



EuropeanaConnect Progress Report, May 2011

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 is developing essential components to enable 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 second annual report confirms the successful work carried out by EuropeanaConnect, the largest single Europeana technology provider. One of the challenges for the project was to synchronise its work 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 so far has been or 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>



Europeana
connect



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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.



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What happened in the project's first two years

Building the Europeana Semantic Layer

Work in this area aims to organise the Europeana data space as a network of interlinked resources and to contextualise these objects enabling 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 as well as to other resources available in the Linked Open Data web <http://version1.europeana.eu/web/lod/>. This will create a stable and rich layer of semantic data which will be the basis for all semantic processing in Europeana.

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. Work in this area has contributed to the Europeana Linked Open Data Pilot and a substantial contribution to the Europeana Data Model (EDM) was also made, assisting with its specification and stabilisation. This work was done in a perspective of making Europeana with its semantic resources an integral part of the Linked Open Data web.

A semantic layer prototype running Amalgame has been developed: <http://semanticweb.cs.vu.nl/europeana/>.

Testing and evaluation of developed services and modules is on-going.

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. Multilingual development in EuropeanaConnect supports a set of 10 languages: English, French, German, Italian, Polish, Spanish (core languages), Dutch, Hungarian, Swedish and Portuguese.

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. The repository was then



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built and populated with language resources (both open source and commercially licensed) to enable translation and mapping activities. <http://europeanalabs.eu/wiki/LinguisticResourceRegister>. Multilingual mapping of controlled vocabularies is being carried out with an exploration of available resources. This task aims to merge the heterogeneous and multilingual Europeana resources, by relating value vocabularies (thesauri, person authority lists, etc) that are relevant in the Cultural Heritage domain and adds a multilingual dimension to the Europeana semantic layer. Finally, a query translation module for all 10 EuropeanaConnect languages (translating from any of the 10 languages into any of the 10 languages) was developed and is now being evaluated.

New access channels to Europeana

One of the accomplished tasks was the development of a methodology to help understand what users do when they visit Europeana with the aim of improving their experience. Work has also progressed 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 has been carried out. A report with the title 'Europeana: an evaluation of users, usage and information seeking behaviour derived from web-server log-files' was produced. The report covers over 18 months of stable operation of the europeana.eu portal, enabling observation of seasonal patterns in visitors' behaviour. It also provides an account of results from on the Search Engine Optimisation process which Europeana.eu underwent in 2010.

A catalogue of so-called personas has been created as a tool for user testing and evaluation. Methods for user tests have been identified and selected with the aim of providing Europeana project partners with a whole palette of methods to do usability testing during the development process of new or further developed web-based products.

Enabling users to search in Europeana by time and location has meant the creation of a prototype of a spatio-temporal interface called Europeana 4D 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 which is added by using the Geoparser.



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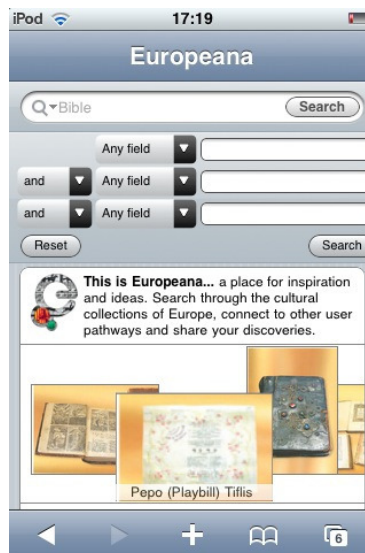
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Europeana 4D interface

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 has been developed and 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. The design and implementation in Europeana of a rich mobile client application is under development. It will allow for advanced queries and provide advanced interfaces. It will also 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.



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Licensing metadata use in Europeana and public domain tools

Clarifying the legal situation and suggesting licenses to content providers is 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, Data Exchange and Data Aggregator Agreements (<http://www.europeana-libraries.eu/web/europeana-project/newagreement/>) have also been produced to govern relationships between Europeana and its partners.

A first draft of the new agreements (based on workshop outcomes) has been circulated widely for feedback in early January. Based on the feedback a second draft has been completed on schedule by Mid-February.

The agreements are on schedule and support the Europeana strategy 2011-2015.

A series of workshops with the title 'Your metadata and the web' were successfully held between September 2010 and February 2011, aimed at archives, museums, libraries, audiovisual archives and aggregators contributing to Europeana in order to explore the risks and rewards involved in open metadata re-use. (<http://www.version1.europeana.eu/web/europeana-project/newagreement-consultation/>). The workshops helped to make more clear the risks and rewards and to identify best practices. Additional workshops are planned to be organised with Aggregators to facilitate the transition to the new agreements.

EuropeanaConnect has collaborated closely with Europeana to adopt the Public Domain Mark as first major institution. The tool will become the standard mark for works free of known copyright that are shared via the Europeana portal, playing an important infrastructural role in the EU's efforts to ensure that all works shared online are marked with rights information.



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 at www.outofcopyright.eu.



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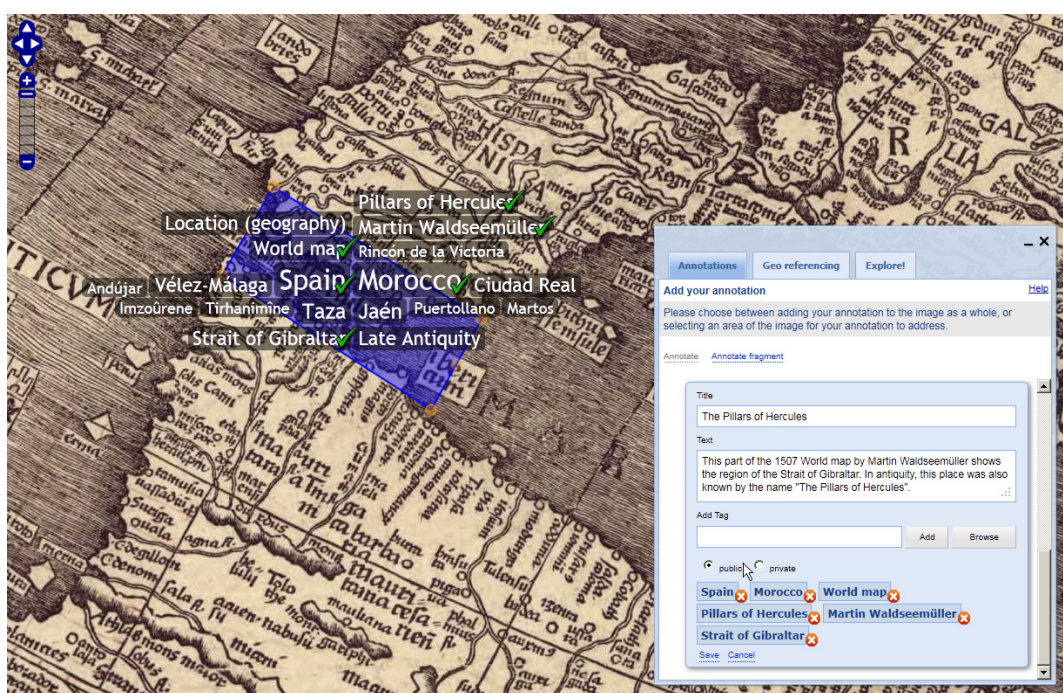
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Integrating software and services in Europeana

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. The image annotation interface is based on the Google Web Toolkit (<http://code.google.com/intl/nl-NL/webtoolkit/>). We have developed an online media annotation suite, available at: <http://dme.arcs.ac.at/annotation/>.



Map Annotation Service

- An evaluation platform (COMPASS) for a Map Annotation Tool was developed (<http://compass.cs.univie.ac.at/>).
- The ordering of Print-on-Demand from the Europeana portal will be demonstrated. To this purpose, the EoD (eBook-on-Demand Service, <http://books2ebooks.eu/>) network has been extended and a connector has been produced to allow Europeana to harvest metadata of already digitised books. This metadata will allow the demonstrator to work in Europeana.



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- The integration of the (EoD) 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](#)

A workshop on geographical and mobile interfaces, with the title EuropeanaConnect Cross-Project Networking Workshop on Place, Cultural Heritage and the Internet, was also held in November 2010 (<http://dme.ait.ac.at/workshop2010/>).

A joint ASSETS/EuropeanaConnect cross-project networking workshop on User-Generated Content for Galleries, Libraries, Archives & Museums was held on 16-17 May 2011 (<http://dme.ait.ac.at/ugc4glam/>).

Adding music audio to Europeana

EuropeanaConnect adds the music dimension to Europeana. A total of 206,100 items has so far been harvested by Europeana from the Audio Aggregation Platform (AAP). The DISMARC-EuropeanaConnect Audio Aggregation Platform (AAP, <http://www.dismarc.eu>) prepares and delivers audio to Europeana, and offers any content owner the possibility of managing his/her content. Currently there are 499 collections from 465 content providers.



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DISMARC Audio Aggregation Platform

New audio collections are constantly aggregated including, 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. A virtual Audio Exhibition has been developed (<http://econnect.ait.co.at/wedding-exhibition/>). It presents content from several EuropeanaConnect partners on the topic 'Weddings in Eastern Europe' and includes text, graphics, images, audio and video. 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 they also allow users to add comments about particular pieces of music. In this connection, a Cultural Content Management Tool was set up to support audio archives in joining Europeana as content providers via the EuropeanaConnect/Dismarc Audio Aggregation Platform.



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Virtual Audio Exhibition: Weddings in Eastern Europe

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.

Project dissemination

EuropeanaConnect dissemination activities have been carried out since the start of the project in coordination with Europeana v1.0.

A number of dissemination tools (project web site, brochure, fact sheet, poster, presentation and annual report) have been developed and made available to partners for dissemination purposes.

Work on the project web site positioning and optimisation has increased visibility of the site on search engines and achieved satisfactory results.

A web section devoted to the EuropeanaTech Conference (<http://www.europeanaconnect.eu/europeanatech/>) was developed to provide all relevant information, including the programme and registration form.

Partners have so far actively participated in events to promote the project and have issued several publications (listed below).



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Publications about EuropeanaConnect

The following publications appeared during the first two years of the project.

- P. Keller, M. Zeinstra (November 2010)
Short position paper on 'Open Linked Data and Europeana'
<http://version1.europeana.eu/web/guest/news/-/blogs/open-linked-data-and-europeana>
- M. Agosti, N. Ferro, A. Rigon, G. Silvello, E. Terenzoni, C. Tommasi (2011)
SIAR: A User-Centric Digital Archive System. In Proceedings of the Seventh Italian Research Conference (IRCDL 2011). Springer-Verlag, Heidelberg, Germany
- M. Agosti, N. Ferro, G. Silvello (2011)
How to Handle Hierarchically Structured Resources Addressing Interoperability Issues in Digital Libraries. In Biba, M. and Xhafa, F., editors, Learning Structure and Schemas from Documents. Springer-Verlag, Heidelberg, Germany
- Martin Doerr, Stefan Gradmann, Steffen Hennicke, Antoine Isaac, Carlo Meghini, Herbert van de Sompel (2011): The Europeana Data Model. IFLA 2010 (Gothenburg). Session on „Libraries and the Semantic Web“. To appear in IFLA journal (in print) <http://www.ifla.org/files/hq/papers/ifla76/149-doerr-en.pdf>
- N. Freire, J. Borbinha, P. Calado
A Language Independent Approach for Aligning Subject Heading Systems with Geographic Ontologies”, submitted to the 2011 edition of the International Conference on Dublin Core and Metadata Applications (waiting for final review)
- B. Haslhofer, E. Momeni Roochi, B. Schandl, S. Zander (2011)
Technical Report: Europeana RDF Store Report, University of Vienna
<http://eprints.cs.univie.ac.at/2833/>
- S. Rainer, B. Haslhofer, W. Robitza, E. Momeni Roochi
Semantically Augmented Annotations in Digitized Map Collections (2011)
in: ACM/IEEE Joint Conference on Digital Libraries (JCDL), June 13–17, 2011, Ottawa, Ontario, Canada (in print)
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Project partners

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- 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



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