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MACS: Recent developments and future perspectives

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Overview of the presentation

- MACS: overview of the project
- Standards & linking manual
- Search interface
- MACS data in TELplus
- CENL WG on integration of MACS in TEL



What is MACS?

- A project that is developing a system that offers multilingual subject access using current subject heading languages (SHLs)
- A project that is based on a coordinated approach between national libraries
- A system that will permit users to search library catalogues in the language of their choice



Why the MACS approach?

- In 1997, the need to find a « neutral » solution for linking SHLs forced some national libraries to find a solution not based on translation
- Approach to add value to existing metadata instead of creating new data (value added data)
- Create exact access to bibliographic metadata via subject headings
- Linking work and management outside of each library's authority files
- Info at: <http://macs.cenl.org>



Basic principles

- Equality of languages and SHLs (no pivot) with autonomy of each SHL (only local, MACS is an external link database)
- Establishment of equivalences (no translation) between the SHLs involved (no new thesaurus)
- Equivalence links conceived as concept clusters
MACS = mappings and numeric identifiers
- Consistency of results (goal = users retrieval)
- Extensible to other SHLs



Milestones (1)

- Proposal & Feasibility study (1997-1999)
- Prototype development (2000-2001)
- Testing & Link Management (LMI) upgrade to production database (2002-April 2004)
- New Link Management Interface production database accepted by partners (2005)
- New Project Proposal: June 2005 (revised August 2006)



Milestones (2)

- Move to production: adding SWD headings to RAMEAU-LCSH links (2007) (SNL and DNB)
- Major linking project DNB: April 2009
- Integration in The European Library : tests in 2007, initial search interface development in August 2008
- Re-indexing of library catalogues in TEL and new search interface development in 2009 - 2010



Display of links (display is according to the partner's SHL (source language))



multilingual access to subjects

Search Results

Lp-super/super/Work

Readers
Annotators
[Search Links](#)
[List Terms](#)
[Help](#)
[Logout](#)

Editors
Admins
[Add a New Link](#)
[To Do](#)
[To Know](#)

Supervisors
[Maintenance](#)

Searched for **psycho*** in SWD.
Search retrieved 85 links in 0.63 seconds.

| SWD | RAMEAU | LCSH | Domains | MACS Link | Dups |
|---|---|---|---------|-----------------------------|------|
| Psychoakustik | Psychoacoustique | Psychoacoustics | 150 | MACS0032748 | |
| Psychoakustische Messung | Mesure AND Psychoacoustique | Measurement AND Psychoacoustics | 150 620 | MACS0157144 | |
| Psychoanalyse | Psychanalyse | Psychoanalysis | 150 | MACS0000839 | |
| Literatur AND Psychoanalyse | Psychanalyse et littérature | Psychoanalysis and literature | 150 801 | MACS0000840 | |
| Psychoanalytikerin | Femmes psychanalystes | Women psychoanalysts | 150 300 | MACS0032780 | |
| Psychoanalytische Gruppentherapie | Psychanalyse de groupe | Group psychoanalysis | 150 | MACS0033003 | |
| Psychobiologie | Psychobiologie | Psychobiology | 150 570 | MACS0032554 | |
| Psycho-Diät | --null-- | --null-- | 610 | MACS0154691 | |
| Psychodrama | Psychodrame | Drama -- Therapeutic use | 150 | MACS0032672 | |
| Psychodynamik | Psychothérapie dynamique | Psychodynamic psychotherapy | 150 610 | MACS0153990 | |

1/9

Next Page



Link strategy

- Each partner works from its own SHL (used as source language)
- For SWD, links to target languages: LCSH or RAMEAU
- Already 102'300 RAMEAU-LCSH links (from the RAMEAU authority file, mostly derived from the Quebec Répertoire de vedettes-matière)



Linking Work Using SWD

- Work officially started in March 2007 at the SNL (0.75 FTE of indexing staff resources used for MACS): 20'000 links created since then
- DNB – April 2009 external staff members hired to create MACS links from SWD headings: 38'000 links created
- Links status: March 15, 2010: 60'127 links with SWD

Readers
 Annotators
[Search Links](#)
[List Terms](#)
[Help](#)
[Logout](#)

Editors
 Admins
[Add a New Link](#)
[To Do](#)
[To Know](#)

Supervisors
[Maintenance](#)

Searched for * in SWD.
 Search retrieved 60127 links in 2.16 seconds.

| SWD | RAMEAU | LCSH | Domains | MACS Link | Dups |
|---|--|---|---------|-----------------------------|------|
| 100Cr6 | --null-- | --null-- | 600 | MACS0132433 | |
| 360-Grad-Feedback | Cadres (personnel) -- Évaluation | 360-degree feedback (Rating of employees) | 650 | MACS0128696 | |
| 360-Grad-Feedback | Personnel -- Évaluation | 360-degree feedback (Rating of employees) | 330 350 | MACS0133464 | |
| ATV Sturmpanzerwagen | ATV (char d'assaut)* | ATV (Tank) | 355 600 | MACS0134758 | |
| Aachener Frieden <1748> | Traité d'Aix-la-Chapelle (1748) | -- | 940 | MACS0058040 | |
| Aachener Printe | Pain d'épice AND Aix-la-Chapelle (Allemagne) | Gingerbread AND Aachen (Germany)* | 390 641 | MACS0134979 | |
| Aale | Anguillidés | Anguillidae | 590 | MACS0119013 | |
| Aalenium | Aalénien | -- | 550 560 | MACS0076568 | |
| Aalquappe | Lota | Lota | 590 | MACS0016185 | |
| ab | --null-- | --null-- | 400 | MACS0130006 | |



MACS linking manual : a necessary condition

- A manual for link creation is required
- The only existing methodological considerations available are from the final report of the feasibility studies (1999)
- Need to adjust the MACS approach in a networked environment (the MACS approach was initially developed in a closed environment – list of terms selected in a few domains in 3 SHLs)



Standards to the rescue

- Development of a new standard: BRITISH STANDARD BS 8723-4:2007 *Structured vocabularies for information retrieval — Guide. Part 4: Interoperability between vocabularies*
- Part 4 of the BS deals with all subject heading languages (not limited to thesauri as for ISO 5964)
- Also: ANSI/NISO Z39.19-2005 Guidelines for the construction, format and management of monolingual controlled vocabularies (Chapter 10)



Example of the MACS Linking (1)

Types of links / levels of equivalence

- **One-to-one: exact equivalence**
 - **Exact equivalence at the linguistic level**
Theology / Théologie / Theologie
 - **Exact equivalence at the semantic level**
Sprinting / Kurzstreckenlauf / Course de vitesse
 - **Exact equivalence at the subject headings level (indexing)**
Track-athletics—Coaches / Leichtathletiktrainer / Athlétisme
+ Entraîneurs



Example of the MACS linking (2)

- **One-to-two: partial equivalence (semantic level)**
 - Using **UF (use for)**
Coureurs / Runners(Sports) / Laüfer
Coureurs / Long-distance runners / Langstreckenläufer
 - **According to scope note**
Sprinting / Kurzstreckenlauf / Course de vitesse
Sprinting / Vierhundertmeterlauf / Course de vitesse
 - Using **BT (Broader term) / NT (Narrower term)**
Jumping / Sprung / Sauts (athlétisme)
Jumping / Hochsprung / Saut en hauteur



MACS linking (3)

Types of links / levels of equivalences that were not discussed in 1999

- **One-to-two: partial equivalences (linguistic level) ?**

One-to-many: partial equivalences (linguistic level)?

The LCSH are generally broader (less specific) than SWD and RAMEAU

- **One-to-many: partial equivalences (semantic level)?**

For example in the area of music



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Search Interface (prototype developed by TEL)

The screenshot shows the search interface of The European Library. At the top, there is a navigation bar with 'HOME', 'SAMMLUNGEN', 'BIBLIOTHEKEN', and 'ORGANISATION'. Below this is a search bar containing the text 'despotism'. To the right of the search bar, there are checkboxes for 'English', 'French', and 'German', all of which are checked. Below the search bar, there are five colored buttons: 'MACS' (green), 'LNT' (orange), 'LWT' (orange), 'REALDUAL' (orange), and 'IBOMBIE' (orange). A 'SEARCH TEL' button is located to the right of the search bar. Below the search bar, there are three result cards. Each card displays the search term in three languages: French, English, and German. The first card shows 'French : Monarchie absolue', 'English : Despotism', and 'German : Absolutismus'. The second card shows 'French : Monarchie absolue', 'English : Despotism', and 'German : Despotie'. The third card shows 'French : Despotisme', 'English : Despotism', and 'German : Autokratie'. Each card has a 'Select' link to its right. To the right of the search results, there is a 'Remove' link.



SUCHE

options

in den Ergebnissen suchen

aus Trefferliste ausschließen

[Erweiterte Suche](#) (Weitere Suchoptionen)

[Die Auswahl der Sammlungen ändern](#)

Für:

DE Katalog der Deutschen Nationalbibliothek 76

FR Hauptkatalog der Bibliothèque nationale de France 16

UK Integrierter Katalog der British Library - Online-Kataloge zu Drucken und elektronischen Ressourcen 0

Katalog der Deutschen Nationalbibliothek

76 Treffer mit (subject_plain exact "Absolutismus") wurden gefunden in 'Katalog der Deutschen Nationalbibliothek'

[drucken Seite](#) | gehe zu Seite / 8

- 1 **[Absolutismus](#)**
Hubatsch, Walther 1915-1984 Hrsg.
Typ: text , single work , single work , single work | Sprache: ger

- 2 **[Das Zeitalter des Absolutismus : 1600 - 1789](#)**
Hubatsch, Walther 1915-1984
Typ: text , single work , single work , single work | Sprache: ger

- 3 **[Geschichte original - am Beispiel der Stadt Münster - 1 - Durchsetzung des Absolutismus : Dokumente, Fragen, Erl. / Darst. von Hans Galen](#)**
Galen, Hans Hrsg.
Typ: text , single work , single work , single work | Sprache: ger

- 4 **[Die Entstehung des absolutistischen Staates](#)**
Anderson, Perry 1938-
Typ: text , single work , single work , single work | Sprache: ger

- 5 **[Der Absolutismus: Cromwell, Ludwig XIV. \[der Vierzehnte\] und Peter der Grosse](#)**
Schaeffner, Claude Hrsg.
Typ: text , single work , single work , single work | Sprache: ger



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2 Das Zeitalter des Absolutismus : 1600 - 1789

Hubatsch, Walther 1915-1984

Typ: text , single work , single work , single work | Sprache: ger

| | |
|-------------------------------|--|
| Typ | text |
| | single work |
| | single work |
| | single work |
| Autor | Hubatsch, Walther 1915-1984 |
| Titel | Das Zeitalter des Absolutismus : 1600 - 1789 |
| Veröffentlichungsdatum | 1975 |
| Schlagwort | Absolutismus |
| Sprache | ger |
| Verlag | Braunschweig : Westermann , 1975 |
| Umfang | XII, 276 S. 25 cm |
| Beschreibung | Literaturverz. S. 217 - 263.. |
| Ist Teil von | Geschichte der Neuzeit |
| Identifikation | 314160357X Werkstoff : DM 30.00 |
| dcterms:edition | 4., erg. Aufl. |
| | general |

| |
|---|
| Service |
| Verfügbarkeit in der Bibliothek |
| LINK zu anderen Services |
| Homepage der Sammlung |
| Optionen |
| als Favorit sichern |
| als E-Mail versenden |
| Quick Links |
| In den Sammlungen aus...suchen |
| <input type="text" value="Land"/> |
| Über die Sammlungen aus...browsen: |
| <input type="text" value="Land"/> |



Hauptkatalog der Bibliothèque nationale de France



16 Treffer mit (subject_plain exact "Monarchie absolue") wurden gefunden in 'Hauptkatalog der Bibliothèque nationale de France'

drucken Seite | gehe zu Seite / 2

VORIGE SEITE

NÄCHSTE SEITE

1 [Qu'est-ce que la royauté ? : Joseph de Maistre / par Jean-Yves Pranchère,...](#)

Pranchère, Jean-Yves

Typ: texte imprimé , printed text , text | Sprache: fre

ONLINE ANSEHEN

2 [La raison du prince : l'Europe absolutiste, 1649-1775 / Robert Mandrou](#)

Mandrou, Robert (1921-1984)

Typ: texte imprimé , printed text , text | Sprache: fre

ONLINE ANSEHEN

3 [La Renaissance ; La monarchie absolue / \(auteur non mentionné\)](#)

Typ: multimédia multsupport , kit , text , still image | Sprache: fre

ONLINE ANSEHEN

4 [Le Despotisme éclairé \(Nouv. éd. rev. et augm.\) François Bluche](#)

Bluche, François (1925-....)

Typ: texte imprimé , printed text , text | Sprache: fre

ONLINE ANSEHEN

5 [The Making of Russian absolutism, 1613-1801 / Paul Dukas](#)

Dukas, Paul (1934-....)

Typ: texte imprimé , printed text , text

ONLINE ANSEHEN

options

in den Ergebnissen suchen

aus Trefferliste ausschließen

[Erweiterte Suche](#) (Weitere Suchoptionen)

[Die Auswahl der Sammlungen ändern](#)

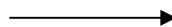
SUCHE ABBRECHEN

Für:

DE Katalog der Deutschen Nationalbibliothek 76

FR Hauptkatalog der Bibliothèque nationale de France 16

UK Integrierter Katalog der British Library - Online-Kataloge zu Drucken und elektronischen Ressourcen 0





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5 The Making of Russian absolutism, 1613-1801 / Paul Dukes

Dukes, Paul (1934-....)

Typ: **texte imprimé** , **printed text** , **text**

ONLINE ANSEHEN

| | | | |
|---------------------|--|--------------------|---|
| Typ | <p>texte imprimé [fre]</p> <p>printed text [eng]</p> <p>text [eng]</p> | Service | <p> LINK zu anderen Services</p> |
| Autor | Dukes, Paul (1934-....) | Optionen | <p> als Favorit sichern</p> <p> als E-Mail versenden</p> |
| Titel | The Making of Russian absolutism, 1613-1801 / Paul Dukes | Quick Links | <p>In den Sammlungen aus...suchen</p> <p>Land <input type="text" value="Land"/></p> <p>Über die Sammlungen aus...browsen:</p> <p>Land <input type="text" value="Land"/></p> |
| Datum | 1982 | | |
| Schlagwort | <p>Monarchie absolue [fre]</p> <p>Russie -- Politique et gouvernement [fre]</p> <p>Russie -- Politique et gouvernement [fre]</p> | | |
| Verlag | Longman (London ; New York) | | |
| Beschreibung | <p>Collection : Longman history of Russia</p> <p>ISBN 058248684X</p> | | |
| Rechte | <p>Catalogue en ligne de la Bibliothèque nationale de France [fre]</p> <p>French National Library online Catalog [eng]</p> <p>French National Library online Catalog [eng]</p> <p>French National Library online Catalog [eng]</p> | | |



MACS in TELplus

- MACS links used to provide automatic query reformulation
- TELplus alignment method uses a lexical mapper that uses SKOS model to exploit semantic structure of controlled vocabularies
- Also uses “instance matching” (similarities between books and subject headings)
- Reliable or relevant links in about 50% of the cases, mostly non-ambiguous terms or domains



Manual vs automatic links

- Automatic methods need to be further refined
- Reliable collections (quality and quantity) and metadata used for « instance matching »
- Complementary approach (mixed approach of automatic link production and manual validation) =
New generation linking approach



Issues relating to ensuring quality of multilingual search results

- Disambiguation issue: single term can be associated with more than one topic
- Cultural and linguistic differences in semantic structure of controlled vocabularies (authority record) – non-symmetrical thesaurus / subject heading lists
- Cultural / subjective nature of subject indexing (choice of headings according to past practices and indexing rules)



CENL WG on the integration of MACS into The European Library

- Review the use of MACS data in the multilingual subject search prototype of The European Library portal
- Explore how the MACS linked subject headings could be used within the operational version of The European Library portal
- Evaluate the use of MACS data in other European projects, current and potential
- Study the extension to other languages



CENL WG on the integration of MACS into The European Library (2)

- Provide a breakdown of costs associated with link creation, the Link Management Interface hosting, maintenance and development, and the update and management of links in The European Library portal with the aim of providing a budget for these activities
- Investigate the feasibility of migrating the MACS Link Management Interface (LMI) to The European Library servers
- Clarify the legal questions surrounding the use and re-use of MACS data in The European Library and elsewhere



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Grazie
Questions?