The European Library: opportunities for new services

Theo van Veen, Koninklijke Bibliotheek
Overview

• Introduction
• Overview of architecture
• Services
• TEL metadata
• Collections
• TEL and LEAF: name authorities
• Conclusions
Introduction

- An “accompanying measure” created under auspices of CENL
- Collaboration of national libraries of Finland, Germany, Italy, Netherlands, Portugal, Slovenia, Switzerland, United Kingdom and ICCU and CENL
- Part funded by the European Commission for 30 months to test feasibility
- If successful it is anticipated that other CENL members will participate
What TEL is aiming at

- User perspective
  - integrated access with central index
  - multi-lingual subject terms and name authorities
  - links to local services
- Provider perspective
  - lower barrier to participate
  - simple protocols
  - facilitate conversions and addition of collections
- Library perspective
  - common vocabulary with ongoing development
  - machine readable metadata sharing
The work packages

1 Publisher relations
2 Business models
3 Metadata
4 Interoperability testbeds
5 Dissemination and use
6 Management
Potential TEL services

- Interlinking national resources
- Registry of all European heritage collections
- Memory of Europe
- Virtual collections (European wide)
- Automatic translation of metadata, abstracts and publications
- Timelines and geographical traveling though heritage collections
- Name authority services (using LEAF)

Create TEL metadata infrastructure that makes it easy to add new services!
How to create the infrastructure?

- Finding the right balance between:
  - Central indexing of distributed metadata by OAI-harvesting
  - Distributed searching by SRU/Z39.50
  - Dynamic linking
- Understanding each others metadata to facilitate automated linking between services
TEL overview

Metadata

- OAI
- Z39.50

Central index

Collections and objects

- additional services
- Link services
- OpenURL

DESCRIBING

TEL portal
Highlights

• Combination of distributed searching via Z39.50 and central indexing using:
  – The Open Archives Initiative protocol for metadata harvesting (OAI-PMH)
  – Search and Retrieve via URLs (SRU)
• Integration with collection level descriptions
• Metadata registry for controlled evolution of TEL application profile
• User and context specific link services (OpenURL, URN)
• Extra services: multilingual subject service (MACS project), name authorities service (LEAF project) and authentication
Search and Retrieve via URLs (SRU)

- Initiative from Z39.50 implementers group
- **Low barrier** implementation of server and client
- Search via **simple** standard URL syntax
- **Human readable** query language (CQL)
- XML response conform **standard** schema in standard XML envelope
- TEL test interface for SRU written as **XSL stylesheet** with some additional javascript giving it very powerful portal functionality
- Allows linking by **automatic** generated searches.
Search and Retrieve via URLs (SRU)

- Initiative from Z39.50 implementers group to offer a low barrier alternative to Z39.50
- Searching via: base-URL ? request with standard syntax
- Response: XML conform standard schema
- Example URL: http://krait.kb.nl/cgi-zoek/srw.pl?query=porbase&maximumRecords=1

With SRU clients/portals can be written as a simple HTML page with javascript and XSL.
### Central indexing - distributed searching

<table>
<thead>
<tr>
<th>Central indexing</th>
<th>Distributed search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniform search options</td>
<td>Search options may differ per target</td>
</tr>
<tr>
<td>Predictable performance</td>
<td>Performance determined by slowest target</td>
</tr>
<tr>
<td>Easy integration of search results</td>
<td>More difficult to integrate of search results</td>
</tr>
<tr>
<td>Centrally controlled index</td>
<td>No control on distributed indexes</td>
</tr>
<tr>
<td>Less overall system load: one search is one request</td>
<td>System load is multiplied by number of requested systems</td>
</tr>
</tbody>
</table>
TEL realisation

- State of art review
- Analysis of functionality
- Realisation of testbeds
- TEL application profiles
- TEL metadata registry
- TEL integrated testbed

Red line: metadata infrastructure (%)
Yellow line: Operational service
Mapping metadata against functions

- List all metadata elements in DC-Lib
- List (all) possible functions
- Check for each combination whether metadata are usable, needed or not relevant
- Identify metadata elements that are missing or need special attention
Functions and services

- search
- record retrieval
- identification
- description
- linking
- multilingual service
- authority service
- software requirements
- copy cataloguing
- document ordering

A TEL application profile allows harmonisation and common understanding of metadata to enable these functions.

Identification of original record (harvesting, linking by reference)
TEL application profile

- Specification of elements, definitions, rules, and namespaces
- Specifications of characteristics like:
  - Type of obligation
  - Vocabularies
- Elements taken from different namespaces:
  - DCES (Original 15 elements)
  - Dcterms (approved qualifiers)
  - DC-LMES (DC Library AP elements)
  - DC-ED (DC Educational AP elements)
  - MODS (LC MODS)
  - Collection Level Description elements
  - TEL (TEL specific elements)

But we need a TEL Metadata Registry for the controlled evolution of the Application Profile!
Usage of the registry/profile

The TEL metadata registry will be open for submission only for TEL participants!
Enter new collection
Collection hierarchy

Confusing?
But suppose your query matches collections.
Do you want to miss those collections in your result list?
Name authorities in TEL: Different scenario’s

1. Complete integration with bibliographic records in single index
2. Separate bibliographic and authority services (use on request only).
3. Linking by index terms (independent bibliographic and authority databases)
4. Linking by authority record-id (coupled bibliographic and authority databases)
### 1. Complete integration

- **Unsolicited retrieval of name authorities** (normal situation in OPAC)
- **Reliable linking between persons and records**: it's all in one index
- **Automatic link generation**: base-URL is fixed; query syntax is known

<table>
<thead>
<tr>
<th>title</th>
<th>author</th>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxxxxxxxxxx</td>
<td>Andrade</td>
<td>book</td>
</tr>
<tr>
<td>aaaaaaaaaaa</td>
<td>Andrade</td>
<td>book</td>
</tr>
<tr>
<td>Link to authority record</td>
<td>Andrade</td>
<td>name authority</td>
</tr>
<tr>
<td>zzzzzzzzzzzz</td>
<td>Andrade</td>
<td>book</td>
</tr>
</tbody>
</table>
2. Separate bibliographic and authority databases

<table>
<thead>
<tr>
<th>Database</th>
<th>#hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEL collections</td>
<td>0</td>
</tr>
<tr>
<td>Porbase</td>
<td>0</td>
</tr>
<tr>
<td>Other collections</td>
<td>0</td>
</tr>
<tr>
<td>LEAF authority database</td>
<td>1</td>
</tr>
</tbody>
</table>

Possible search for local identifiers?

Distributed search in more indexes.
3. Linking by index terms

- **Index term authority = index term**

<table>
<thead>
<tr>
<th>Name authority record</th>
<th>Original query</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxxxx (used for new search)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main entry</th>
<th>Pseudonym</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxxxx (used for new search)</td>
<td>yyyyyyyyy (searched)</td>
</tr>
</tbody>
</table>

**New query proposal**

query generated from previous search result
### 4. Linking by authority record-id

<table>
<thead>
<tr>
<th>Authority record</th>
<th>database</th>
<th>id</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith, J (1946-)</td>
<td></td>
<td>DBA001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DBY001</td>
</tr>
<tr>
<td>Smith, J (1950-)</td>
<td></td>
<td>DBX123</td>
</tr>
<tr>
<td>Smith, J (1960-)</td>
<td></td>
<td>DBZ456</td>
</tr>
</tbody>
</table>

- **Metadata elements to be put in TEL application profile.**
- **Link to original authorities by unique id.**
- **Search results from LEAF in TEL?**
4. Linking by authority record-id

- Need mutual knowledge on authorities
- Less duplication and more uniformity by sharing authorities
- Difficult to realise (different languages, organisations, formats etc.)
- Very powerful tool in multi-cultural and multi-lingual environment
- Useful in one central index: OAI-PMH harvesting of authority records
Conclusions

• Although the current TEL project will not result in a fully operational European Library system, the results of the project will constitute the groundwork on which TEL’s ambitious vision can be realised.

• TEL is following the newest open standards like Dublin Core in XML, Application Profiles, OAI, SRU and OpenURL.

• Integration of the TEL Application Profile, Search and Retrieve via URL’s and OAI-PMH facilitates co-operation with other services as offered by LEAF.