Tuesday, 27 August 2019

International Dewey Users Meeting

Violet Fox
Dewey Editor

Elise Conradi
EDUG Chair

Uماماهشواري بلالكريشنان
Project Coordinator VZG

Peter Werling
Pansoft GmbH
Violet Fox
Editor, Dewey Decimal Classification
Community involvement

• How Dewey users have helped shape the DDC
• Why integrate more community engagement now
Opening up the process

Editorial process:

1. Identify the problem
2. Research the subject area
3. Create the exhibit
4. Submit to EPC

For additional information please visit oc.lc/deweyexhibits
Your chance to contribute

• Create your own proposals to revise Dewey
• Your ideas about new ways to contribute

Find more information about proposing changes at oc.lc/deweycontributors
Group discussion questions

1. What are your biggest challenges in using Dewey?
2. What do you see as the cultural biases in Dewey?
3. What could be done to make things better?
4. How would you like to be a part of making Dewey better?
Elise Conradi
EDUG Chair
Dewey and AI

Elise Conradi
Biblioteksentralen
EDUG Chair

International Dewey Meeting
IFLA 2019
Where, what and how?

Deutsche Nationalbibliothek

Frank Busse
Automatic classification at the DNB

National Library of Norway

Machine Learning and Dewey Decimal Classification
Svein Arne Brygfjeld
National Library of Norway

Linnaeus University

Automatic Classification Using DDC on the Swedish Union Catalogue
Kornelia Geilab, Johan Hägelbäck, Anders Axell
EDUG 2019 Symposium, May 10
Kungliga Biblioteket
Why?

Books to catalogue, in particular digitally-born texts + Access to digital texts and/or metadata

Cost of technology and storage space
Promising results, but....
Training sets: Small classes are not very filling.
How to teach machines about new knowledge?

Summary

We recommend the following changes:

- Relocate statistical thermodynamics from 536.70727 to 530.132, adding a do-not-use note at the former.
- Map the LCSH “Statistical physics” to 530.13, retaining it at 530.1595 as well.
- Relocate quantum physics from 539 to 530.12, with quantum mechanics and quantum theory.
- Continue continuum mechanics from 531 to 531.7, between solid mechanics and fluid mechanics.
- Continue solid mechanics from 531 to 531.2.
- Remove the centered entry 531.2-531.5.
- Remove the class-here note at 531.16.
- Remove the scope note from 530.124 and update the see-also note at 531.1133 accordingly.
- Add “wave functions” to the class-here note at 530.124.
- Change the mapping of the LCSH “Wave equation” from 530.124 to 531.1133.
- Some housekeeping matters, replacing phrases like “relativistic, nonrelativistic quantum mechanics” with “relativistic quantum mechanics, nonrelativistic quantum mechanics.”

In the following schedules, 518, 530.1, and 536.7 are given for context; changes to 515.353, 515.64, 530.15, and 539 are not apparent in the printed schedules (e.g., history notes, indexing).
Machines don’t care about existing biases!
Thanks!

Questions?
elise.conradi@bibsent.no

Works cited:
Automatic classification at the DNB / Frank Busse, DNB

BRYGFJELD, Svein Arne and WETJEN, Freddy and WALSØE, André Machine learning for production of Dewey Decimal

Automatic classification on Swedish Dewey / Koraljka Golub, Linné University, Växjö
Umamaheswari Balakrishnan
VZG
Towards integrated systems for KOS management mapping & access coli-conc and its collaborative computer-assisted KOS mapping tool Cocoda

The International Dewey Users Meeting 2019
Athens

Uma Balakrishnan
Key points of the presentation

Towards an infrastructure for

- creating computer-assisted mappings between KOS
- facilitating uniform access to KOS and KOS mappings
Outline

1 Introduction and Objectives
2 coli-conc functional architecture
3 coli-conc Components
   • The JSKOS data format
   • The KOS and concordance registry and database
   • Input processes
   • The Mapping Tool
   • KOS and mapping data services and connection to other systems
4 Next Steps
The Project

Aim: Development of an infrastructure to facilitate an easy exchange KOS and mappings, management of mappings through collaborative effort as well as aid in semi-automatic creation of mappings between library KOS

Exe. Agency: Verbundzentrale des GBV


Funder: DFG - German Research Foundation
Project Partners

**Application partners**
- Freie Universitätsbibliothek Berlin
- German National Library
- Staatsbibliothek zu Berlin Preussischer Kulturbesitz
- Universitätsbibliothek Regensburg
- Universitätsbibliothek St.Gallen
- Universitäts- und Landesbibliothek Tirol
- GESIS-Leibniz-Institut für Sozialwissenschaften (Leibniz Institute for the Social Sciences)
- Leibniz Informationszentrum Wirtschaft (Leibniz Information Centre for Economics)

**Knowledge Organization partners**
- WIKIMEDIA DEUTSCHLAND
- BARTOC.org. Basel Register of Thesauri, Ontologies & Classifications
Why this project?

- Manage the heterogeneity in the German library KOS landscape & create a semantic network of KOS
- **Catalog enrichment** (Union catalog K10plus of the GBV and BSZ)
- Facilitate sharing KOS and catalog resources
- **Serve as knowledge base to:**
  - support automatic and manual subject indexing
  - Improve browsing, subject searching & aid in query expansion
  - mapping and enriching subject cataloging data and queries between systems
- Contribution to the **further development of software** for mapping and for KOS management
- **Develop, establish formats and standards**
  - For KOS representation and ease of use,
  - To ease KOS exchange,
  - enhance the quality and ease of use of mappings
Objectives

- Effective Creation of Concordances between library KOS
- Building a new data format (JSKOS) to facilitate access and exchange of the KOS and their mappings in a uniform format
- Collect, store, and manage KOS data and mappings in a uniform structure
- Creation of a platform to enable collaborative work and establish best practices for quality assurance of KOS and mappings
coli-conc Functional Infrastructure
Editor interface

Mapping Tool Cocoda

KOS & concordance API

KOS data

KOS Mapping data

Sources
KOS
& Concordances

coli-conc
access

User access
KOS data &
mapping data
service

e.g. DANTE

External systems using data
(e.g. Wikidata,
Digitaler Assistent)

External systems using data
(e.g. Wikidata,
Digitaler Assistent)

KOS & concordance API

Quality Module
KOS & Concordance-
Measures

Administration Module
Summary Architecture

Cocoda Web Application
- User and Editor interface to KOS, concordances, and mappings
- Developed in JavaScript (Vue framework)
- Open Source

Backend Services
- Terminology Services (DANTE API, BARTOC, Skosmos, MarcXML...)
- Mapping Services and Database (Collected concordances)
- Mapping Suggestions (Co-occurrences and queries)
- Quality Services and Statistics (planned)
coli-conc Components

- The JSKOS data format
- The KOS and concordance registry and database
- Input processes
- The Mapping Tool Cocoda
The JSKOS Data Format

Facilitate representation, use and exchange of KOS and mappings

Requires

▪ An easy-to-use data format (JSKOS)
▪ An easy-to-use access method (JSKOS-API)
```json
{
  "mappingtype": ["http://www.w3.org/2004/02/skos/core#narrowMatch"],
  "fromScheme": {"uri":"http://dewey.info/scheme/edition/e22/"},
  "toScheme": {"uri":"http://bartoc.org/en/node/454"},
  "from": {
    "memberSet": [ {
      "uri": "http://dewey.info/class/387/e22/",
      "notation": ["387"],
      "preflabel": { "en": "Water, air, space transportation" }
    }
  ],
  "to": {
    "memberSet": [ {
      "uri": "http://id.loc.gov/authorities/subjects/sh85121579",
      "prefLabel": { "en": "Shipping" }
    }
  }
}
```
{
  "@context": "http://gbv.github.io/jskos/context.json",
  "from": { "memberSet": [
    { "uri": "http://dewey.info/class/612.112/e23/", "notation": [ "612.112"] }],
  "to": { "memberSet": [ { "uri": "http://rvk.uni-regensburg.de/nt/WW_8840", "notation": ["WW 8840"] } ] },
  "fromScheme": [ "uri": "http://bartoc.org/en/node/241", "notation": [ "DDC"] ],
  "toScheme": [ "uri": "http://bartoc.org/en/node/533", "notation": [ "RVK"] ],
  "type": [ "http://www.w3.org/2004/02/skos/core#closeMatch" ],
  "creator": [{ "prefLabel": { "de": "VZG" } } ]
}
{"..."}, "altLabel": [
  "de": ["Leukozyten-Humanphysiologie",
    "Weiße Blutkörperchen- - Humanphysiologie"
  ],
  "broader": [
    {"uri": "http://dewey.info/class/612.11/e23/"},
  ],
  "narrower": [null],
  "identifier": ["16d595ff-ec01-3e55-b425-016cf92bb950"],
  "created": "2000-02-02",
  "modified": "2013-12-04"}
Summary: JSKOS data format

- Based on JSON(-LD) ⇒ compatible with SKOS/RDF but easier to use, especially in Web applications
- Defines how to encode repeatable and non-repeatable fields;
- Can represent concordances, mappings, and registries (which were lacking in pure SKOS or other formats)

Important special features
- Confidence level for mappings
- Elements for concept occurrences and co-occurrences
- Mappings with multiple concepts, ordered lists
- Treats mappings between KOS elements as first-class entities
  - JSKOS specification http://gbv.github.io/jskos/
KOS and Concordance Registry and Database

- **KOS Registry**
  - In Collaboration with BARTOC.org
  - **KOS used today in German-speaking countries**
    - Regensburg Verbund Classification (RVK)
    - Basic Classification (BC)
    - Dewey Decimal Classification (DDC)
    - Library of Congress Classification (LCC)
    - German Subject Headings (GND)
    - Standard Wirtschaft Thesaurus (STW)...

- **Concordances between these KOS**
  - Enriched with metadata
  - KOS and concordance metadata and actual KOS and mapping data converted into JSKOS and stored

- **Web interface allows to select KOS and concordances**
  - see and download metadata in JSKOS format
  - linked to KOS and mapping data service
KOS and concordance registry and database

- **Concordance Registry**
  - contains currently four concordances GND-DDC, STW-GND, DDC 1000-RVK, DDC 1000-BC
  - and mappings between RVK-GND Register, RVK-DDC, BC-DDC, RVK-BC, MSC-BC for a total of over **386,000 mappings**

- **Wikidata mappings**
  - The registry contains mappings between Wikidata and other KOS. The data is daily extracted from Wikidata and available as public domain (CC0).

http://coli-conc.gbv.de/terminologies/
http://coli-conc.gbv.de/concordances/
http://coli-conc.gbv.de/concordances/wikidata/
Input processes

- APIs to physically import and reformat KOS and mapping data from many sources.

- APIs that establish a dynamic connection to sources through wrappers. The source becomes a virtual part of the KOS and mappings database.
Mapping Tool - Cocoda

- User Exploration Interface and KOS Representation Module
- KOS Suggestion Module
- Mapping Editor Module
- User Authentication and Other Features
- Quality Measure Module
User Exploration Interface and KOS Representation Module

- Drop down menu for KOS selection
- Display of Top concept hierarchy
- Hierarchical navigation and detailed display of the concepts
- Display of intra-KOS structural content (scope notes and linked relative index terms, etc.)
- Display of mapping candidates
- Editor Interface
Maschinenbau (de)

| 621.80153 | Physikalische Prinzipien |
| 621.80287 | Testen und Messen |
| 621.80288 | Instandhaltung und Reparatur |
| 621.81   | Allgemeine Themen im Maschinenbau |
| 621.82   | Maschinenelemente |
| 621.83   | Getriebe, Schalträder, Nocken |
| 621.84   | Ventile und Kolben |
| 621.85   | Kraftübertragungssysteme |
| 621.86   | Fördermittel (Fördergeräte und Förderanlagen) |
| 621.87   | Krane und Aufzüge |
| 621.88   | Befestigungselemente |
| 621.89   | Tribologie |
Mapping Suggestion Module

**Task:** For a caption in the Source KOS (e.g. RVK) find the best mapping in the Target KOS (e.g. DDC)

**Four approaches:**

1. **Search the mapping database (coli-conc Registry)** with the Dewey notation
2. **Search Union catalog (Co-Occurrences)** for records with the Dewey notation that also have a RVK notation
3. **Search the target system (coli-conc Recommendation, ccMapper)** with the Dewey caption and additional terms using query term expansion using other KOS and knowledge bases (such as Wikipedia)
4. **Search Wikidata** for mappings

These approaches are automated to the extent possible.
**Cocoda Mapping Tool (dev)**

### RVK Regensburg Classification

- **ZP - ZP Technik**
- **ZL - Maschinenbau**

**Info**
- Labels
- GND
- Search Links

- [http://rvk.un-regensburg.de/nt/ZL](http://rvk.un-regensburg.de/nt/ZL)
- Created: Jul 5, 2012
- Modified: Mar 19, 2019

- **ZL 0001** Zeitschriften und Referatuangaben
- **ZL 1100 - ZL 2200** Bibliografien, Sammelverzeichnisse, Biografien
- **ZL 2250 - ZL 2650** Nachschlagewerke
- **ZL 3700 - ZL 3750** Aneignung, Bericht

### Top Concepts

- **V Chemie und Pharmazie**
- **W Biologie**
- **X - Y Medizin**
- **ZK - ZK Technik allgemein**
- **ZH Architektur**
- **ZT Baugenieureinwesen**
- **ZK Bergbau und Hüttenwesen**
- **ZL Maschinenbau**
- **ZM Werkstoffwissenschaften und Fertigungstechnik**
- **ZN Elektrotechnik, Elektronik, Nachrichtentechnik**
- **ZO Verkehr, Transport**
- **ZP Energietechnik**

### Mapping Editor

#### Concordances

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVK ZL Maschinenbau</td>
<td>GND 4037790.8 Maschinenbau</td>
<td>DBLB Regen... 2015</td>
</tr>
<tr>
<td>UV 1450 Maschinenbautechnik, Förmertechnik</td>
<td>DCC 621.8 Maschinenbau</td>
<td>GESEL</td>
</tr>
<tr>
<td>GND 4037786-6 Maschine</td>
<td>DCC 621.8 Maschinenbau</td>
<td>DNB</td>
</tr>
<tr>
<td>GND 4037790.8 Maschinenbau</td>
<td>DCC 621.8 Maschinenbau</td>
<td>DNB</td>
</tr>
</tbody>
</table>

#### Wikidata-Mappings

- No Mappings

#### Co/i-conc Recommendations

- No Mappings

#### Commapper Mapping Recommendations

- 4 of 51 Mappings

#### Co/occurrences

- 4 of 20 Mappings

### DDC Dewey Decimal Classification

- **621.8 Maschinenbau**

**Info**
- Labels
- GND
- Search Links

- [http://dewey.class/dewey/621.8/mz2/](http://dewey.class/dewey/621.8/mz2/)
- Created: Feb 2, 2003
- Modified: Nov 2, 2005

### Top Concepts

- **VZG Vakuums-, Tiefstdrahttechnik**
- **621.8 Gebläse, Lüfter, Pumpen**
- **621.8 Maschinenbau**
- **621.9 Werkzeuge**
- **622 Bergbau und verwandte Tätigkeiten**
- **623 Militär- und Schifffahrt**
- **624 Ingenieurbau**
- **625 Eisenbahnh.- und Straßenbau**
- **626 (Nicht beantwortet)**
- **627 Wasserbau**
- **628 Sanitätstechnik**
- **629 andere Fachrichtungen der Ingenieurwissenschaften**
- **632 Landwirtschaft**
- **641 Hauswirtschaft & Familie**
- **651 Management & Öffentlichkeitsarbeit**

[www.gbv.de](http://www.gbv.de)
Mapping Editor Module

- Edit, save, and export mappings in different formats (JSKOS, CSV, planned Excel, …)
User Authentication and Other Features
Authorize Cocoda Mapping Tool

Cocoda Mapping Tool by gbv
wants to access your stefandesu account

Public data only
Limited access to your public data

Authorize gbv
Authorizing will redirect to
https://coli-conc.gbv.de

Not owned or operated by GitHub
Created 7 months ago
Fewer than 100 GitHub users

Learn more about OAuth
Login Server

Logged in as Stefan Peters

You have been logged in.

Name: Stefan Peters

Connected Identities

GitHub
Stefan Peters

https://github.com/stefandesu

Disconnect
Profile

The following information is stored in all your mappings so it may also be shared:

Name

Stefan Peters

Identity (must be an URI, is automatically filled after login)

https://coli-conc.gbv.de/login/users/c0c1914a-f9d6-4b92-a624-bf44118b6619

You are logged in. Account Page • Log out

Cocoda uses a dedicated login server to authenticate users: Imprint • Privacy Policy
<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Account</th>
<th>User Interface</th>
<th>Shortcuts</th>
<th>Local Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Authority File</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Access to a copy of GND at VZG <a href="http://coli-conc.gbv.de/registry/gnd-concepts">http://coli-conc.gbv.de/registry/gnd-concepts</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Wikidata</td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Access to Wikidata in JSKOS format <a href="http://coli-conc.gbv.de/registry/wikidata-concepts">http://coli-conc.gbv.de/registry/wikidata-concepts</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Regensburger Verbundklassifikation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><a href="http://coli-conc.gbv.de/registry/coli-conc-rvk">http://coli-conc.gbv.de/registry/coli-conc-rvk</a></td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>JSKOS Server</td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>central JSKOS server instance of coli-conc <a href="http://coli-conc.gbv.de/registry/coli-conc-concepts">http://coli-conc.gbv.de/registry/coli-conc-concepts</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DANTE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>DANTE API with vocabularies at VZG <a href="http://coli-conc.gbv.de/registry/dante-concepts">http://coli-conc.gbv.de/registry/dante-concepts</a></td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Mappings saved locally in the browser <a href="http://coli-conc.gbv.de/registry/local-mappings">http://coli-conc.gbv.de/registry/local-mappings</a></td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Concordance Registry</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Central concordance registry of coli-conc <a href="http://coli-conc.gbv.de/registry/coli-conc-mappings">http://coli-conc.gbv.de/registry/coli-conc-mappings</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Wikidata-Mappings</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Access to Wikidata mappings in JSKOS format <a href="http://coli-conc.gbv.de/registry/wikidata-mappings">http://coli-conc.gbv.de/registry/wikidata-mappings</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

GitHub • Version 1.0.1 • Current Commit: 24fb97a • Build Date: Aug 20, 2019, 01:10:12 PM

For issues and suggestions, please use the GitHub issue tracker.
Local Mappings
Local mappings are only stored in your current browser. They are not visible to other users, but they will get lost if you purge your browser’s local storage.

Download Local Mappings
WD to BK (1): JSKOS CSV
DDC to WD (1): JSKOS CSV
DDC to BK (2): JSKOS CSV
DDC to RVK (1): JSKOS CSV

Download all 5 mappings as JSKOS

Upload Local Mappings (JSKOS)
Choose a file...

Delete Local Mappings
Delete all local mappings

Rewrite Creator
Clicking the button below will rewrite the creator for all local mappings with the following information:

Name: Stefan Peters
URL: https://github.com/stefandesu

Rewrite creator for all local mappings

GitHub • Version 1.0.1 • Current Commit: 24f97a • Build Date: Aug 20, 2019, 01:10:12 PM
For issues and suggestions, please use the GitHub issue tracker.
Manual, Feedback and Releases
Cocoda User Manual
version 1.0.1 (2019-08-20)

Introduction
Cocoda should be usable with any modern web browser (at least Firefox and Chromium). The application requires at least HD resolution (1366×768) but FHD (1920×1080) or more is highly recommended. Using Fullscreen also shows pictures better.

User Interface
The user interface is divided into several cards which can be resized and arranged in different configurations. Most of these cards are implemented as components which can also be used in other web applications.

- By default, the left and right side of the interface allow browsing in concept schemes to inspect and select concepts from source and target vocabulary respectively.

- In between there are several cards to create, modify, browse, and evaluate mappings and mapping recommendations.

All cards can be hidden with a minimize button in the top right of each card and resized by dragging on the divider line between cards.

https://gbv.github.io/cocoda/#manual
Feedback zum Mapping-Tool Cocoda

Fehlerhinweise, Verbesserungsvorschläge oder Fragen: jede Form von Feedback ist willkommen!

Benutzerfreundlichkeit
Ist die Benutzeroberfläche verständlich, leicht zu bedienen und intuitiv? Was lässt sich verbessern?
Your answer

Funktionalität
Your answer

Sonstige Kommentare
Your answer

SUBMIT

Never submit passwords through Google Forms.
Cocoda 1.0.1

chrisandrews released this 6 days ago

Cocoda 1.0.1 is a minor update with only a few visible changes.

- Annotations of type `weaving` are now shown for mappings. These mappings will have a checkmark instead of the number of votes. (#442)
  - Note that it is currently not possible to add a `weaving` annotation inside Cocoda.
- Added a separate subpage showing a reduced interface with only the Mapping Browser (concordances and mapping search). It is available under `/concordances.html`.
- Improved tab appearance.
- Improved annotations.
- Other small changes and improvements. (e.g. #433)

Assets

- Cocoda 1.0.1.zip 3.27 MB
- Source code (zip)
- Source code (tar.gz)

Cocoda 1.0.0

chrisandrews released this on Jul 2
Quality Module - KOS and Concordances Measures

- **Assignment of** confidence level, relationship types or ranking based on expert criteria and established standards
- **Identifying and classifying errors**
- **Generating statistical data** and information on Mappings:
  - Per KOS
  - Per topic/subject field
  - On frequency of search terms
  - Completeness
  - Correctness (expert reviewed)
  - Institution/Creator
  - New entries and date of creation
KOS and Mapping Data Services and Connection to other Systems

- PICA Cataloguing software (WinIBW)
- Digitaler Assistent (Subject indexing software)
- DANTE (VZG- KOS hosting Service)
- BARTOC
- Wikidata
Next Steps

- Ingesting more KOS and mapping data
- Further development of the KK Suggest module for other KOS
- Implementing measures for quality assessment
- Defining criteria for establishing mapping relationships types, especially for RVK-DDC
- Linking to cataloguing software and indexing tools
- Editing Wikidata mappings in Cocoda and export to Wikidata
- K10plus Union catalog enrichment (development of an API to export mappings from coli-conc Registry to the union catalogue)
Mapping Tool: ccMapper
Live Demo

Peter Werling
Peter Werling
Pansoft GmbH