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BERNSTEIN

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eContentplus

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¹ OJ L 79, 24.3.2005, p. 1.

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1 Introduction

In the following chapters the integrated workspace (“Bernstein-Portal”) is described. The newest version of the integrated workspace is available online under the following address http://bernstein.iicm.tugraz.at:8080/BernsteinPortal_new and offers

- an entry page with the five areas “Catalogue”, “Atlas”, “Bibliography”, “Expertise” and “Kit”;
- the area “Catalogue” with
 - simple and advanced search in the watermark databases;
 - browsing of motifs in a new hierarchy;
 - summary and detailed statistics over the results;
 - maps of the places of use over the results;
- the area “Bibliography” with
 - search and browse indexes;
 - search and browse classification.

At the last general meeting in Stuttgart it has been decided not to integrate the component model search (see under <http://bernstein.iicm.tugraz.at:8080/BernsteinSearchEngine>) within the portal because this search option is too complicated and not enough developed for this version of the portal.

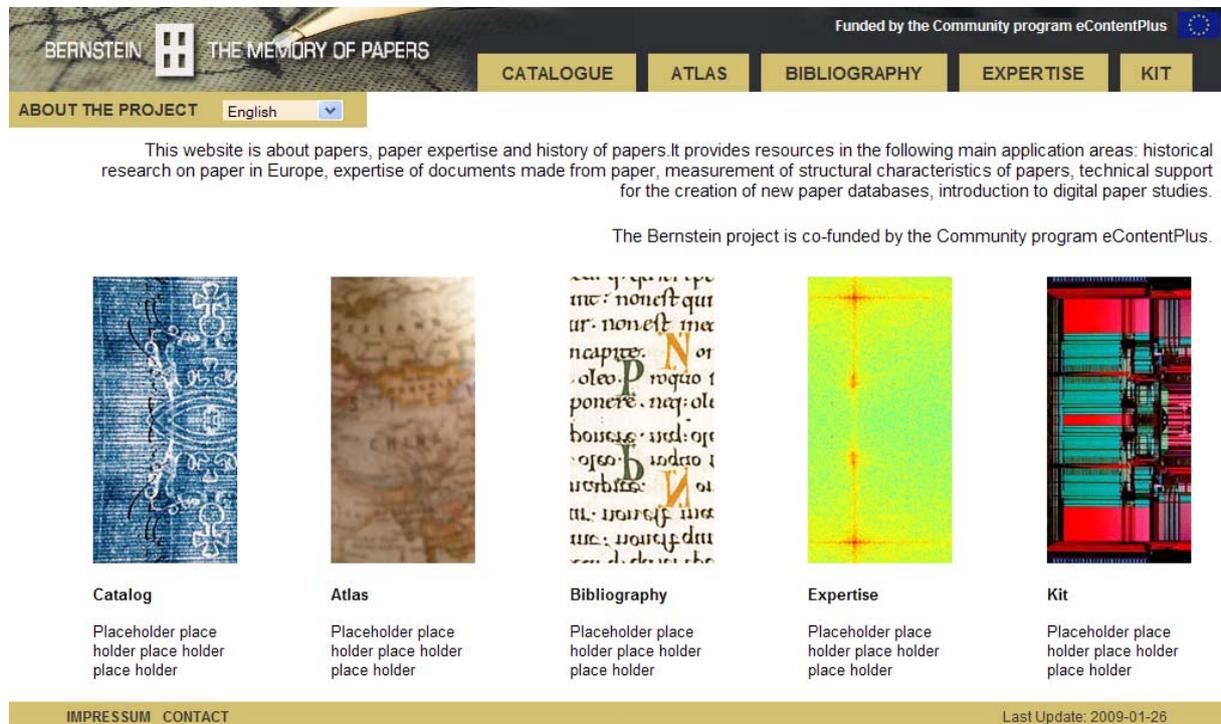
A new design has been developed by a team of the “FH JOANNEUM – University of Applied Sciences”, study program “Information Design”. The partners discussed the proposals and then voted for the final design. As minimum a display resolution of 1024 x 768 pixels was agreed on. After this step the design has been implemented in the workspace. The web usability was also tested with a broader range of users and has been improved together with the new design. The support of the following web browsers started with the launching of the new final design:

- Internet Explorer \geq Version 6.0
- Mozilla Firefox \geq Version 2.0
- Opera \geq Version 9.5
- Safari \geq Version 3.1

For the communication between the workspace and the watermark databases the SRU (Search/Retrieval via URL) protocol with a Dublin Core Extended context set is used. SRU (see <http://www.loc.gov/standards/sru/>) is a standard XML-focused search protocol for Internet search queries, utilizing CQL (Contextual Query Language) a standard syntax for representing queries. The possibility of the integration of the contents into other digital libraries was investigated. The result was that in a follow-up project the OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) should be supported by the portal.

For the export of data CSV (Comma-Separated Values) files are used. The CSV format is described in RFC 4180 (see <http://tools.ietf.org/rfc/rfc4180.txt>) and is also used by spreadsheet programs for the import of data.

2 Workspace



BERNSTEIN  THE MEMORY OF PAPERS

Funded by the Community program eContentPlus 

CATALOGUE ATLAS BIBLIOGRAPHY EXPERTISE KIT

ABOUT THE PROJECT English 

This website is about papers, paper expertise and history of papers. It provides resources in the following main application areas: historical research on paper in Europe, expertise of documents made from paper, measurement of structural characteristics of papers, technical support for the creation of new paper databases, introduction to digital paper studies.

The Bernstein project is co-funded by the Community program eContentPlus.

Catalog
Placeholder place holder place holder place holder

Atlas
Placeholder place holder place holder place holder

Bibliography
Placeholder place holder place holder place holder

Expertise
Placeholder place holder place holder place holder

Kit
Placeholder place holder place holder place holder

IMPRESSUM CONTACT Last Update: 2009-01-26

Figure 1: Workspace Entry Page

In the header section of the portal (see Figure 1) the user can navigate to one of the five areas of the workspace (Catalogue, Atlas, Bibliography, Expertise and Kit) or switch between the available languages of the user interface – English, French, German, Italian, Spanish (Russian coming soon) – or get some information “About the Project”.

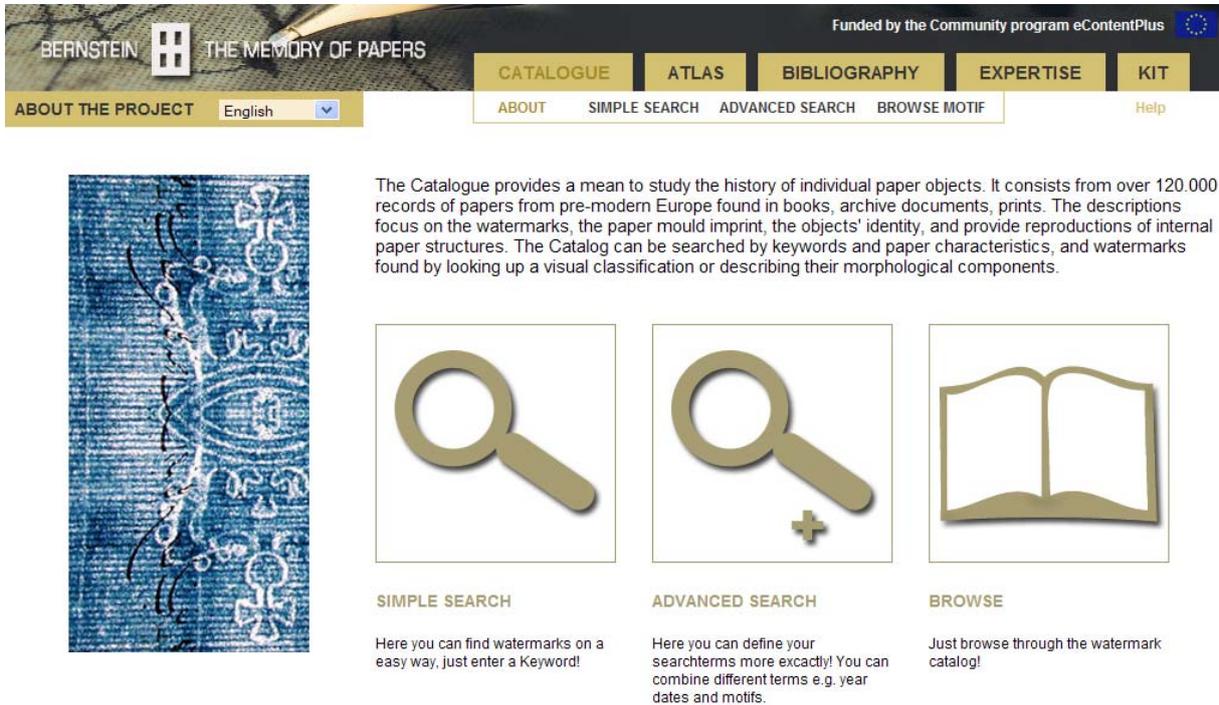
To guarantee an easy navigation this header is always present while navigating through the areas of the integrated workspace.

In the footer section there are links to imprint and contact information. On the right-hand side the user can see the date of the last update.

The multilingual user-interface is prepared for 6 languages (English, French, German, Italian, Spanish and Russian). The translations for all 6 languages will be finished and soon be available in the portal.

The multilingual help also is prepared for these 6 languages and is based on an editable help database with user management. For users who are identified with username and password (via http://bernstein.iicm.tugraz.at:8080/BernsteinPortal_new/login.disp) an additional taskbar at the top of the workspace is displayed. If the user clicks on “Helpcenter” a new window appears, where he/she can add, delete or edit topics in the selected category or create main topics.

3 Catalogue



The Catalogue provides a mean to study the history of individual paper objects. It consists from over 120.000 records of papers from pre-modern Europe found in books, archive documents, prints. The descriptions focus on the watermarks, the paper mould imprint, the objects' identity, and provide reproductions of internal paper structures. The Catalog can be searched by keywords and paper characteristics, and watermarks found by looking up a visual classification or describing their morphological components.

SIMPLE SEARCH
Here you can find watermarks on a easy way, just enter a Keyword!

ADVANCED SEARCH
Here you can define your searchterms more exactly! You can combine different terms e.g. year dates and motifs.

BROWSE
Just browse through the watermark catalog!

Figure 2: Catalogue About Page

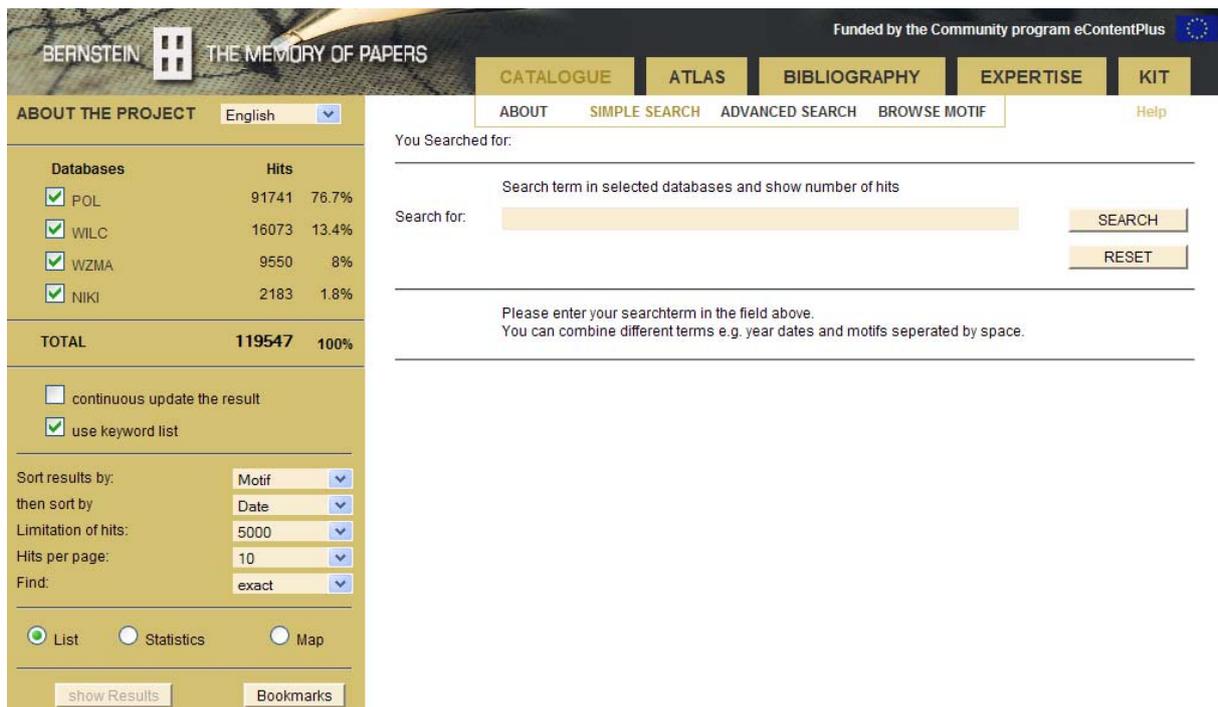
When the user selects “Catalogue” within the workspace the “About” page appears (see Figure 2). This page consists of a short description of the three different search possibilities “Simple Search”, “Advanced Search” and “Browse Motif” and the according links. The user is able to choose between simple and advanced search mode and the browse motif and to combine the searches together. A “Help” for using the catalogue is also available.

3.1 Simple and Advanced Search

The search pages of the “Catalogue” consist of the header, the information field and the result list options, which are arranged on the left-hand side.

When “Simple Search” is selected (see Figure 3) the user gets a simple text input field for his terms and option fields to change the result options. In the input field the user can type in different kind of terms (e.g.: dates, motifs...) and search for it. The simple search is performed within all fields which are available in each of the databases (i.e. motif, place of use, depository, date, height, distance of chainlines and reference number).

The “Advanced Search” allows the user to search in the databases in a much more specific way. If the user clicks on “Advanced Search” he/she has nearly the same view as in simple search, but instead of a simple input field the user can now choose a general or a specific field in the databases he/she would like to search in. There are several different types of fields and options the user can choose and combine.



Databases	Hits
<input checked="" type="checkbox"/> POL	91741 76.7%
<input checked="" type="checkbox"/> WILC	16073 13.4%
<input checked="" type="checkbox"/> WZMA	9550 8%
<input checked="" type="checkbox"/> NIKI	2183 1.8%
TOTAL	119547 100%

Figure 3: Catalogue Simple Search

The following changes were made since the last version described in Deliverable no. 17, ref. D1.3 – Workspace v.2:

- Using “Enter” behaves like clicking the “Search” button;
- Scale units (“mm”) are indicated behind numeric boxes;
- For numeric ranges two input fields (separated by a hyphen) are available;
- Default value for “Limitation of hits” was increased to 5000 (from 200);
- Default for “Find” was changed from “Character String” to “exact” (to improve the performance);
- Checkbox “use keyword list” is activated by default.

The function “use keyword list” is based on a multilingual keyword list (“Watermark Terms – Vocabulary for Watermark Description”; former “Thesaurus”) which includes approximately 750 terms in 6 languages. If this function is selected the search terms typed in by the user are automatically translated if they can be found for the user-selected language in the keyword list. This functionality allows the user to find watermarks in databases where the motifs are only available in languages divergent to the user-selected language (e.g. to find the German motif “Vogel” in WZMA if the user searches for “bird” and his selected language is English).

ABOUT SIMPLE SEARCH ADVANCED SEARCH BROWSE MOTIF Help

You Searched for:

Place of Use INDEX REGION

REGIONS

Your Selection: Österreich >> Südösterreich >> Steiermark >> Graz

Countries	Regions	Middle regions	Small regions
Hrvatska	Ostösterreich	Kärnten	Graz
Ireland	Südösterreich	Steiermark	Liezen
Ísland	Westösterreich		Östliche Obersteiermark
Isle of Man			Oststeiermark
Italia			West- und Südsteiermark
Jan Mayen			Westliche Obersteiermark
Kypros / Kibris			
Latvijā			
Liechtenstein			
Lietuva			
Luxembourg (Grand-Duch)			
Macedonia			
Magyarország			
Malta			
Moldova			
Monaco			
Montenegro/Crna Gora			
Nederland			
Norge			
Österreich			

click to select

Figure 4: Catalogue Region Search

In the “Advanced Search” the search for regions (see Figure 4) was implemented: If the user selects “Place of Use” he can click on the button “Region” and then choose a country, region, middle region or small region by clicking to “Accept”. After this the user can perform a search for the selected region or combine it with other search criteria.

The regions are defined according to the NUTS 2003 standard and therefore NUTS0 – NUTS3 codes are used for searching the regions. NUTS (Nomenclature of Units for Territorial Statistics) has been created by the European Office for Statistics (Eurostat) as a single three-level hierarchical classification of spatial units used for statistical production across the European Union. Since NUTS is a hierarchical classification, it subdivides each member state into a whole number of NUTS 1 regions, each of them is in turn subdivided into a whole number of NUTS 2 regions and so on.

3.2 Browse Motif

Now the integrated workspace also contains a motif browser (see Figure 5). Here the user can get an overview of the main watermark motifs and all sub motifs on the next two levels.

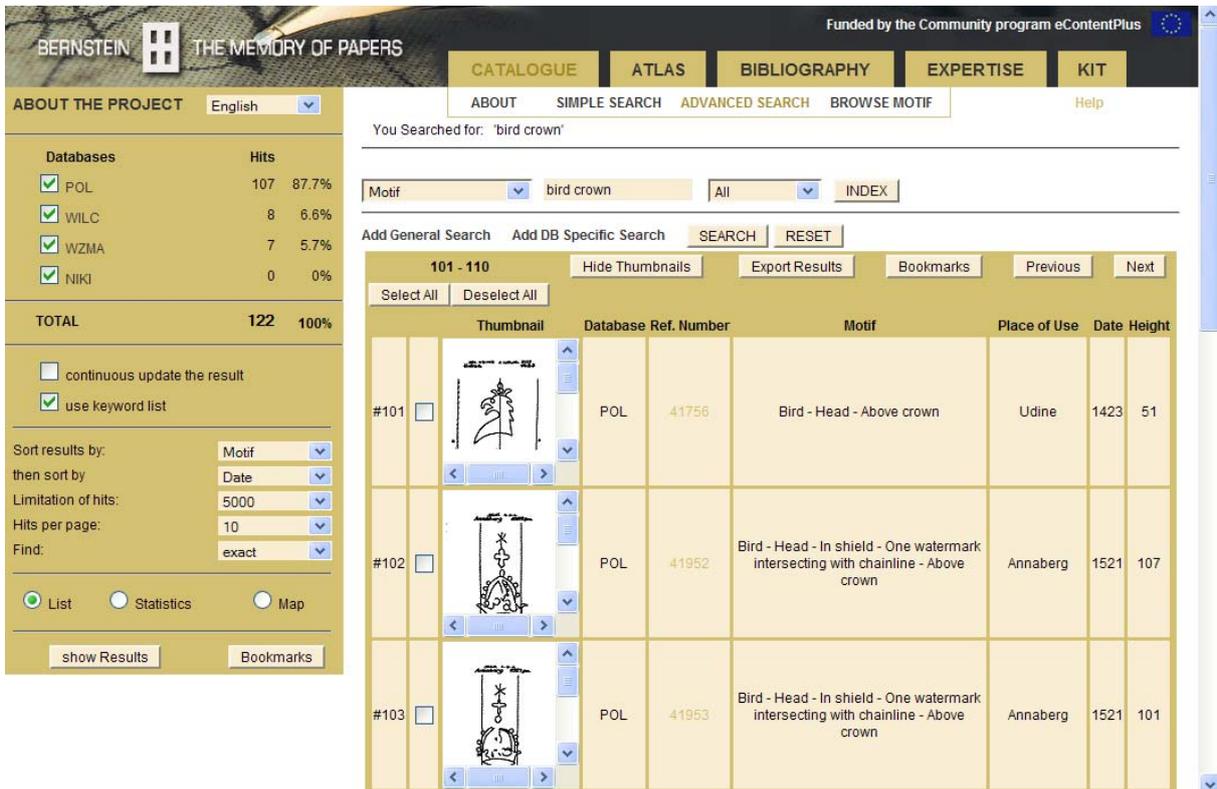
A commonly agreed “Bernstein hierarchy” of motifs, which consists of three levels and which is available in 6 languages, has been specified. For the realisation of this feature this hierarchy and additional keywords for each entry are used to search for motifs in the selected watermark databases in the appropriate language.

The implementation has been started but isn't finished yet, because the images for each entry are still missing.

- [-] figures, anthropomorphic
 - [-] fauna
 - [-] fabulous creature
 - [-] flora
 - [-] mountains/luminaries
 - [-] realities
 - [-] symbols/insignia
 - [-] geometrical figures
 - [-] coat of arms
 - [-] marks
 - [-] without shield
 - consisting in one line
 - consisting in two lines
 - others
 - [-] in shield
 - [-] letters/digits
 - [-] undefined mark

Figure 5: Catalogue Browse Motif

3.3 Result List



The screenshot shows the Bernstein Motif Browser interface. The top navigation bar includes 'CATALOGUE', 'ATLAS', 'BIBLIOGRAPHY', 'EXPERTISE', and 'KIT'. The 'BROWSE MOTIF' tab is active. The search bar contains 'bird crown'. The search results are displayed in a table with columns: Thumbnail, Database Ref. Number, Motif, Place of Use, Date, and Height. The results are sorted by Motif, then Date. The table shows three results, with the first one selected.

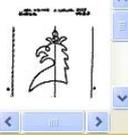
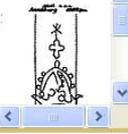
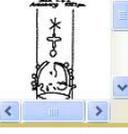
Thumbnail	Database Ref. Number	Motif	Place of Use	Date	Height
	POL 41756	Bird - Head - Above crown	Udine	1423	51
	POL 41952	Bird - Head - In shield - One watermark intersecting with chainline - Above crown	Annaberg	1521	107
	POL 41953	Bird - Head - In shield - One watermark intersecting with chainline - Above crown	Annaberg	1521	101

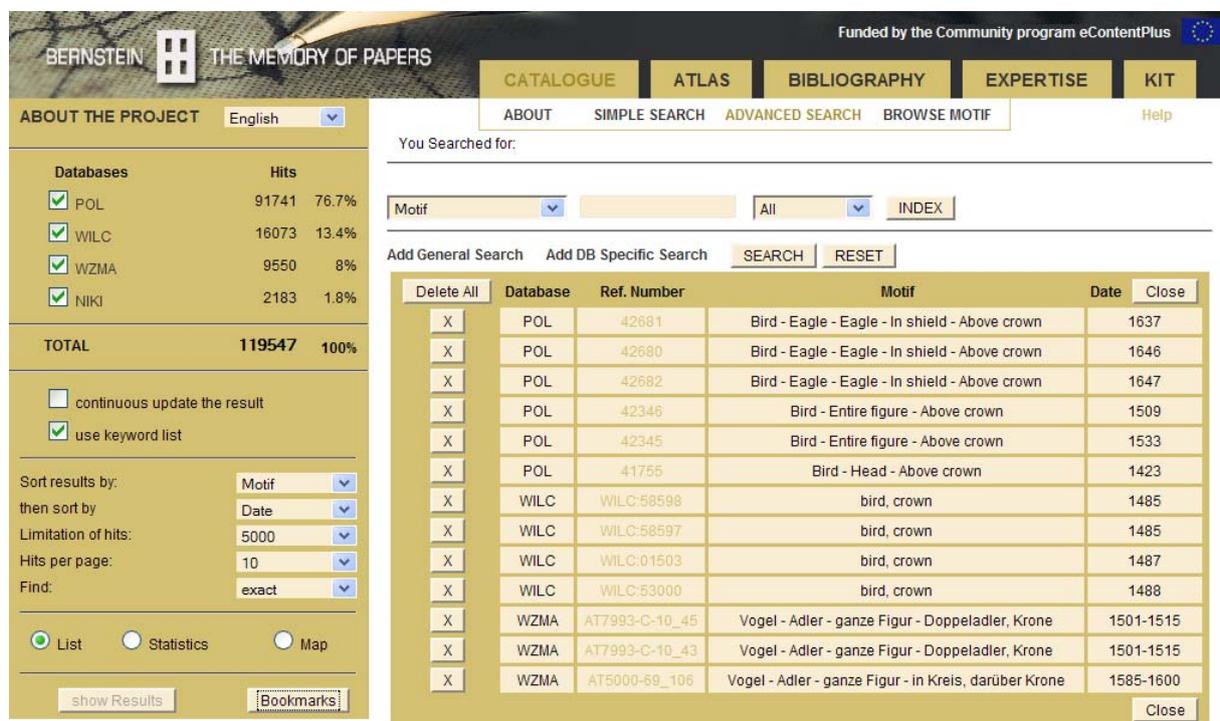
Figure 6: Catalogue Result List

In the “Show Results” list view the user gets an overview of the search results in table form. The list size depends on the selected number of hits per page.

In the result list the user can bookmark individual entries by clicking the checkboxes at the beginning of each row or he can bookmark all shown results by clicking “Select All”.

On top of the list there are several options:

- With “Show Thumbnails” the thumbnails for the watermarks will be loaded from the databases. The user gets a small picture preview of the watermarks (see Figure 6).
- With “Export Results” the list will be exported into a file which can be downloaded.
- With “Bookmarks” the entries which the user has bookmarked will be shown (see Figure 7).



The screenshot displays the 'Catalogue Bookmarks List' interface. The top navigation bar includes 'CATALOGUE', 'ATLAS', 'BIBLIOGRAPHY', 'EXPERTISE', and 'KIT'. The main content area shows a search results table with the following data:

Delete All	Database	Ref. Number	Motif	Date	Close
X	POL	42681	Bird - Eagle - Eagle - In shield - Above crown	1637	
X	POL	42680	Bird - Eagle - Eagle - In shield - Above crown	1646	
X	POL	42682	Bird - Eagle - Eagle - In shield - Above crown	1647	
X	POL	42346	Bird - Entire figure - Above crown	1509	
X	POL	42345	Bird - Entire figure - Above crown	1533	
X	POL	41755	Bird - Head - Above crown	1423	
X	WILC	WILC:58598	bird, crown	1485	
X	WILC	WILC:58597	bird, crown	1485	
X	WILC	WILC:01503	bird, crown	1487	
X	WILC	WILC:53000	bird, crown	1488	
X	WZMA	AT7993-C-10_45	Vogel - Adler - ganze Figur - Doppeladler, Krone	1501-1515	
X	WZMA	AT7993-C-10_43	Vogel - Adler - ganze Figur - Doppeladler, Krone	1501-1515	
X	WZMA	AT5000-69_106	Vogel - Adler - ganze Figur - in Kreis, darüber Krone	1585-1600	

The interface also includes a sidebar with database filters (POL: 91741 hits, 76.7%; WILC: 16073 hits, 13.4%; WZMA: 9550 hits, 8%; NIKI: 2183 hits, 1.8%), search options (Motif, All, INDEX), and a 'Bookmarks' button at the bottom right of the table.

Figure 7: Catalogue Bookmarks List

The user can see his bookmarks by clicking the “Bookmarks” button in the result list or beside the “show Results” button. The table with the bookmarks consists of the database name, the reference number, a description of the motif and the date. The user can click on the reference number to get all information of this single watermark.

Now it is also possible to export the text results (current view, all results or all bookmarks) as well as the statistics as CSV file with UTF-8 encoding. The export is limited to 5000 records.

3.4 *Statistic View*

If the user chooses the statistic view, he first gets a statistical overview of the result set and a combination-matrix where he can select detailed statistics.

For some combinations (e.g. Motif & Depository) a “bubble chart” diagram (see Figure 8) is generated which was implemented in the meantime. There is also a new function "Fit into area" which allows the user to see the diagram as a whole (without scrolling).

For all statistical combinations the user can generate a text table by use of the “Show List” button.

Other improvements and changes:

- A copyright logo “Bernstein © 2009” is generated within the diagrams;
- The limit was increased from 2000 to 5000 hits;
- No warning if the number of hits is between 2000 and 5000.

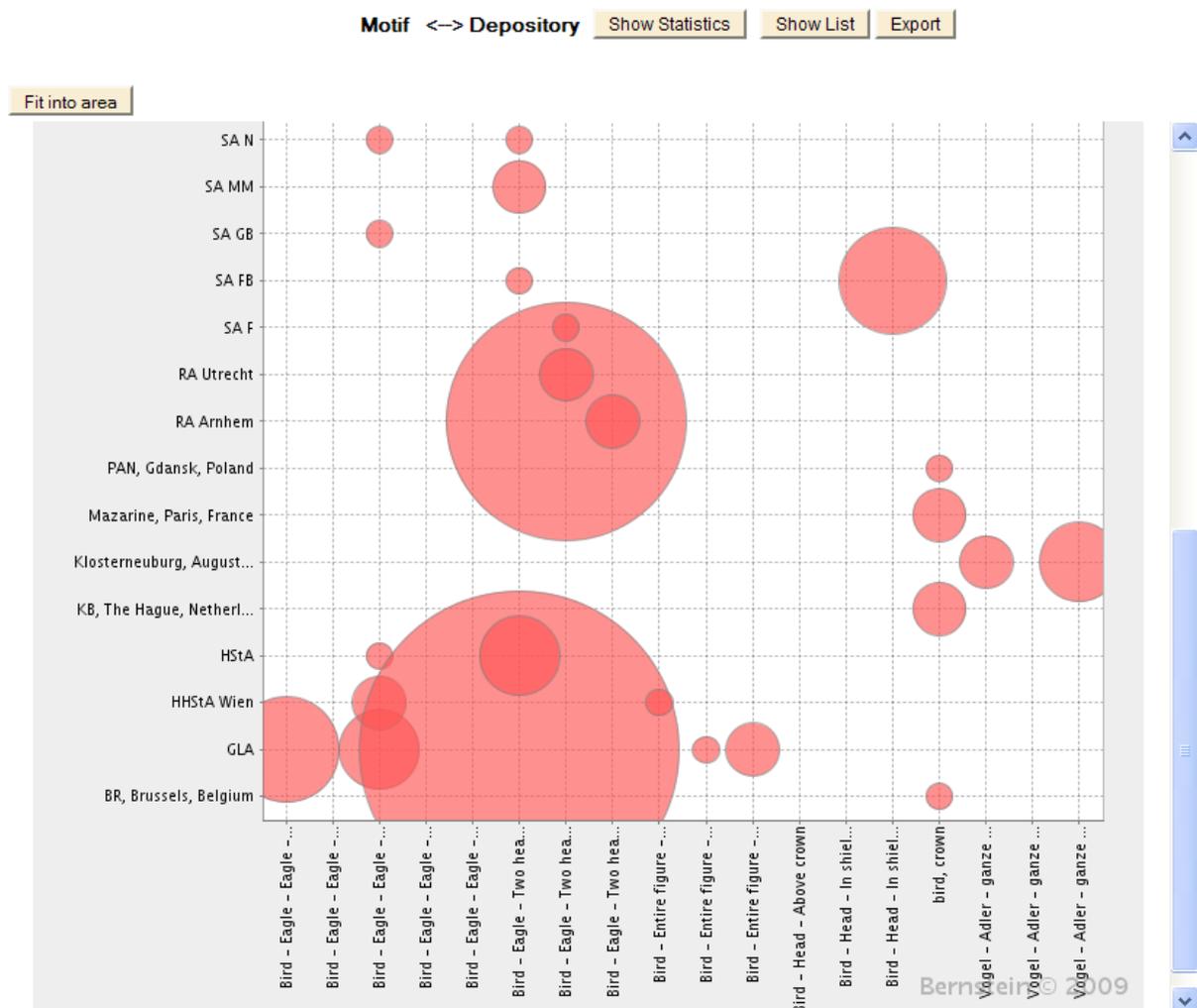


Figure 8: Catalogue Detailed Statistics

3.5 Map View

Now there are also geographical data available in the databases which can be used to generate a geographical file for displaying the places of use on a map (see Figure 9).

For each request the search interface generates a unique file containing the results. The content of this file is formatted following the JSON (JavaScript Object Notation) standard. This JSON format, described in RFC 4627 (see <http://tools.ietf.org/rfc/rfc4627.txt>), is a simple, light and human readable relatively new data interchange format. The location of the geographical file is made aware to the mapping service by embedding it in the link on which the user will click to access the map.

The mapping service by Bernstein is based on ArcGIS 9.3 products ArcGIS Desktop, Server and JavaScript API.

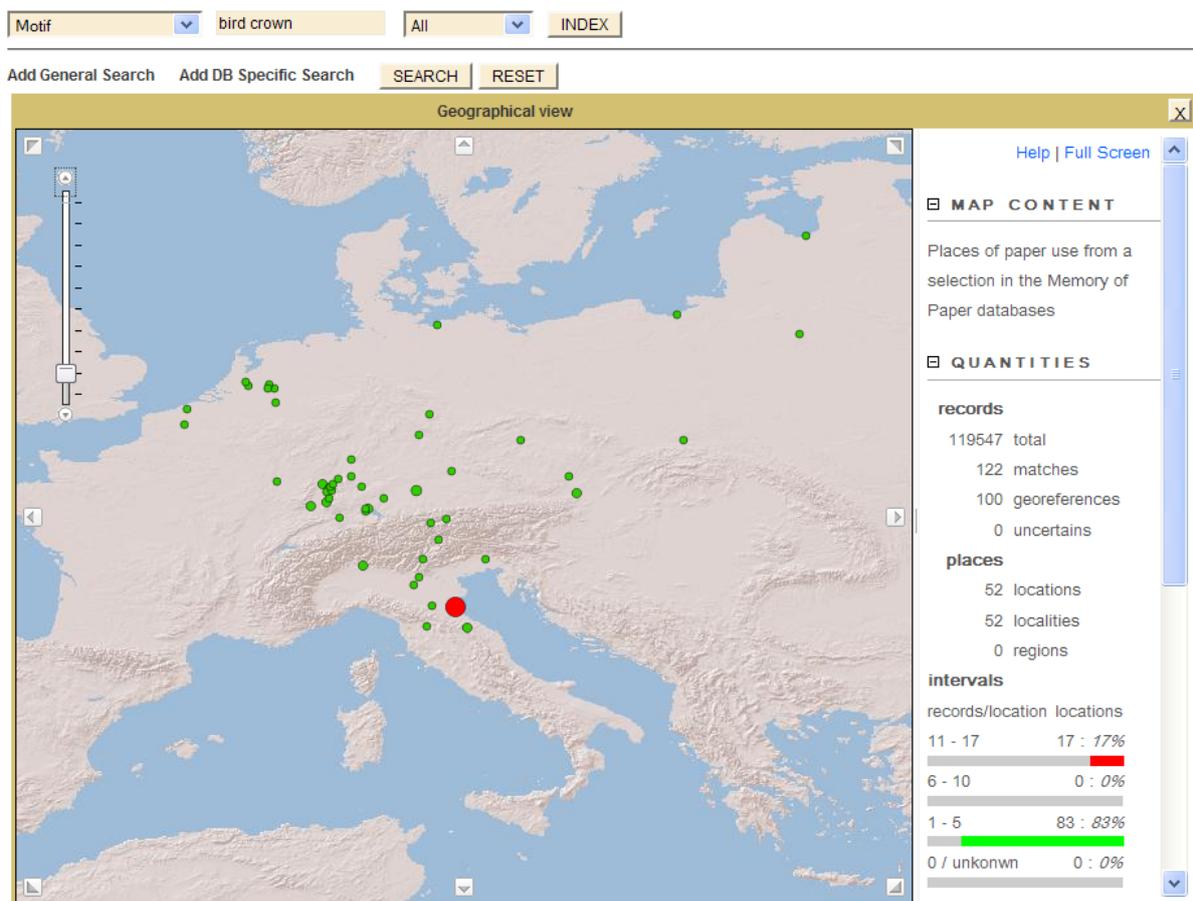


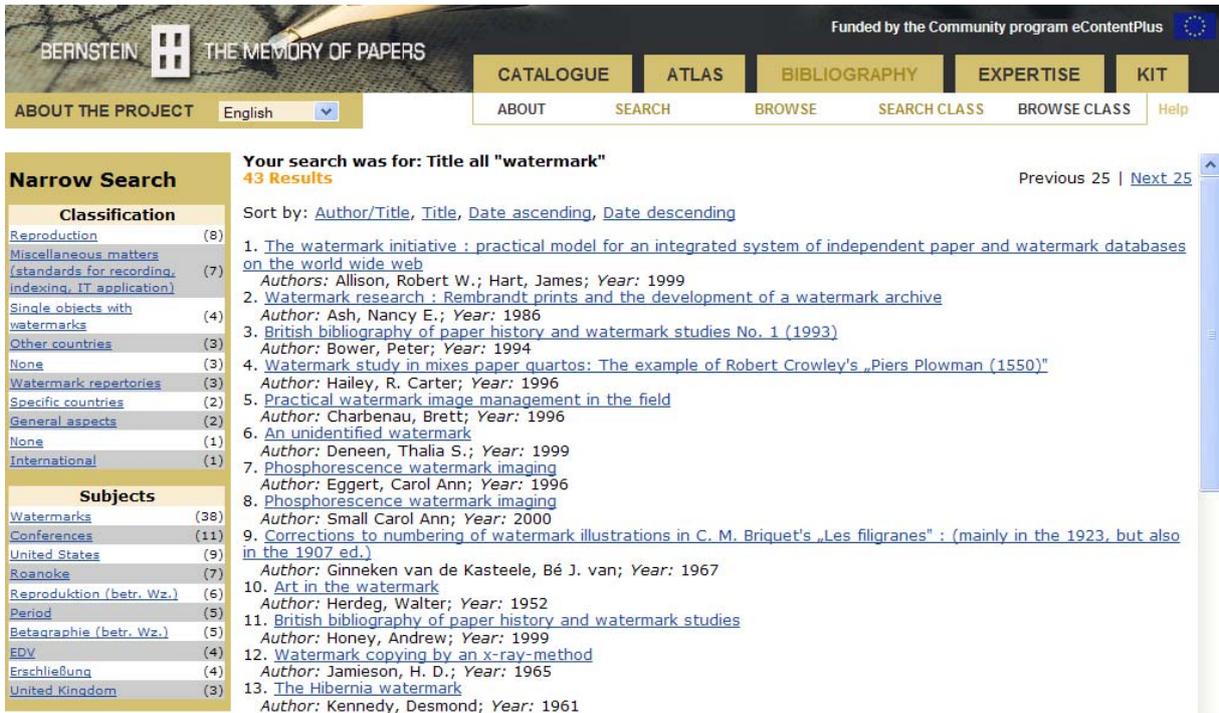
Figure 9: Catalogue Map View

4 Bibliography

The “Bibliography” area offers the submenus “Search”, “Browse”, “Search Classification” and “Browse Classification”, which have been integrated into the portal now (see Figure 10).

The search tool offers the facility to access records by both searching and browsing for specific words within defined indexes for certain fields within the database.

The browse interface enables the user to look through terms stored in the database by browsing the fields (indexes).



The screenshot shows the website header with the logo and navigation menu. The search results page displays the following information:

Your search was for: Title all "watermark"
43 Results Previous 25 | [Next 25](#)

Sort by: [Author/Title](#), [Title](#), [Date ascending](#), [Date descending](#)

Narrow Search

Classification	
Reproduction	(8)
Miscellaneous matters (standards for recording, indexing, IT application)	(7)
Single objects with watermarks	(4)
Other countries	(3)
None	(3)
Watermark repertories	(3)
Specific countries	(2)
General aspects	(2)
None	(1)
International	(1)

Subjects	
Watermarks	(38)
Conferences	(11)
United States	(9)
Roanoke	(7)
Reproduktion (betr. Wz.)	(6)
Period	(5)
Betaographie (betr. Wz.)	(5)
EDV	(4)
Erschließung	(4)
United Kingdom	(3)

- [The watermark initiative : practical model for an integrated system of independent paper and watermark databases on the world wide web](#)
Authors: Allison, Robert W.; Hart, James; *Year:* 1999
- [Watermark research : Rembrandt prints and the development of a watermark archive](#)
Author: Ash, Nancy E.; *Year:* 1986
- [British bibliography of paper history and watermark studies No. 1 \(1993\)](#)
Author: Bower, Peter; *Year:* 1994
- [Watermark study in mixes paper quartos: The example of Robert Crowley's „Piers Plowman \(1550\)“](#)
Author: Hailey, R. Carter; *Year:* 1996
- [Practical watermark image management in the field](#)
Author: Charbenau, Brett; *Year:* 1996
- [An unidentified watermark](#)
Author: Deneen, Thalia S.; *Year:* 1999
- [Phosphorescence watermark imaging](#)
Author: Eggert, Carol Ann; *Year:* 1996
- [Phosphorescence watermark imaging](#)
Author: Small Carol Ann; *Year:* 2000
- [Corrections to numbering of watermark illustrations in C. M. Briquet's „Les filigranes“ : \(mainly in the 1923. but also in the 1907 ed.\)](#)
Author: Ginneken van de Kastelee, Bé J. van; *Year:* 1967
- [Art in the watermark](#)
Author: Herdeg, Walter; *Year:* 1952
- [British bibliography of paper history and watermark studies](#)
Author: Honey, Andrew; *Year:* 1999
- [Watermark copying by an x-ray-method](#)
Author: Jamieson, H. D.; *Year:* 1965
- [The Hibernia watermark](#)
Author: Kennedy, Desmond; *Year:* 1961

Figure 10: Bibliography Search

5 Next steps

Until the end of the project the following items will be implemented respectively finished:

- Addition of icons for each motif of the “Browse Motif” hierarchy;
- Implementation of the translations for the multilingual user-interface and addition of Russian;
- Modification of the logo to “BERNSTEIN – THE MEMORY OF PAPER” (instead of “BERNSTEIN – THE MEMORY OF PAPERS”);
- Integration of the areas “Atlas”, “Expertise” and “Kit”;
- Transfer of the whole portal and the gateways from the test server to the new Bernstein server at the Austrian Academy of Sciences in Vienna. After this the integrated workspace will be available under <http://www.memoryofpaper.eu/>.

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