

EuropeanaConnect First Annual Progress Report May 2009 – April 2010

www.europeanaconnect.eu

EuropeanaConnect is a key project of Europeana, the European digital portal providing user-friendly access to Europe's cultural heritage.

Key data

- **Co-ordination:** Austrian National Library
- **Project partners:** 30 institutions from 14 countries
- **Duration:** May 2009 – October 2011 (30 months)

EuropeanaConnect is a Best Practice Network co-funded by the European Commission within the *eContentplus* Programme. The project will deliver essential components enabling Europeana to become a truly interoperable, multilingual and user-friendly service. Users will be able to access millions of images, books, maps, video, historic writings and audio files representing Europe's cultural diversity.

This report marks the end of a successful first year in which EuropeanaConnect was established as the largest single Europeana technology provider. A challenge in the year was to synchronise the project with the requirements and planning of Europeana. Success in meeting this challenge has provided a solid model for Europeana's future collaboration with technical projects.

The work achieved in year one will be included in Europeana as appropriate as its services develop. This report is not an exhaustive list of work done, but focuses on highlights.

All publicly available reports produced by the project and presentations relating to its work can be found at <http://www.europeanaconnect.eu/results-and-resources.php>



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

What EuropeanaConnect does

- **Provides multilingual searching and browsing**
including translation tools and other language resources to enable multilingual searching of objects and data in Europeana.
- **Semantically enriches digital content in Europeana**
creating new connections between objects. Semantic enrichment will make Europeana content more accessible, reusable and exploitable.
- **Develops a spatio-temporal interface**
allowing users to use time as well as geographical space to search or browse the vast Europeana database.
- **Builds a Europeana interface for mobile devices**
allowing browsing of Europeana on mobile devices independent of location.
- **Studies the behaviour of users of digital libraries**
to understand what users really want from Europeana. Logging tools and methodologies developed by the project will identify additional services required by users.
- **Integrates multimedia annotation, eBooks-on-demand and GIS information**
allowing tagging of digital images, maps, audio and video content. To further enhance Europeana, EuropeanaConnect will integrate geographical information services and will enable the ordering of eBooks-on-demand.
- **Builds and validates a set of Europeana rights licenses**
assisting in the selection of the correct licenses for digital content provided to Europeana. EuropeanaConnect will draft an initial Europeana licensing framework.
- **Creates an audio-aggregation infrastructure and adds music**
harvesting audio from hundreds of audio archives and aggregating 200.000 music files for Europeana. EuropeanaConnect also provides the infrastructure for harvesting, analysis and storage of audio metadata prior to integration into Europeana.
- **Deploys key infrastructure components for Europeana**
including an OAI-PMH (Open Archive Initiative Protocol for Metadata Harvesting) Management Infrastructure to handle large-scale metadata harvesting, a Metadata Registry to ensure interoperability, a Service Registry to enable integration of external added-value services and a Resolution Discovery Service to allow unique resource identification.



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

What happened in the project's first year

Building the Europeana Semantic Layer

Work in this area aims to organise the Europeana data space as a network of interlinked resources for object discovery and further use. The Semantic Layer will be the key component which will make Europeana a network of interoperating resources for object discovery and use and provide the mechanisms to semantically process the content of Europeana. This will significantly simplify the integration of vast amounts of disparate content into Europeana and will make Europeana content better accessible, useable, suitable for repurposing and exploitable in the future. The work involves creating a repository of harvested semantic resources (such as vocabularies and classification schemes) from the Libraries, Museums and Archives community. It will deploy a mechanism to ingest semantic material into this repository, convert these data into Europeana semantic representations, and semantically enrich Europeana content by mapping it to these semantic representations. This will create a stable and rich layer of semantic data which will be the basis for all semantic processing in Europeana.

In the first year a survey of controlled and structured vocabularies took place among Europeana data providers and there was a successful migration of selected vocabularies to SKOS. A specification of semantic functionality was created and checked with selected expert users. A substantial contribution to the Europeana Data Model (EDM) was also made, assisting with its specification and stabilisation.

Multilingual Access to Europeana

Work to provide multilingual access capabilities for Europeana will enable users to find relevant content even if it is not described in their native / preferred language. To make this a reality, we first need to build a Europeana repository of language resources in order to support and develop tools for multilingual mapping of controlled vocabularies for browsing and translation services for querying. Initially we aim to support 6 languages [English, French, German, Italian, Spanish, Polish], expanding to include 4 more [Dutch, Hungarian, Portuguese, Swedish].

So far, a report on user preferences and information retrieval scenarios for multilingual access in Europeana has been produced and a specification for the Europeana language resources repository developed. Multilingual mapping of controlled vocabularies has begun with an exploration of available resources.



Co-funded by the European Community Programme eContentplus



EuropeanaConnect is coordinated by the Austrian National Library

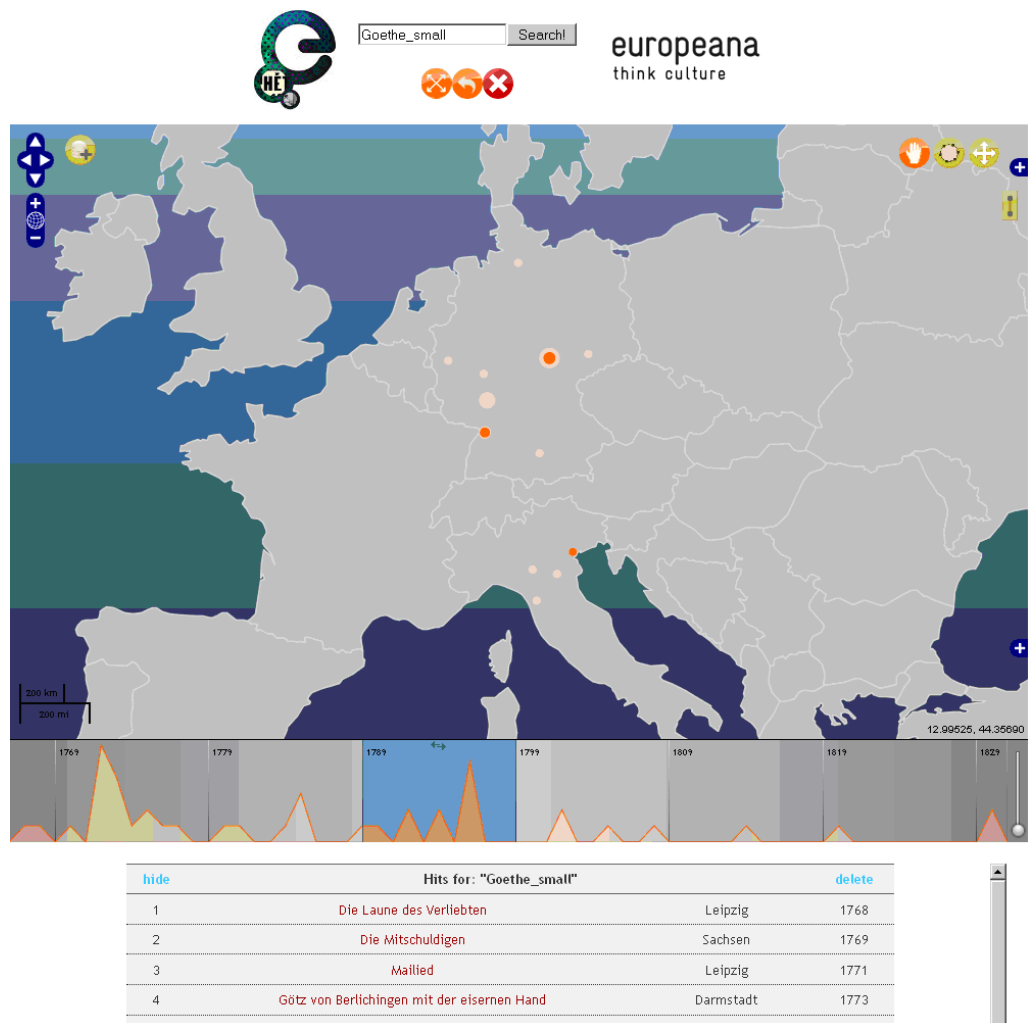
Images © Österreichische Nationalbibliothek

New access channels to Europeana

Work has begun to provide a methodology to help understand what users do when they visit Europeana so that we can improve their experience. Work has also started on providing new ways to access the data in Europeana, allowing a combined approach via time and place and access through mobile devices.

Log-file analysis is under way and a catalogue of so-called personas has been created as a tool for user testing and evaluation.

Enabling users to search in Europeana by time and location has meant the creation of a prototype of a spatio-temporal interface. It will give a new visual access channel for Europeana by combining spatial and temporal metadata for visualisation and allowing the creation of user generated interactive and generic maps of geo-related tagged events, places and characters in Europe – combined with a timeline of the user's choice. To do this, it makes use of time-related and geographical metadata of the Europeana semantic layer.



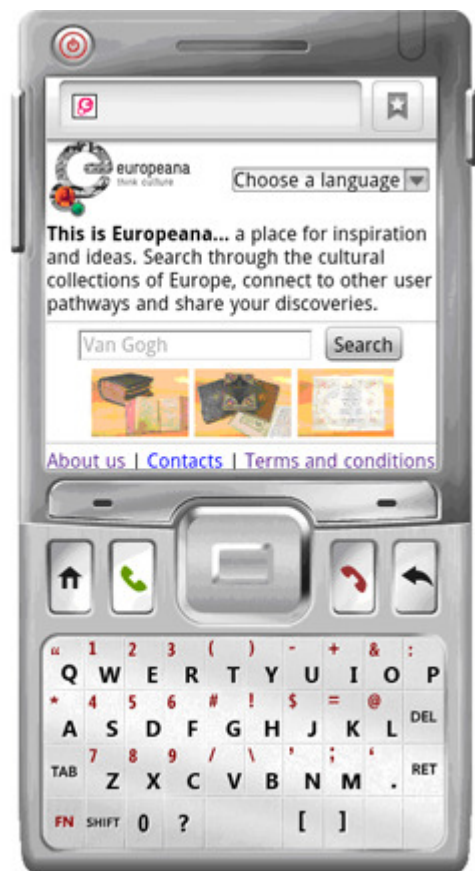
Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Giving users mobile access to Europeana is the second new access channel worked on in year one. A generic mobile client, adapting to the user's mobile device is under development and is included in Europeana, allowing searching of Europeana from a mobile device. A feature to be offered in later releases will also allow users to search for works inside Europeana around their current position. Other work planned for the second half of the project includes the design and implementation in Europeana of a rich mobile client application for which allows for advanced queries and provides advanced interfaces. It will provide new services as well as more sophisticated and powerful interfaces to Europeana in comparison to the web server for general mobile browsers, but will be limited to a more specific device class.



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Licensing metadata use in Europeana

Clarifying the legal situation and suggesting licenses to content providers has been a key activity. This is a fast moving and complex field where a Europe-wide approach is often lacking and which the European Commission is addressing at a strategic level. The multi stakeholder nature of rights issues has made progress in legal questions slow and complex.

Work has resulted in the publication of the Europeana Public Domain Charter in six languages <http://version1.europeana.eu/web/europeana-project/publications>.

The Charter is endorsed by the Europeana Foundation and the European Commission and highlights the value of public domain content and alerts the cultural community to the fact that digitisation of Public Domain content does not create new rights in it. The topic is somewhat controversial.

Draft Europeana Data Provider and Data Aggregator Agreements have also been produced to govern relationships between Europeana and its partners.

A third strand of work in this area has been the development of so called “Public Domain Helper tools” which define decision trees to translate the law into a tool to decide if a work is in the public domain. Users specify the country and type of material and are guided to a view of whether an item is public domain or not. The tool is available in a Beta version.

Integrating software and services in Europeana

Essential behind the scenes work has extended the technical capabilities of Europeana. Work has also gone ahead to integrate three value-added services which users will potentially see and use in Europeana:

- A Geographical Information Services (GIS) suite consisting of a geoparser and a gazetteer will make it possible to enrich Europeana metadata and content with explicit geographical metadata and references. Prototypes and showcases of both tools are available.
- Multimedia Annotation Services will provide Europeana with annotation capabilities for audio and video content, images and maps [prototypes ready in July 2010].

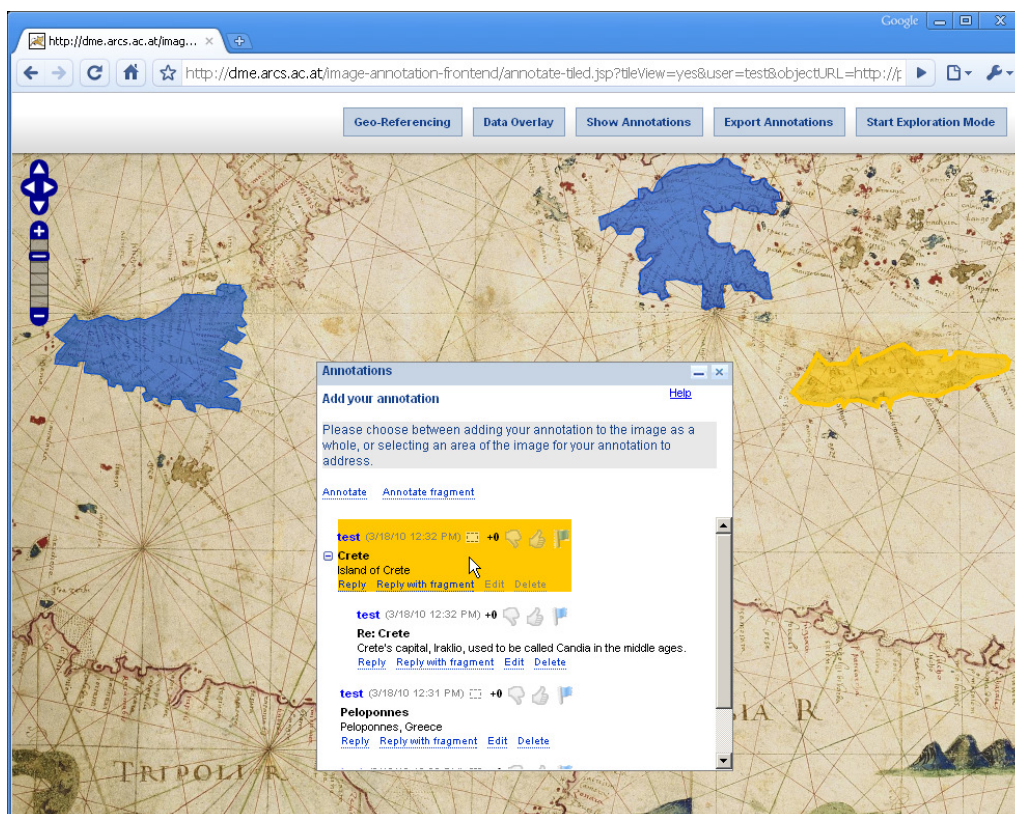


Co-funded by the European Community Programme eContentplus



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek



- The integration of the eBook-on-Demand Service (EoD) (<http://books2ebooks.eu/>) will allow automated and generic transfer of eBooks created within the EoD network to Europeana Portal and thus enable the ordering of eBooks-on-Demand by the end of 2011.

An important development which users will not see is the REPOX software which automates the process of adding content to Europeana.

The Europeana Resolution Discovery Service (ERDS) is yet another crucial backroom service that will provide a meta-resolver for European Cultural Heritage Institutions. The ERDS will provide a solution to the challenge of persistent identification of digital objects across the different resolution services that are currently in use by the numerous Cultural Heritage Institutions.

A workshop on Persistent Identifiers with participants from a number of European projects was held at the German National Library on 17 and 18 February 2010 and its report is available on the EuropeanaConnect homepage: <http://www.europeanaconnect.eu/results-and-resources.php>. » [Report on the European Resolution Discovery Service \(ERDS\) Meeting](#)



Co-funded by the European Community Programme *eContentplus*



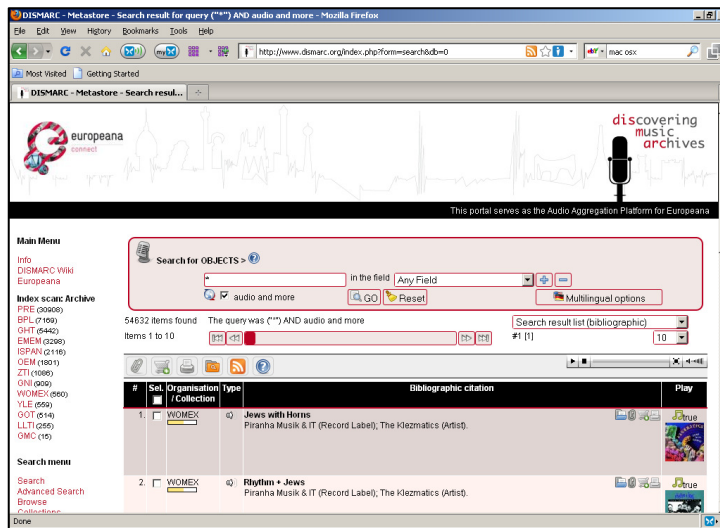
EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Adding music audio to Europeana

EuropeanaConnect adds the music dimension to Europeana. Over 54,000 music audio and related items have been prepared and delivered to Europeana, drawn from more than 100 collections from 26 archives in 16 countries. These items are now available online and constitute a tripling of the amount of audio content in Europeana. New audio collections are constantly aggregated including, in recent

months, archives from Bulgaria, Lithuania, Romania and Switzerland. Another significant addition was the [Grieg Archive](#) from Norway, owned by the Bergen Public Library. This is composer Edvard Grieg's personal archive, which he donated to his local library. It contains not only recordings



of Grieg's work but also related documents and artefacts, including his personal papers, letters, pictures and annotated manuscripts. This material will be available via Europeana in coming months, following the next scheduled harvesting of the DISMARC/EuropeanaConnect Audio Aggregation Platform which delivers the content to Europeana.

Behind the scenes, an array of tools for content management has been developed – these tools enable content owners to manage their data online in real time, and also allow users to add their own comments about particular pieces of music. Partners have also created a supply of resources for content owners, to help them over any hurdles they may encounter during the aggregation process. These resources include hands-on workshops as well as documentation.



Co-funded by the European Community Programme eContentplus



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Publications about EuropeanaConnect

The following publications appeared in year one.

- L. Dini, Celi, V. Petras (2010).
The Challenge of Multilinguality in Europeana: Web Services as Language Resources, in: Proceeding: 2nd European Language Resources and Technologies Forum, Language Resources of the Future, the Future of Language Resources, p39ff, at FLaReNet Forum, Barcelona, 11 – 12 February 2010,
http://www.flarenet.eu/sites/default/files/FLaReNet_Forum_2010_Proceedings.pdf
- N. Ferro, G. Silvello (2010).
FAST and NESTOR: How to Exploit Annotation Hierarchies. In: M. Agosti, F. Esposito and C. Thanos, editors, Post-proceedings of the Sixth Italian Research Conference on Digital Library Systems (IRCDL 2010). DELOS Association and Department of Information Engineering of the University of Padua (in print).
- N. Popitsch, B. Haslhofer (2010)
DSNotify: Handling Broken Links in the Web of Data, Nineteenth International WWW Conference (WWW2010), April 26-30, 2010 – Raleigh, NC, USA,
<http://portal.acm.org/citation.cfm?id=1772690.1772768&coll=portal&dl=GUIDE&type=series&idx=SERIES968&part=series&WantType=Proceedings&title=WWW&CFID=90698807&CFTOKEN=83625318>
- R. Simon, J. Korb, C. Sadilek and M. Baldauf (2010).
Explorative User Interfaces for Browsing Historical Maps on the Web, Proceedings of the [5th International Workshop on Digital Approaches in Cartographic Heritage](#), February 22 – 24 2010, Vienna, Austria. ([PDF](#))
- L. G. Svensson (2010).
EuropeanaConnect. In: Dialog mit Bibliotheken 22, issue 1, pp 48 – 50.
http://www.d-nb.de/service/pdf/dialog_2010_1_europeana_connect.pdf
- M. Agosti, N. Ferro, G. Silvello (2009).
Access and Exchange of Hierarchically Structured Resources on the Web with the NESTOR Framework. In: R. Baeza-Yates, B. Berendt, E. Bertino, E.-P. Lim, G. Pasi, editors, Proceedings 2009 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology, pages 659–662. IEEE Computer Society, Los Alamitos, CA, USA.
- J. Euzenat, A. Ferrara, L. Hollink, A. Isaac, C. Joslyn, V. Malaisé, C. Meilicke, A. Nikolov, J. Pane, M. Sabou, F. Scharffe, P. Shvaiko, V. Spiliopoulos, H. Stuckenschmidt, O. Šváb-Zamazal, V. Svátek, C. Trojahn dos Santos, G. Vouros, S. Wang (2009).
Results of the Ontology Alignment Evaluation Initiative 2009. Proceedings of the 4th International Workshop on Ontology Matching, 8th International



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Semantic Web Conference (ISWC 2009). Chantilly, USA, 25 October 2009. CEUR online Workshop Proceedings. http://sunsite.informatik.rwth-aachen.de/Publications/CEUR-WS/Vol-551/oeai09_paper0.pdf

- B. Haslhofer, N. Popitsch (2009):
DSNotify – Detecting and Fixing Broken Links in Linked Data Sets, Bernhard Haslhofer, 8th International Workshop on Web Semantics (WebS '09), co-located with DEXA 2009 – Linz, Austria,
http://www.europeanaconnect.eu/documents/Dsnotify_brokenlinks_HasPopi02-09_09.pdf
- M. Kaiser, J. Nikolov-Ramírez Gaviria, V. Prändl-Zika (2009).
EuropeanaConnect: Enhancing user access to European digital heritage, in: Conference 2009: Proceedings, Cultural Heritage on line. Empowering users: an active role for user communities, [Part I \(Plenary session, Parallel session I, Digital Library Applications & Interactive Web\)](#), p.69, <http://www.rinascimento-digitale.it/eventi/conference2009/proceedings-2009/Proceedings-part1.pdf>
- R. Simon, J. Korb, C. Sadilek and R. Schmidt (2009).
Collaborative Map Annotation in the Context of Historical GIS, Proceedings of the [Workshop on Geospatial Computing for the Arts, Humanities and Cultural Heritage](#), p.139, December 9 – 11, 2009, Oxford, UK. ([PDF](#))



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek

Project partners

- Austrian National Library, AT – CO-ORDINATOR
- AIT Applied Information Technology Ltd., AT
- AIT Austrian Institute of Technology GmbH, AT
- Amsterdam University Press, NL
- CELI S.R.L., IT
- EREMO S.R.L., IT
- Europeana Foundation, NL
- German National Library, DE
- Goettingen State and University Library, DE
- Humboldt-Universität zu Berlin / Berlin School of Library and Information Science, DE
- Institute for Musicology of the Hungarian Academy of Sciences, HU
- Institute of Art of the Polish Academy of Sciences, PL
- Institute of Lithuanian Literature and Folklore, LT
- Instituto Superior Técnico, PT
- KB, National Library of the Netherlands, NL
- Knowledgeland, NL
- National Library of Luxembourg, LU
- National Library of Portugal, PT
- National Technical University of Athens, GR
- OFFIS Institute for Information Technology, DE
- Rundfunk Berlin-Brandenburg, DE
- Scientific Research Centre of the Slovenian Academy of Sciences and Arts, SL
- The Royal Library, The National Library of Denmark and Copenhagen University Library, DK
- UCL Consultants Ltd, UK
- University of Amsterdam – Institute for Information Law, NL
- University of Innsbruck – University and Regional Library of Tyrol, AT
- University of Padua – Dep. of Information Engineering, IT
- University of Vienna, AT
- VU University Amsterdam, NL
- XEROX SAS, FR



Contact and further information

Max Kaiser – Project Coordinator
Austrian National Library
Josefsplatz 1, A-1015 Vienna
Tel: + 43 1 53410-370, Fax: + 43 1 53410-681
Email: EuropeanaConnect@onb.ac.at
<http://www.onb.ac.at>
<http://www.europeanaconnect.eu>



Co-funded by the European Community Programme *eContentplus*



EuropeanaConnect is coordinated by the Austrian National Library

Images © Österreichische Nationalbibliothek