

# ECP 2006 DILI 510049 ENRICH

# **Annual Report**

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eContentplus

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## 2 **Project Objectives**

The aim of the ENRICH project is creating a base for the European digital library research environment for study of specific historical cultural heritage consisting of manuscripts, incunabula, early printed books, historical archival materials, etc. The project objective is integration of existing but scattered electronic content under the existing Manuscriptorium (*http://www.manuscriptorium.com*) digital library interface through the way of the metadata enrichment and coordination between heterogeneous metadata and data standards as well. The main innovation of ENRICH is in a common easy-to-use interface which enables concentration of dispersed resources into a unique research environment and retrieval of data from distant servers. The repository owners (libraries, archives) can use their own existing platform. The Manuscriptorium platform will practically verify the possibilities of using the existing (mostly image) data from remote servers for seamless access. ENRICH and Manuscriptorium platform enable sharing of data repositories (distributed storage) and detailed metadata and search from a single access point without a need to switch to other websites with different interfaces made in different languages. The Manuscriptorium platform will enable creation of personalized metadata and data packages.

The possibilities of application of modern tools for automated translation of metadata and multilingual search engine are being tested over existing data and metadata provided by all participating content owners. ENRICH will exploit multilingual ontologies developed by SYSTRAN in VICODI project.

From the exploitation point of view, the integrated resource is designated both for the professional and expert heuristics and for the use of the general public. Thus, a very complex subset of a European Digital Library can be created for specific group of documents and specific target user group. This will surely enrich the existing EDL.

#### The main objectives of ENRICH are:

1. creation of European digital library research environment for specific historical cultural heritage consisting of manuscripts, incunabula, early printed books, historical archival materials, maps, etc.

2. adaptation of existing Manuscriptorium platform for accessing, use, re-use and data **harvesting of digitized manuscripts** held by libraries, museums and archives in EU Member States, Associated States, Candidate Countries, and other European countries which will enable interoperability between digitized objects and collections

3. adaptation of existing Manuscriptorium platform enabling interoperability of existing partner systems for authorizing the use of the digital content

4. **implementation of multilingual ontologies enabling** search in local languages, retrieval of data in source languages, enabling personalized indexing and creation of personal collections and presentations

#### Contribution to programme objectives

ENRICH will contribute to the enrichment and interoperability of the vast amount of regional heritage resources available. ENRICH is a targeted project mainly directed toward aggregating and harvesting content enhancing its visibility and re-use, it will also contribute greatly to the establishment of an enabling infrastructure supported by existing standards and integrated into TEL.

Through working together with national-level cultural institutions, ENRICH will take a step toward a Single European Information Space where content held at national and local levels can be accessed **interoperably**. The potential for **cross-border use** will be greatly enhanced by provision of a **single access point and common top level navigational interface** providing a European view of cultural resources 'where they live' and also according to their theme, across different regions.

Carrying out the work at European level has very substantial value in the context of accessible and sustainable cultural heritage preservation but also through the development of crossborder services and activities (e.g. CENL, TEL, etc). The partners in each country are in a strong position to advocate and support implementation and roll-out of the service and have specific experience of the application through research and pilot projects.

The activities to be carried out within **ENRICH** project aim to contribute to the objectives of the EU Policy for growth and jobs (Lisbon strategy), the EU framework policy in the domain of information technologies, particularly i2010 and are based on experience and recommendations acquired within eEurope 2005 action plan. In particular ENRICH will contribute to the Communication on **European Digital Library**.

Among the significant challenges identified in i2010 for the Single European Information Space to which ENRICH will contribute are:

- rich content: increased quality of digitized resources and related metadata
- interoperability: for the use of data external to Manuscriptorium, there are tools for accessing and sharing metadata in standard formats (UNIMARC, MARC21, MASTER, TEI P5...) via standard communication interfaces, Z39.50, OAI-PMH.
- re-usability: ENRICH platform will enable creation of personal collections and sets of documents and metadata
- multilingual approach: ENRICH provides an environment for multilingual search and automated translation of metadata

By working together with national libraries and memory institutions which are involved in initiatives such as CENL and The European Library (TEL), ENRICH will be well placed to achieve synergies with these key initiatives for EDL. Manuscriptorium has been cooperating closely and successfully with TEL and this cooperation will continue. Therefore EDL will directly profit from the enhancement of the digital content realized within ENRICH project.

ENRICH will increase quality of life of citizens in the area of cross-border multilingual access to a specific type of cultural heritage the access to which used to be a privilege of a small group of researchers. ENRICH will thus contribute to complement and support the objectives of European Union action in the field of culture.

#### 3 Consortium

The consortium is coordinated by **National Library of the Czech Republic, Prague, Czech Republic (NKP)**, a world leading institution in digitization and presentation of digitized manuscripts. NKP in cooperation with the technical coordinator AIP Beroun developed the original version of Manuscriptorium, which was a basis for the whole ENRICH project. National Library of the Czech Republic is also the most important content provider with more than 900 000 pages of digitized documents. National Library if the Czech Republic combines 3 roles within the project – the coordinator (assisted by Cross Czech a.s. and AIP Beroun s r.o.), the member of technological group applying its experience within the Manuscriptorium development and participant in the tools development and implementation and the content provider, using the developed tools for improving the quality, quantity and accessibility of maintained digital content. NKP will therefore actively participate in all workpackages, leading WP1 and WP2.

**Cross Czech a.s., Prague, Czech Republic (CCP)** is the administrative coordinator of the project. It closely cooperates with NKP and AIP, monitors the overall project development, fulfillment of established deadlines and assurance of the quality of the project results. CCP participates in dissemination activities and administrates the project webpage. CCP also cooperates on several technical WPs related to the research of end-users needs and multilingual accessibility of the digital content.

**AiP Beroun s r.o., Beroun, Czech Republic (AIP)** has been the developer and administrator of Manuscriptorium for many years since its foundation. In frame of ENRICH project AIP holds the position of Technological Coordinator. AIP is involved in all technological WPs, leading the WP5. AIP cooperates with all content partners, provides them consultations during the preparation phase of their infrastructures, data and metadata. After agreement of the way of cooperation AIP assures the integration of partners' data into Manuscriptorium clone (and later to regular Manuscriptorium). AIP applies the ENRICH TEI P5 scheme developed in frame of WP3 and integrates it to the Manuscriptorium platform. AIP is also leading partner in the development of the new functionalities and tools created under WP4 and WP5.

**Oxford University Computing Services** –**The Research Technologies Service, Oxford, UK** (**OUCS**) is one of the core technological partners. It brings its know-how according harvesting metadata, TEI P4/TEIP5 platforms, MASTER platforms, METS containerization and UNICODE treatment. OUCS will is the leader of WP3 in close cooperation with KU. It also valuably contributes to other technological work packages, mainly to WP4 and WP5.

**Københavns Universitet - Nordisk Foskningsinstitut, Copenhagen, Denmark (KU)** is a combined partner, delivering to the ENRICH project valuable digitized content and experienced expertise in the area of digitization of historical documents and data/metadata processing, contextualization etc. KU cooperates on WP3 leadership with OUCS. It participates in all WPs by technology and content development and adaptation, including multilingual accessibility of the provided digital content.

**Universita degli studi di Firenze - Media Integration and Communication Centre, Florence, Italy (MICF)** is a member of technological group and focuses on user personalization of virtual digital collections and implementation of intelligent search engines working above accessible metadata. MICF is the leader of WP4, close cooperating with PSCN. MICF ensures the close cooperation with other technological WP5, mostly WP3 and WP5.

**Institute of mathematics and informatics, Vilnius, Lithuania (IMI)** is the next member of the technological group. Its main responsibility is in the leadership of WP7, focusing on testing and validation of developed tools and services. The strong cooperation with all partners is necessary to ensure successful completion of this WP; therefore apart of the definitions of methodology and

strategy for evaluation the realization of the planned works will require also certain organizational efforts. IMI also partially contributes to other technological and to dissemination activities.

**SYSTRAN S.A (SYS)** is the world leading company in automated translation tools development and implementation, cooperating with numerous institutions around the world. Its main responsibility within ENRICH project is the leadership of WP6 – development and implementation of multilingual access tools, with the use of VICODI ontologies for the contextualization of the digital content previously developed within other EC funded project. Systran also partially contributes to other technological WPs (mainly WP5 and WP7).

#### Computer Science for the Humanities - Universität zu Köln – UZK has a special status. It has

considerable experience with web based servers of cultural heritage material and focuses concretely on the question of general interfaces for the provision of the MASTER (or now TEI P5) exchange via OAI. It is a technological contributor in all fields of web based services, as well as liaising between technology and the Cultural Heritage sector, i.e. mostly WPs 3, 4, 5 and 7. Furthermore, UZK will provide reasonable amount of digitalized documents (450 000 images) to ENRICH project.

**Instytut Chemii Bioorganicznej PAN - Poznańskie Centrum Superkomputerowo-Sieciowe – Poznan Supercomputing and Networking Center (PSNC)** is the last member of technological group. PSCN is the leader of tasks 4.1 and 4.2 related to its research on distributed dynamic collections and "grid publications" in digital libraries. PSNC contributes to remaining technological WPs except WP6 (multilingual access).

**The National Library of Spain, Madrid (BNE)** is the leader of WP8 – Dissemination and Exploitation. It was responsible for the creation of promotional materials, cooperated on the design of the webpage and preparation of Dissemination Plan. It monitors the dissemination activities carried out by all partners and will organize the final project conference. BNE will also contribute with substantial amount of digital content to the ENRICH project and therefore cooperates on all WPs except WP3as a content provider.

#### **Content providers**

The remaining partners can be characterized as **"content providers"** which will make their digitized documents available via ENRICH interface. These partners have quite similar roles, contributing mostly to WP2 and WP7 and partially to WP4, WP5 and WP6. All of them also carry out the standard dissemination activities within their countries and in the frame of consortium international activities. The content partners of ENRICH project are as follows:

- Biblioteca nazionale centrale Firenze, Florence, Italy (BNCF)
- Vilniaus universiteto biblioteka, Vilnius, Lithuania (VUL)
- University of Wroclaw, Poland (ULW)
- Stofnun Árna Magnússonar í íslenskum fræðum, Reykjavík, Iceland (SAM)
- Diözese St. Pölten, Austria (DSP)
- The National and University Library of Iceland, Reykjavík, Iceland (NULI)
- The Budapest University of Technology and Economics National Technical Information Centre and Library, Hungary (BUTE)

# 4 Project Results/Achievements

Major ENRICH achievements during the first year of the project realization were the following:

- The creation of the TEI P5 ENRICH schema and its documentation the outputs of this task influence many other tasks especially those related to search and personal libraries, connectors' output structure and structure of translated records and related translation stylesheet. The documentation is available for public download at the enrich website in the section "Products"
- The decision to fully apply the ENRICH schema within the Manuscriptorium presentation platform
- The readiness of tools and services dedicated to large-scale sources aggregation
- Full integration of selected partners into the routine Manuscriptorium services as a result of preceding tasks; the integration was accomplished with associated partners using two different and typical ways of cooperation this provides good results for demonstration and dissemination purposes
- The readiness of the content partners for content aggregation which after initial processing of characteristic samples will now enable more extensive aggregation (first presentable large-scale results are expected by the end of January 2009); most recent results are available in the testing environment which is not available for public
- Realization of the pilot solution for personalized library features in WP4 the successful completion of collections related tasks was possible due the carefully performed end-users surveys and subsequent analyses; the implemented features provide new ways of usage of the aggregated content.
- Integration of SYS API into the Manuscriptorium platform adds the multilingual features to the end-user interface the API is available and necessary translation stylesheets are prepared; also there is a dedicated translation interface where ENRICH expert users fine-tune dynamically the machine translation available
- Development of a new engine for the Manuscriptorium presentation platform it enables successful realization of many related tasks including development pilot solutions for personal collections and deep searching and the multilingual features integration
- Establishment of the contacts with the numerous institutions and convincing them to become associated partners of the project and potential content contributors. At the moment more than 30 libraries from Europe and Asia expressed their willingness to become associated partners and some of them already actively started cooperation

### 5 Target Users & their Needs

User related aspects as they are understood in the frame of the ENRICH project are twofold: the aspects concerning users-partners (full and associated partners as well) and those concerning end users-researchers, teachers, students and general public (end users).

The most important issue in relation to the users-partners is method of aggregating documents. There are three basic ways how to do it.

The first way is harvesting via communication protocols, especially OAI-PMH. The metadata profiles were/will be agreed (where the OAI service is already implemented in the partners digital library/where the OAI service is not yet implemented but where will be implemented during the advance of the ENRICH project) that are the most appropriate for the connection between partner's repository and Manuscriptorium, resp. clone of Manuscriptorium.

The second way is off-line processing of metadata exports. For both the above ways an individual connector i.e. technical tool that performs metadata conversions according to individual partner's collection properties, its metadata content, structure and formats. The specific connector must be created for each individual partner due to high heterogeneity of the individual digitization approaches.

The third way is the use of a special tool (M-TOOL) that enables partners having data (images) without metadata to create the missing metadata information. At present off-line version of M-Tool is available for download at the project webpage, during the progress of the ENRICH project the on-line version will be ready. Creation of a new on-line version is important especially from two points of view: it will enable users-partners to affect its functionality (will better suit their collections needs and particular digitization projects attributes) and it should be more suitable for writing diacritical characters.

The most important issue in relation to the end users – researchers, students and interested public is making the aggregated content accessible under the single interface of Manuscriptorium platform. The survey was carried out in order to find out their preferences related to creation of personalized collections, which resulted into definition of requirements for the creation of personalized virtual digital libraries". The pilot tools enabling creation and use of individual virtual collection and virtual document are under development in the dedicated Manuscriptorium clone and will be integrated into standard Manuscriptorium after their testing and final approval by the technical coordinator.

## 6 Underlying Content

The latest information about the number of aggregated documents are provided in the Manuscriptorium Clone section of the ENRICH project website.

After the first year of duration of the project the individual partners prepared more or less extensive amount of digital documents (depending both on the number of documents declared to aggregate and on the level of partners initial readiness – some partners had to resolve demanding mostly technical issues before they could start to contribute) and these documents were prepared in the Manuscriptorium clone.

Two associated partners were fully integrated and are presented within the routine service of Manuscriptorium. The other partners' metadata are tested in the clone. The first part of the content aggregation performed in the first year focuses in verification of data availability and structural metadata content validation – e.g. the crucial aspects of readiness of partners are in focus. The following steps include the subsequent descriptive metadata conversions and their fine-tuning.

Source	Number of documents	Number of page images
NKP	166	58 077
IMI	56	1 223
ULW	758	56 327
VUL	165	165
SAM, NULI, KU	21	3 551
DSP	42	16 678
BNE	301	14 546
BUTE	26	3 300
BNCF	305	62 264
UZK	255	91 414
National Library of Romania	72	12 798
Heidelberg University Library	570	190 419
Manuscriptorium	3 170	973 643
TOTAL	5 907	1 481 105

The digital content aggregated in the Clone by the end of the first year of project duration:

With the exception of the emphasized sources all the documents were aggregated in the Clone pre-routine environment. The structural metadata and availability of data in the Manuscriptorium platform end-user interface was verified. The descriptions of the documents are under conversion to TEI P5 and will be available as soon as the migration of the platform to TEI P5 will be finished.

## 7 Summary of Activities

The project realization in the first year in general followed the plan as described in the Description of Work and contracted with the EC. The project management structures, decision making processes and communication channels were established and proven functional. From the management point of view no crucial problems were observed.

The technical works are carried out under continuous supervision of AIP Beroun. The new tools and features are being tested in the dedicated Manuscriptorium Clone which is not publicly available at the moment as it is. The idea originated in the beginning of the project as natural answer to the need of testing of new features, processes and aggregated documents. As Manuscriptorium is a routine service and its accessibility has to be guaranteed it would be unsafe to test new features within its routine environment. That is the reason why the Clone originated. It is originally an exact copy of the Manuscriptorium server system – including the data content. It enables in particular:

- testing of the engine with improved UNICODE treatment as produced in WP3
- testing of new cooperation processes especially harvester implementation in WP3
- testing of new end-user features and interface modifications produced in WP4
- testing of aggregation of particular collections and conversion results testing in WP5
- testing of multilingual features produced in WP6

All new features tested in the Clone and considered as final are easily moved to the routine Manuscriptorium. The same applies to finalized aggregated collections.

Data and metadata standards used by content partners were identified and summarized, work on definition of metadata standards was carried and missing metadata regarding digital objects have been created. Conversions of available metadata into TEI Specification for ENRICH started to be developed. Partners (full and associated as well) who do not have available the descriptive metadata started to create them routinely using the standalone M-Tool. The cooperation with content partner will continue in agreed way according to their technical capabilities in order to prepare their collections for full integration into Manuscriptorium.

The **TEI P5 ENRICH schema and its documentation were prepared** under leadership of OUCS and the decision was made to fully apply the ENRICH schema within the Manuscriptorium presentation platform. The specifications including the training materials can be downloaded from the public part of the ENRICH webpage (Products section). The migration tools are being developed and tested. Improvement of UNICODE treatment is one of the major tasks in WP3 for the second year of ENRICH project.

Analyses of user requirements lead to the development of a **pilot that was set available for a first phase of testing in the Manuscriptorium clone.** The pilot enables registered users to create and use both Static and Dynamic Collections. The same tools enable to prepare personal collections and common collections. The designing of search fields for the Manuscriptorium platform will reflect the changed metadata structure. Manuscriptorium will also be updated with a monitoring tool that creates log file in a XML format in order to be able to record end-users actions and analyze them.

The aggregation of the digital content provided by regular and associated partners who will provide large document sets is in progress and **two selected partner's sources were processed and successfully included into the routine service of Manuscriptorium**. The cooperation with the other partners is running and current goal is to aggregate approx. 308 000 of images prepared by the regular content partners by the end of January 2009. All the results will be presented in the **Manuscriptorium clone** until all aspects of the migration to TEI P5 will be tested and fine-tuned and the TEI P5 based clone will replace the MASTER+ based regular service. The current stage of M-Tool development shows that

ENRICH will be able to present real results in M15 and therefore a workshop is planned for the end of March 2009 where the M-Tool will be introduced to new potential partners.

The multilingual web service http://enrich.systran.fr/ was created. Based on the feedback of the content partners SYSTRAN constructed the first version of the SYSTRAN **Translation Stylesheet** according to the content partners' requirements. The Corpus Analysis is described to the Deliverable 6.1 Corpus Analysis which is publicly available at project website. The **implementation of SYS API** into the Manuscriptorium platform was completed by AIP recently. The multilingualism of the Manuscriptorium environment is now significantly improved by dynamic translations of the available content. The works on improving VICODI ontologies and their implementation have been started.

The *Methodology for Testing and Validation of e-Applications* was completed in frame of WP7 and the testing of the first project results has started recently. The pilot trial to evaluate the usability of the project web site as a collaborative environment has been performed. The results were taken into account when updating the webpage. The next testing what was performed concerns **M-Tool** (off-line version). The trials of the system evaluation corresponding to the various sub-tasks are going to be performed by the partners in cooperation with Technological group at <u>www.musicalia.lt/eta/</u> where the prototype for evaluation is created by IMI. The quality evaluation covering the assessment of all aspects of tools, services, language groupings, and will be carried out further in permanent partnership with all partners in future months as soon as results will be available for evaluation.

The variety of dissemination and awareness actions was carried out including the numerous presentations of the project on national and international events, production of project leaflets, logo and presentations and launching the project webpage. The workshop for associated partners will be organized in Vilnius in March 2009. The national workshops should be organized in each country during the year 2009 and the final conference is scheduled for 5.-6.11.2009, Madrid. The dissemination activities related to acquiring additional potential content contributors and making them associated project partners were quite successful due to active approach of ENRICH partners. At the moment the relations were established with more than 30 libraries worldwide.

### 8 Impact & Sustainability

The impact of the ENRICH project so far is limited because the major tools and newly developed functionalities of the Manuscriptorium platform are still under development and have not been publicly available yet. However the first results directly affecting the target groups can be observed in four main areas:

- a relatively high number of documents was aggregated during the first year of advance of the ENRICH project. Some of them are homogeneous historic collections (e.g. UL Heidelberg – Codices Palatini Germanici), some of them are typical representatives of appropriate collections (e.g. Biblioteca Nazionale Centrale Florence, National Library Bucharest, University Library Wrocław), some of them are based on already integrated resources (e.g. University Cologne – Verteilte Inkunabelbibliothek).
- 2) Relatively wide part of Europe was covered by full and associated ENRICH partners during the first year of advance of the ENRICH project, i.e. Czech Republic, Slovakia, Poland, Lithuania, Hungary, Austria, Germany, Romania, Moldova, Iceland, Denmark, Italy, Spain, Turkey. As for there are actual and potential associated partners as well also in Sweden, Serbia, Former Yugoslav Republic of Macedonia, Latvia, Belarus, Russia and as for we have first contacts also in other European countries (United Kingdom, Ireland, France, Portugal, Belgium, Switzerland, Slovenia), the ENRICH goal which is to built a European Digital Manuscript Library is real.
- 3) Thirdly, there are some countries (e.g. Austria, Romania, Former Yugoslav Republic of Macedonia) that started with systematic web presentation of their manuscript heritage just in frame of the ENRIH project. It is very important for further dissemination of a European Digital Manuscript Library that started to be integrated through the ENRICH project.
- 4) Fourthly, there are some European countries not yet covered by contacts in frame of the ENRICH project (especially Finland, Norway, Estonia, Liechtenstein, Netherlands, Luxembourg, Bulgaria). The consortium of ENRICH partners will try during the second year of the projects advance to find contacts also in memory institutions of these countries.

Sustainability of the ENRICH project is based on the actual Manuscriptorium service. An essence of the Manuscriptorium service is standardization of data and metadata as well. If standards are observed, data input can be automated and consequently it does not matter how big amount of data and/or metadata is input. The Manuscriptorium has been operated by National Library of Czech Republic for many years in cooperation with AIP Beroun and this operation will be maintained even after the end of ENRICH project. The content partners will keep providing the data via Manuscriptorium. The ways of their more intensive participation on the Manuscriptorium operation and maintenance will be sought through the second year of ENRICH project.

## 9 Further Information

#### 9.1 The current list of associated partners of ENRICH project and potential Manuscriptorium contributors:

- Royal Library National Library, Stockholm Sweden
- National Library of Moldova, Kishinev, Moldova
- National Library of Kazakhstan, Almaty, Kazakhstan
- National Library of Serbia, Belgrade, Serbia
- University Library Carol I, Bucharest, Romania
- Serbian Academy of Science and Arts, Belgrade, Serbia
- Faculty of Natural Sciences and Mathematics, Skopje, Macedonia
- National Library of Romania, Bucharest, Romania
- National Library of Latvia, Riga, Latvia
- National Library of Turkey, Ankara, Turkey
- Library of the Lithuanian Academy of Sciences, Vilnius, Lithuania
- University Library Budapest, Hungary
- University Library Bratislava, Slovakia
- Central Library of the Slovak Academy of Sciences, Bratislava, Slovakia
- Lyceum Library Kežmarok, Slovakia
- National Library Warsaw, Poland
- National and University Library Zagreb, Croatia
- Odessa State Research Library, Odessa, Ukraine
- CIMEC, Bucharest, Romania
- University Library Szeged, Hungary
- National Library of Korea, Seoul, Korea
- University Library Heidelberg, Germany
- Patrimonio Nacional Real Biblioteca, Madrid, Spain
- University Library Minsk, Belorussia
- University Library Toruń, Poland
- University Library Lund, Sweden
- University Library Debrecen, Hungary
- Latvian Academic Library, Riga, Latvia
- Library in Zielona Gora, Poland



Diözesanarchiv St. Pölten



# ENRICH

#### **European Networking Resources and Information concerning Cultural Heritage**

(Dezember 2007 – November 2009)

Mit einem "Kick-off-Meeting" in Prag startete am 3. Dezember 2007 ein im Rahmen des eContentPlus Programms angesiedeltes EU-Projekt namens ENRICH mit Partnern aus 12 europäischen Ländern.

Ziel dieses Projektes ist die Schaffung einer europäischen digitalen Bibliothek für historisches schriftliches Kulturgut wie Handschriften, Inkunabeln, Frühdrucke, Urkunden, Pläne und Archivalien aller Art. Durch die Integration bereits bestehender, jedoch über viele verschiedene Institutionen verstreuter elektronischer Inhalte in das Internetportal von "Manuscriptorium" (http://www.manuscriptorium.eu), das – getragen von der Tschechischen Nationalbibliothek in Prag – als das größte digitale Handschriftenportal Europas gilt, sollen mit Projektende insgesamt mehr als fünf Millionen digitale Bilder der breiten Öffentlichkeit zur Verfügung stehen. Diese hohe Zahl resultiert aus der Tatsache, dass nahezu 85 % aller schon digitalisierter Handschriften aus europäischen Nationalbibliotheken sich in Besitz von ENRICH-Partnern befinden; diese Sammlung wird durch einige hundert tausend elektronische Daten aus Universitätsbibliotheken und anderen Instituten bereichert.

ENRICH baut auf den bereits 15-jährigen Erfahrungen der Tschechischen Nationalbibliothek im Bereich der Digitalisierung und virtuellen Bereitstellung besonders von mittelalterlichen Handschriften auf. Die Ursprünge der heutigen Internetplattform "Manuscriptorium" liegen im "Memory of the World"-Programm der UNESCO, wofür die Tschechische Nationalbibliothek im Jahr 2005 auch den UNESCO "Jikji-Preis" erhalten hat. Momentan stellen 46 tschechische und andere europäische Institutionen ihre Daten der digitalen Bibliothek "Manuscriptorium" zur Verfügung.

Die Voraussetzungen der Integration bereits bestehender elektronischer Informationen basieren ebenfalls auf den Errungenschaften von "Manuscriptorium". Das Neue und Innovative an ENRICH ist jedoch die Schaffung eines Portals, das die Zentralisierung von weit verstreuten digitalen Ressourcen in einer einzigen Suchumgebung ermöglicht. Dabei werden die Metadaten vorhandener Digitalisate, die idealerweise ein XML-Format aufweisen sollten, innerhalb von "Manuscriptorium" zentral gelagert, während die Bilddaten am Server der bereitstellenden Institution liegen.

Die Zielgruppen von ENRICH sind Bibliotheken, Museen und Archive, Wissenschafter und Studenten, Entscheidungsträger und allgemein Interessierte. Das Projekt ermöglicht die Suche und den kostenlosen Zugang zu historischen Dokumenten, deren Einsichtnahme normalerweise mit großen Schwierigkeiten verbunden ist. Neben Bildern werden auch TEIstrukturierte Volltexte, Forschungsressourcen, Audio- und Videodateien oder historische Pläne zur Verfügung gestellt. Darüber hinaus arbeitet ENRICH eng mit "Der europäischen Bibliothek" (TEL - The European Library) zusammen und trägt damit maßgeblich zum Aufbau einer "Europäischen Digitalen Bibliothek" bei.

Die Benützer von ENRICH können ihre Suchergebnisse innerhalb von "Manuscriptorium" speichern sowie eigene personalisierte Zusammenstellungen anlegen, um diese beispielsweise für Forschungen oder pädagogische Zwecke zu verwenden.

Des Weiteren soll das ENRICH-Portal in mehreren Sprachen zur Verfügung stehen; auch mehrsprachige Ontologien sind in Planung, um Suchanfragen in der lokalen Sprache sowie das Auffinden von Daten in der Sprache der Quellen zu gewährleisten.

Das ENRICH-Konsortium setzt sich aus 18 Partnern zusammen, die von einer Reihe weiterer Institutionen unterstützt werden.

Die Koordination des Projektes hat die Tschechische Nationalbibliothek übernommen, Cross Czech a.s. hat das administrative und finanzielle Management inne, AiP Beroun s.r.o. fungiert als technischer Koordinator. Die anderen beteiligten Institutionen – sei es als Datenlieferer oder technische Berater – sind folgende: die Oxford University Computing Services, das Zentrum für Kommunikation und Integration von Medien der Universität Florenz, das Institut für Mathematik und Informatik in Vilnius, SYSTRAN S.A in Paris, das Nordische Forschungsinstitut der Universität von Kopenhagen, die Universität für Technologie und Ökonomie in Budapest, die Nationalbibliotheken von Spanien, Florenz und Island, die Universitätsbibliotheken von Vilnius, Wrocław und Island, das Árni Magnússon-Institut in Reykjavik, das Institut für Historisch-Kulturwissenschaftliche Informationsverarbeitung der Universität zu Köln, das Diözesanarchiv St. Pölten sowie das Zentrum für Supercomputer und Netzwerke in Poznań.

Interesse an einer Teilnahme an ENRICH wurde von den Nationalbibliotheken in Ungarn, Kasachstan, Moldawien, Polen, Rumänien, Serbien, Schweden und der Türkei sowie von den Universitätsbibliotheken in Bratislava, Bukarest und Heidelberg bekundet.

Projekt-Website mit näheren Informationen: http://enrich.manuscriptorium.com

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# 9.3 Examples of search results in various languages for ENRICH project and some important links to http://enrich.manuscriptorium.com







