EuropeanaConnect – Results, November 2011

EuropeanaConnect was 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 was a Best Practice Network co-funded by the European Commission within the *e*Content*plus* Programme. The project developed essential components to enable Europeana to become a truly interoperable, multilingual and user-friendly service. Users can access millions of images, books, maps, video, historic writings and audio files representing Europe's cultural diversity.

This final 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 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

What EuropeanaConnect did

– Provided multilingual searching and browsing
including translation tools and other language resources to enable
multilingual searching of objects and data in Europeana.

– Semantically enriched digital content in Europeana
creating new connections between objects. Semantic enrichment makes
Europeana content more accessible, reusable and exploitable.

– Developed a spatio-temporal interface
potentially allowing more academic users of portals where this feature is
activated to use time as well as geographical space to search or browse.

– Built a Europeana interface for mobile devices
allowing browsing of Europeana on mobile devices independent of location.

– Studied the behaviour of users of digital libraries
to understand what users really want from Europeana. Logging tools and
methodologies developed by the project help identify additional services
required by users.

– Developed methods for integration of multimedia annotation, eBooks-on-
demand and GIS information
allowing tagging of digital images, maps, audio and video content in
databases other than Europeana which contain the original objects and not
simply their metadata. To further enhance Europeana, EuropeanaConnect
integrated geographical information services and enabled the ordering of
eBooks-on-demand.

– Built and validated a set of Europeana rights licenses
assisting in the selection and development of the correct licenses for
metadata provided to Europeana. EuropeanaConnect helped develop the
Europeana Data Exchange Agreement.

– Created an audio-aggregation infrastructure and added music
by harvesting audio from hundreds of audio archives and aggregating
350.000 music files for Europeana. EuropeanaConnect also provided the
infrastructure for harvesting, analysis and storage of audio metadata prior to
integration into Europeana.

– Deployed 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.

What happened in the project

Building the Europeana Semantic Layer

Work in this area aimed to organise the Europeana data space as a network of interlinked resources as well as to contextualise these objects enabling discovery and further use. The Semantic Layer is the key component which makes Europeana a network of interoperating resources for object discovery and use and provides the mechanisms to semantically process the content of Europeana. This significantly simplifies the integration of vast amounts of disparate content into Europeana and makes Europeana content better accessible, useable, suitable for repurposing and exploitable in the future. The work involved creating a repository of harvested semantic resources (such as vocabularies and classification schemes) from the Libraries, Museums and Archives community. It deployed 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. This creates a stable and rich layer of semantic data which will be the basis for all semantic processing in Europeana and at same time seamlessly integrates Europeana in the Linked Open Data paradigm.

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. This work was done in a perspective of making Europeana with its semantic resources an integral part of the Linked Open Data (LoD) web. In this perspective, linking is done preferably to LoD resources and the vocabularies migrated by EuropeanaConnect are made available as LoD where applicable, mappings to existing LoD resources are created wherever possible.

A semantic layer prototype running AMALGAME has been developed: http://semanticweb.cs.vu.nl/europeana/. Tool documentation is available at http://semanticweb.cs.vu.nl/amalgame/. Amalgame and XML-RDF are further documented in D1.3.1.

Testing and evaluation of developed services are documented in D1.5.1.

Furthermore, substantial contributions have been made to the specification and prototype testing of the Europeana Data Model (EDM) including the processing of a complex data set from the Staatsbibliothek zu Berlin combining bibliographic metadata and digitisation metadata provided in METS and PICA3 formats and including rich proprietary linking structures.

Multilingual Access to Europeana

EuropeanaConnect facilitates multilingual access to Europeana content by providing multilingual query translation as well as multilingual mapping of controlled vocabularies for browsing and searching within the Europeana Semantic Layer. Through the provision of multilingual access capabilities all content can be accessed by all Europeana users equally, regardless of their native language or the available native language resources.

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

To identify user needs in multilingual information environments, a report on user preferences and information retrieval scenarios for multilingual access in Europeana was produced.

The Europeana Language Resources Repository implemented in EuropeanaConnect collects and aggregates open-source and licensed language resources to be used via download or direct APIs in Europeana components.

Multilingual mapping of controlled vocabularies was carried out with an exploration of available resources in order 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 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 and 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 by time and location has meant the creation of a prototype of a spatio-temporal interface. It potentially provides a new visual access channel 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 Geoparser. It is aimed at more academic users and is not deployed in the current Europeana user interface.
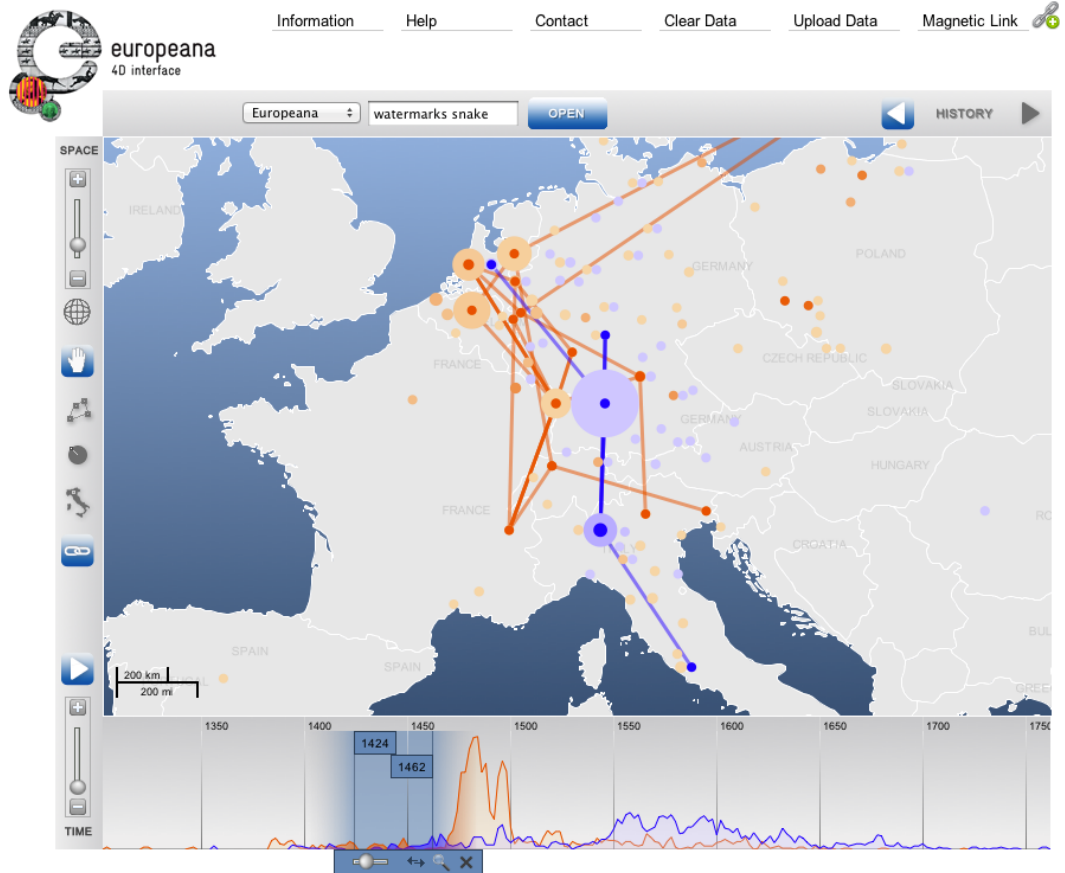
Giving users mobile access to Europeana is the second new access channel worked on. A generic mobile client, adapting to the capabilities and features of a user's mobile device has been developed and integrated in Europeana, allowing to search the Europeana database from a mobile device. Additionally, a rich client has been developed, enabling users to search for works inside Europeana around their current position. Also, basic navigation support has been included in the application, enabling users to find their way to the respective works on foot or by car. Further, it is possible to formulate advanced, faceted queries using the rich client, analogous to the Europeana web portal.

Licensing metadata use in Europeana

Clarifying the legal situation and suggesting licenses to content providers were key issues tackled by WP4 of EuropeanaConnect. 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 cumbersome and complex, but all tasks were delivered on time and endorsed by the Europeana Foundation.

Work has resulted in the publication of the Europeana Public Domain Charter in six languages http://version1.europeana.eu/web/europeana-project/publications plus the companion Public Domain Guidelines http://www.europeana.eu/portal/pd-usage-guide.html defining the community norms of the Europeana network. The Charter is endorsed by the Europeana Foundation and the European Commission and highlights the value of public domain content.

In October 2010, the Public Domain Charter was launched, plus a new way to mark public domain content in Europeana. This "Public Domain Mark" was created in cooperation with Creative Commons:

http://creativecommons.org/weblog/entry/23830

Related to the charter is the analysis of protection terms of 30 countries (EU plus Norway, Switzerland and Iceland) which was the basis of the development of the "Public Domain Calculator", available (with all supporting research) at http://www.outofcopyright.eu. The calculator guides expert users through a set of questions, which, if answers can be provided, results in a calculation of the public

domain status of the item. Care must be taken to ensure that all layers of rights are calculated separately. Initially, only 6 countries were planned to be analysed, but mid-term of the project, this was extended to 30 countries.

Another addition to the initially planned work were the "Terms of use for User Generated Content". These are deployed in the key pilot, the 1914–1918 collection: http://www.europeana1914-1918.eu/en/about/terms.

The key outcomes of WP4 are the contracts regulating the re-use of descriptive metadata: An initial set of Europeana Data Provider and Data Aggregator Agreements
(http://www.europeana-libraries.eu/web/europeana-project/newagreement/) had been produced to govern relationships between Europeana and its partners. These initial agreements were critically reviewed against the "New Renaissance Report" and the "Europeana strategic plan 2011–2015", leading to the drafting of a new, single "Data Exchange Agreement" [DEA] mid-term in the project, the main difference being that the new "Data Exchange Agreement" abandons the non-commercial use only restriction. Apart from being a simpler, single agreement, it is complemented, as is the Public Domain Charter, with non-binding metadata use guidelines:

http://www.version1.europeana.eu/web/europeana-project/newagreement.

Translations of the "Data Exchange Agreement" and its metadata guidelines will be provided in ten languages, the English original will remain the only binding document.

In order to communicate this essential shift in Europeana's strategy, a feedback process as well as a large number of targeted workshops and presentations with the community were organised, in close cooperation with the Europeana Office. This process is described here:

http://www.version1.europeana.eu/web/europeana-project/newagreement-consultation/

In September 2011, the Europeana Foundation endorsed the new DEA and after a transition period, all metadata are planned to be available under the new rules by July 2012. CENL and EUScreen have also adopted the key licensing mechanism of the new agreement ("Creative Commons Zero 1.0 Public Domain Dedication"), creating a critical mass of openly licensed cultural heritage metadata.

The adoption of the "Data Exchange Agreement" by Europeana does not remove the need for continued explanation and awareness raising of the potential and risks of open metadata licensing. Therefore the Bibliothèque Nationale de Luxembourg is providing funds of its own to ensure that parts of the WP4 team remain responsive to any community requests until the forthcoming Europeana Awareness project (currently in negotiation) takes over this task.

A third strand of work was added to WP4 mid-term. It became clear that rights clearance for content was hitting serious roadblocks for cross-border access, even in the context of the forward-looking approach of extended collective

licensing (ECL). Thus an analysis of the ECL approach in respect to fundamental copyright law and treaties was undertaken, focussing on cross-border clearance options. This work will be built upon in the forthcoming Europeana Awareness project.

Integrating software and services in Europeana

Essential behind the scenes work has extended the technical capabilities of Europeana. Additionally, EuropeanaConnect provides 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.

- The YUMA Universal Multimedia Annotator (YUMA) suite will provide Europeana with annotation capabilities for audio and video content, images and maps. We have developed an online media annotation suite, available at: http://dme.arcs.ac.at/annotation/.

- An evaluation platform (COMPASS) for the Map Annotation Tool was developed (http://compass.cs.univie.ac.at/).
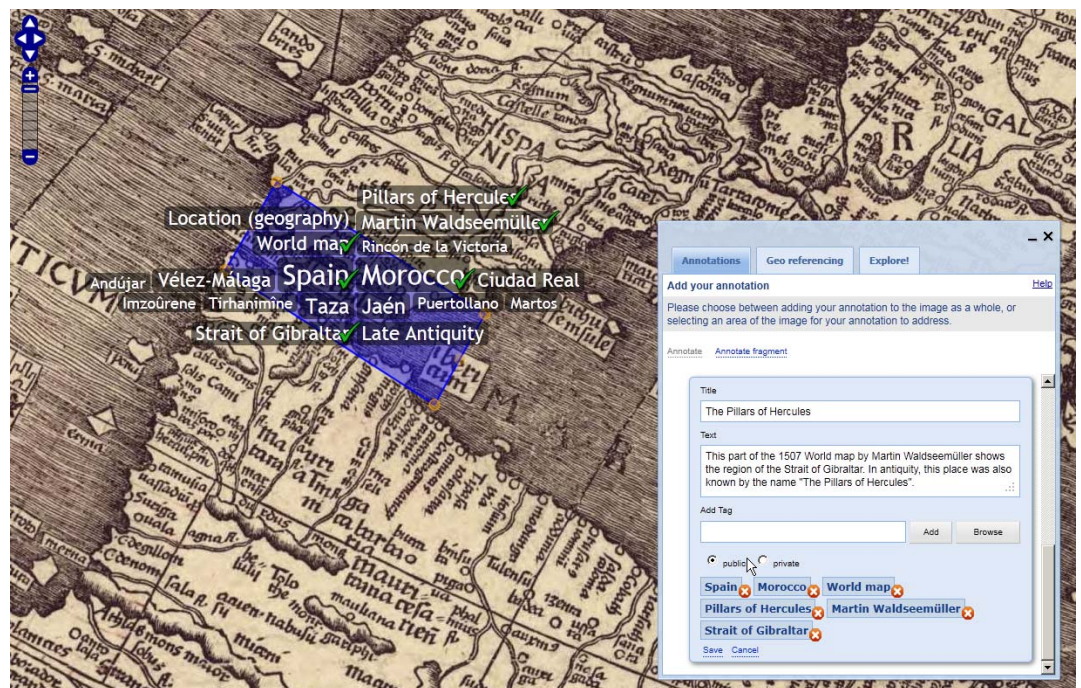
- A 'demonstrator' shows how ordering of Print-on-Demand books can be integrated into the Europeana portal. To this purpose, the EoD (eBook-on-Demand) Service Network (http://books2ebooks.eu/) has been extended significantly and a connector has been implemented to allow Europeana to harvest metadata of already digitised books.
- The EoD connector will allow automated and generic transfer of eBooks created within the EoD network to the Europeana Portal and thus enable the ordering of eBooks-on-Demand in the future.

An important back-end development for Europeana is the REPOX software which automates the process of adding content metadata to Europeana via OAI-PMH.

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.

To facilitate communication in the technical and scientific communities, three targeted workshops were organised by EuropeanaConnect:

- A workshop on Persistent Identifiers with participants from a number of European projects, held on 17–18 February 2010 at the German National Library in Frankfurt/Main, Germany.
  http://www.europeanaconnect.eu/results-and-resources.php. » Report on the European Resolution Discovery Service (ERDS) Meeting (workshop report)

- A workshop on Geographical and Mobile Interfaces, with the title "EuropeanaConnect Cross-Project Networking Workshop on Place, Cultural Heritage and the Internet", held in November 2010 at AIT in Vienna, Austria.
  http://dme.ait.ac.at/workshop2010/ (workshop website).

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

Adding music audio to Europeana

EuropeanaConnect adds the music dimension to Europeana. The DISMARC-EuropeanaConnect Audio Aggregation Platform (the AAP - http://www.dismarc.org) prepares and delivers audio and related text, images and video items to Europeana, and offers any content owner the possibility of managing his/her content.

By the close of the EuropeanaConnect project, approximately 350,000 items had been harvested by Europeana from the AAP.

Audio Aggregation Platform – www.dismarc.org

During the EuropeanaConnect project new audio collections were constantly aggregated.

A virtual Audio Exhibition was developed for presentation on the AAP (http://econnect.ait.co.at/wedding-exhibition/) and it is now also presented by Europeana (http://exhibitions.europeana.eu/exhibits/show/weddings-in-eastern-europe/themes). The exhibition delivers content from several EuropeanaConnect partners on the topic 'Weddings in Eastern Europe' and includes audio, text, images and video.

Behind the scenes, and in support of the aggregation of content to Europeana, an array of tools for content management was developed. These tools enable content owners to manage their data online in real time, and also allow content

owners/registered users to add comments and additional information about particular items.

'Highway to Europeana' virtual server USB card

The Audio Aggregation Platform can be fully or partly deployed on a 'virtual machine' which requires only a computer system with an internet connection. The virtual machine provides a fully-operational system which can be used either as an OAI Data Provider to the Audio Aggregation Platform, or as another Audio Aggregation Platform (i.e. as a sub-node). The software includes a VMware player and is distributed on a standard USB device (a USB card).

All necessary resources required by an archive which uses its own server and which wishes to establish an OAI-Data Provider are contained on the USB card. The USB card (with 8 gigabytes of software) is available on demand, at no cost. The existence of the card is disseminated via the AAP Newsletter, suitable workshops and via various on-line outlets including the WP6 Moodle. The system software can also be downloaded at no cost.

Moodle – http://moodle.ait.co.at

A Cultural Content Management Moodle was developed as a tool to support audio archives in joining Europeana as content providers via the EuropeanaConnect/Dismarc Audio Aggregation Platform. Partners also created a supply of resources (http://www.dismarc.org/info/resources.html) for content owners, to help them over any hurdles they may encounter during the aggregation process. These resources include a Guide to the Audio Aggregation Platform, a Guide to Copyright for Archives, a Starter Kit for joining archives, dissemination material and profiles of participating archives. A number of hands-on workshops were also held during the project period, and videos were created to support and disseminate the use of the AAP.

Publicising the work of EuropeanaConnect

The work of the project is thoroughly documented on its website.

In October 2011 the project's dissemination work culminated in a major conference, EuropeanaTech, organised in partnership with Europeana Foundation. It explored technical challenges of making digital cultural and scientific information attractive and easily accessible for the public and continued the process of building the community of technical and scientific experts in the field. A Hackathon associated with the conference resulted in useful developments both of software prototypes and future relationships.

Publications about EuropeanaConnect

Here is a selection of publications that arose from the work of the project.

- 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, pp 659–662. IEEE Computer Society, Los Alamitos, CA, USA.

- 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.

- 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.

- C. Concordia, S. Gradmann, Sjoerd Siebinga (2010)
  Not just another portal, not just another digital library: A portrait of Europeana as an application program interface. In: International Federation of Library Associations and Institutions 36(1), pp. 61–69, (http://dx.doi.org/10.1177/0340035209360764).

- 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, p 39ff, at FLaReNet Forum, Barcelona, 11–12 February 2010, http://www.flarenet.eu/sites/default/files/FLaReNet_Forum_2010_Proceedings.pdf.

- G.M. Di Nunzio, J. Leveling, T. Mandl (2011)
  Multilingual Log Analysis: LogCLEF. In: P. Clough, C. Foley, C. Gurrin, G. Jones, W. Kraaij, H. Lee, V. Murdoch (eds.) Proc. 33rd European Conference on IR Research (ECIR 2011), Lecture Notes in Computer Science, Springer (in print).

- 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.

- 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 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/oaei09_paper0.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. Freire, J. Borbinha, P. Calado (2011)
A Language Independent Approach for Aligning Subject Heading Systems with Geographic Ontologies, International Conference on Dublin Core and Metadata Applications 2011.

- N. Freire, J. Borbinha, P. Calado (2011)
A Language Independent Approach for Named Entity Recognition in Subject Headings, International Conference on Theory and Practice of Digital Libraries 2011.

- M. Gäde, V. Petras, J. Stiller, (2010)
Which Log for Which Information? Gathering Multilingual Data from Different Log File Types. Multilingual and Multimodal Information Access Evaluation. International Conference of the Cross-Language Evaluation Forum, CLEF 2010. M. Agosti, N. Ferro, C. Peters, M. de Rijke and Smeaton. Padua, Italy, September 2010, Springer. LNCS 6360: 70 – 81.

- M. Gäde, J. Stiller (2011)
Multilingual Interface Usage. Information und Wissen: global, sozial und frei? Proceedings des 12. Internationalen Symposiums für Informationswissenschaft. Boizenburg: Hülsbusch Verlag, 503–504.

- S. Gradmann (2010)
Knowledge = Information in Context. On the Importance of Semantic Contextualisation in Europeana. Europeana White Paper 1. http://www.scribd.com/doc/32110457/Europeana-White-Paper-1.

- 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.

- B. Haslhofer, E. Momeni, M. Gay, R. Simon (2010)
  Augmenting Europeana Content with Linked Data Resources; in:
  "Proceedings of the 6th International Conference on Semantic Systems I-
  Semantics 2010", published by: ACM New York; ACM, New York, 2010.

- 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/.

- B. Haslhofer, R. Simon (2011)
  Historic Map Annotations with YUMA; "Using the OAC Data Model for
  Sharable Annotations Workshop", Chicago, IL, USA; 24.03.2011 –
  25.03.2011; "Using the OAC Data Model for Sharable Annotations
  Workshop", T. Cole, J. Hunter, J. Smith, H. Van de Sompel (ed.); (2011),
  Paper-Nr. 9.

- S. Hennicke, M. Olensky, V. de Boer, A. Isaac, J. Wielemaker (2011)
  A data model for cross-domain data representation. The Europeana Data
  Model in the case of archival and museum data. Proceedings of the 12th
  International Symposium on Information Science, (ISI 2011), March 9–11,
  2011, Hildesheim, Germany.

- A. Huckstorf, V. Petras (2011)
  Mind the lexical gap – EuroVoc Building Block of the Semantic Web.
  Information – Wissenschaft und Praxis 62 (2–3), 125–126.

- 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

- 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

- J. van Ossenbruggen, M. Hildebrand, V. de Boer (2011)
  Interactive Vocabulary Alignment. In: Research and Advanced Technologies
  for Digital Libraries. Proceedings of TPDL 2011 (=LNCS 6966), pp. 296–307.

- 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=GUID
  E&type=series&idx=SERIES968&part=series&WantType=Proceedings&title=
  WWW&CFID=90698807&CFTOKEN=83625318

- R. Simon, B. Haslhofer, W. Robitza, E. Momeni Roochi (2011)
Semantically Augmented Annotations in Digitized Map Collections in:
ACM/IEEE Joint Conference on Digital Libraries (JCDL), June 13–17, 2011,
Ottawa, Ontario, Canada (in print).

- R. Simon, J. Korb, C. Sadilek, M. Baldauf (2010)
"Explorative User Interfaces for Browsing Historical Maps on the Web"; e-
Perimetron, 5 (2010), http://www.e-perimetron.org/Vol_5_3/Simon_et_al.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

- 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, part of the "5th IEEE International Conference on e-Science"
http://www.oerc.ox.ac.uk/ieee, p.139, December 9–11, 2009, Oxford, UK.
(PDF)

- R. Simon, C. Sadilek, J. Korb, M. Baldauf, B. Haslhofer (2010)
Tag Clouds and Old Maps: Annotations as Linked Spatiotemporal Data in the
Cultural Heritage Domain; in: "Proceedings of the Linked Spatiotemporal Data
Workshop", K. Janowicz, T. Pehle, G. Hart, P. Maué (Hrg.); LSTD 2010
GIScience; USB Tagungsband, Zürich, 2010.

- R. Simon, B. Haslhofer, J. Jung (2011)
Annotations, Tags & Linked Data – Metadata Enrichment in Online Map,
Collections through Volunteer-Contributed Information; 6th International
Workshop on Digital Technologies in Cartographic Heritage, The Hague;
07.04.2011 – 08.04.2011; in: "6th International Workshop on Digital
Technologies in Cartographic Heritage", D. Fairbairn, G. Gartner, E.
Livieratos (ed.) (2011), Paper-Nr. 3.

- R. Simon, J. Korb, C. Sadilek, M. Baldauf (2010)
Explorative User Interfaces for Browsing Historical Maps on the Web; 5th
International Workshop on Digital Approaches in Cartographic Heritage,
Wien; 22.–24.02.2010; in: "5th International Workshop on Digital Approaches
in Cartographic Heritage".

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

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