during the consultation a language switch can be carried out.

As a conclusion we can say that this represents an extremely time consuming effort but the rewards to reach other regions and cultures via this way is very rewarding and beneficial for the European dimension of the project.



Knowledge resources

The multilingual aspects of the knowledge layers on top of the cultural heritage information resources were taken fully into account when the choice of the used paradigm was made: topic maps. Topic maps have an in-built mechanism to express the name of a topic in different languages. Within REGNET different themes were expressed in topic maps corresponding with the chosen themes for data generation: SAINTS, LINNAEUS, INCIVICS, HABSBURG-PRIMISSER.

With the developed tools one can easily generate a topic map in one or several languages. This complies completely with the aim expressed in the previous point: rewarding and beneficial for the European dimension of the project.

The general feeling that reigns when looking back the multilingual aspects and efforts are multiple:

- time consuming
- sometimes difficult to catch and express the right context
- necessary to reach a broader audience
- a European burden and asset at the same time

12 Conclusions

The demonstration efforts carried out within the REGNET project were characterised and influenced by the large number and variety of domains and technical modules addressed by a evenly large number of partners, some new technologies incorporated during the project's life time (topic maps), different developments that took more time than originally foreseen, adaptations to chosen solutions and emerging standards, the setting up of a network of Cultural Service Centres and the production of a substantial amount of cultural heritage data.

The main goal of this part of the project was to offer a test and demonstration platform capable to prove the viability of the project's objectives via tests and demonstrations and at the same time create the necessary construct and infrastructure to continue this in real life situations and to start businesses out of it.

The project managed to offer an integrated solution of the different modules with a methodology to validate and test these. The basic methodology was quite straightforward. First two frames of reference were set up: one for the technical modules and one for the produced cultural heritage content. They form the material and benchmark against which the tests and demonstrations were carried out. Than several scenarios were worked out, corresponding with the work flow of the respective content providers, for organising the test and demonstration sessions. Some of the methods used during the previous validation phase, i.e. scenario based testing and usability testing with fixed format questionnaires for feedback, were continued. Experience gained during the validation phase and confirmed during the demonstration phase led to the introduction of more "free" and "open ended" testing and reporting. This caused the production of a more spontaneous and usable feedback. Behavioural observation techniques by the responsible partners of the respective sub tasks of the work package were added in order to complement the written reports in the final assessment rounds. This approach proved to be right for eliciting a sufficient number (critical mass) of data for a valid evaluation.

Meanwhile, the Cultural Service Centre (CSC) concept matured and was "de facto" used to organise several CSC-partnership based test and demonstration sessions. In order to obtain a firm legal structure for the CSC concept different actions were taken that led to a convenient structure for further collaboration. A European Economic Interest Group (EEIG, CSC Europe, was created as an umbrella organisation for the regional CSCs. Some of the CSCs exist already (CSC Austria), others are in the process of being established (CSC Low Countries, CSC Spain) and some exist as representation offices via established companies or organisations (CSC Germany and Switzerland, CSC Bulgaria). Possible extensions of the CSC network are: CSC Greece and CSC Italy. A complete set of regulatory means, such as the partnership and contracting model, between partners and CSCs has been set up in order to start projects and businesses based on the REGNET outcome. The concept proved to be fully viable and well suited to be used in the future.

The first demonstration sessions showed clearly that, because of the still important technology gap, most of the content providers needed more direct guidance to organise demonstrations. Therefore it was decided to organise full content providers meetings dedicated mainly till solely to the "hands on" of the system components. Three of this kind of meetings were organised: Mechelen, Den Haag and Toulouse. This had as a consequence that part of the originally foreseen number of external demonstrations were shifted towards more internal only oriented sessions. Nevertheless, at least at three occasions until the time of this writing (Feb 2002), real life publicly accessible solutions were installed: the Card Collection case by ONB - AIT, the interactive multimedia production "Faydherbe" by MECH - TARX and dedicated test bed activities with new potential cultural heritage institutions by AIT and IMAC.

The use of open source based systems proved to be reliable while the applications, possessing a solid basic structure, need still to become more stable and user friendly. This is mainly due to the first time use of some components (the research effect) in combination with the integration facets of the high number of components in a limited time frame of the project. The maturity level of the components needs enhancements in order to become fully operational (e.g. user support).



In general we can say that REGNET achieved to develop the basically required technical, content, legal and operational structures to let Cultural Heritage Institutions enter the digital era for their domain and also the eCulture age with eBusiness capabilities in a broad cross border regional and European context. It is fair to say that the project did not met all the (ambitious) objectives put forward at the beginning of the project but we can state that the basic needs, requirements and wishes of the Cultural Heritage world is largely served by the current outcome of the REGNET project. The indirect benefits for the Cultural Heritage Institutions, being obvious at this stage, are complemented by the availability of a series of tools, of which for a part is immediately sellable in the market, and infrastructures, the Cultural Service Centres. The concept of these Cultural Service Centres will be further elaborated and extended in the future together with a further enhancement and right time to market of the tools and services.



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