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BHL-Europe

BHL-Europe System Description for the German Prototype

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[1] OJ L 79, 24.3.2005, p. 1.

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1 Document History

This chapter describes the document's creation events and contributors.

1.1 Contributors

This document is based on the meetings of the technical team in Leiden, Graz and Berlin with the following members contributing to this document.

Person	Partner
Johannes Edelsbrunner, Gerda Koch, Walter Koch, Bernd Sproger	AIT

1.2 Revision History

Revision Date	Author	Version	Change Reference & Summary
2010-11-10	AIT	1.0	Draft
2010-11-18	AIT	1.1	Draft
2010-11-22	AIT	1.2	Final

1.3 Reviewers and Approvals

This document requires the following reviews and approvals.

Name	Date	Version
Henning Scholz Adrian Smales Jana Hoffmann, BHL-Europe consortium	15 November 2010	1.0
Henning Scholz, Jana Hoffmann	21 November 2010	1.1
Henning Scholz, Adrian Smales	22 November 2010	1.2

1.4 Distribution

This document has been distributed to.

Group	Date of issue	Version
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BHL-Europe Wiki	2010-11-18	1.1
BHL-Europe Wiki	2010-11-22	1.2

2 Introduction

2.1 Overview – The BHL-Europe German prototype

The purpose of the BHL-Europe German prototype is to establish a metadata platform for the discovery and diffusion of biodiversity heritage literature. The prototype addresses problems of interactivity between different systems, which are mainly caused by varying methods of metadata description. Existing software tools are used to map fields from each database onto a project-defined standard format. The aggregation platform Dismarc MetaDataManager (MDM) serves as a basis for the prototype development.

The BHL-Europe German prototype implements core features (as derived from the Description of Work) such as search and retrieval of biodiversity information and multilingual thesauri. The submission and dissemination of biodiversity information packages is managed via OAIS-compliant modules (i.e. OAI harvesters and providers). A multilingual community portal will be developed until the end of summer 2011. The components of the German prototype will be integrated into this community portal and the development will focus on other core features such as Taxonomic Intelligence Tools, OCR and the Content Viewer.

The BHL-Europe German prototype will provide a single user interface (via Web Site) allowing users to access bidodiversity heritage literature of the BHL-Europe.

The BHL-Europe German prototype provides an OAI data provider for Europeana which contains metadata from the BHL-Europe partner archives. All BHL-Europe metadata is exposed to be harvested by the Europeana-harvester and copied onto the central Europeana-System. The data is also integrated into the German prototype system (indexing, searching, browsing). By this means BHL-Europe metadata (coming from all partner catalogues) can be searched simultaneously together.

The graphic below provides a general overview of the system.

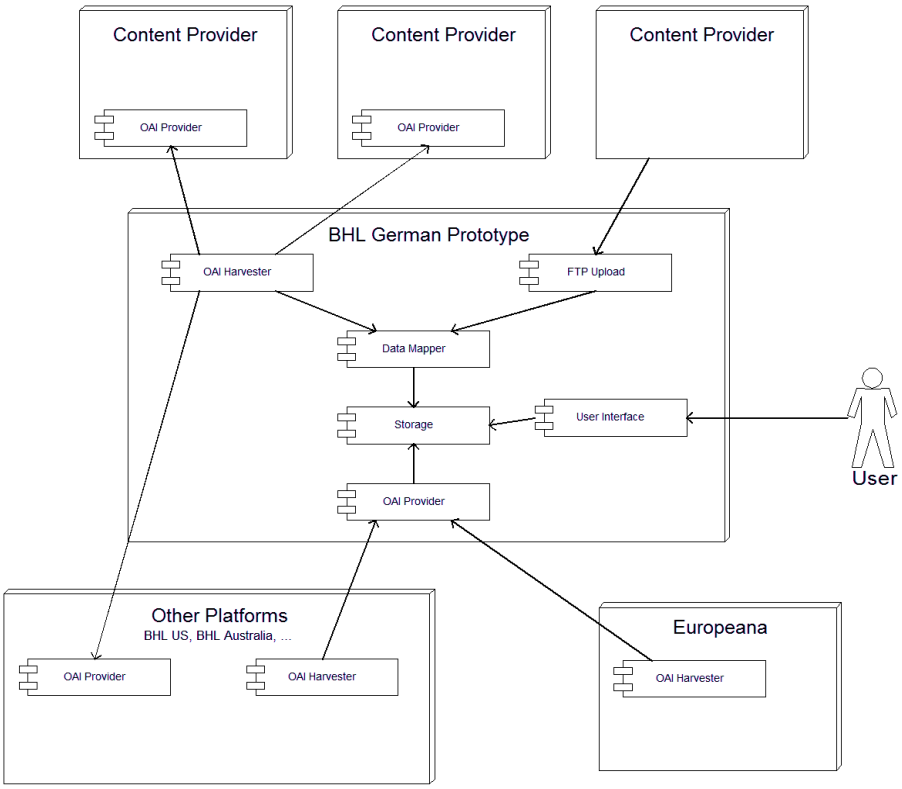


Figure 1 Overview of the BHL-Europe German Prototype

The various Content Providers make their data available for the harvester of the German BHL-Europe Prototype. The Prototype itself also functions as a provider and can be harvested by other data portals like Europeana. The German Prototype displays the metadata of the participating archives in BHL-Europe.

The BHL-Europe German prototype implements portal languages in German and English. Multilingual thesauri contain more languages than German and English because they are derived out of the collection's metadata.

3 Requirements

The use cases for the BHL-Europe system have been detailed within a separate document, the Use Case Documentation for the German Prototype. The document describes the various use cases for the BHL-Europe German prototype front end and the administration area.

UCD incorporates the following contents:

- And Use Cases for the following components:
  - Security
  - Search & Retrieval
  - User Services
  - Data Exchange
  - Administration Area

3.1 Technical Requirements

The next table shows the technical (both, hard- and software) requirements which a server has to meet in order to run an instance of the MetaDataManager (from here on referred to as MDM).

Apache/IIS	Since the MDM is a web application, a web server is needed. There are no special preferences for its implementation	
PHP 5.2	The MDM is written as object oriented PHP application. Therefore the use of the latest PHP version is recommended.	http://www.php.net
MySQL 5	Due to the need of a relational database as user and setting storage and the native support of MySQL5 by PHP, MySQL5 was the choice for MDM. Nevertheless, also the use of a Postgres database is possible	http://www.mysql.com
Zebra Server	The Zebra Server supplies the core functionality for	http://www.indexdata.dk

	the collection and object metadata. The Zebra Server is used to index and retrieve the generated xml records.	
Iconv	Inconv is a unix tool to convert the encoded import files to MDMs internal “utf-8” encoding. Every common *nix distribution ships with iconv, whereas the support for MS Windows is supplied by cygwin.	

Table 1 Software requirements

The BHL-Europe German prototype is running on NHM London servers and can be reached via http://prototype.bhle.eu.

4 Components and Procedures of the MetaDataManager

This section introduces the MDM, describes its basic architecture and shows the process of several user interactions.

MDM is a PHP based application able to index, search and retrieve information stored as xml. The access to this information is restricted by several access right management implementations.

The MDM is also capable of searching information in several languages. This is accomplished through a user defined dictionary and other controlled vocabularies like thesauri.

4.1 Components

As already shown the MDM provides various interaction points, which will be discussed in this section.

Figure 2 MDM components displays an abstract view of the application model.

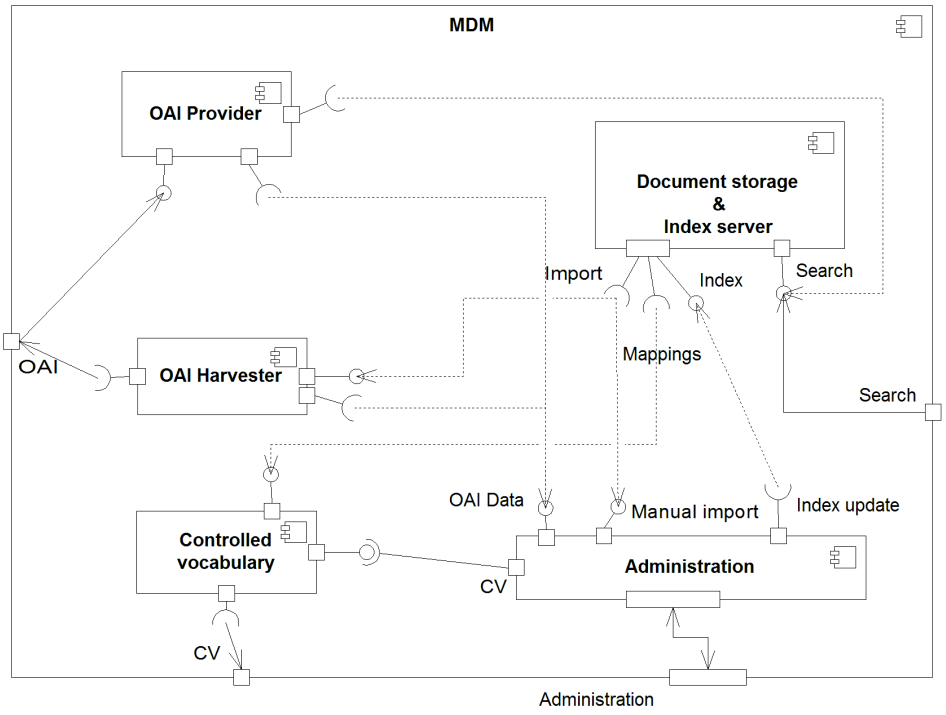


Figure 2 MDM components

Each subcomponent has its own interfaces which communicate within the MDM. The MDM acts as facade to the user for these subcomponents and implements the control and information flow in some use cases.

Both OAI components are implemented as adapters for the other MDM components and the OAI protocol. For more detailed information please see the Open Archives Initiative documentation on http://www.openarchives.org .

One of the first subcomponents discussed should be the document storage and index server. The abstract view of this components can be found in Figure 3.

Document storage provides search and indexing functionalities and is using the import and mapping interface from other components.

Import, mapping and index are the functionalities needed during the import of new or updated records and are delegated to the Zebra Server and record normalization subcomponent. More information can be found at 4.2 Procedures.

The Zebra Server holds two databases. One is the object database which stores indexes and information about each record whereas the collection database stores collection related information.

Thanks to this concept, an infinite number of collections and collection levels can be supported (only restricted by available disk space) and all search functionalities can be used for both databases.

The query normalization is used to create a proper search string for the Zebra Server.

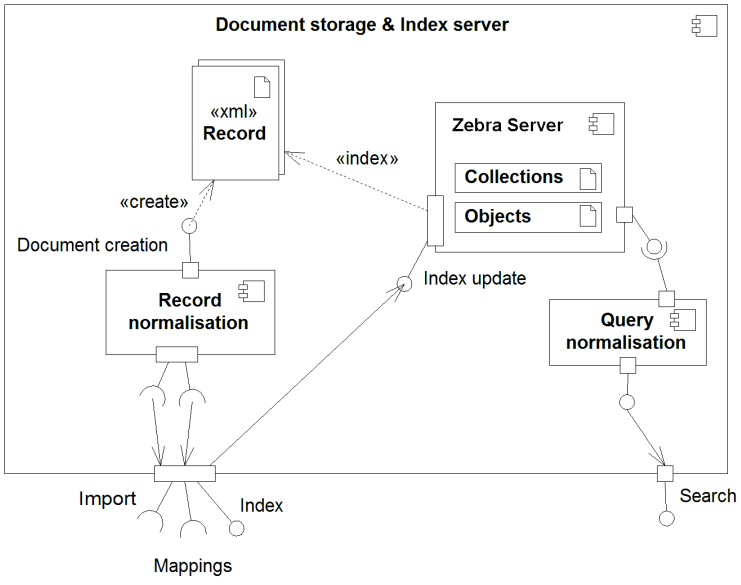


Figure 3 Document storage & index server

An additional quite complex component is the administration area. Most of the settings (settings which might break the environment of the MDM can only be set on file access level) can be accessed via this component.

Figure 4 Administration shows the subcomponents of the administration area. Settings control the appearance of the website, the access rights, the import behavior as well as the OAI namespace configuration and control.

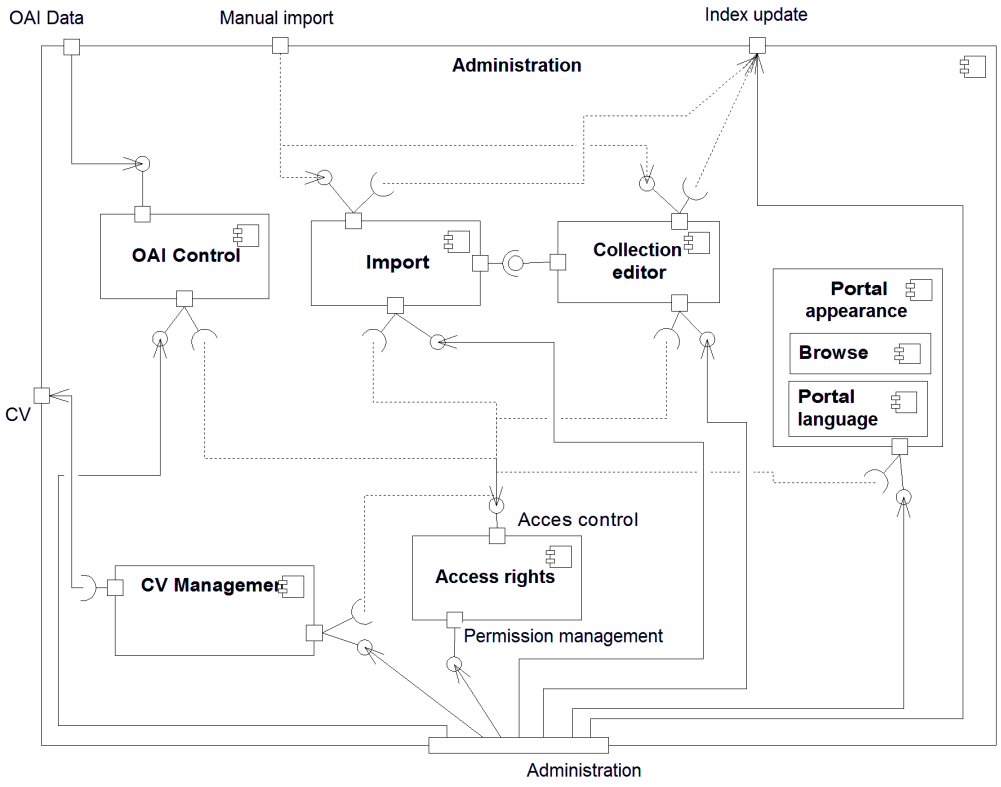


Figure 4 Administration

4.2 Procedures

The core user interactions are search and import. The basic setup of the import can be seen in Figure 5 Import sequence diagram.

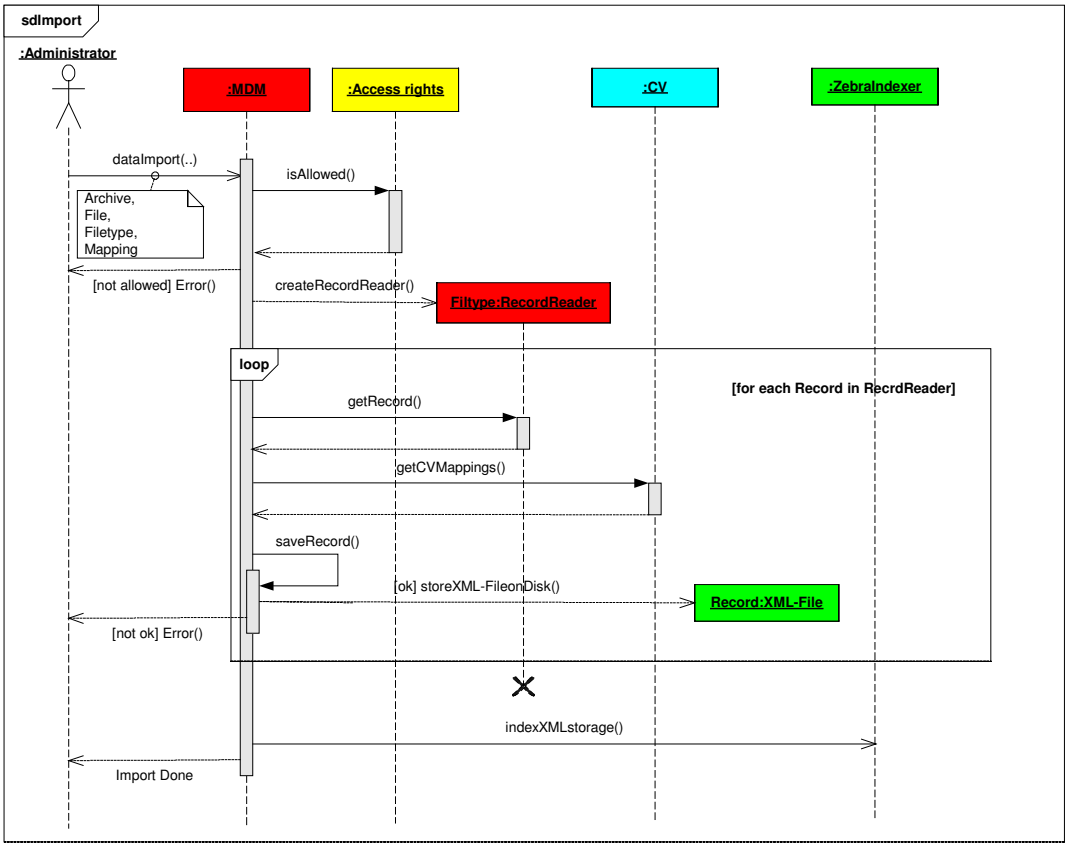


Figure 5 Import sequence diagram

The administrator tells the MDM to import a new file for an archive. MDM checks in the access right module if the user is allowed to do so. With the file, its encoding and type definition, a record reader is generated. MDM then loops through the records, checks the CV for mapping information and creates a new xml file which will then be indexed by the Zebra Server.

This quite easy process becomes considerably comprehensive during the mapping. Thesauri terms have to be mapped and native field information be ripped apart to match the BHL-Europe application profile to represent the native data without the loss of any information at the same time.

The search process as shown in Figure 6 Search sequence diagram looks even simpler than the import process. With the easy process, the result gets broad. Due to the user preferences MDM selects additional words to search with from the dictionary based on the user's known languages and current language settings.

This results in a broader result set even in non-multilingual searches because the dictionary also contains synonyms for search terms the user might not have thought about.

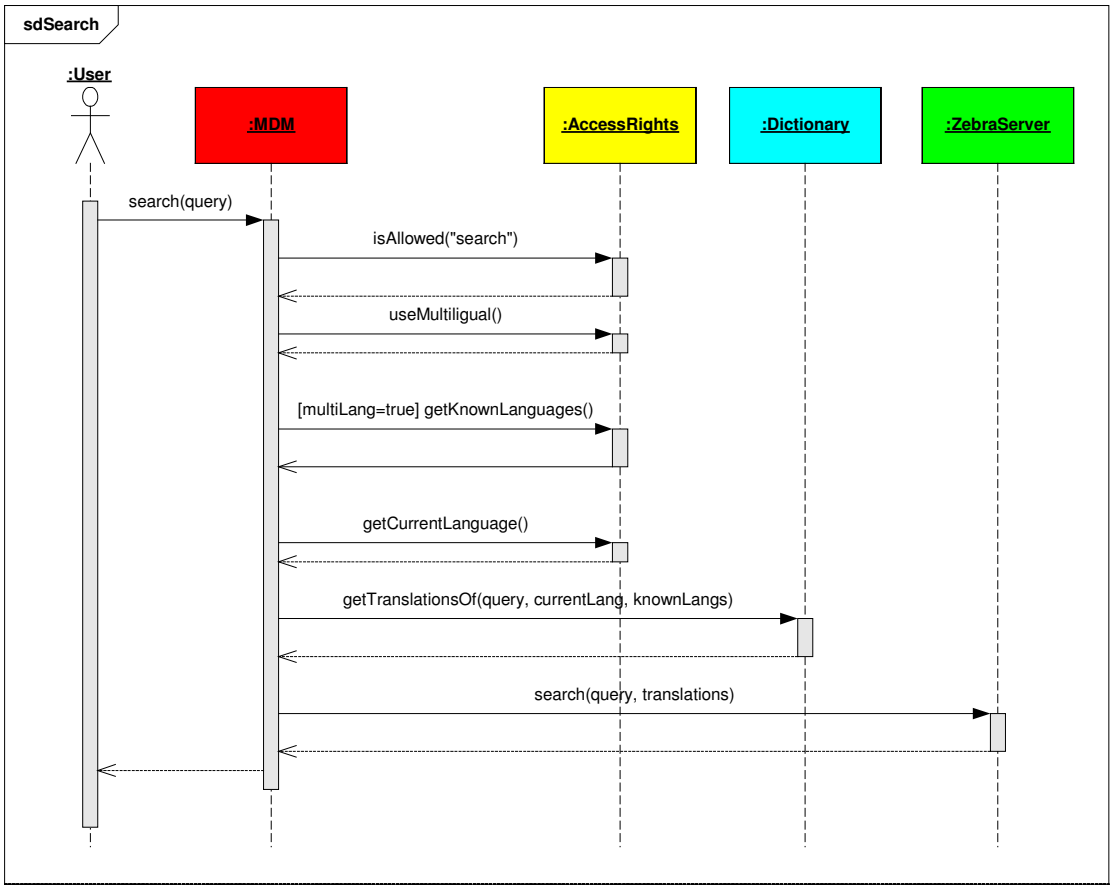


Figure 6 Search sequence diagram

5 Mapping data to the BHL-Europe application profile[2]

The native data that is contributed by the content providers to BHL-Europe has to be mapped to the BHL-Europe application profile in order to allow a standardized search over the distributed information.

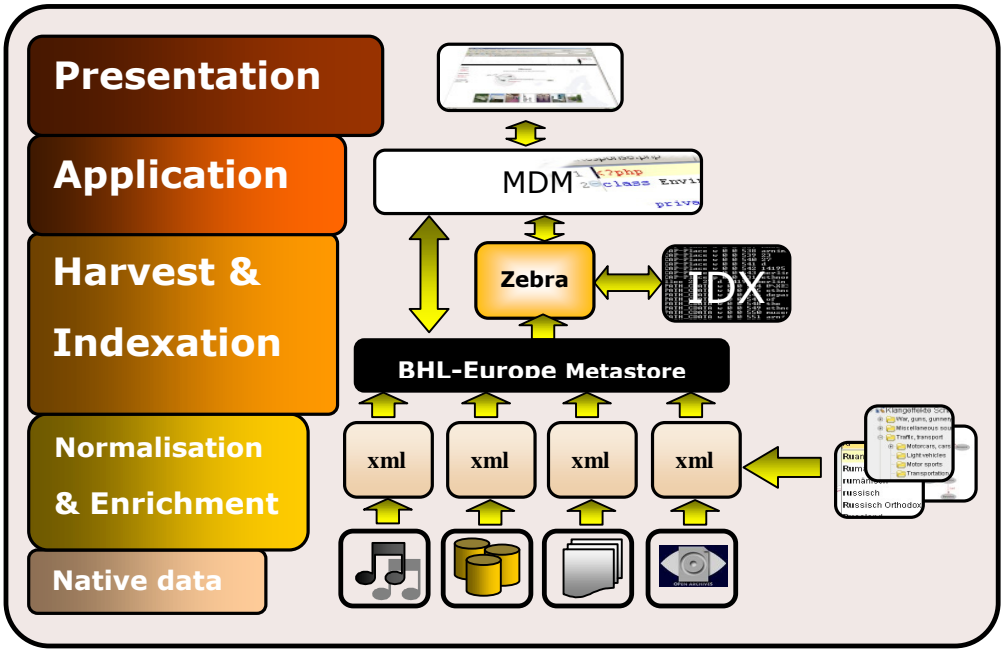


Figure 7 Mapping of native data

In general BHL-Europe partners (data providers) need to undertake the following steps, in order to make their resources discoverable via BHL-Europe (service provider):

1. The archive provides details such as the nature of the archive resources, number of metadata records to be harvested and metadata schemas & vocabularies
2. The archive makes available a test sample of objects (preferred export formats: plain text files (.csv, .xml, .txt). If the archive is using a relational database system, they should send an SQL dump)
3. The metadata (and vocabulary) mapping is finalized via the provided online tools (this procedure is supported by the BHL-Europe team)

[2] in development

4. The mapping confirmation information is sent to the BHL-Europe technical team
5. BHL-Europe conducts a trial harvesting and notifies the partner of any problems and incompatibilities.
6. When the trial harvesting is successful, the new partners make a full set of metadata records available via their local provider
7. BHL-Europe conducts an initial full harvest into a test system. A test search is conducted to make sure the harvested metadata is working correctly via the search functionality.
8. Finally BHL-Europe conducts an initial full harvest into the BHL-Europe production system which makes the harvested metadata discoverable via the search tools.

The mapping of new data is support by a Data mapping online tool that is connected to the currently used BHL-Europe application profile and generates

- A basic mapper written in PHP
- A collection description
- A table for further usage

This information is then sent automatically to the BHL-Europe technical responsible personnel.

5.1 Importers

The Importer is the component of the application that is responsible for converting the archive's native data into the BHL-Europe compliant format.

The Importer consists of three sub components:

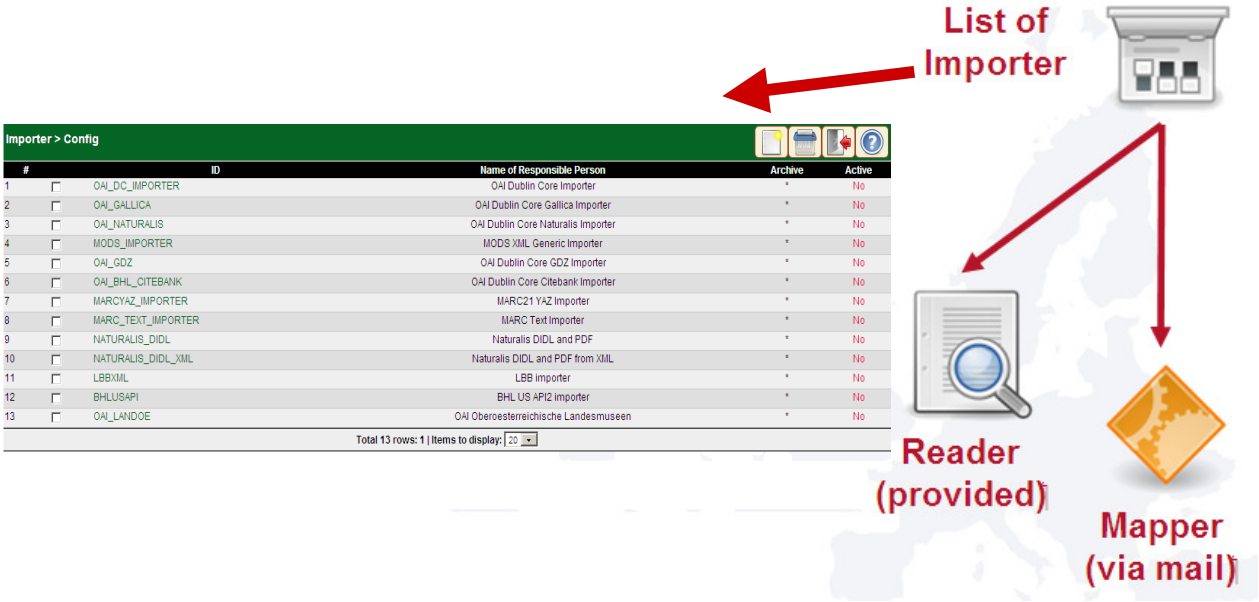
1. Settings
2. Reader
3. Mapper

The Importer contains the information about what files shall be imported from where with what **Reader** and what **Mapper** in what encoding.

```
<Importer active="true" db="0" archive="ARCHIVE"
id="ARCHIVE_NATIVE_TO_DMOAP" description="Default Archive importer"
indexAfterSave="true">
 <Reader class="importparser.recordreaders.DummyReader" />
 <Mapper class="importparser.mapper.DummyMapper" />
 <DefaultEncoding>utf-8</DefaultEncoding>
```

```
 <NewFilesDir pattern="/xml/">Archive/newfiles</NewFilesDir>
 <RepositoryDir>Archive/repository</RepositoryDir>
 <LogFile>Archive/Archive.log</LogFile>
 <ContactMail>someone@archive.local</ContactMail>
</Importer>
```

The Reader and the Mapper elements provide the path and classname of the proper reader and mapper.



#		ID	Name of Responsible Person	Archive	Active
1		OAI_DC_IMPORTER	OAI Dublin Core Importer	*	No
2		OAI_GALLICA	OAI Dublin Core Gallica Importer	*	No
3		OAI_NATURALIS	OAI Dublin Core Naturalis Importer	*	No
4		MODS_IMPORTER	MODS XML Generic Importer	*	No
5		OAI_GDZ	OAI Dublin Core GDZ Importer	*	No
6		OAI_BHL_CITEBANK	OAI Dublin Core Citebank Importer	*	No
7		MARCYAZ_IMPORTER	MARC21 YAZ Importer	*	No
8		MARC_TEXT_IMPORTER	MARC Text Importer	*	No
9		NATURALIS_DIDL	Naturalis DIDL and PDF	*	No
10		NATURALIS_DIDL_XML	Naturalis DIDL and PDF from XML	*	No
11		LBBXML	LBB Importer	*	No
12		BHLUSAPI	BHL US API2 importer	*	No
13		OAI_LANDOE	OAI Oberoesterreichische Landesmuseen	*	No

Total 13 rows: 1 | Items to display: 20

Figure 8 Mapping structure

These general settings have to be entered to set up an importer:

Importer

@active

When run as a cronjob, shall this importer be used?

@db

What Database to use.

@archive

To what archive does this importer belong to.

@id

What's the ID of the mapper?

@description

Some description of what the importer is about.

@indexAfterSave

Shall the records be indexed right after they have been saved? This is only used during the automated import.

DefaultEncoding

This is the encoding the files are written in. Use UTF-8 for XML.

ContactMail

Whenever an automated import is done, where shall the import summary will be sent to?

NewFilesDir

Where can the importer find new files when used during the automated import? This directory will be read recursive.

@pattern

What pattern the files have to match.

Repository

Where to put the files form the NewfileDir? Do not put the files into a subdirectory of NewfileDir for there can be an endless loop

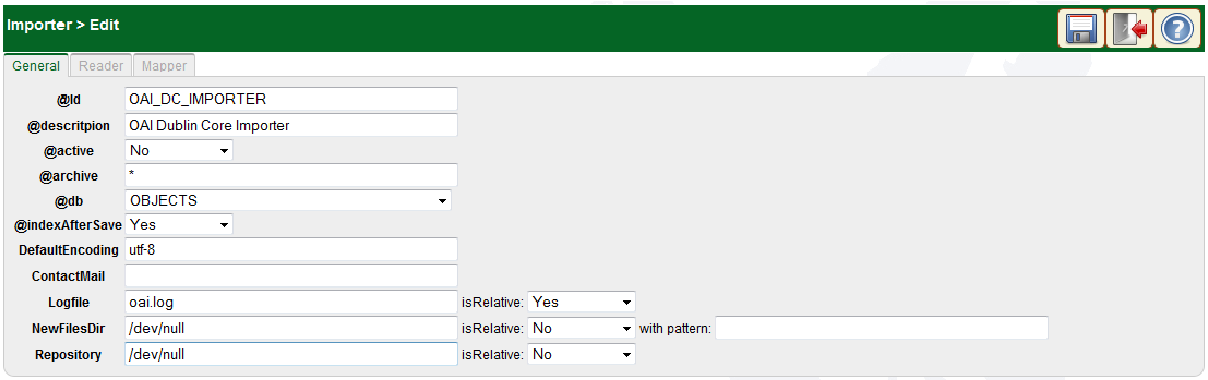


Figure 9 Importer settings (sample)

5.2 Record Readers

Record readers are used to transform the native data into an XML. Together with the mappers they are part of the import routine.

The following Record Readers have been developed:

- CsvRecordReader

- ExcelXMLRecordReader
- Iso2709RecordReader
- XmlRecordReader
- SequentialRecordReader
- SeparatedSequentialRecordReader
- MysqlDatabaseRecordReader
- MarcTextRecordReader
- OaiRecordReader

The ranking provides an overview on which kind of data exports are easily to be integrated in BHL-Europe to the ones that will cause additional importing effort: (starting from 1: minimal analyzing effort - to 6: causing major analyzing effort)

Export formats which are used at the moment:

1. XML (with UTF-8 encoding)
2. CSV (any encoding)
3. ISO2709
4. Plain text files
5. Database (with Entity-Relationship model attached)
6. Database (without Entity-Relationship model)

5.3 Mappers

Mappers are part of an Importer. They convert the XML they get from a Reader and try to create an XML that fulfills the BHL-Europe application profile.

Each archive needs its own mapper, except for predefined formats like MARC21, DC, MODS, ESE and so on, standard mappers will be available.

When the mapping of the data is entered via the BHL-Europe online tool a basic PHP mapper is generated automatically. This mapper can be refined further on to meet all requirements of data conversion for this archive.

5.4 Data enrichment

The data may be either directly transformed to fit to the BHL-Europe application profile or if necessary parts of the data may be enriched via substitution files. Substitution files are used by the data mappers that add or transform the required values and add them to the mapped document.

Within BHL-Europe there are a number of vocabularies and wordlists that aim to improve searching through the different and heterogeneous databases of the various BHL-Europe partners. Part of these mappings can be done automatically if partners are using standard terms. Other parts of the mapping are done in cooperation with the partners, or even by the partners themselves after they have been introduced to the mapping routines. The data enrichment routine via vocabularies is defined once for each partner and any further data uploads will recognize these procedures automatically. Registered users may view all BHL-Europe vocabularies on the portal. The browse functionality of the portal depicts only those terms of the various vocabularies that have data attached.

The browse functionality also offers to browse through the vocabulary terms in different languages this way providing multilingual access to the items. Here the user may broaden the search and choose in which languages the word should appear in the record.

6 Automated Data import

The partners can upload new data exports to their directory at the BHL-Europe FTP account configured at http://bhl-celsus.nhm.ac.uk/uploads/.

Figure 10 Data Upload (FTP)

The BHL-Europe harvester iterates each night through the aknowledged importers and checks whether new data has been uploaded to the "newfiles" directory of each partner.

Figure 11 Active importers are being checked each night

For each importer, the directory is checked and each new file found will be passed to the Importer's reader.

The following day the new data is searchable via the BHL-Europe portal.

I Acronyms

CV	Controlled Vocabulary	
EUROPEANA	Portal of the European Digital Library	www.europeana.eu
GB	Gigabyte	
MDM	MetaDataManager	
HDD	Hard Disk Drive	
HTML	Hyper Text Markup Language	
HTTP	Hyper Text Transfer Protocol	
IPTC	International Press Telecommunications Council	http://www.iptc.org/
MySql	Open Source Database	http://www.mysql.com/
OAI	Open Archives Initiative	http://www.openarchives.org
OAI-PMH	Open Archives Initiative Protocol for Metadata Harvesting	http://www.openarchives.org/OAI/openarchivesprotocol.html
ODBC	Open Database Connectivity	
OMG	Object Management Group	http://www.omg.org/
OPAC	Online Public Access Catalogue	
PHP	PHP: Hypertext Preprocessor	www.php.net
RAM	Random Access Memory	
REGNET	Cultural Heritage in REGional NETworks (IST-Research Project IST-2000-26336)	http://www.regnet.org
RSS	Really Simple Syndication (RSS) is a lightweight XML format designed for sharing headlines and other Web content.	
SQL	Structured Query Language: ISO, ANSI standard user front end to a relational database management	

	system.	
UC	Use Case	
UID	Unique Identifier	
UML	Unified Modelling Language	http://www.uml.org
URL	Uniform Resource Locator	
XML	EXtensible Markup Language	

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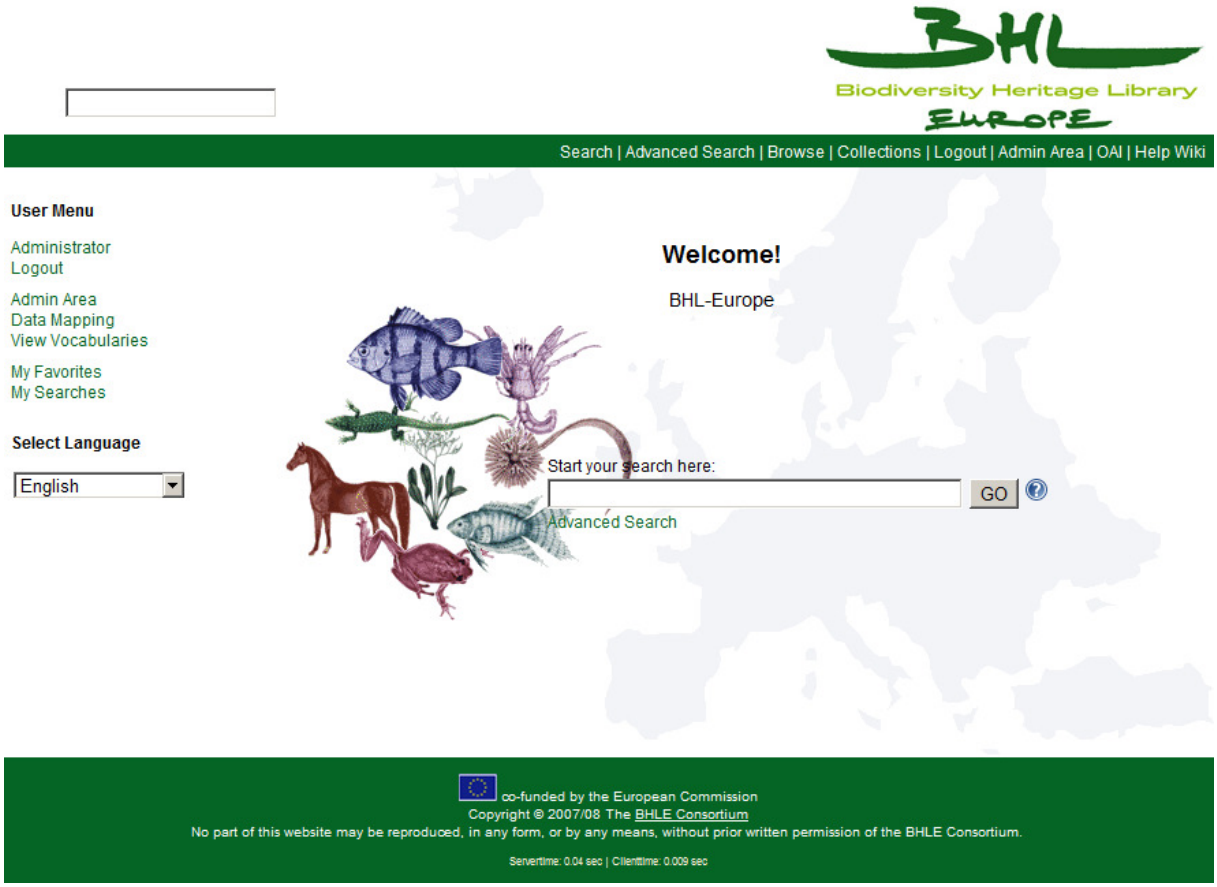
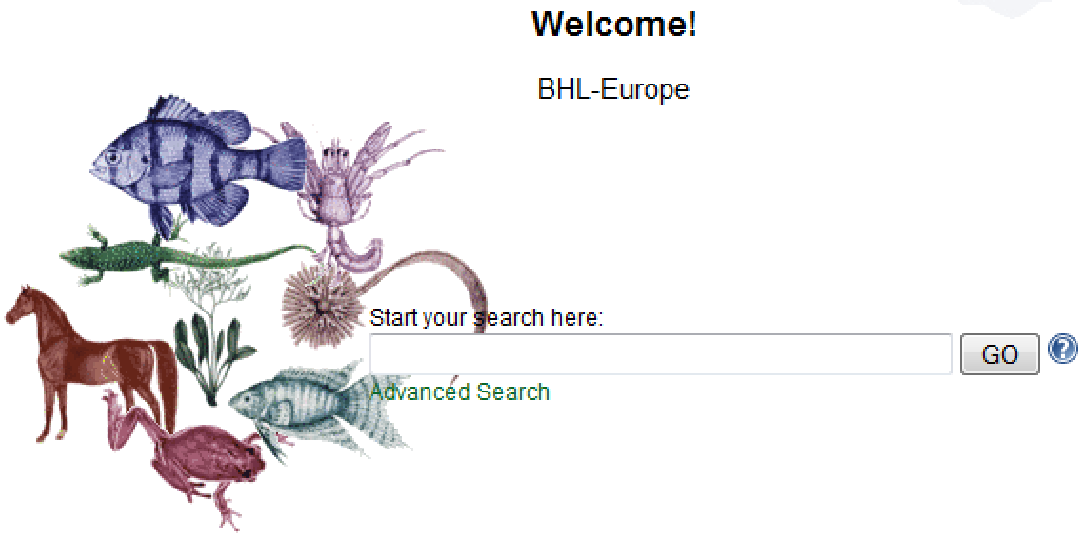
III Annex 1 – BHL-Europe Front end tools

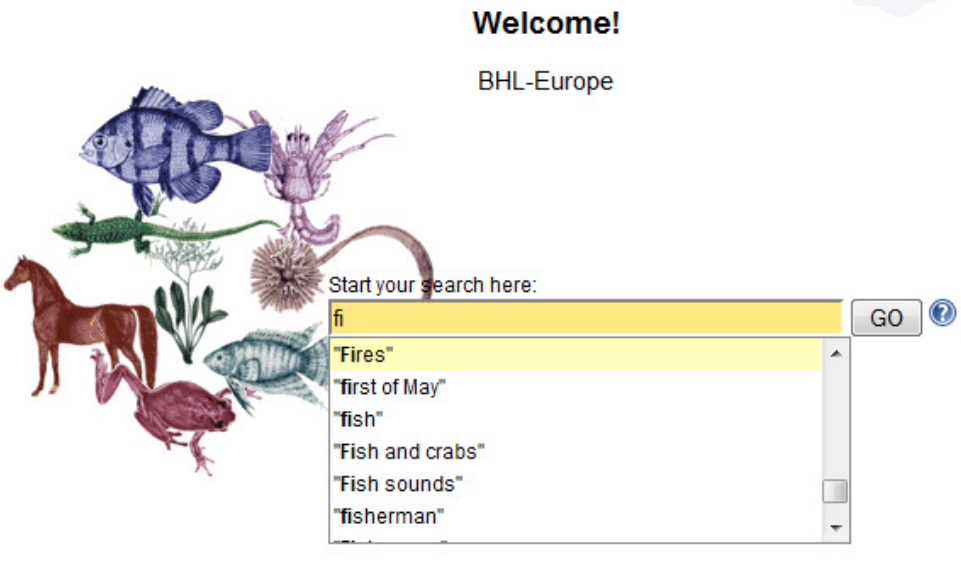


III.I Search services

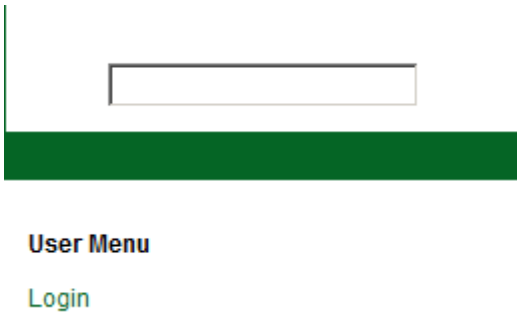
The portal offers a simple search facility that smoothly transforms to an advanced search when the first result set is delivered by the system.



After entering the first 2 letters the auto-suggest list appears. This list displays available terms from the BHL-Europe multilingual lexicon (vocabularies and free texts).

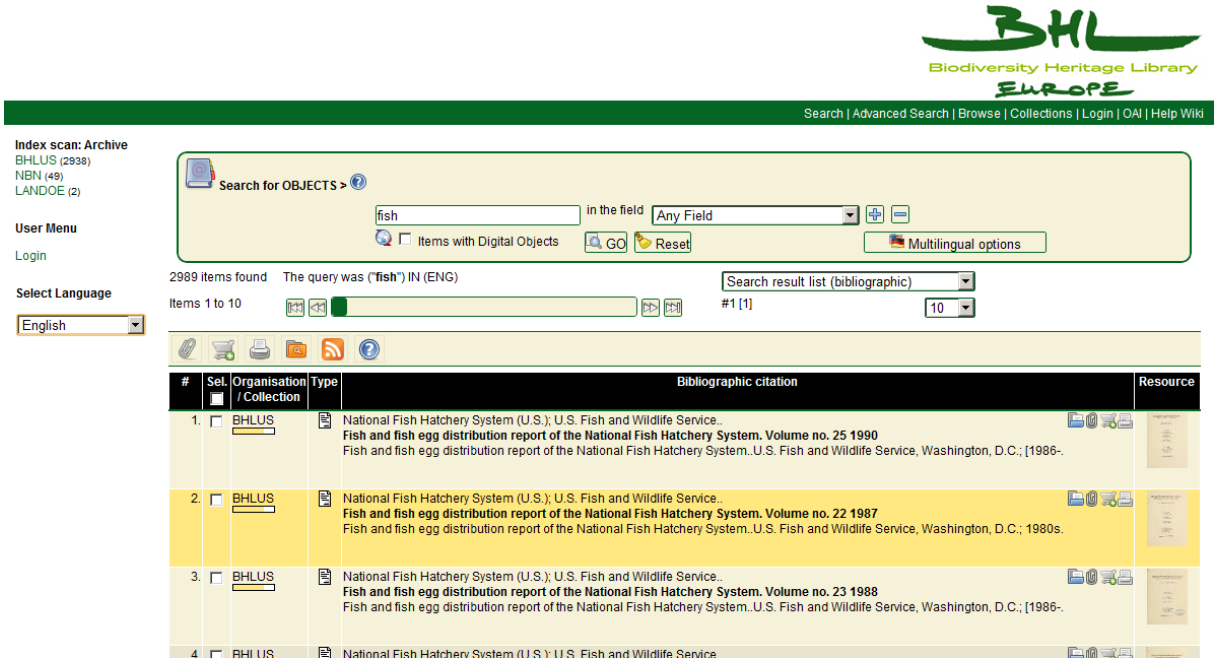


The user may include selected or all metadata fields, use Boolean operators, multilingual features and vocabularies when shaping the query. The search may be restricted to those records that carry digital objects and items and collections might be searched individually.

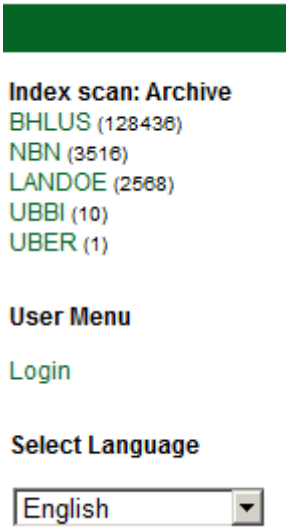


On many sites there is also a quick-search field in the top left corner of the page above the Main Menu. This provides a quick way to do simple searches.

When the users starts the search for “fish” in the simple search the screen changes and the result list is displayed.



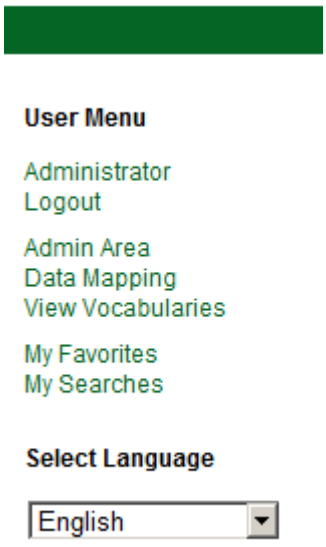
The sidebar of the BHL-Europe browser provides the following links:



Information on how many records in each archive have been found.

Clicking once on the archive acronym adds the archive to the query. This way more than one archive might be looked through. (If the user selects NBN and then LANDOE and hits the return button – or starts the search again – then only the joint 50 items of these archives are displayed in the result list.)

Clicking once again on the same archive acronym leads the user immediately to the found items of this archive.



Link to the user profile

Log out functionality

Link to the Administration Area (for registered users)

Link to the Data Mapping tool (for registered users)

Link to the Tree views of all available BHL-Europe Vocabularies

Link to the folder in which users save their favorite items (registered users)

Link to a folder for the saved searches of the user (registered users)

Select box for the portal display language

Select box for the (Smarty) template

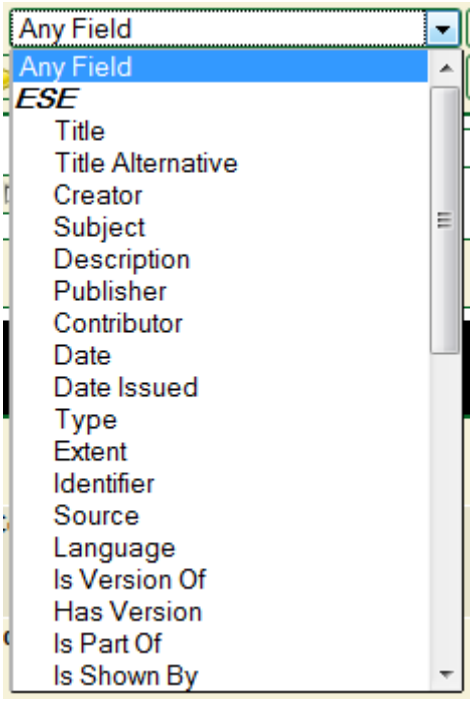
III.I.I Refining the query > Advanced Search

The upper part of the result list shows the possible entry fields for the search.

When the user starts with the simple search (single field entry) on the first page he is led automatically to the search for objects.

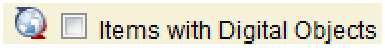
The user may enter the search terms into the field on the left side.

The select box on the right displays all the metadata (catalogue) fields that are currently filled in by any of the data available within BHL-Europe. If “Any Field” is selected the system performs a full text search across all metadata fields.



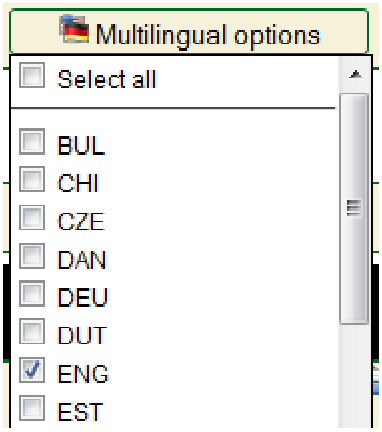
A mouse click on the scroll icon at the right hand sight of the metadata field select box opens up the list of available metadata fields for searching. Registered users may define favorite metadata fields for searching in their user profile. These fields are displayed head of the list.

The user may choose to search within more than one metadata field.



The user may choose to search only items with digital objects.

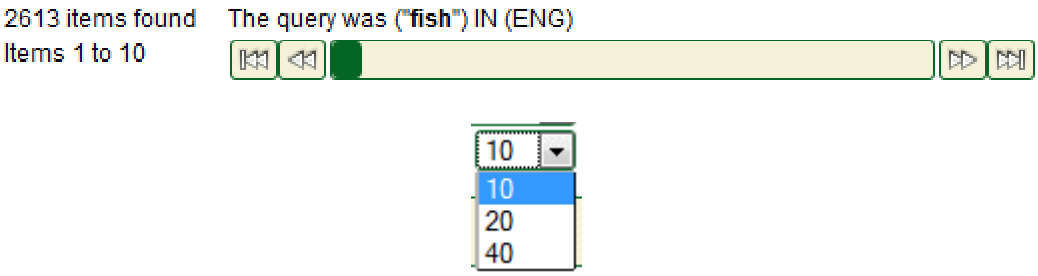
These buttons start or reset the search.



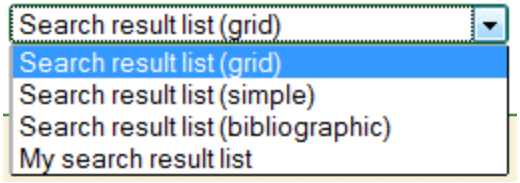
The multilingual select box opens when the user clicks on multilingual options. Now various languages may be included in the search. This means that words of the BHL-Europe multilingual lexicon are included in the query.

The message line beneath the search entry fields shows how many items have been found. The information on how many languages have been included in the search is given.

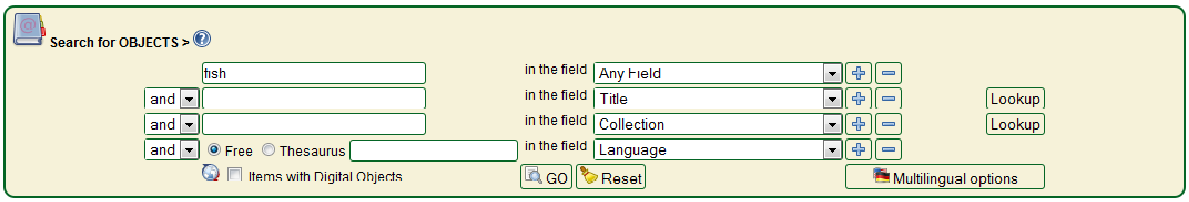
If the user clicks on the (show multilingual terms…) options the translated terms that have been included in the search are displayed.



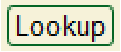
With the red scrolling bar the user might scroll through the results. “Items 1 to 20” displays the information on which found items are being display in the browser window. (The user may select the display of 10, 20, or 40 items for one browser window).



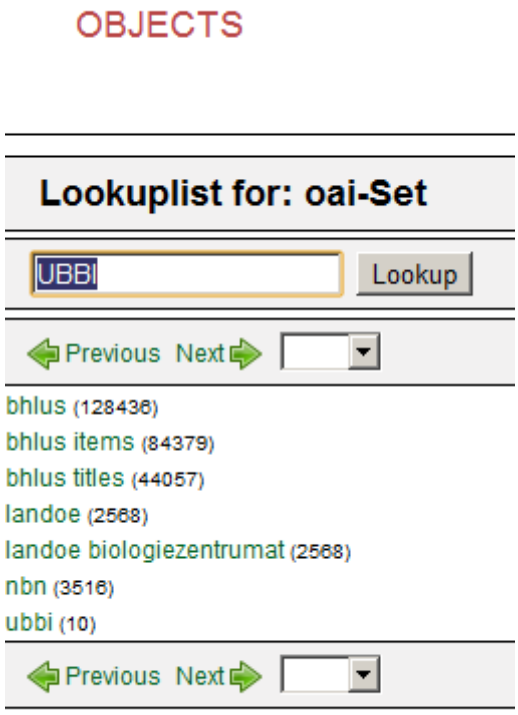
Beside the presentation of the queried words or phrases ("fish") the user finds the options for the result presentation. Three presentations have been pre-defined (grid, simple and bibliographic). Registered users may generate their individual result list presentation (My search result list).



When the user adds a new search ("+" / "-") row via the Boolean operators for connecting the different search terms are being displayed at the left hand side of the search row.



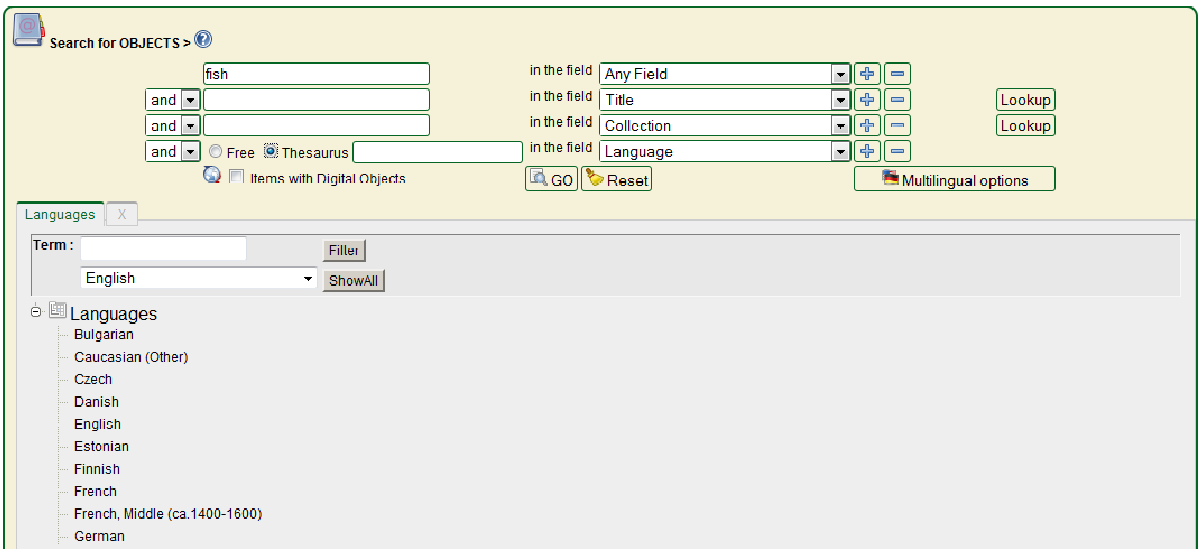
If the selected metadata field for searching (eg. Title) allows an index searching the button "Lookup" is being displayed. A click on this button opens up the lookup list for the metadata field.



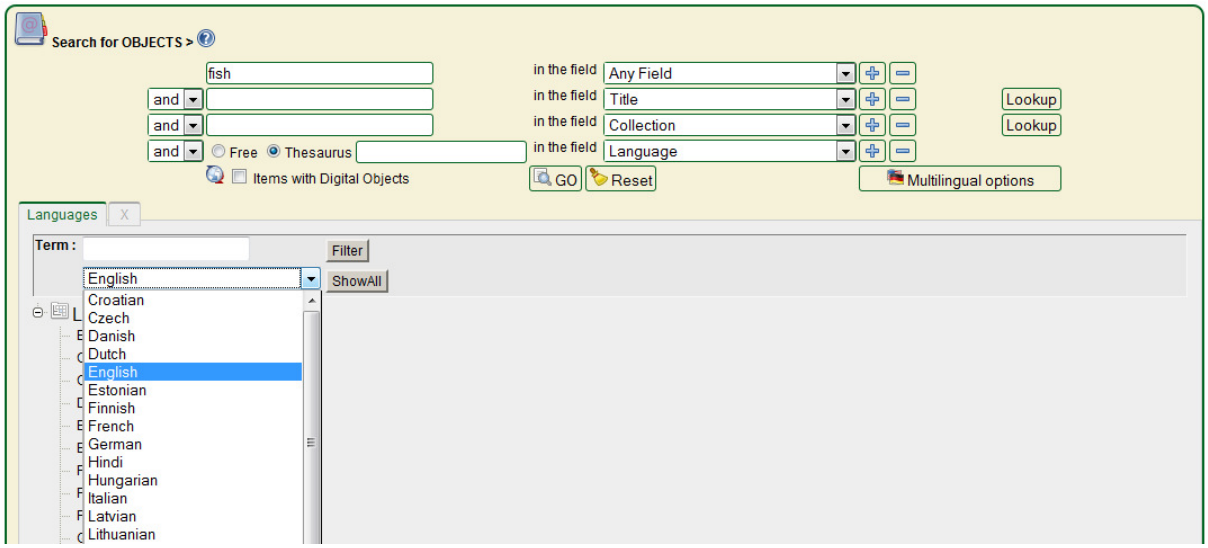
See beside the example of the look up list for the term “fish” in the Title field. The list depicts the various titles available that include the term “fish”. In brackets the number of related items is given. A click on the title (red-colored) transfers the title to the search field.

With “Previous” and “Next” and the alphabetic select box the user may browse through the titles. To find other titles via the index scan the user may insert the desired term into the search field top of the list.

If the selected metadata field is connected to a vocabulary (thesaurus) the search line changes and the user may open up the referring vocabulary with a mouse click on “Thesaurus”.



The vocabulary is displayed below the search line, and the user may select via mouse click terms out of the vocabulary for the search. The user may search for terms of the vocabulary, or filter terms out of the vocabulary. The user can also change the language of the vocabulary and search for terms in another language.



Query language:

fish …finds all items with “fish” as a single word

fish* …truncation right hand side > finds also “fishing”

*fish …truncation left hand side > finds also “catfish”

fish …truncation on both sides > finds “fishing” and “catfish”

fish and cat …finds items that include the words “fish” and “cat”

"fish" and "cat" …also finds both words anywhere in the record

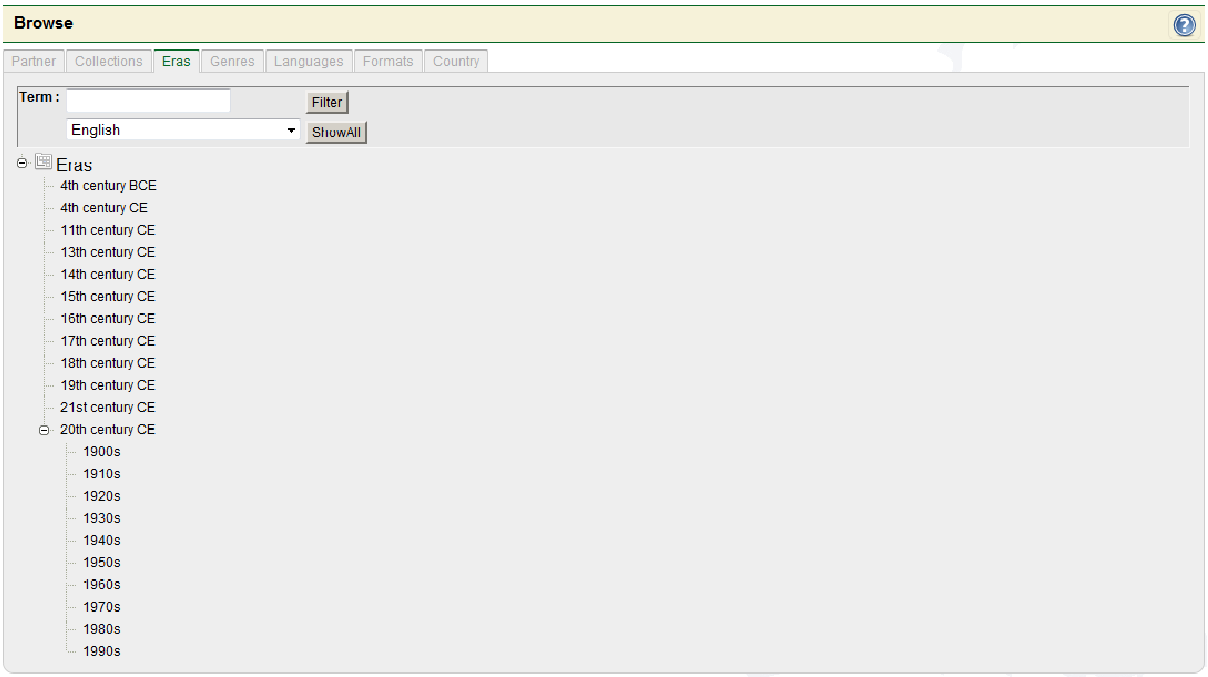
fish not cat …finds items with “fish” but not with “cat”

“fish and cat” …finds items that include the phrase “fish and cat”

"fish" "cat" …finds any of the the words

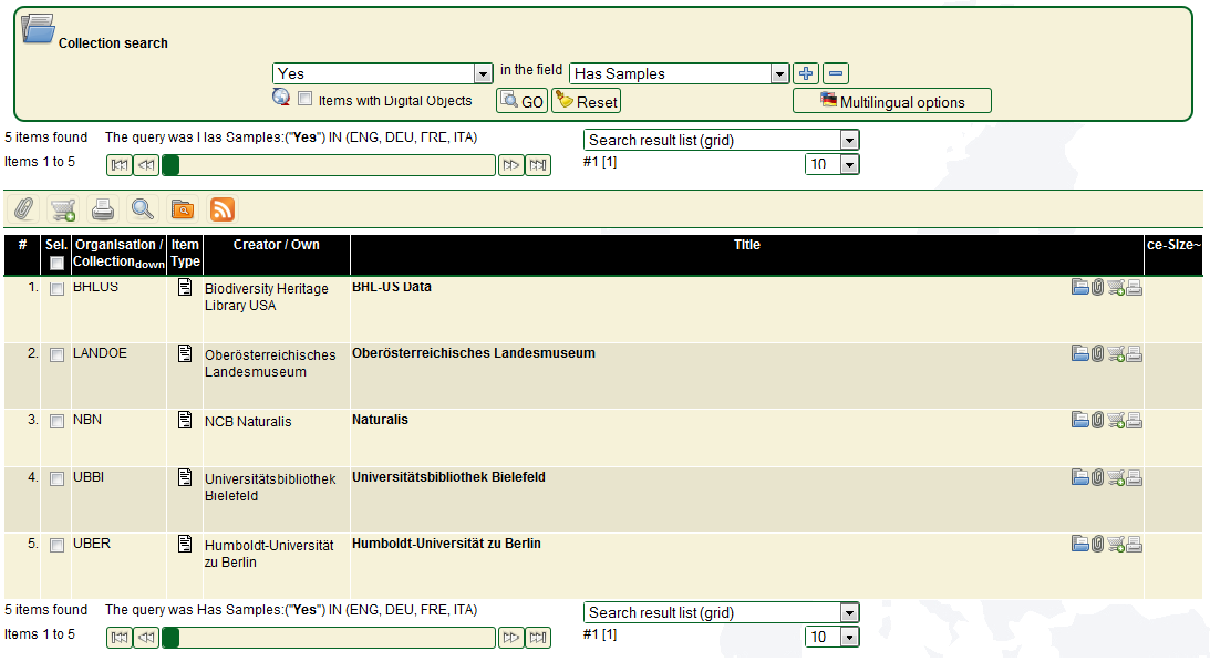
III.I.II Browsing BHL-Europe

When the user opens the browse functionality the screen shows several tabs with fields or vocabulary terms for browsing the database. Each of these entries is connected to data. Vocabulary branches that do not carry data are left out from the vocabulary tree or the wordlist. A click on a wordlist term starts the search/browsing. All of the connected vocabularies for the browsing and searching have been realized as web services.



III.I.III Searching for collections

The collection data may be searched separately. The query is similar to the one for objects. The user may select collections from the retrieved list and start with a search within these collections.



III.II Working with the search results

On top of the list of retrieved items the user finds various tools for handling the search result.

Marked items are added to the favorite folder (registered users). > My Favorites

Marked items are added to the IPR basket. > My Basket

Print the result list.

(Only at Collection Search) Displays objects from marked collections.

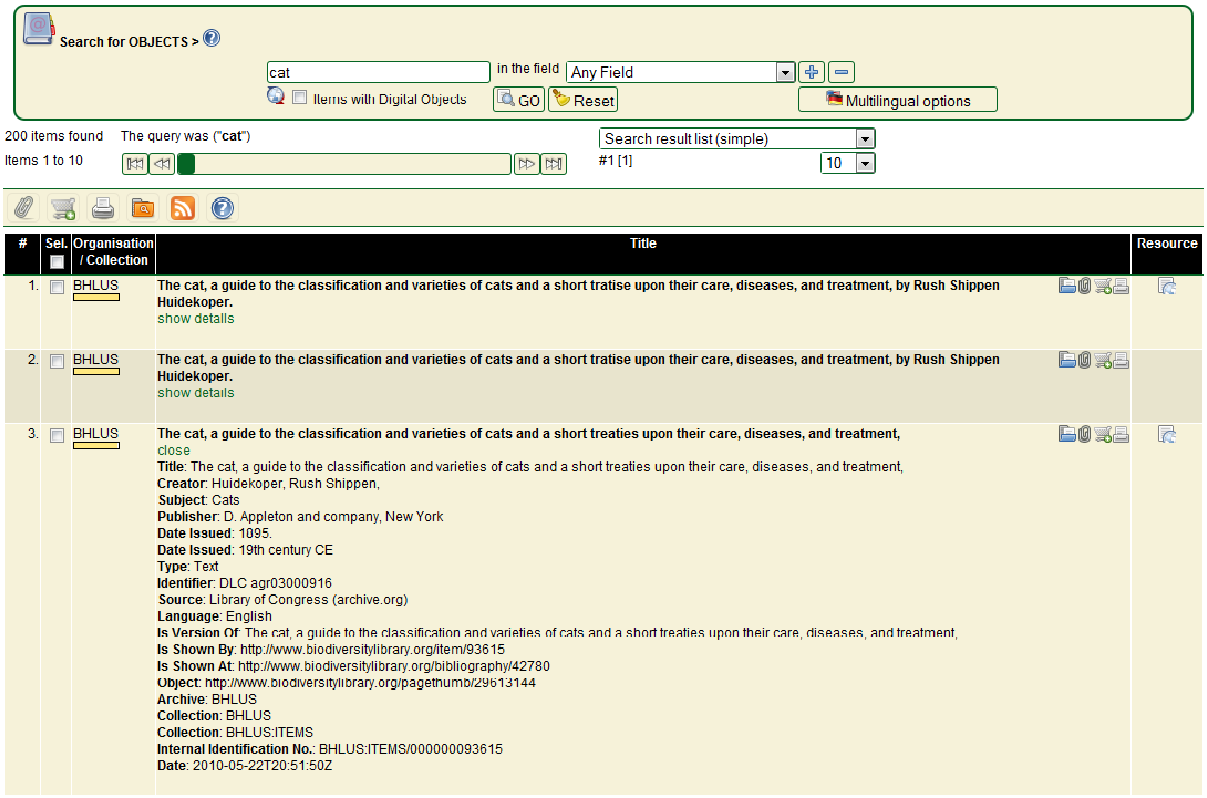
Search history. Save and select a query (registered users). > My Searches

Save the query as RSS newsfeed to your browser.

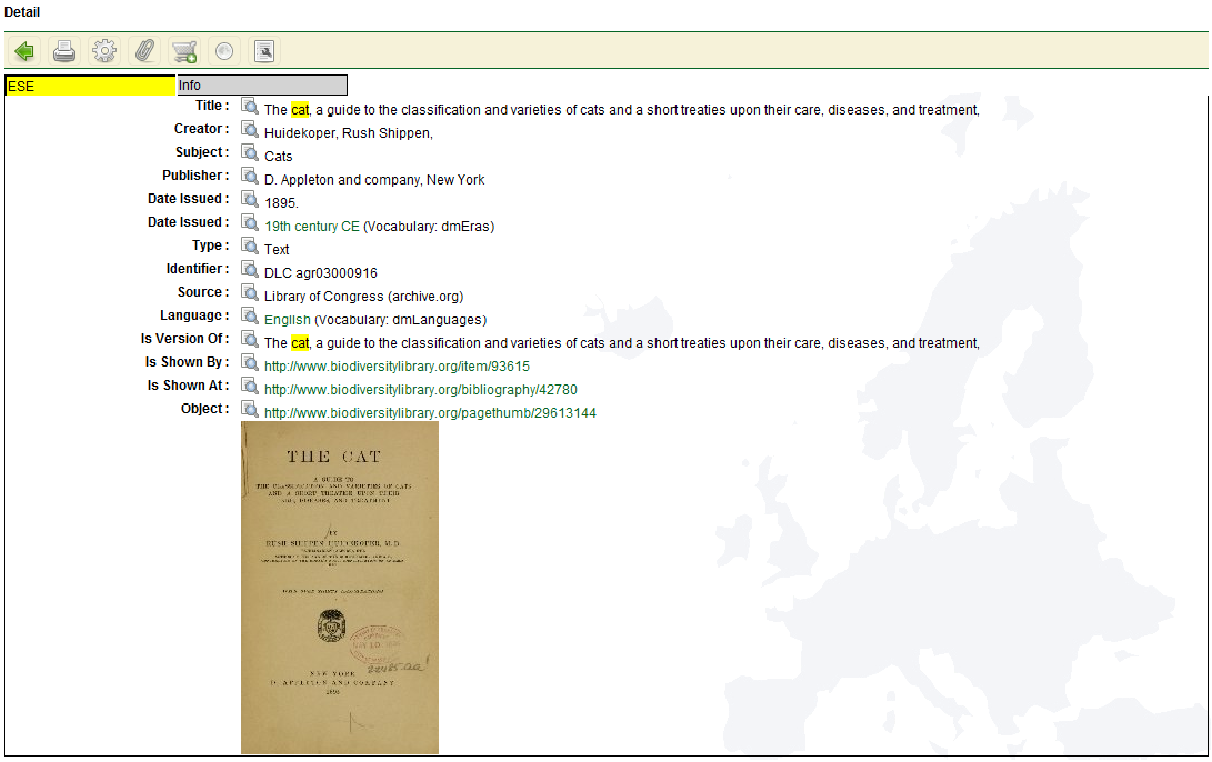
III.III The detail view of items

There are two ways of viewing the details of a queried item.

In the simple result list presentation the user may open the detail information directly in the result list with show details.



In all result presentations the link on the title leads the user to the detailed information for the item.



The detailed view shows all object metadata fields that carry data in the “Object” tab. The symbol takes over the data of this metadata field and performs a new search with it.

These functionalities are available in the detailed view area and displayed at the beginning of the metadata information.

Leads the user back to the result list.

Prints the detailed information in a standardized format.

Shows the XML record of the item.

Adds the item to the favorites folder.

Adds the item to the IPR basket.

Switches the highlighting of search terms on or off.

Opens the raw/original data for the item in a separate window. (Intended for content contributors)

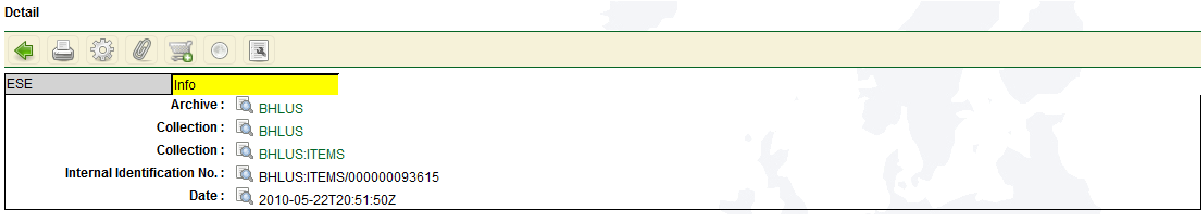
Example of the printing format for detailed information

Detail view

Details

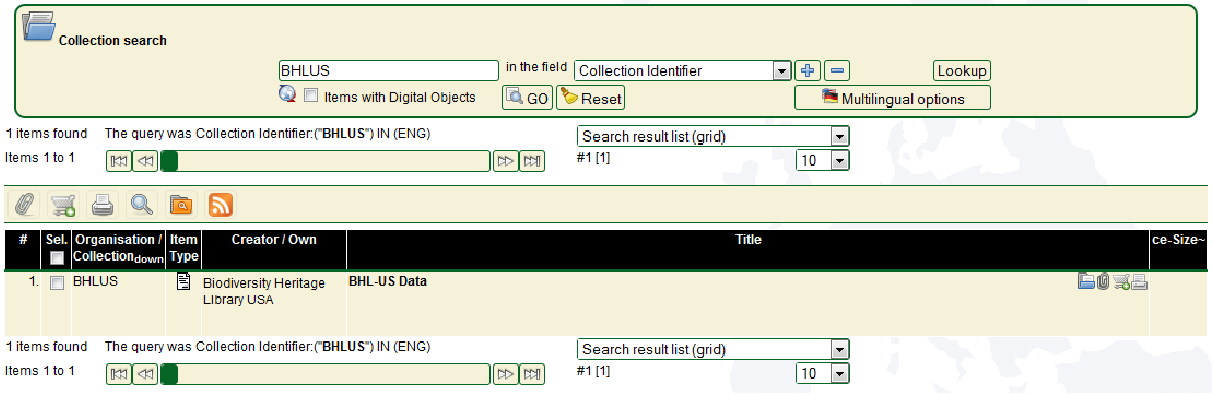
Info	
Archive:	BHLUS
Collection:	BHLUS
Collection:	BHLUS:ITEMS
Internal Identification No.:	BHLUS:ITEMS/000000093615
Date:	2010-05-22T20:51:50Z

The “Info” tab of the detailed view shows the information on the collection to which the object belongs and the current date information for the object.

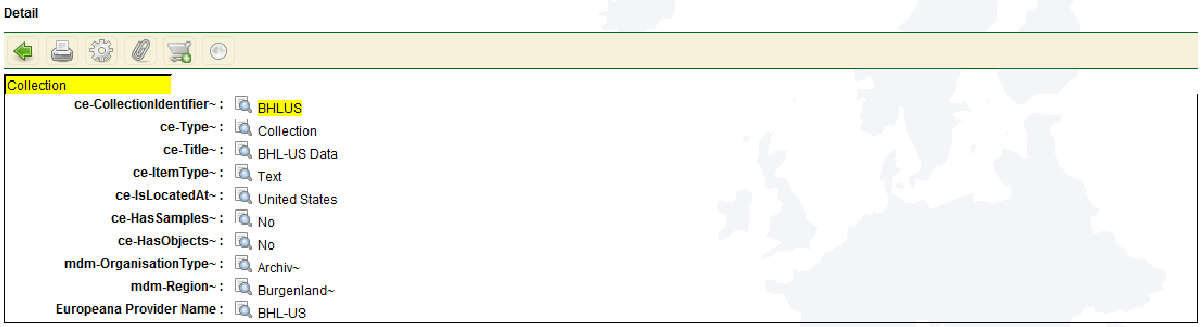


In the “Collection” metadata fields the super and sub collection acronyms are displayed (top down).

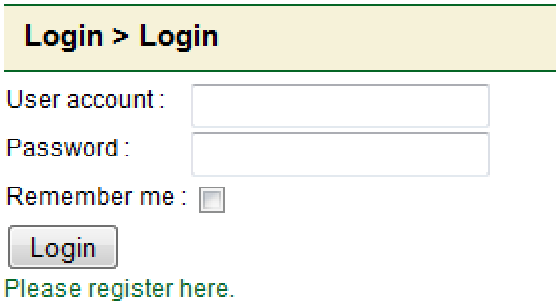
A click on the collection acronym (BHLUS) initiates a search for the collection description.



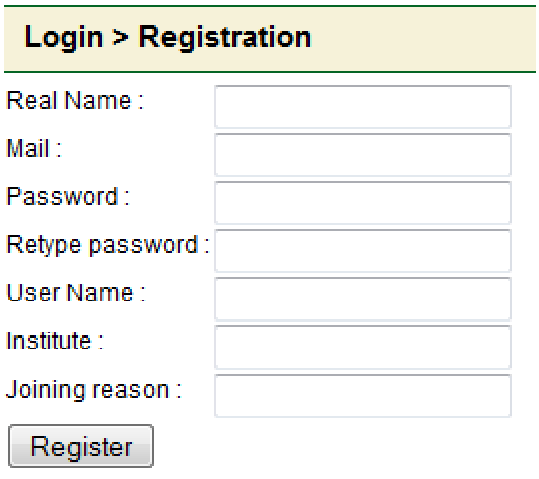
The user retrieves the description of the collection and may have a look into the details of this collection (click on the title > **Published Media**).



III.IV Tools for registered users



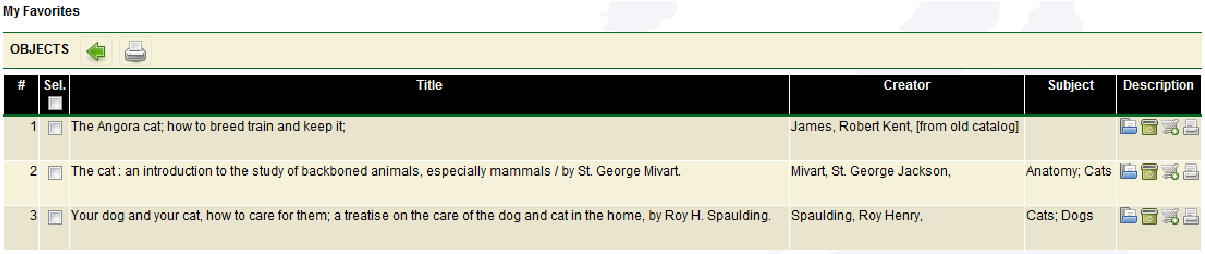
User may register to BHL-Europe via a click on "Please register here" when starting the Log in procedure.



New users need to fill in a registration form and click on “Register”. BHL-Europe will evaluate the registration and the user account will be activated on the following workday. The BHL-Europe portal offers for registered users the following search add-ons:

III.IV.I My Favorites

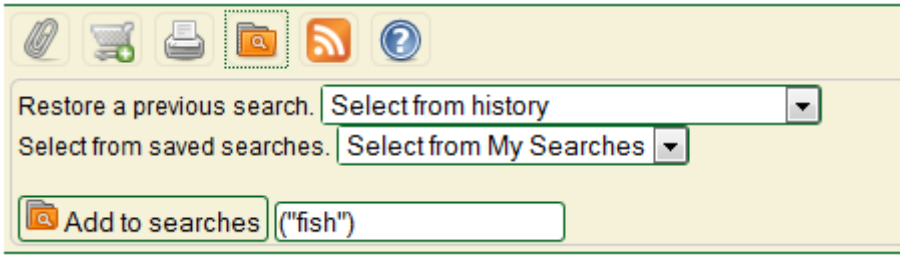
Save favorites (single records) to your individual favorites folder >



The user may save single items to a favorites folder.

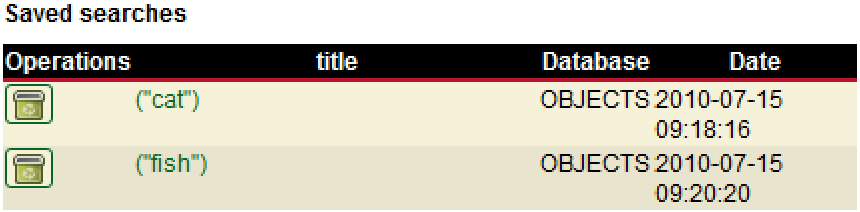
III.IV.II My Searches

Save searches (search parameters) to your individual search folder >



The user may restore a previous search of this working session.

Registered users also may save queries under a chosen name.



III.IV.III Data mapping tool

Registered users may use the data mapping tool for entering mappings of their catalogue data to the BHL-Europe application profiles.

The user can enter the native field name in the “Your field” column and add several comments in the “Your Comment” field. The fields may be duplicated if more than one native field fits to a single BHL-Europe field. (In Dublin core the duplication and leaving out of fields is not restricted.)

In the “Your Comment” field the BHL-Europe vocabularies are pre-entered and new data will be automatically checked for any possibility to connect to a BHL-Europe vocabulary.

The most important field within the mapping is the OAI identifier field (Internal Identification No.) which appears at the end of the form (Section “Info”). In this field the user should enter the unique identifier field for the data in the native database. This information will allow the later updating of records in the common repository.

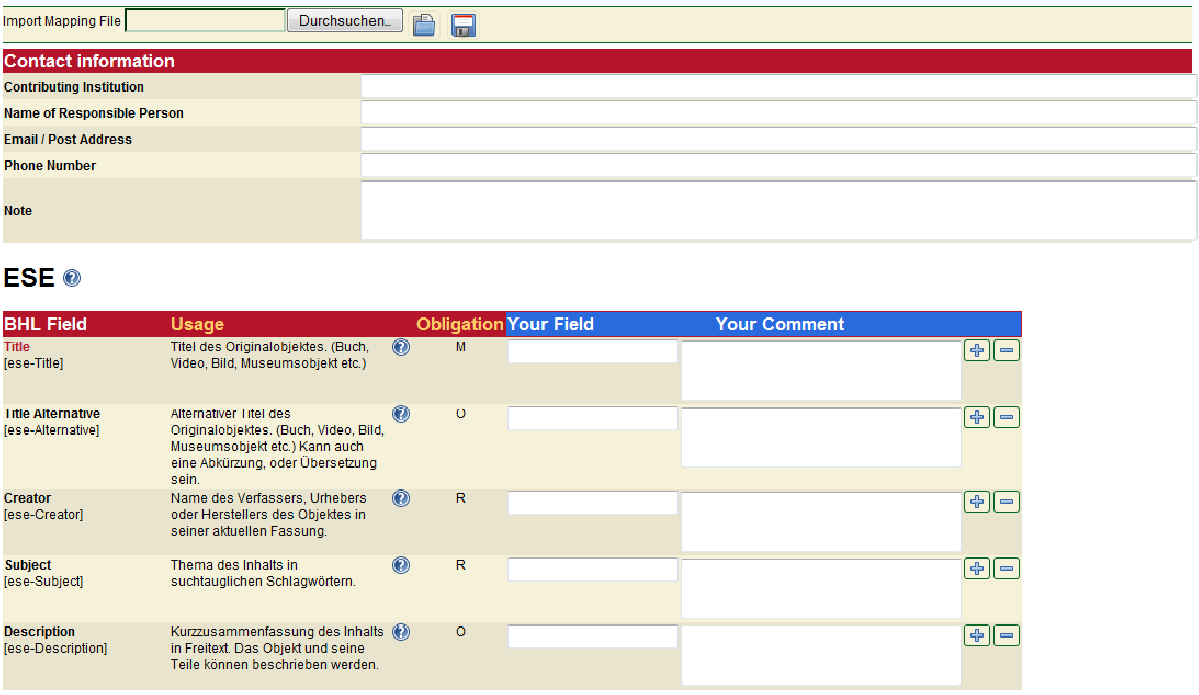
When the user uploads the mapping the tool automatically creates:

- A basic mapper written in PHP
- A collection description
- A table for further usage

This information is then send automatically to the BHL-Europe technical responsible personnel.

OPTIONAL: If the native data makes use of individual vocabularies that could be mapped to the BHL-Europe vocabularies the user may download the substitution lists at the end of the tool. These can be filled in and send to the technical BHL-Europe team via email.

Archives that do not have data describing their collections can use the section “Collection” for entering information on the collection connected to the object data.



III.IV.IV Portal personalization features

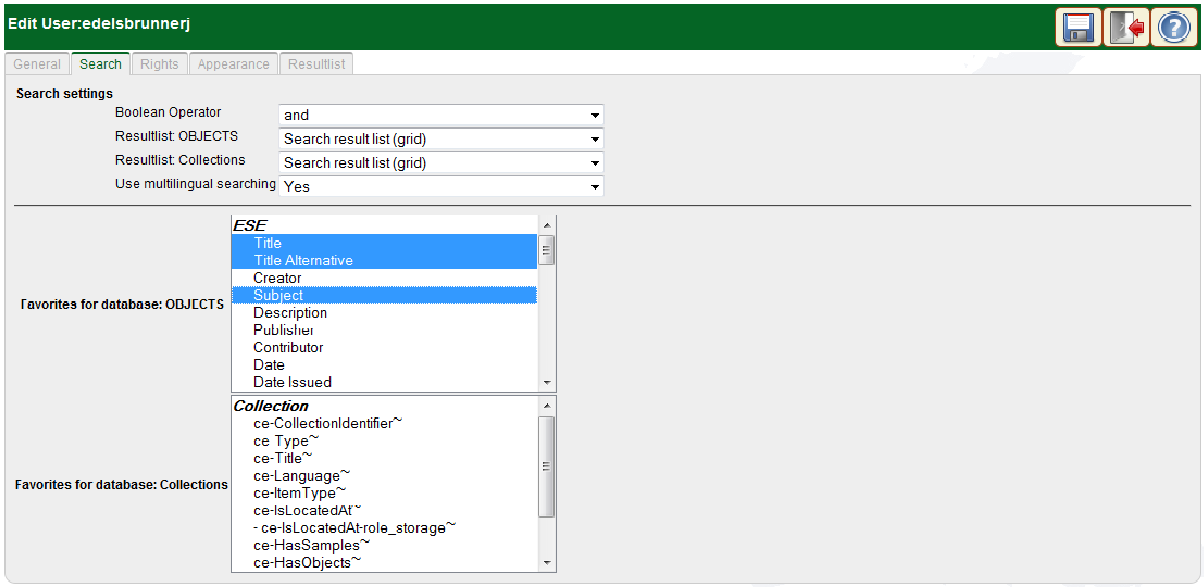
Registered users may choose among the following personalization features for the BHL-Europe portal:

A click on the user name leads the registered use to the user profile where the following features are supported:

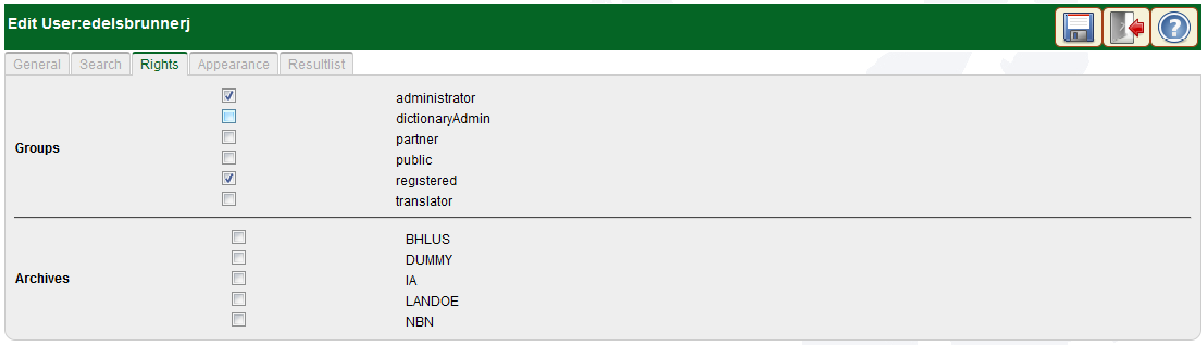
The first tab “General” shows the user name, email and password.

The second tab “Search” allows the individualization of the search.

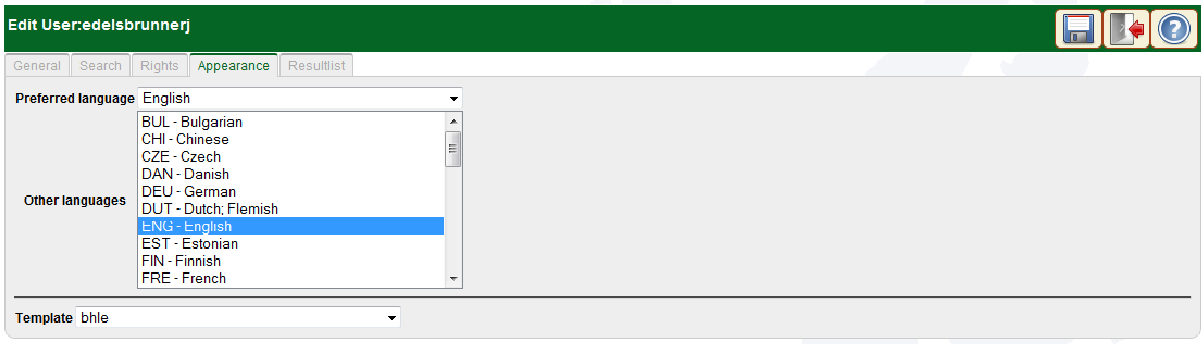
- Definition of the standard Boolean operator
- Definition of the standard Result list presentation
- Switching on/off the multilingual search option
- Selecting preferred (metadata) fields for querying items
- Selecting preferred (metadata) fields for querying collections



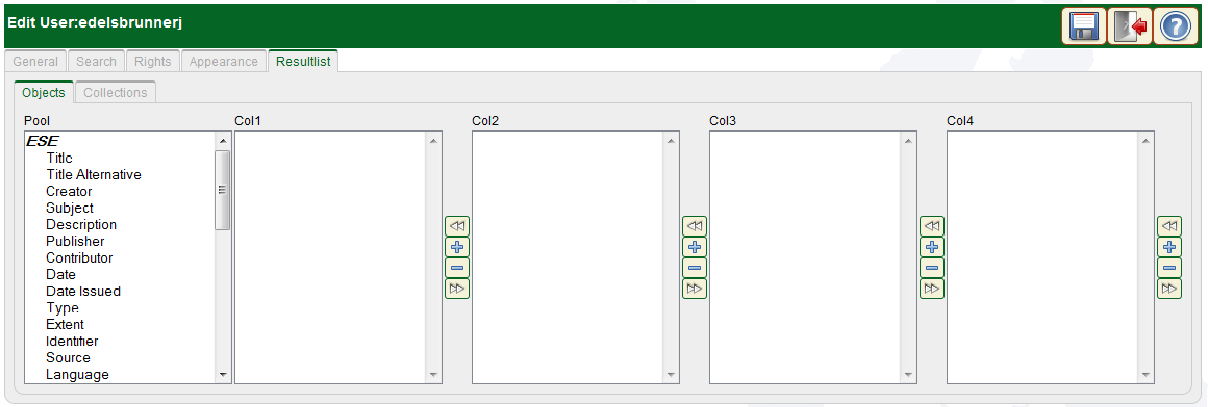
The third tab “Rights” shows the user the rights for the account.



On the fourth tab “Appearance” the user may choose the preferred portal language, the “other languages” that should be included in the search as a standard for this account.



The fifth tab “Resultlist” provides a tool for choosing an individual result list design. The user clicks on a metadata field in the Pool and adds it via the + to one of the four columns. The user may change the ordering of the fields in one column. This result list design is saved to the user’s profile and can be accessed when the user has logged in.


Edit User:edelsbrunnerj
General
Search
Rights
Appearance
Resultlist
Objects
Collections
Pool
Col1
Col2
Col3
Col4
ESE
Title
Title Alternative
Creator
Subject
Description
Publisher
Contributor
Date
Date Issued
Type
Extent
Identifier
Source
Language

IV Annex 2 – BHL-Europe Back end tools

Via the link “Admin Area” the user reaches the BHL-Europe back end tools.

The back end tools are mainly intended for content contributors, translators and portal administrators.

IV.I The edit environment tool

Here the user can show and edit configurations of the system. Settings that are made in the installation process can be altered. System variables can be modified:

Edit

MdmMain

Title	BHL-Europe
Compress	
HelpPath	http://dev.ait.co.at/bhl/wiki/index.php5/%s
Debugging	true
SessionName	MDMSESSION

MdmDirectories

WebRoot	http://bhl.ait.co.at
IdentifyWebRoot	true
DefaultUrl	index.php
PortalRoot	
AjaxGateway	
ThesaurusAjaxRoot	/193.80.249.124/webservice/wsdl-creator-dev/ajax.php/
DataDir	

Be aware that wrong entries will prevent the system from working.

IV.II The collection entry tool

This tool allows the entering of collection descriptions based on the BHL-Europe collection application profile. The collection description might also be send via the mapping tool.

For being allowed to enter a collection description the user must be registered to the BHL-Europe platform.

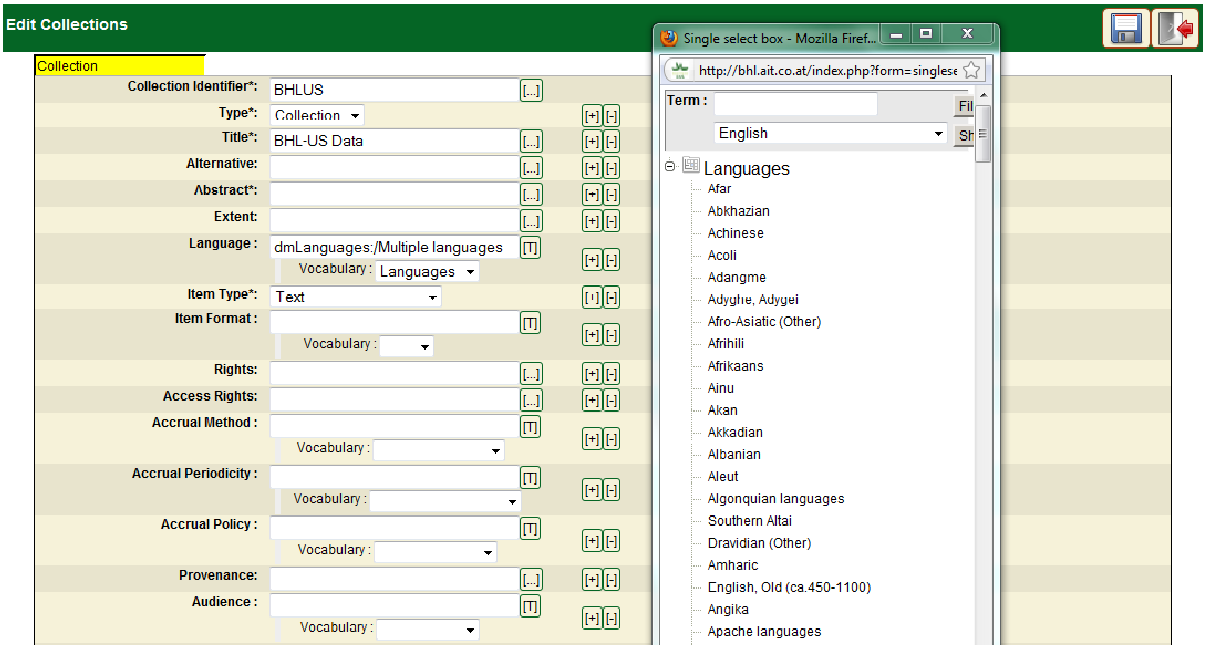
The entry tool shows all available metadata fields for describing a collection. Those marked with * should be filled in primarily.

[…] leads to an index scan for this field. The user may adopt a term of the index into the entry form.

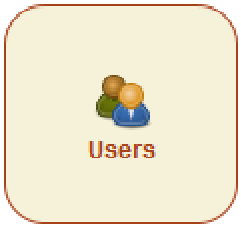
[T] Opens the referring thesaurus of this field in a separate window. The user may select a term from the thesaurus for the description.

All metadata fields may be duplicated. Use [+] for duplication and [-] for deleting a field.

IMPORTANT: In the Place field the user should first enter the country (with the role: place of storage), than duplicate the field and enter the address.



IV.III The user administration

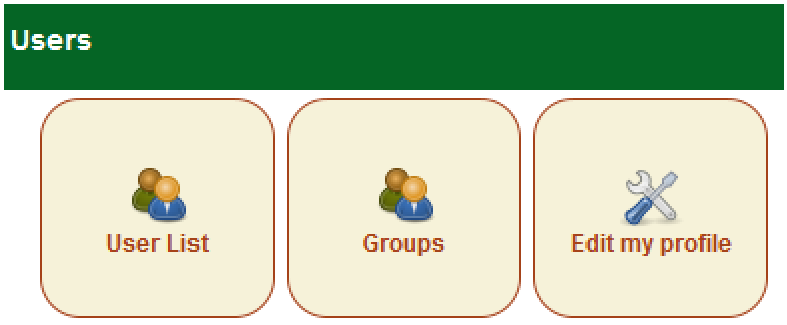


Users and user groups have to be managed very carefully in order to guarantee a secure and consistent system. The User Administration component enables the BHL-Europe Administration Users to administrate users and user group profiles.

How to administer a user profile has already been described in the section “Portal personalization features” of Annex 1.

Overview on the BHL-Europe user groups

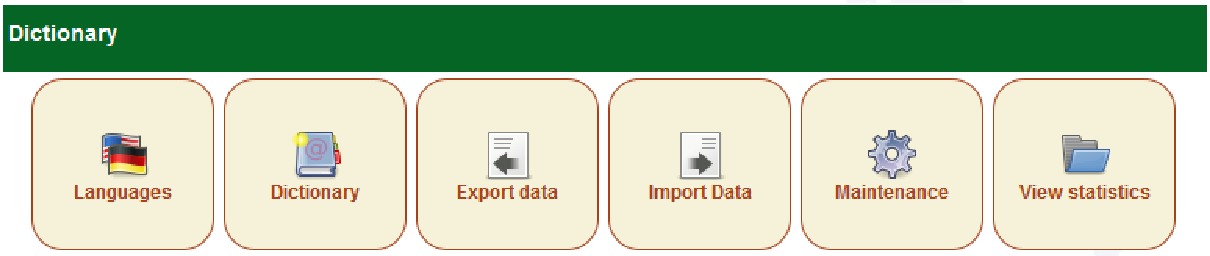
Name	Description
Dictionary Administrator	Dictionary Administrator. People who are allowed to change everything in the dictionary
Partner	Partners have the right to edit their collections and user profile and use the dictionary, the portal languages and the data import tool
Public	Public usergroup. Everything a not logged in user can do
Administrator	Systemadministrator
Registered	User with own profile. Registered users are allowed to search, display and edit their own data. (Use advanced search result handling features)
Translator	People who are allowed to change language specific stuff.



The administrator may look into the user list and change the user profiles there. The administrator may also enter new user groups. Registered users do only see the "Edit my profile" part of this tool.

IV.IV The dictionary

The dictionary tool administrates the translation and multilingual vocabularies and free wordlists. The tool is only available for a special user group (the translators).



Languages: The languages that should appear in the dictionary tool can be selected

Dictionary: The online tool which allows translation per language or per word.

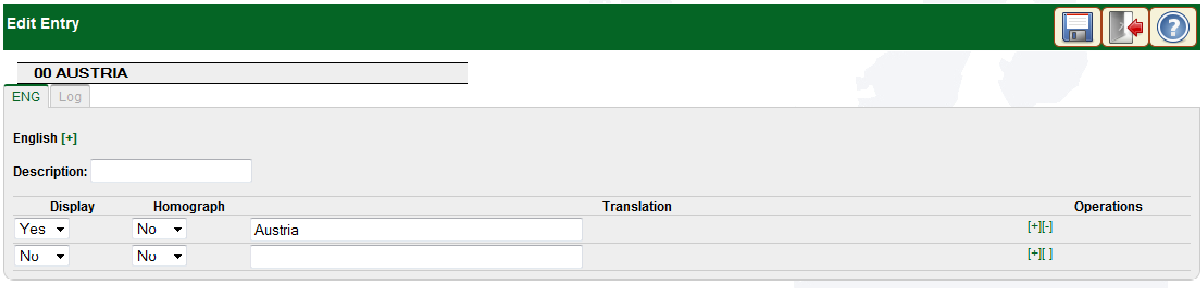
Export data: Export language files for later translation in Excel format.

Import data: Import the translated Excel files to the Dictionary tool.

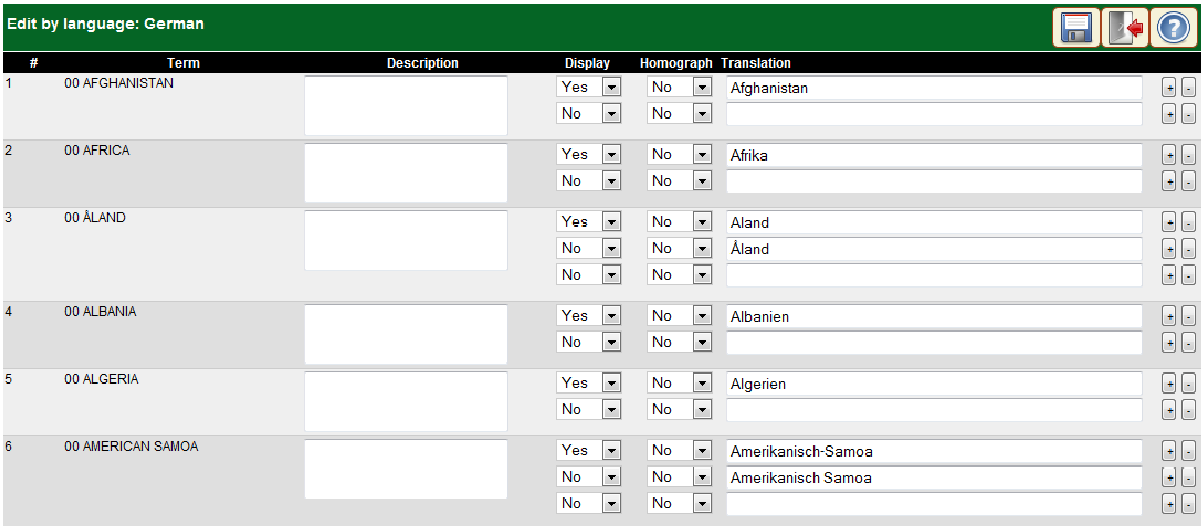
Maintenance: Delete whole translations per language.

View statistics: Translation statistics and log file.

Edit per word:



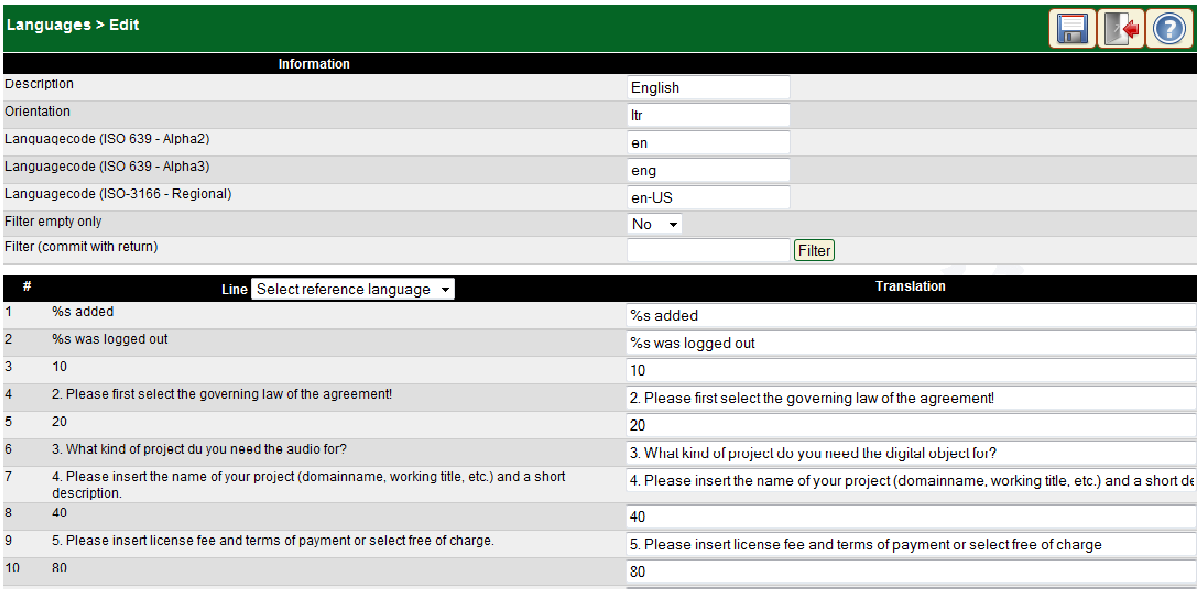
Edit per language:



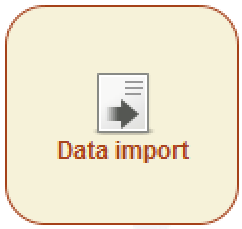
IV.V The portal languages tool

This tool supports the translation of the used expressions and words in the portal. It is only accessible for translators.

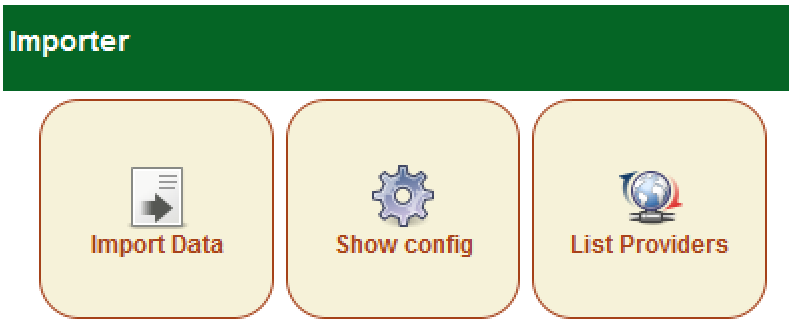
Via “Available languages” the translator reaches the word list of portal terms in a given language. The word lists may also be exported and re-imported.



IV.VI The data import



This tool supports the data import to the BHL-Europe system.

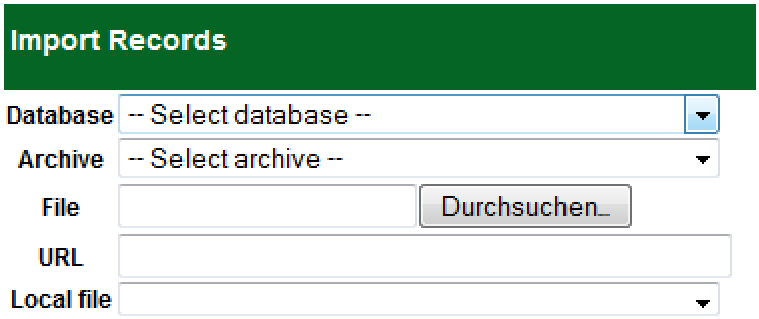


Import Data: New files with data can be imported directly to the system via this tool.

Show config: This is where the configuration for the mapper and the reader and the general settings is done. See section 6.1, 6.2 and 6.3 for a detailed description of the tool.

List providers: This is the tool for administrating the various providers connected to the BHL-Europe platform. See section 5 of this document for a detailed description.

First the database, the archive and the file that should be uploaded are selected.



Then the collection and the importer for this collection have to be chosen. The entry screen shows a pre-view of the file in the dedicated encoding. If the encoding is not pre-defined the user may choose among various encodings.

When the import settings have been saved, the entry screen shows how the raw (native) record is being "read" – how the mapped (BHL) record will look like. If the user is not satisfied with the mapped record he could go back to the Import configuration and update the mapper (administrator user).

When the user presses "save" after looking at the mapped record then the file will be imported into the system.

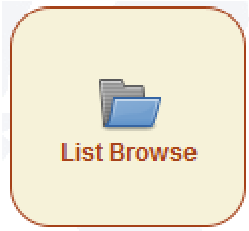
The user will get an information message via email.

IV.VII List Thesauri

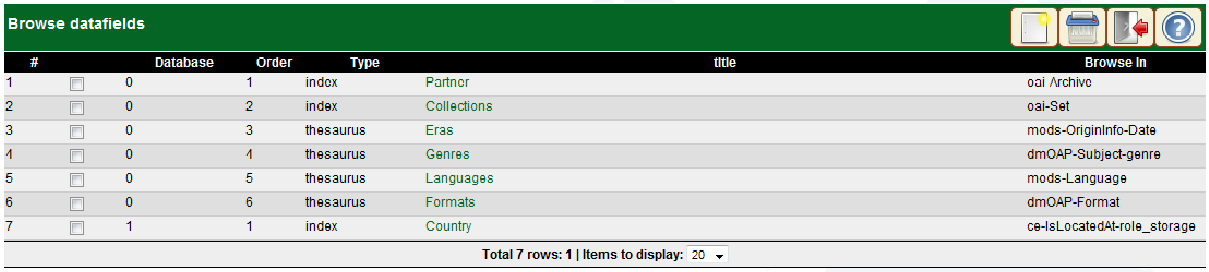
The "List Thesauri" tool is used by the administrator of the BHL-Europe system to add vocabularies to the platform.

All BHL-Europe thesauri are available and integrated as web services. These web services are currently running on ait's servers and are accessible under http://dev.ait.co.at/webservice/.

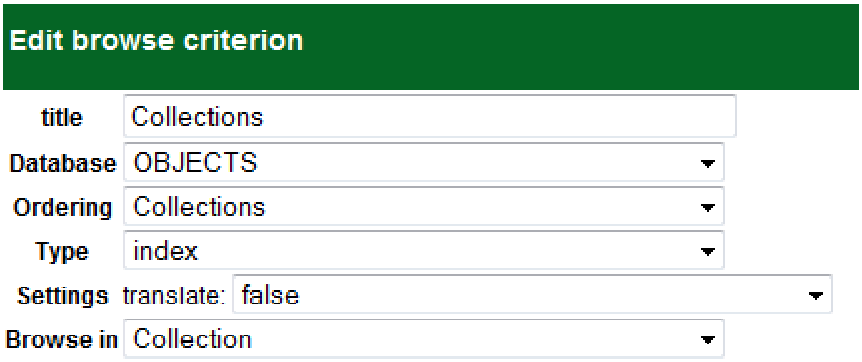
IV.VIII List Browse



With this tool the Portal administrator manages the tabs for browsing BHL-Europe. The administrator may choose which data field should be offered for the browsing function.



Via a click on the (green) title of the data field the administrator can update the settings:



V Annex 3 - BHL-Europe German Prototype Schema

The BHL-Europe German Prototype uses the ESE 3.3 schema.

Information about the schema can be found at:

http://group.europeana.eu/web/guest/technical-requirements/

VI Annex 4 – BHL-Europe German Prototype Application Profiles

The next pages show the sections of the BHL-Europe application profiles for object and collection metadata used for the German prototype. A BHL-Europe application profile is being developed based on MODS and METS.

VI.I Section: ESE

Name	Refinement	URI	Usage	Obligation	Note
Title		http://purl.org/dc/terms/title	A name given to the resource. Typically, a Title will be a name by which the resource is formally known. Title of the original object (analog or born digital)	M	
Alternative Title	Title	http://purl.org/dc/terms/alternative	Alternative title of the original object (analog or born digital). Can include Title abbreviations as well as translations.	O	Any form of the title used as a substitute or alternative to the formal title of the resource.
Creator		http://purl.org/dc/terms/creator	Creator of the original object (analog or born digital)	R	An entity primarily responsible for making the resource.
Subject		http://purl.org/dc/terms/subject	The topic of the resource. Subject of the original object (analog or born digital)	R	Spatial characteristics of the resource. (i.e. what the resource represents and depicts in terms of space)
Description		http://purl.org/dc/terms/description	Description of the original object (analog or born digital)	O	An account of the resource.
TableOfContents	Description	http://purl.org/dc/terms/tableOfContents	List of subunits of the original object (analog or born digital)	O	
Publisher		http://purl.org/dc/terms/publisher	An entity responsible for making the resource available. Publisher of the original object (analog or born digital)	O	
Contributor		http://purl.org/dc/terms/contributor	An entity responsible for making contributions to the resource.	O	
Date		http://purl.org/dc/terms/date	Date of creation of the original object (analog or born digital). Not the date of digitization. Use dcterms:temporal (dc:coverage), if date is associated with the topic of the resource. In case of only unqualified dates, the first instance will be taken as the default creation date for presentation of the digital object in the Timeline browse	R	A point or period of time associated with an event in the lifecycle of the resource

Date Created	Date	http://purl.org/dc/terms/created	Date of creation of the original object (analog or born digital). Not the date of digitization.	O	
Date Issued	Date	http://purl.org/dc/terms/issued	Date of formal issuance (e.g., publication) of the resource. Issued date of the original object (analog or born digital)	O	
Type		http://purl.org/dc/terms/type	Type of the original object (analog or born digital). Europeana uses only the four following dc:type values: Text, StillImage, MovingImage, Sound, while keeping the original source values for full text indexing. Each content provider is requested to map the types used in their metadata with the four types used in Europeana. This element is mainly used for user interface/search purposes. Europeana will show objects categorized in one of the four types, therefore the user can search easily what they are looking for. A type icon is displayed with each search result. There is one icon for each of the four types. When thumbnails or samples of digital objects are not available for short and full display, default thumbnails are displayed according to the type resulting of the types mapping given by the content provider. The Europeana end user interface is using the following terminology: Text for Text dc:type Image for StillImage dc:type Video for MovingImage dc:type Sound for Sound dc:type	O	The nature or genre of the resource. Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMIType vocabulary).
Format		http://purl.org/dc/terms/format	File format, physical medium, or dimensions of the original and/or digitized object	O	
Extent	Format	http://purl.org/dc/terms/extent	Size or duration of original and/or digitized object	O	
Medium	Format	http://purl.org/dc/terms/medium	The material or physical carrier of the resource. Medium of the original object (analog or born digital)	O	
Identifier		http://purl.org/dc/terms/identifier	An unambiguous reference to the resource within a given context. Identifier of the original object (analog or born digital). For the URL of the digital object see <europeana:isShownBy>	O	
Source		http://purl.org/dc/terms/source	A related resource from which the described resource is derived.	R	
Language		http://purl.org/dc/terms/language	The languages of metadata of a resource should be described in xml:lang attribute. For instance, After dark.Europeana normalizes the value of both dc:language and xml:lang for functional purposes (facet browsing etc). If any languages can be	O	Recommended best practice is to use a controlled vocabulary such as RFC 4646 which, in conjunction with ISO 639, defines two- and three-letter

			associated with digital objects, please use and repeat this element as many as possible. For example, video and sound can attach speaking languages. If image includes some text on it (i.e. posters, newspapers etc), we recommend the content providers to use dc:language. If there is absolutely no language aspect (photograph etc), please ignore this element.		primary language tags. Either a coded value or text string can be represented here. If the content is in more than one language, the element may be repeated.
Relation		http://purl.org/dc/terms/relation	A related resource. Information about the original object (analog or born digital)	O	
isVersionOf	Relation	http://purl.org/dc/terms/isVersionOf	A related resource of which the described resource is a version, edition, or adaptation. Information about the original object (analog or born digital)	O	See dc:relation for more.
hasVersion	Relation	http://purl.org/dc/terms/hasVersion	A related resource that is a version, edition, or adaptation of the described resource. Changes in version imply substantive changes in content rather than differences in format. Information about the original object (analog of born digital)	O	See dc:relation for more.
isReplacedBy	Relation	http://purl.org/dc/terms/isReplacedBy	A related resource that supplants, displaces, or supersedes the described resource. Information about the original object (analog or born digital)	O	See dc:relation for more.
Replaces	Relation	http://purl.org/dc/terms/replaces	A related resource that is supplanted, displaced, or superseded by the described resource. Information about the original object (analog or born digital)	O	See dc:relation for more.
isRequiredBy	Relation	http://purl.org/dc/terms/isRequiredBy	A related resource that requires the described resource to support its function, delivery, or coherence. Information about the original object (analog or born digital)	O	See dc:relation for more.
Requires	Relation	http://purl.org/dc/terms/requires	A related resource that is required by the described resource to support its function, delivery, or coherence. Information about the original object (analog or born digital)	O	See dc:relation for more.
isPartOf	Relation	http://purl.org/dc/terms/isPartOf	A related resource in which the described resource is physically or logically included. Information about the original object (analog or born digital)	O	See dc:relation for more.
hasPart	Relation	http://purl.org/dc/terms/hasPart	A related resource that is included either physically or logically in the described resource. Information about the original object (analog of born digital)	O	. See dc:relation for more.

isReferencedBy	Relation	http://purl.org/dc/terms/isReferencedBy	A related resource that references, cites, or otherwise points to the described resource. Information about the original object (analog or born digital)	O	See dc:relation for more.
References	Relation	http://purl.org/dc/terms/references	A related resource that is referenced, cited, or otherwise pointed to by the described resource. Information about the original object (analog or born digital)	O	See dc:relation for more.
isFormatOf	Relation	http://purl.org/dc/terms/isFormatOf	A related resource that is substantially the same as the described resource, but in another format. Information about the original object (analog or born digital)	O	See dc:relation for more.
hasFormat	Relation	http://purl.org/dc/terms/hasFormat	Information about the original object (analog of born digital) A related resource that is substantially the same as the pre-existing described resource, but in another format.	O	See dc:relation for more.
Conforms To	Relation	http://purl.org/dc/terms/conformsTo	Standard useful for the use of the digital object (digitized or born digital).	O	An established standard to which the described resource conforms. See dc:relation for more.
isShownBy		http://europeana.eu/terms/isShownBy	An unambiguous URI reference to the digital object in the best resolution available on the content provider web site. The link to the digital object is mandatory and will be used as a hyperlink associated with the clickable button and clickable icon to view or play the object on the content provider's web site.	M	
isShownAt		http://europeana.eu/terms/isShownAt	An unambiguous URI reference to the digital object in full information context on the content provide's web site. This link will be active in the Europeana interface. It will lead the user to the digital object displayed in full information context on the content provider's web site.	O	An
Coverage		http://purl.org/dc/terms/coverage	Unqualified topic of the original object (analog or born digital). Please use preferably the spatial or temporal qualifier if possible.	O	The spatial or temporal topic of the resource, the spatial applicability of the resource, or the jurisdiction under which the resource is relevant.
Spatial Coverage	Coverage	http://purl.org/dc/terms/spatial	Spatial characteristics of the resource. (i.e. what the resource represents and depicts in terms of space). Spatial characteristics of the original object (analog or born digital)	R	
Temporal	Coverage	http://purl.org/dc/ter	Temporal characteristics of the original object (analog	R	

Coverage		ms/temporal	or born digital)		
Rights		http://purl.org/dc/terms/rights	Intellectual Property Rights or access rights/license of the digital object (digitized or born digital)	O	Information about rights held in and over the resource.
Provenance		http://purl.org/dc/terms/provenance	A statement of any changes in ownership and custody of the resource since its creation that are significant for its authenticity, integrity, and interpretation. Ownership and custody of the original object (analog or born digital)	O	
Object		http://europeana.eu/terms/userTag	User created tags through the Europeana interface	O	
Europeana Rights		http://www.europeana.eu/schemas/ese/rights	Information about copyright of the digital object as specified by isShownBy and isShownAt	O	The value is a URL constructed according to the specifications in the "Rights Guidelines" document on the Technical Requirements page at: http://version1.europeana.eu/web/guest/technical-requirements/ The URLs are constructed by adding a code indicating the copyright status of an object to the domain name where that status is defined. For users of Europeana.eu this copyright information also applies to the preview specified in europeana:object. The rights statement will be represented as a badge on the object page and as a text string in the metadata display. The provision of this element has an obligation level of "recommended" in this version of ESE. It will be changed to "Mandatory" in a later version.

VI.II Section: Collection

Name	URI	Usage	Encodings	Role	Obligation	Note
Collection Identifier	dc:identifier	A URI for the collection.			M	The data field that shows the unique identifier of the collection.
Type	dc:type	TYPE = Collection	dcterms: DCMIType		M	Please indicate here which field in your data expresses the fact that the described item is a collection.

Title	dc:title	The name of the collection.			M	EXAMPLE: The Archive's XXX biodiversity literature collection.
Alternative Title	dcterms:alternative	Any form of name used as a substitute or alternative to the formal name of the collection.			O	EXAMPLE: Biodiversity literature collection.
Description	dcterms:abstract	A summary description of the collection.			M	A free text description.
Size	dcterms:extent	The size of the collection.			O	EXAMPLE: 56.879 books, 100.900 articles
Language	dc:language	The language(s) of the items in the collection.	dcterms: ISO639-2/3		R	EXAMPLE: English, Portuguese, Spanish.
Item Type	cld:itemType	The various item types within the collection.	dcterms: DCMIType		M	Example: sound, text, video. VOC: GERMAN PROTOTYPE provides here the Dublin Core Type vocabulary to choose from: Physical Object, Interactive Resource, Collection, Text, Still Image, Sound, Service, Moving Image, Event, Dataset, Software, Image.
Item Format	cld:itemFormat	A media type, physical or digital, of one or more items within the collection.	dmFormats		O	EXAMPLE: book, journal. VOC:
Rights	dc:rights	A statement of any rights held in/over the collection.			O	EXAMPLE: Collection donated by XXX to Archive YYY.
Access Rights	dcterms:accessRights	Access restrictions to the collection.			O	A statement of any access restrictions placed on the collection, including allowed users, charges, etc.
Accrual Method	dcterms:accrualMethod	A method by which items are added to the collection.	cld: AccrualMethod		O	EXAMPLE: Donation, Purchase. VOC: GERMAN PROTOTYPE provides the Dublin Core Accrual Method vocabulary to choose from: Purchase, Donation, Loan, License, Item Creation, Deposit.
Accrual Periodicity	dcterms:accruralPeriodicity	The frequency with which items are added to the collection.	cld: Frequency		O	EXAMPLE: Once a year, irregular. VOC: GERMAN PROTOTYPE provides the Dublin Core Accrual Periodicity vocabulary to choose from: Triennial, Biennial, Annual, Semiannual, Three times a year, Quarterly, Bimonthly, Monthly, Semimonthly, Biweekly, Three times a month, Weekly, Semiweekly, Three times a week, Daily, Continuous, Irregular
Accrual Policy	dcterms:accrualPolicy	A policy governing the addition of items to the collection.	cld: AccrualPolicy		O	EXAMPLE: Closed, some parts are closed. VOC: GERMAN PROTOTYPE provides the Dublin Core Accrual Policy vocabulary to choose from: Closed, Passive, Active, Partial.
Custodial History	dcterms:provenance	Custody or ownership history of the collection.			O	A statement of any changes in ownership and custody of the collection that are significant for its authenticity, integrity and interpretation.

Audience	dcterms:audience	The intended audience for the collection.	MARC target audience codes		O	Examples: pupils, scientists. VOC: GERMAN PROTOTYPE offers a basic vocabulary based on the MARC audience codes including: adolescent, adult, general, juvenile, preschool, specialized.
Subject	dc:subject	A topic of content of the collection.	dcterms: DDC , dcterms: LCC , dcterms: LCSH , dcterms: UDC ,		R	The subject is represented using keywords or key phrases. EXAMPLES: Free subject terms (like "Bird", "'Fungi", "Stones"). VOC: controlled terms from LCSH, LCC, DDC, UDC
Spatial Coverage	dcterms:spatial	The spatial topic of the collection.	dmGeography, TGN		R	Example: Austrian fungi. VOC: The spatial topic can be represented by using terms from a standard or individual classification system (like TGN-The Getty Thesaurus of Geographic Names or GERMAN PROTOTYPE Geography)
Temporal Coverage	dcterms:temporal	The temporal scope of the collection.	W3CDTF, RKMS-ISO8601, dmEras		R	EXAMPLE: Literature from the 1920s to the 1950s. VOC: The temporal topic may be represented by using terms from a standard or individual classification system (like GERMAN PROTOTYPE Eras).
Dates Collection Accumulated	dcterms:created	A range of dates over which the collection was accumulated.	W3CDTF, RKMS-ISO8601, dmEras		O	EXAMPLE: Collected from 1970 to 1987. VOC: GERMAN PROTOTYPE offers a basic vocabulary for Eras and the following standards: DCMI Period, W3C-DTF , RKMS-ISO8601.
Dates Items Created	cdl:dateItemsCreated	A range of dates over which the individual items within the collection were created.	W3CDTF, RKMS-ISO8601, dmEras		R	EXAMPLE: The collection contains literature from 1924 to 1987. VOC: GERMAN PROTOTYPE offers a basic vocabulary for Eras and the following standards: DCMI Period, W3C-DTF , RKMS-ISO8601.
Contributor	dc:contributor	The owner and the collector of the collection.	dmAgentRoles :Creator	MARCrel Role:collector	M	This field acknowledges two roles: the owner and the collector (An entity who gathers (or gathered) the items in a collection together.)
	dc:contributor	The owner and the collector of the collection.	dmAgentRoles :Creator	MARCrel Role:collector	M	This field acknowledges two roles: the owner and the collector (An entity who gathers (or gathered) the items in a collection together.)
Place	cld:isLocatedAt	The location where the collection is held.	dmPlaceRoles	dmPlaceRoles	M	The address where the collection is stored.
Is Accessed Via	cld:isAccessedVia	A service that provides access to the items within the collection.			O	This can be an URL where the collection can be found, searched through or opening hours are displayed.
Sub-Collection	dcterms:hasPart	A sub-collection of the described collection.			O	A second collection contained within this collection.
Super-Collection	dcterms:isPartOf	A super-collection of the described collection.			O	A second collection that contains this collection.
Catalogue or Index	cld:catalogueOrIndex	A catalogue for, or index of, the described			O	These can be Analytic finding aids, Hierarchic finding aids, or Indexing finding aids

Index		collection.				finding aids, or Indexing finding aids.
Associated collection	cld:associatedCollection	An associated collection.			O	A second collection that is associated with the current collection.
Associated publication	dcterms:isReferencedBy	Publications that reference this collection.			O	A publication that is based on the use, study, or analysis of the collection.
HasSamples	dmCore:hasSamples	Digital samples are attached to various objects of this collection. (YES/NO)			M	Indicate whether digital samples are available for the items of this collection. EXAMPLES: scan files
HasObjects	dmCore:hasObjects	Online Metadata of the included objects is available/searchable for this collection. (YES/NO)			M	If you can not provide electronic metadata for the objects of your collection but only have your collection description entered and searched via the GERMAN PROTOTYPE portal than indicate: NO.
IPR License		Licence text for IPR			R	Insert here the text choices for the automatic IPR email responses. This is recommended for your Top Level Collection.
IPR Mail Contact		Contact mail for IPR related queries.			R	Insert here the contact email to which the item requests should be send to.
Name of Europeana Data Provider		europeana:provider			R	The content of this field will be used as europeana:dataProvider when the archive is harvested by europeana.

VI.III Section: oaiInfo

Name	URI	Usage	Obligation	Note
OAI Archive	mdm:oaiArchive	The code name of the Archive that contributes this data.	M	EXAMPLE: The Finnish literature archive.
OAI Set	mdm:oaiSet	The collection name within the Archive.	M	EXAMPLE: Early Finnish biodiversity literature.
OAI Internal Id	mdm:oaiInternalId	Unique Catalogue number of the item in your database.	M	Unique-resource identifier IMPORTANT: GERMAN PROTOTYPE needs to know a unique-resource identifier for your item: Provide applicable identifiers assigned to one-of-a-kind resources (such as catalogue numbers assigned to items). This information is needed for the UPDATE procedure.
oai-DateStamp	mdm:oaiDateStamp	The data of harvesting.	M	This date will be generated automatically.
oai-Deleted	mdm:oaiDeleted	The date of deletion of the record.	O	The date when the record was deleted.