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**Common Internet Portal for Libraries, Archives and Museums – BAM-Portal** (<http://www.bam-bw.de>)

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#### Introduction

Archives, libraries and museums must through popular demand or through legal obligation not only to maintain the cultural heritage but also to make it accessible for the public. For access and presentation online media and the Internet are becoming increasingly important. The three types of institution have in the past developed different principles and they use different methods to display their collections and make them accessible. In the modern information society users always expect services which permit thematic oriented retrieval possibilities. So, a network of resources with similar content, as is the case with libraries, archives and museum, is a new challenge. It is not a surprise that initiatives, programmes and projects have recently started to develop a virtual integration of the collections from these three types of information service. The new action plan of the European Union “eEurope” promotes the digitization of the cultural heritage with the European network for the digital presentation of cultural artefacts. On the national level we find similar efforts. Since February 2001 the Archive Directory of Baden-Württemberg, the Library Service Centre Baden-Württemberg and the Museum for Technology and Labour at Mannheim have been cooperating in a project promoted by the Deutsche Forschungsgemeinschaft called “Common Internet Portal for Libraries, Archives and Museums. Online Information System” (BAM-Portal), which is the subject of this paper.

The aim of this project is to design a technical procedure which allows these three types of institution to make their digitized resources (information, content services, digitized objects) accessible through a common online portal. For this purpose, a metadata format has to be developed and digitized cultural artefacts in some selected thematic fields will be presented retrospectively.

## The starting-point

The Internet has become a serious medium of information and communication. But Internet retrieval does not get easier due to its hidden structures. The frequency of an excessive number of hits in such search engines as Google or Altavista makes precise access to the desired information impossible. One solution to these problems could be the so-called portal-solution, which offers an access-point for defined thematic research. Virtual research using ordinary search engines yields insufficient results for archives. Unlike archives and to some extent museums, libraries have long been present on the Internet via OPACs or virtual library union catalogues. This is due to several reasons:

1. Library collections do not need a provenance-oriented presentation. Databank solutions suit research without the need for context-oriented navigation.
2. Standards for cataloguing and data exchange exist (MAB2, Dublin Core, Z39.50).

The world of archives, like the world of museums, is very heterogeneous. Generally accepted standard cataloguing rules or data exchange formats hardly exist – the understanding and traditions do, i.e. traditions about the administration in the unique archives and archive environments. The Americans have developed the standard “Encoded Archival Description” (EAD). Since 1998 EAD is an accepted standard and is used in the USA and to some extent in other English-speaking countries to generate online research access. A similar standard for description and presentation does not exist for German archives. But it is essential that archivists as service providers in a modern information society develop ideas on how to present their contents and aspire to a unified solution.

## Conception and information levels of the BAM-Portal

The main objective of the Bam-Portal is to use the existing digitized objects of the partner institutions and to unite metadata about the data stored there in a centrally structured data file as a base for homogeneous research on these data.

The Internet client has access to the portal and its metadata via a web-browser. The description data and the digitized objects, which have been described, stay on the Internet page and on the web-server of the respective institution. The user gets information about the subject in which he is interested, information about archive materials from the relevant archives and information about the exhibits from the collaborating museums at the same time.

The BAM-Portal offers the following information levels:

1. Basic information about the respective institutions
2. Metadata with references to online helps and online catalogues
3. Online-help and online-catalogue data
4. Digitized objects.

A so-called test-content on “Industrialization in Baden-Württemberg from the 19th century to the beginning of the 20th century” was chosen as part of the project. A research scenario could, for example, be the following: the user is interested on trains in Baden-Württemberg. At present he has to carry out at least three operations with different search tools to find all of the material about this subject offered in different institutions.

- One search in the union catalogue of the southwest library union to find, for example, the title “*Bähnle, Mühle, Zug und Bus : die Bahn im mittleren Schwarzwald*” by Raimund Kolb.
- One search in the stock of the State-Archive Sigmaringen brings to light the digital archive entry on relevant construction documents: *Erbauung einer Nebeneisenbahn von Schussenried nach Buchau 1880, 1896-1997*.

- Finally he finds in the Museum for Technology and Labour the engine *Dampflokomotive Eschenau T3Cn2t* used at this time and perhaps on this railway.

The BAM-Portal permits the retrieval of all three objects in one list of results with only one search using the term “Eisenbahn”.

### **Description, data format and data exchange**

Because of their different aims and materials libraries, archives and museums have distinct methods of description. The result is that the information systems and the online presentation of information differ for each of the project partners:

1. The Library Service Centre has as database in the union catalogue of the SouthWest German Library Union with its online accessible OPAC. The description follows the library rules, the Rules for Alphabetic Cataloguing in Scientific Libraries (RAK-WB) using the standardized Machine readable Exchange Format for Libraries (MAB) for data exchange.
2. The archive description follows in a structured manner the principle of provenance. In the Public Archive Administration of Baden Württemberg the description of archive materials is database-oriented using the MIDOSA software, the generation of the catalogue and the presentation is realized with MIDOSA online and with special presentation modules for archive materials developed by the archive directory of Baden-Württemberg.
3. The Museum for Technology and Labour provides a database of its collection using FAUST software, which is not accessible via the Web at present. The museum describes the materials with documentation rules using the subject authority file (Schlagwortnormdatei – SWD) of the Deutsche Bibliothek.

The principal problem of this project lies in the fact that these information systems use distinct methods of description and content analysis in combination for the different materials. Because of their essential and structural differences these formats cannot be the basis of a mutual research.

It is not the purpose of the BAM-project to create a common format for description or to develop common rules suited to an object description in each institution, or to replace completely traditional description rules; on the contrary it is to evolve through collaboration a way which allows retrieval via a common portal. The data of the project partners will be presented with a data mapping onto a common format. The metadata format DImeta derived from the Dublin Core will be used as the exchange format. The conditions for the inter-connected research within the BAM-portal provide a convenient model for the selected formats MAB, MIDOSA and FAUST on DImeta respectively, building on the underlying Dublin Core. The problem is not the technical conversion of the data, the problem is to adjust semantically equivalent fields in the different formats to DImeta. MAB, MIDOSA and FAUST are converted in DImeta-XML and then delivered to the datacentre for loading the database.

An additional problem, besides the harmonization of the fields from different data formats is the different use of thesauri and authority files by the participating institutions. The Library service centre and the Museum for Technology and Labour use the Subject Authority File (SWD) and the Person Name Authority File (PND) of the Deutsche Bibliothek. Because the content description of the archive material does not use a verbal indexing system there is no facility for a comparable documentation language. Archives normally index and search on the basis of the so-called principle of provenance. Within the project, the use of authority files and intellectual and automatic verbal indexing will be tested as an add-on value to traditional archival description, and this could make it easier for the institutions to cope with retrieval from related fields of interest.

## **Strategies and functionality of the research**

The BAM-Portal will offer two kinds of research functionality:

1. A search engine for full text retrieval and for research in defined data fields will be provided, including support by keyword and subject heading lists,
2. Subject retrieval in different subject fields will be made possible by hierarchically structured subject headings (hyperlink-list) which can be either automatically or intellectually generated.

## **Conclusion and future**

The first step of the DFG-project “Common Internet Portal for Libraries, Archives and Museums – an Online Information System” was the development of a prototype, using common tools which presents digitized materials about literature, archives and exhibits in an Internet portal and makes them retrievable. To emphasize the superior value of such an inter-connected method of retrieval, the project was limited in the current phase to resources on the subjects “patents” and “hydraulic power”. The three project partners hold sufficient digitized materials about these subjects, so the retrieval should result in an adequate convenient recall.

The “Deutsche Forschungsgemeinschaft” has agreed to a one-year extension of the project. The two main aims of the second project phase will be:

1. Extension of the data resources from the BAM-index and extension/optimization of the research system
2. Differentiation of the use and broadened approach of the clients.

## Internet-Resources

- Project page: <http://www.bam-bw.de>
- Project partner:
  - Bibliotheksservice-Zentrum Baden-Württemberg: <http://www.bsz-bw.de>
  - Landesarchivdirektion Baden-Württemberg: <http://www.lad-bw.de>
- Landesmuseum für Technik und Arbeit, Mannheim: <http://www.landmuseum-mannheim.de>
- Dublin Core and DLmeta: <http://dublincore.org>; <http://www.dlmeta.de>