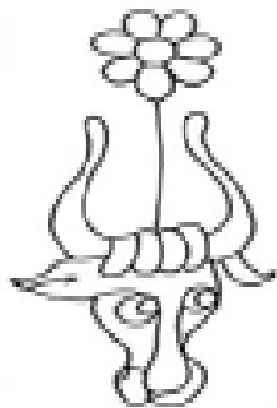




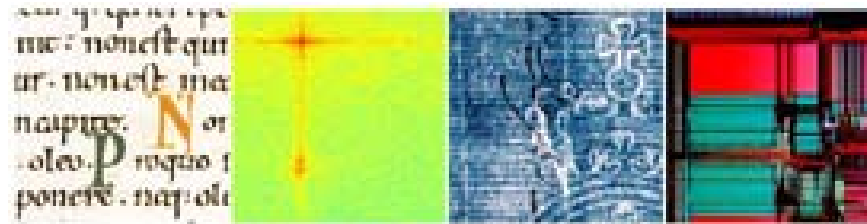
Bernstein Symposium

The History of Paper and Watermarks from the Middle Ages to the Modern Period





Project Bernstein



Emanuel Wenger

Austrian Academy of Sciences, Vienna – AUSTRIA



Project Summary

Project start date: September 1, 2006, duration: 30 months

EU funding: 1.6 Mill EURO

eContentPlus project: digital content in Europe more accessible, usable and exploitable, specific market areas (geographical content, educational content, digital libraries)

Main objectives:

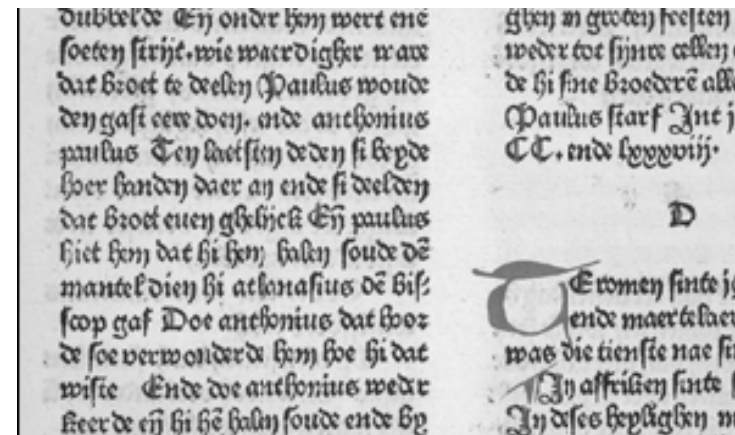
- Create an integrated European digital environment about paper history and knowledge
- Interlink European online databases of paper reproductions
- Augment the database by specialized image processing tools for measuring, authenticating and dating of paper
- Enrich paper data by contextual data with bibliographic and GIS content
- Provide a multilingual interface to these digital resources

substantial improvements of all expertise areas related to paper studies



Why the name ‘Bernstein’

Bernstein stands for ‘amber’ in German, which is famous for the insects from times far ago it traps. We can see them by raising the resin between our eyes and a source of light, a movement identical to that of the historian who looks for traces of the past revealed to him in the structural features of papers. Hence the name of the consortium and the metaphorical title of the project.





Consortium

1. Austrian Academy of Sciences, Vienna, Austria (OEAW, Coordinator)
Management, database of mediaeval watermarks (WZMA), dig. repertories, image processing tools
2. Archives of the State of Baden-Württemberg, Stuttgart, Germany (LABW)
Huge collection of watermarks (Piccard Online, 95000)
3. University of Technology, Institute for Information Systems and Computer Media, Graz, Austria (TUG)
Integration software (implementation), user interface
4. Laboratory for Occidental Medieval Studies in Paris, France (LAMOP)
Historical GIS
5. The National Library of Germany, Leipzig, Germany (DNB)
Bibliography on paper, huge paper collection
6. Dutch University Institute for Art History, Florence, Italy (NIKI)
Paper database, art historical expertise
7. Delft University of Technology, Delft, Netherlands (DUT)
Data mining software, intelligent image processing
8. National Library of the Netherlands, The Hague, Netherlands (KB)
Watermarks in incunabulae (WILC)
9. Liverpool University, United Kingdom (LU)
Integration architecture



Cooperators (Academy of Arts Vienna, British Library, Bundeskriminalamt, ICPL, ...)

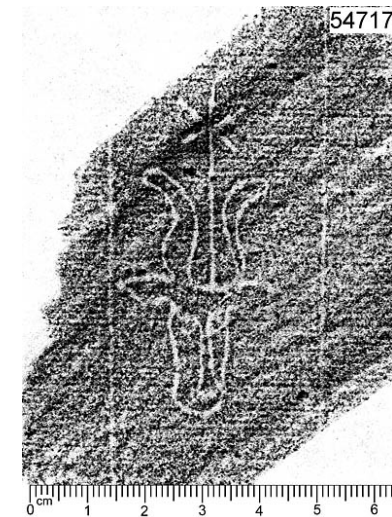
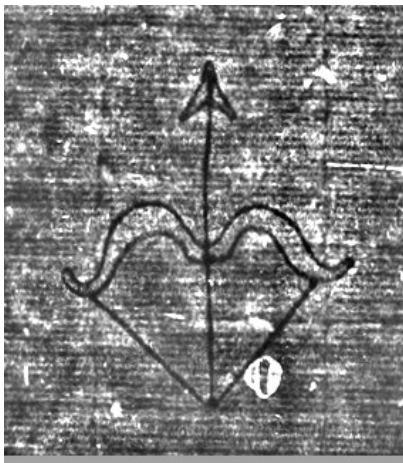
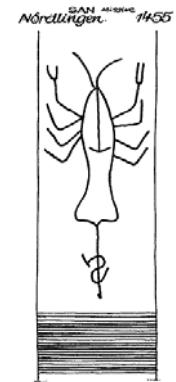


Data

Paper related data and tools

a) Images (drawings, rubbings, X-ray images, beta- and electron radiographies, digital photos, ...)

1. Piccard LABW binary images with textual description 95.000
2. KB grayscale images with textual description 16.000
3. WZMA OEAW (KSBM) grayscale images with textual description 9.500
4. NIKI grayscale images with textual description 2.200





Data

Paper related data and tools

- b) **Metadata:** measured paper characteristics, watermark classification, date and place of production, information about the documents (for example for books, the title, author, publisher name and date).
- c) **Contextual data**
 - a) bibliography
 - b) incunabula catalogue ISTC
 - c) historical GIS
- d) **Content processing software**
 - a) image processing software,
 - b) measurement tools,
 - c) historical cartography, statistics programs



Results and Components

- Bernstein watermark terms and classification (six languages)
- Integrated Bernstein workspace (portal)
- GIS data
- Cross linking between WILC and ISTC
- Bibliography
- Statistics
- Exhibitions (catalogue in English, German and Italian)
- Tutorials (transfer of the knowhow in the Bernstein consortium)



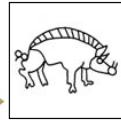
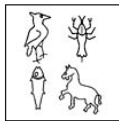
Bernstein Watermark Terms (Vocabulary)

- Harmonization of watermark terms (ox to bull, chalice to goblet, ...)
- Classification scheme for the hierarchically organized watermark types and nomenclature (codicology and heraldics)
- Six languages (English, French, German, Italian, Russian, Spanish)

Базы данных
☒ POL
☒ WILC
☒ WZMA
☒ NIKI
ИТОГО 68 100%

Выборка
68 100%
☐ Постоянно обновлять результат
☒ Используйте словарь
Сортировать результаты по: **мотив**
Затем сортировать: **Дата**
Ограничение выборки: 5000
Выборка на страницу: 10
Найти: **точный**
☒ Список ☐ Статистика ☐ Карта

фигура, антропоморфическая
Фауна
четырёхногий
обезьяна
медведь
бобр
козел
одногорбый верблюд
кабан, вепрь
осел
лиса
заяц
олень (самец)
собака
еж
кошка/леопард
лев
бык



Никакой дополнительной выбираемой систематики

Ваш выбор: Фауна >> четырёхногий >> кабан, вепрь

Объяснение комбинированного представления

I

 THE
BERNSTEIN
CONSORTIUM

 **OAW**
Austrian Academy
of Sciences

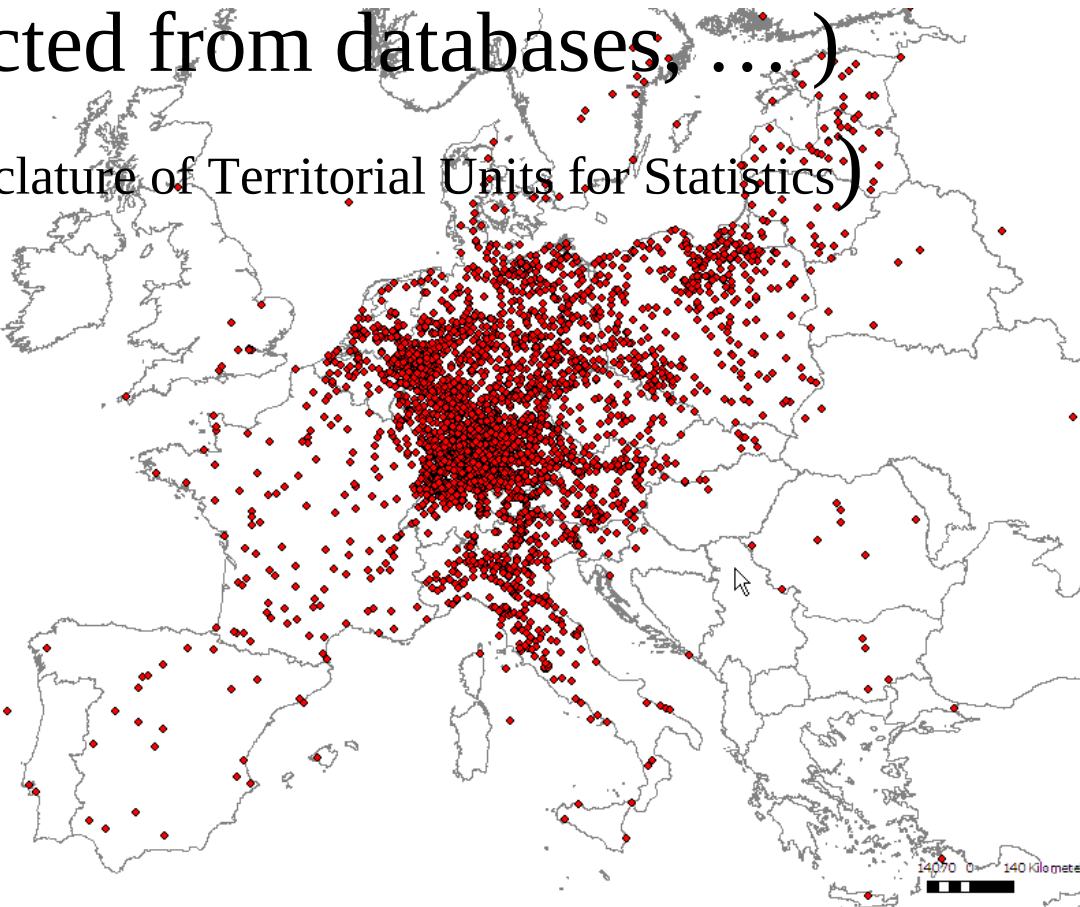


Integrated Workspace (portal)

- Portal for the access to the databases and paper expertise
 - *Connect components*
 - Search features,
 - statistics,
 - GIS,
 - dating,
 - identification.
 - *Interpret content*: harmonize heterogeneous content
 - *Emerge knowledge*: it should generate additional knowledge from existing content
 - *Assist users*:
- www.memoryofpaper.eu



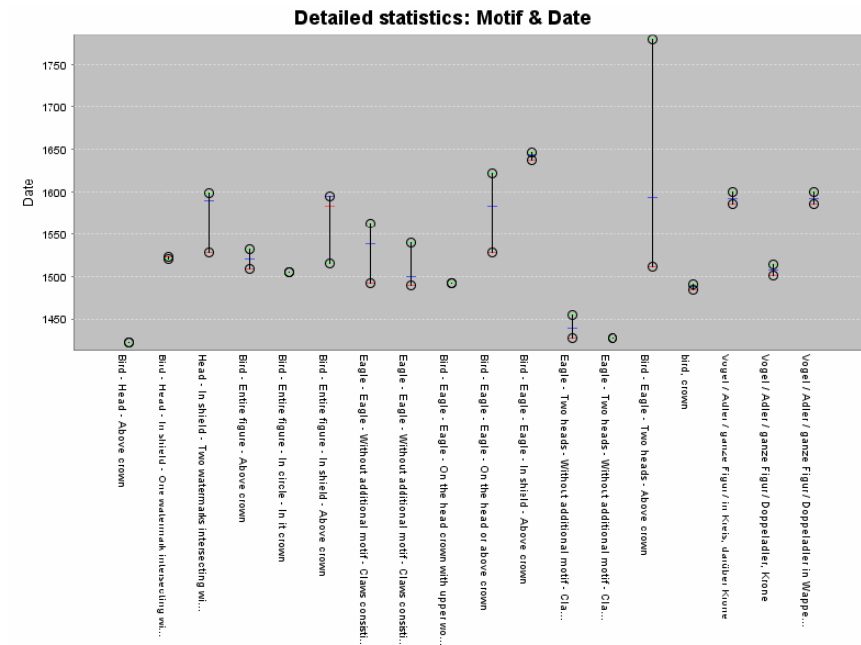
GIS

- GIS data (collected from databases, ...)
 - NUTS (The Nomenclature of Territorial Units for Statistics)
 - ArcGIS
- 
- A map of Europe with numerous red dots representing NUTS (Nomenclature of Territorial Units for Statistics) regions. The dots are densely packed in central Europe and more sparsely distributed in peripheral areas like Ireland, the UK, and Scandinavia. A scale bar in the bottom right corner indicates distances up to 140 kilometers.

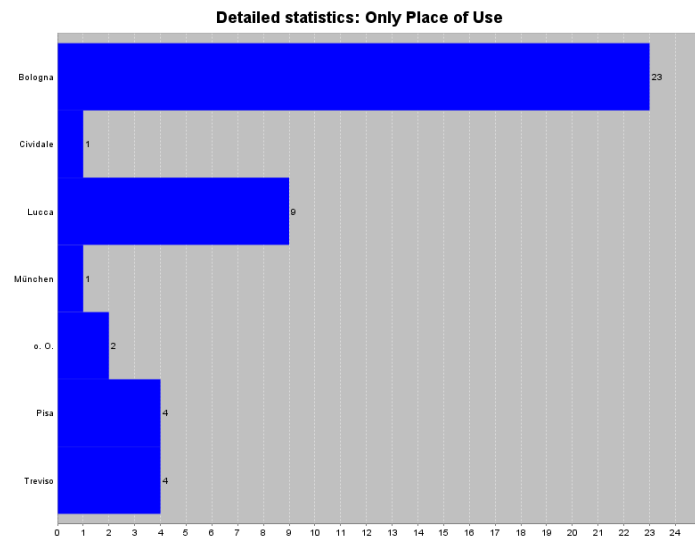


Statistics

- 120 000 entries in database
- summary statistics
 - 0. Number of selected watermarks
 - 1. Motif of watermark: number of motifs
 - 2. Place of paper use: number of places
 - 3. Depository at present time: number of depositories
 - 4. Date of paper use: range (min, max), mean, stdv
 - 5. Height of watermark: range (min, max), mean, stdv
 - 6. Width of watermark: range (min, max), mean, stdv
 - 7. Density of laid lines: range (min, max), mean, stdv
 - 8. Distance between chain lines: range (min, max), mean, stdv



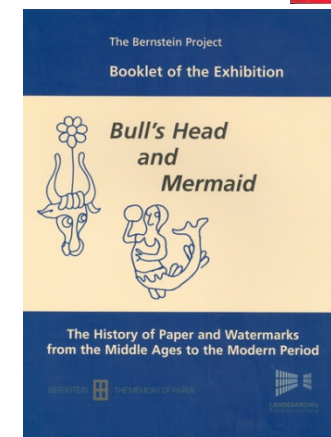
- choice section
- detailed statistics section





Exhibitions

- Stuttgart (Dr. Rückert), LABW, “*Ochsenkopf und Meerjungfrau – Wasserzeichen des Mittelalters*”, 70-page German catalogue
- Vienna, Schottenstift
- Fabriano, Museo della carta e della filigrana, “*Testa di bue e sirena – La memoria della carta e delle filigrane dal medioevo al seicento*”, 96-page Italian catalogue
- Rome, Istituto Centrale della Patologia del Libro (ICPL)
- Milano, Castello Sforzesco, Sala del Tesoro della Trivulziana (October-December 2008) ,
- Torino, Biblioteca Nazionale (April-May 2009)
- Further candidates: Bergisch Gladbach, TheHague, Valencia.





Dissemination Kit

- Textbook
- Database
- Image processing software
- Tools



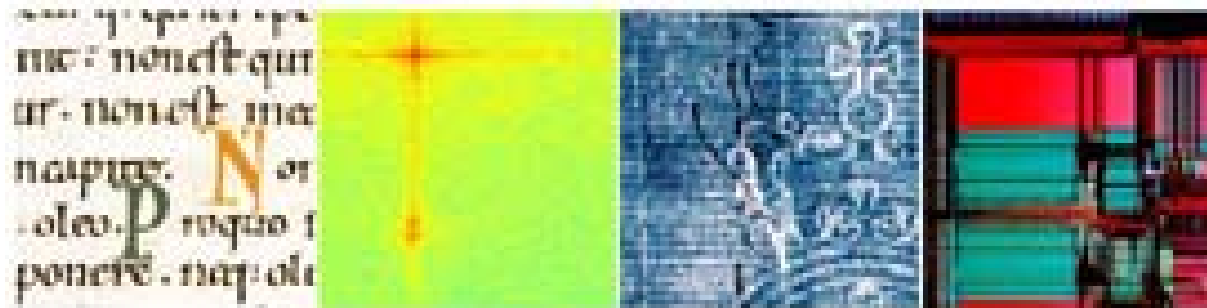
Contacts

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Thank you