

# The Usage of EDM in the Deutsche Digitale Bibliothek

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Metadata Task Group  
Meeting

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# Overview



1. What is the DDB?
2. DDB in the Europeana network
3. Data Delivery Workflow
4. DDB Data Model and Mappings
  - Use of Europeana Data Model
  - DDB-EDM application profile
  - Mapping examples
5. Further developments 2013 (selection)

# 1. What is the DDB?



# What is the Deutsche Digitale Bibliothek?



- **Portal that provides central access to digital cultural and scientific objects in Germany**
  - Cross-domain (archives, libraries, museums, research-, monument protection- and media institutions)
  - Interdisciplinary
  - Target groups: culturally interested public , research, education, economy
- **National Contribution to Europeana**
- **Cooperative Network of Cultural Heritage and Research Institutions in Germany**





DEUTSCHE  
NATIONAL  
BIBLIOTHEK



Stiftung  
Preußischer Kulturbesitz



BSB



Deutsches  
Filminstitut **DIF**

## Competency Network Deutsche Digitale Bibliothek



BSZ I



**digiCULT**  
MUSEEN SCHLESWIG-HOLSTEIN



Brandenburgisches  
Landesamt  
für  
Denkmalpflege  
und  
Archäologisches  
Landesmuseum



Kulturamt  
Landeshauptstadt Düsseldorf

# November 2012: Beta-Launch



# Beta phase until end 2013 - Retrospect



- Status Quo
  - Holding (ca. 5,7 million objects from ca. data providers)
  - Ca. 1.700 unique visitors / daily
- Quarterly Milestones
  - M1-Release (Mai 2013)
    - Optimized views in mobile devices
    - Relevance ranking
  - M2-Release (August 2013)
    - DDB internal data model switched to EDM
    - User Registration (<http://www.deutsche-digitale-bibliothek.de/user/registration>), manage search results in favourite list
    - DDB Licensing Model for digital objects (e.g. <http://www.deutsche-digitale-bibliothek.de/lizenzen/rv-fz/>)

# Beta phase until end 2013 - Outlook



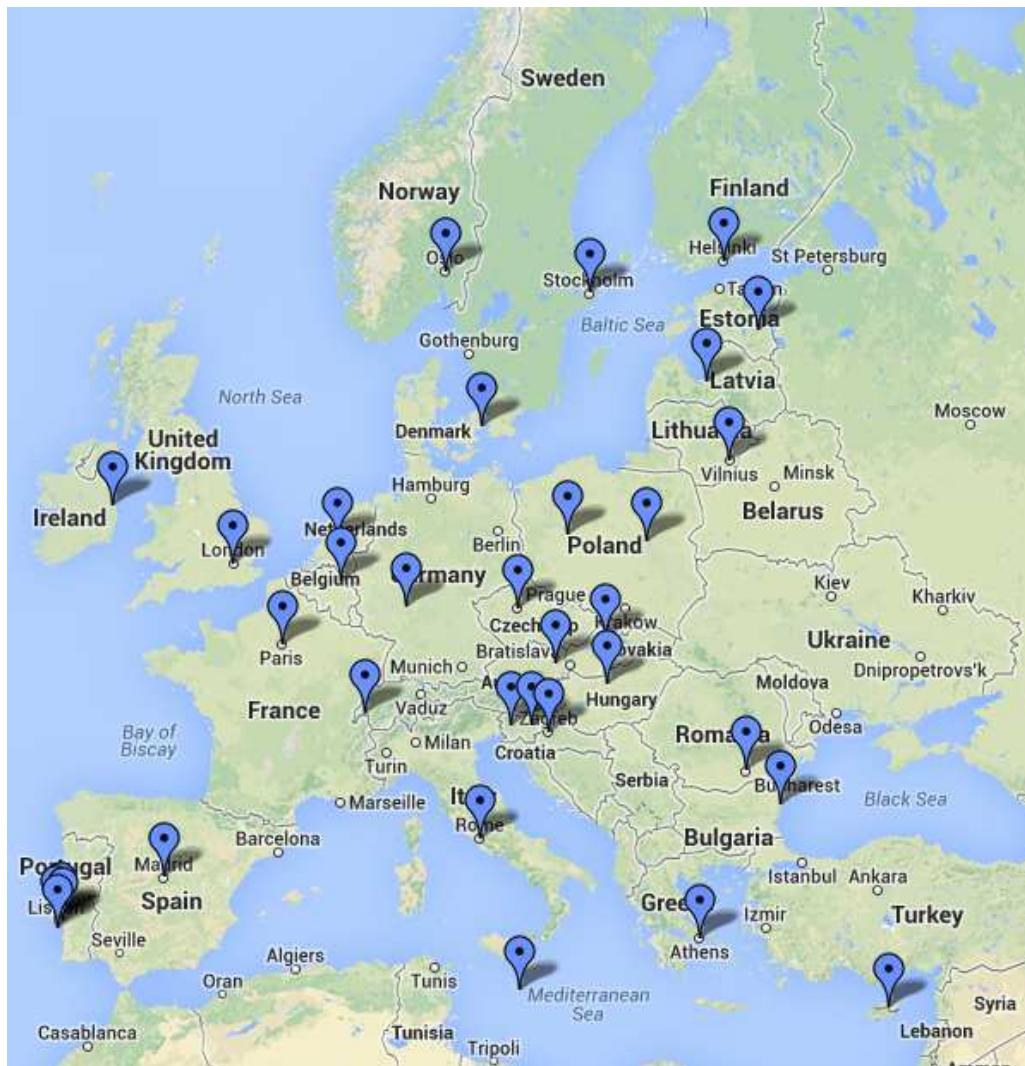
- Further Developments (selection)
  - M3 (until October 2013)
    - Data export to Europeana
    - Person entity pages
    - Optimized simple search (autocorrection, autocompletion)
  - M4 (until December 2013)
    - Publish developer API
    - Virtual exhibitions
- Set-Up Service Desk DDB
  - Establish and test workflows and support tools (e.g. DDB service portal)
  - Increase number of data sets and data providers
- Innovative Developments (show cases, prototypes)



## 2. DDB in the Europeana network



# Europeana's National Partners



# DDB as national partner of Europeana



- Collaboration:
  - Common Data Model especially for semantic relations
    - DDB defined an application profile of the Europeana Data Model
  - DDB-Licensing Model <-> Europeana Licensing Framework
  - DDB Cooperation Agreement <-> Europeana Data Exchange Agreement
- Data Delivery:
  - Clarify efficient routes to Europeana (avoid „cross-aggregations“)
  - Data exports to Europeana start in October 2013
  - Provide services for data providers
- Forums:
  - Europeana Aggregators Forum (yearly)
  - National aggregators workshop
  - Europeana Work Groups
  - Service Desk DDB <-> Europeana Ingestion Team



### 3. Data Delivery Workflow



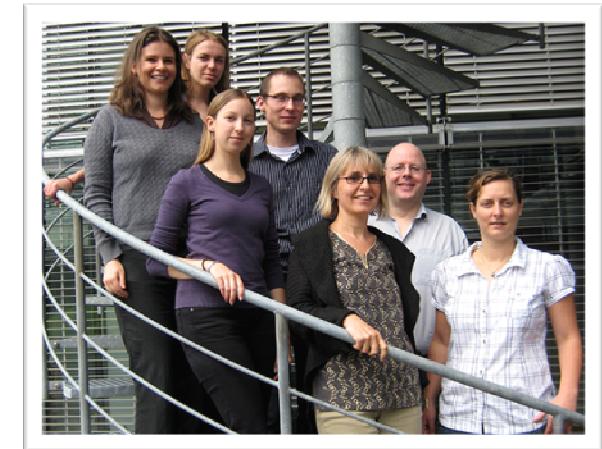
# Service Desk DDB



# Service Desk DDB



- **Service Desk (DNB)**
  - Point of first contact for interested institutions
  - Responsible for all sectors
  - Supports institutions to deliver data to DDB
  - Link between technical operator (FIZ Karlsruhe), cultural heritage institution and Europeana
- **Specialist departments** with sector-specific tasks
  - Conceptual Mappings
  - Community Work
  - Content Acquisition
- **Work Group Data**
  - Develops concepts and requirements for data-based functions and services



Service Desk Team  
[service@deutsche-digitale-bibliothek.de](mailto:service@deutsche-digitale-bibliothek.de)

# DDB's Service Blocks



*„Service from one source“*

**From Registration till ingest in DDB and Europeana**

# Step 1: Registration



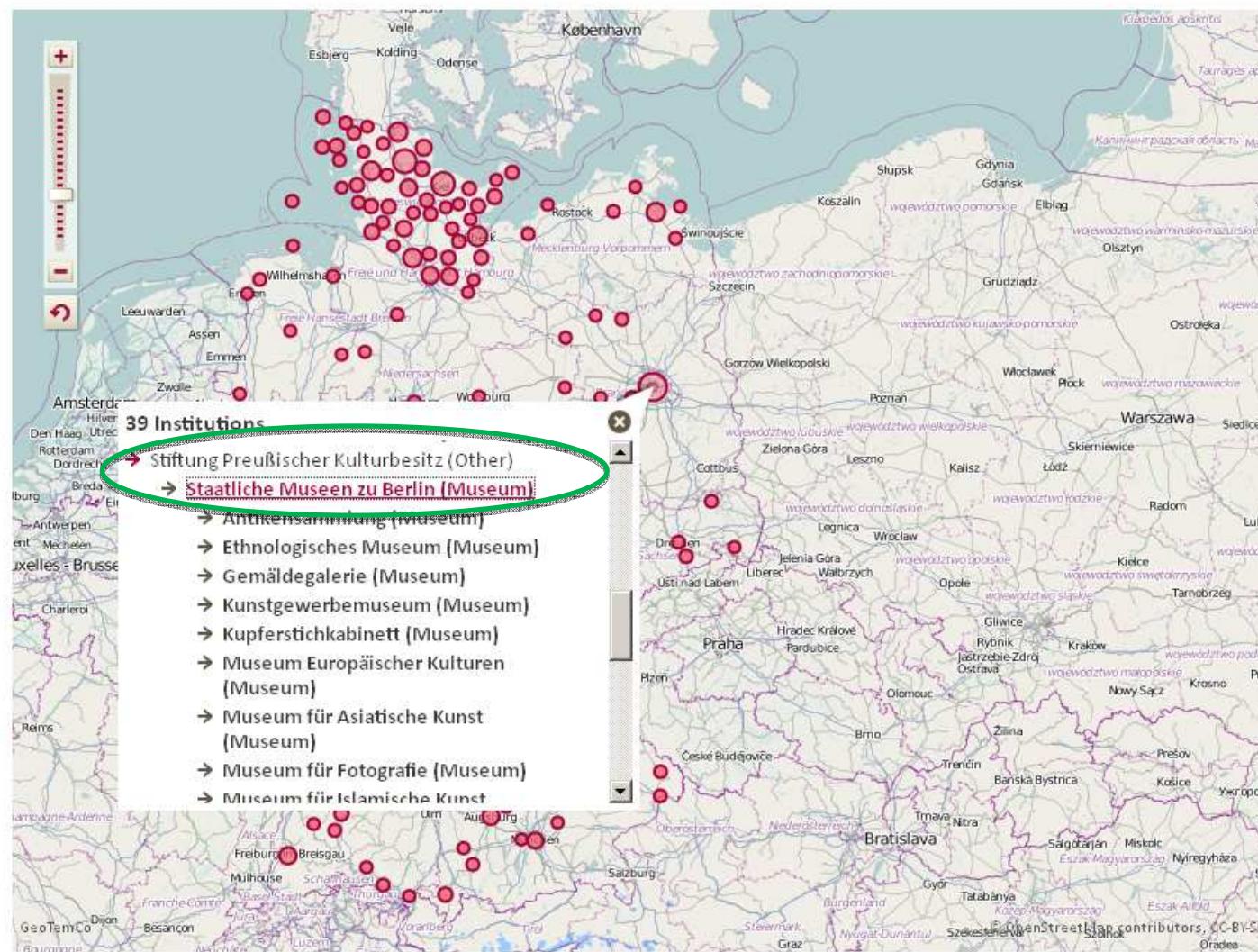
# Registration of an institution



- Via invitation (soon: Login to DDB service portal, change geo-localisation)
- All interested institutions (not only data providers)
- Presentation in map of Germany's cultural and scientific institutions as well as in an institution page
- **International Standard Identifier for Libraries and Related Organisations (ISIL)** mandatory for data providers
  - Data exchange workflow with German ISIL agency
  - Establish ISIL as authority file for institutions of all CH-sectors



# Culture and Science Map



## Filter by sector

- Archive
- Library
- Monument protection
- Research
- Media
- Museum
- Other

Please find here 1,995 institutions currently registered with the Deutsche Digitale Bibliothek. The number of partners is rising all the time and, in the long term, all German cultural and scientific institutions are to contribute their contents.

# Institution Detail View



Museum

**Staatliche Museen zu Berlin**

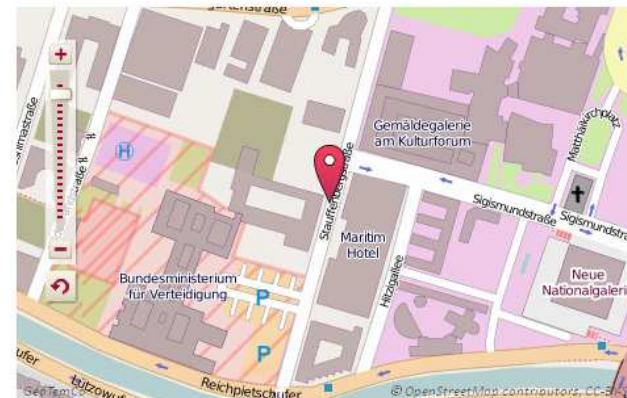
<http://www.smb.museum/>

98,798 objects

**Staatliche Museen zu Berlin**  
Stauffenbergstrasse 13  
10785 Berlin

Locations:

- Stiftung Preußischer Kulturbesitz
- Geheimes Staatsarchiv Preußischer Kulturbesitz
- Ibero-Amerikanisches Institut Preußischer Kulturbesitz
- **Staatliche Museen zu Berlin**
  - Antikensammlung
  - Ethnologisches Museum
  - Gemäldegalerie
  - Gipsformerei
  - Institut für Museumsforschung
  - Kunstabibliothek
  - Kunstgewerbemuseum
  - Kupferstichkabinett
  - Museum Europäischer Kulturen
  - Museum für Asiatische Kunst
  - Museum für Fotografie
  - Museum für Islamische Kunst
  - Museum für Vor- und Frühgeschichte
  - Münzkabinett
  - Nationalgalerie
  - Rathgen Forschungslabor
  - Skulpturensammlung und Museum für Byzantinische Kunst
  - Vorderasiatisches Museum
  - Zentralarchiv
  - Ägyptisches Museum und Papyrussammlung



**ISIL DE-B11-DB necessary to relate data provider with delivered object metadata**

URI: <http://id.zdb-services.de/resource/organisations/DE-B11-DB>

# Institutions as data providers



- Capturing information about deliverable data sets
  - Content-Questionnaire (incl. metadata formats, submission method, etc.)
  - First Level Support
  - Information material
  - Soon: Login to DDB Service Portal, Online Content-Survey
- Signing DDB Cooperation Agreement
  - Agreement and Annex „Technical Specifications“
  - Minimum requirements for metadata and digital objects (derivates)
  - DDB has signed Europeana Data Exchange Agreement

## Step 2: Data Clearing



# Data Clearing

- Analyses of data and interfaces
  - Data-Provision via FTP-Server
  - Data-Harvesting via OAI-PMH
  - Besides metadata also derivates can be delivered (e.g. thumbnails)
  - Clarify CC0 licensed EDM data set
  - Quality criteria for metadata and digital objects
- Define mapping rules
- Services (partly under construction):
  - Establish authority data processes
  - Provide persistent identifiers for digital objects
  - Hosting of digital objects
- Delivery of test data set and evaluation of mapping results in DDB test system





## Step 3: Data Transfer



# Data Transfer



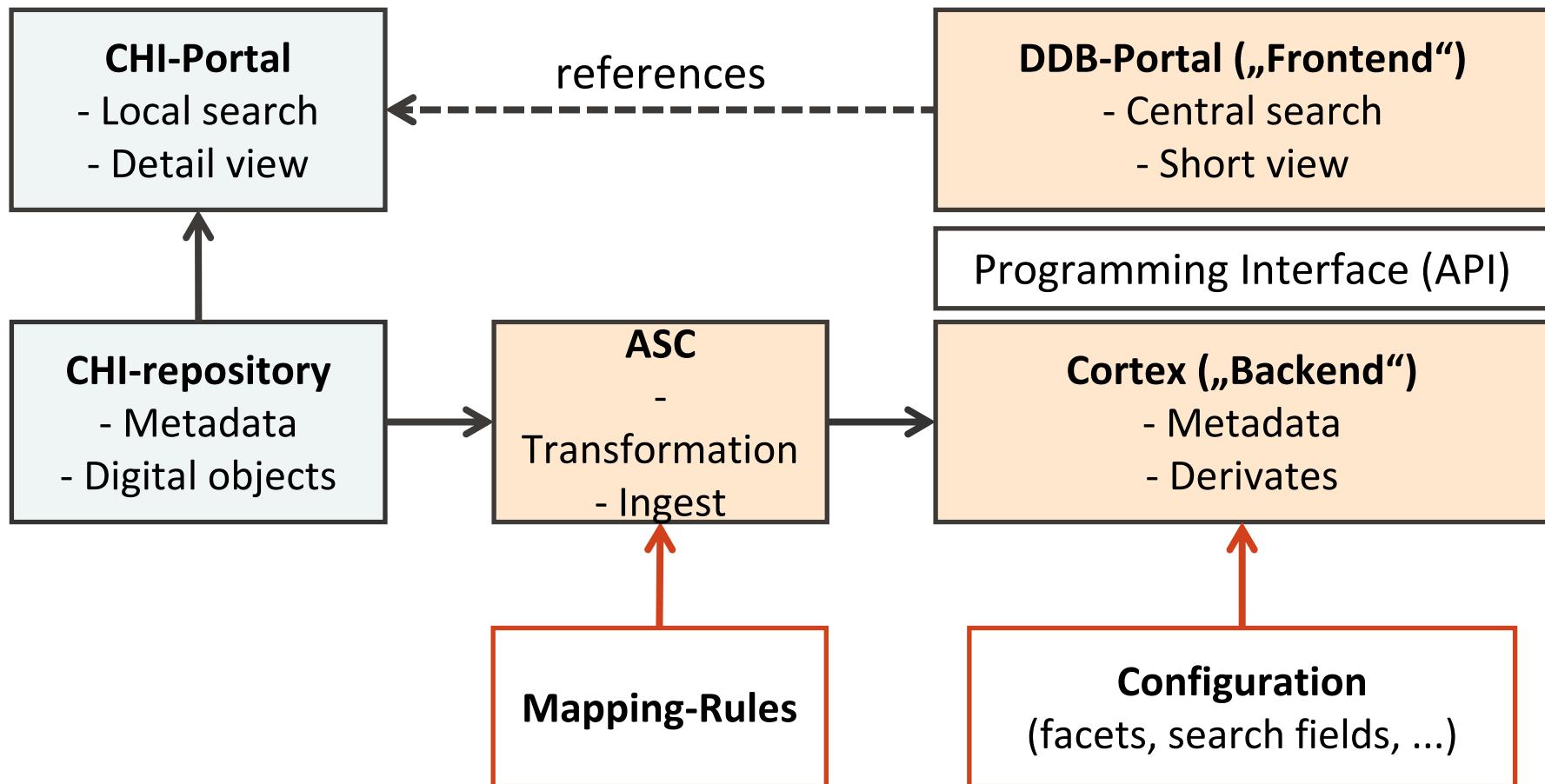
- Submit data to DDB's technical operator (FIZ Karlsruhe)
- Embedding into production workflow
  - Pick-up, transform and ingest data into DDB production system
  - Particularly for EDM: Technical mappings can be reused or developed cooperatively with external partners
  - Agree upon update-routines
  - Deliver data to Europeana (if applicable)
- Data Ingest
  - Release of data only with agreement of data provider



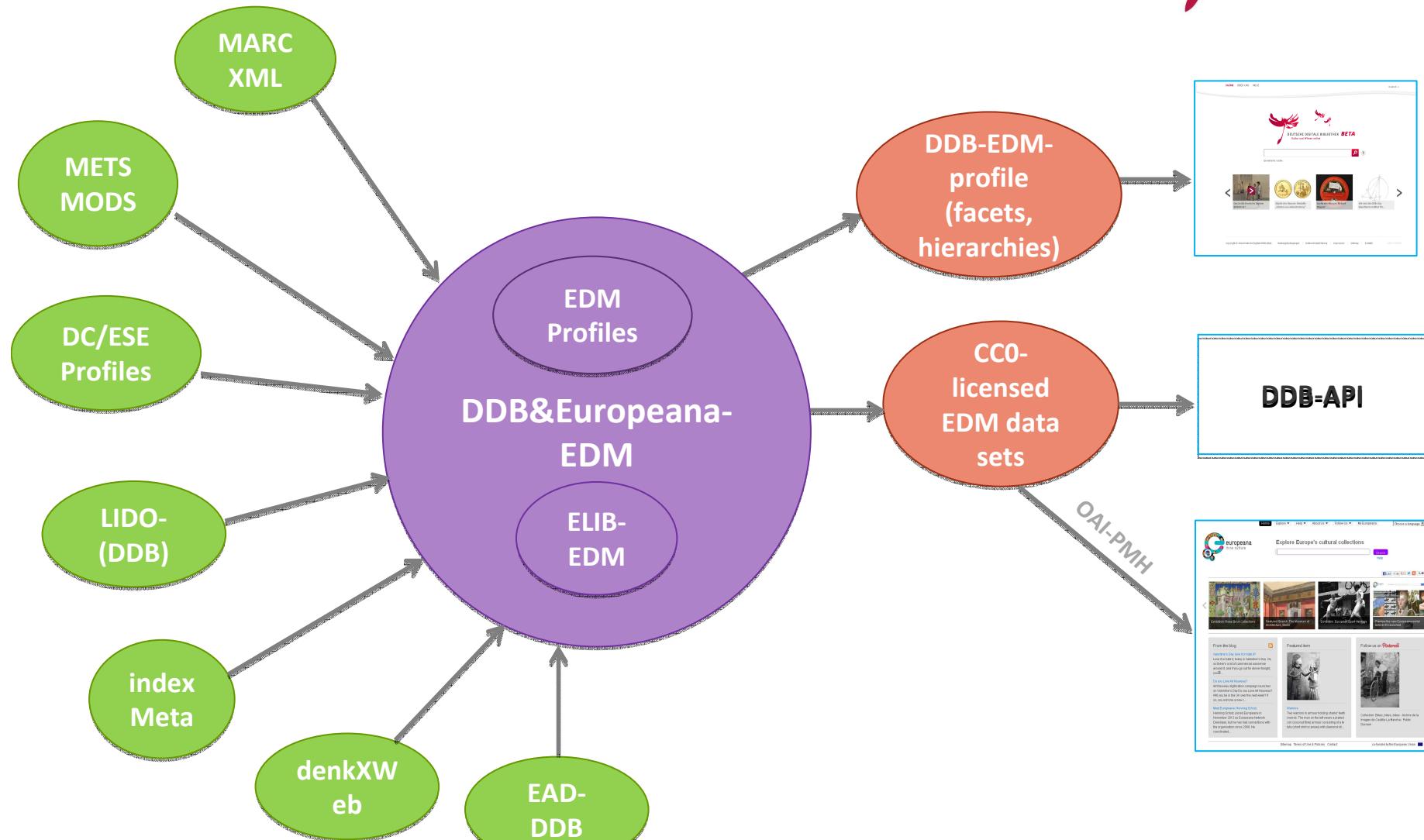
# DDB Data Model and Mapping



# How does the DDB function?



# Use of Europeana Data Model in the DDB



## EDM is used for:



- Interlinking
  - Hierarchical organisation of cultural objects
  - Relation between authorities and cultural objects
  - Relation between data provider and cultural objects
- Advanced Search
- Data Exchange
  - Provide metadata for Europeana via OAI-PMH
  - Open API

## In DDB EDM is not used for

- Presentation of cultural objects  
<http://www.deutsche-digitale-bibliothek.de/item/77SBAB3SGKJVO24FFMP45HT0532ZCQAD>
- Presentation of Data Provider  
<http://www.deutsche-digitale-bibliothek.de/about-us/institutions/item/265B17NE7QBS4NQMZCCGIVLFR73OCOSL>



# Metadata Formats in DDB-Portal



# Search Result List



SEARCH ABOUT US HELP

Login English ▾

Goethe Advanced Search

Filter results

Time Location Person/organisation Keyword Language Media type Sector Data provider

Results per page 20 Sort by Relevance

1 - 20 of 3,096 results

Page 1 of 155 Next > Last <

Only results with thumbnails

**Goethe**  
Technique  
...61 B 2 (GOETHE, Johann Wolfgang von) 11 (+52); Porträt einer Person (mit NAMEN) (allein)...  


**Goethe-Theater**  
Gentz, Heinrich; Goethe, Johann Wolfgang, 1802  
...Gentz, Heinrich Goethe, Johann Wolfgang, Goethe-Theater  


**Goethe-Theater**  
Gentz, Heinrich; Goethe, Johann Wolfgang von, 1802  
...Gentz, Heinrich Goethe, Johann Wolfgang von, Lauchstädt, Bad, Goethe-Theater... ...Gentz, Heinrich; Goethe, Johann Wolfgang von...  


Facet based search (EDM)

Static elements (sector-specific)

Binary Content

Index Data

# Detail View



[Back to the results list](#) [Link to this page](#) Result 1 of 1

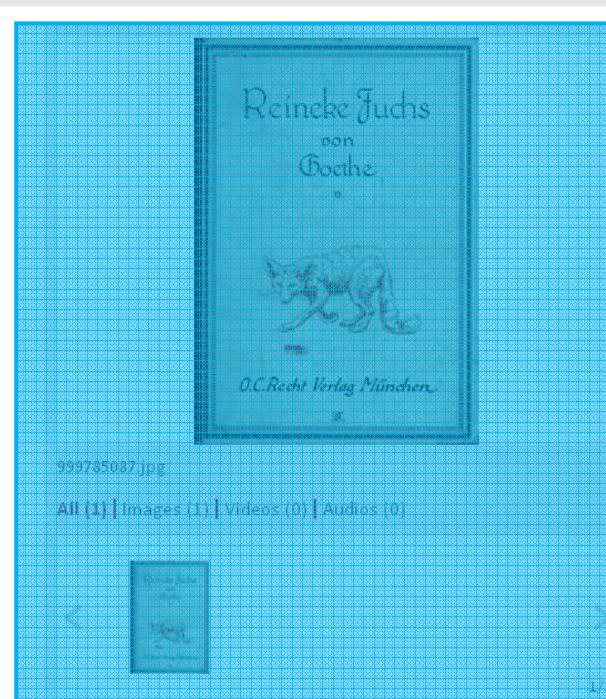
Institution  
→ Deutsche Nationalbibliothek  
<http://www.dnb.de>

Data provider's object view

**Reineke Fuchs**

Contributor: Goethe, Johann Wolfgang von (1749-1832)  
Publication: Monografie  
Published: München : Recht, 1922  
Published: [Online-Ausg.]; 2010  
Language: Deutsch  
Extent: 167 S.  
DNB-IDN: DE-101  
Link zum Katalogisat/OPAC: <http://d-nb.info/999785087>  
URN: <http://nbn-resolving.de/urn:nbn:de:101:1-2910012846>  
EKI: DNB999785087  
Rights: Der Zugriff auf das Objekt ist unbeschränkt möglich.

Data provider's object view



999785087.jpg

All (1) | Images (1) | Videos (0) | Audios (0)

1/1

Static Elements (all sectors)

Data Provider (Registration)

Sector-specific metadata set

Media Viewer (Binary Content)

# Data linking in DDB: Hierarchies

Data provider's object view

DFG Viewer



## Teil I: Jauchzet, frohlocket! auf, preiset die Tage

Contributor: Johann Sebastian Bach

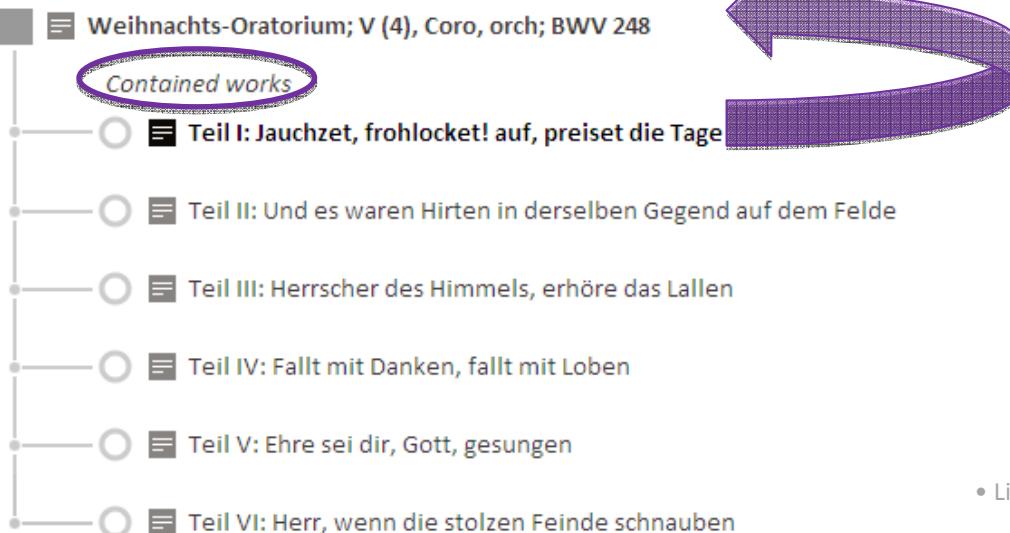
Publication: Beigefügtes Werk oder Enthaltenes Werk

Bibliographic citation: Weihnachts-Oratorium; V (4), Coro, orch; BWV 248

Location: Staatsbibliothek zu Berlin - Preußischer Kulturbesitz

Rights: Rechteinformationen beim Provider klären.

Related objects



Persistent URI to  
DFG-Viewer



EDM-based relations of  
structural parts  
-Currently used for  
**compound library objects**  
(Formats: METS-MODS,  
MARCXML) and **archival inventories** (Format: EAD-DDB)



Structure type  
–DDB controlled vocabulary  
–Rules for splitting records  
containing several DDB-objects

# DFG-Viewer



The screenshot shows a digital viewer for a historical manuscript. At the top left is the logo of the Staatsbibliothek zu Berlin (SBB PIK) and the DFGviewer logo. The top right features the Deutsche Forschungsgemeinschaft (DFG) logo and links to their website. The main content area displays a page from Bach's manuscript of the "Weihnachts-Oratorium". The page is filled with handwritten musical notation and lyrics in German. The lyrics are organized into sections labeled "Epil. 1", "Epil. 2", "E. 3", "Eh. 4", and "Ta. 5". Each section contains multiple staves of music with corresponding lyrics. The manuscript is written in brown ink on aged paper. To the right of the manuscript, there is a sidebar with a table of contents and descriptions of the sections. The table of contents includes: "Weihnachts-Oratorium; V (4), Coro, orch; BWV 248", "Inhaltsverzeichnis", "Teil I: Jauchzet, frohlocket auf, preiset die Tage", "Teil II: Und es waren Hirten in derselben Gegend auf dem Felde", "Teil III: Herrscher des Himmels, erhöre das Lallen", "Teil IV: Fallt mit Danken, fallt mit Loben", "Teil VI: Ehre sei dir, Gott, gesungen", and "Teil VII: Herr, wenn die stolzen Feinde schnauben". Below the table of contents, there are small icons for navigating through the document.

# Overview DDB Metadata Formats



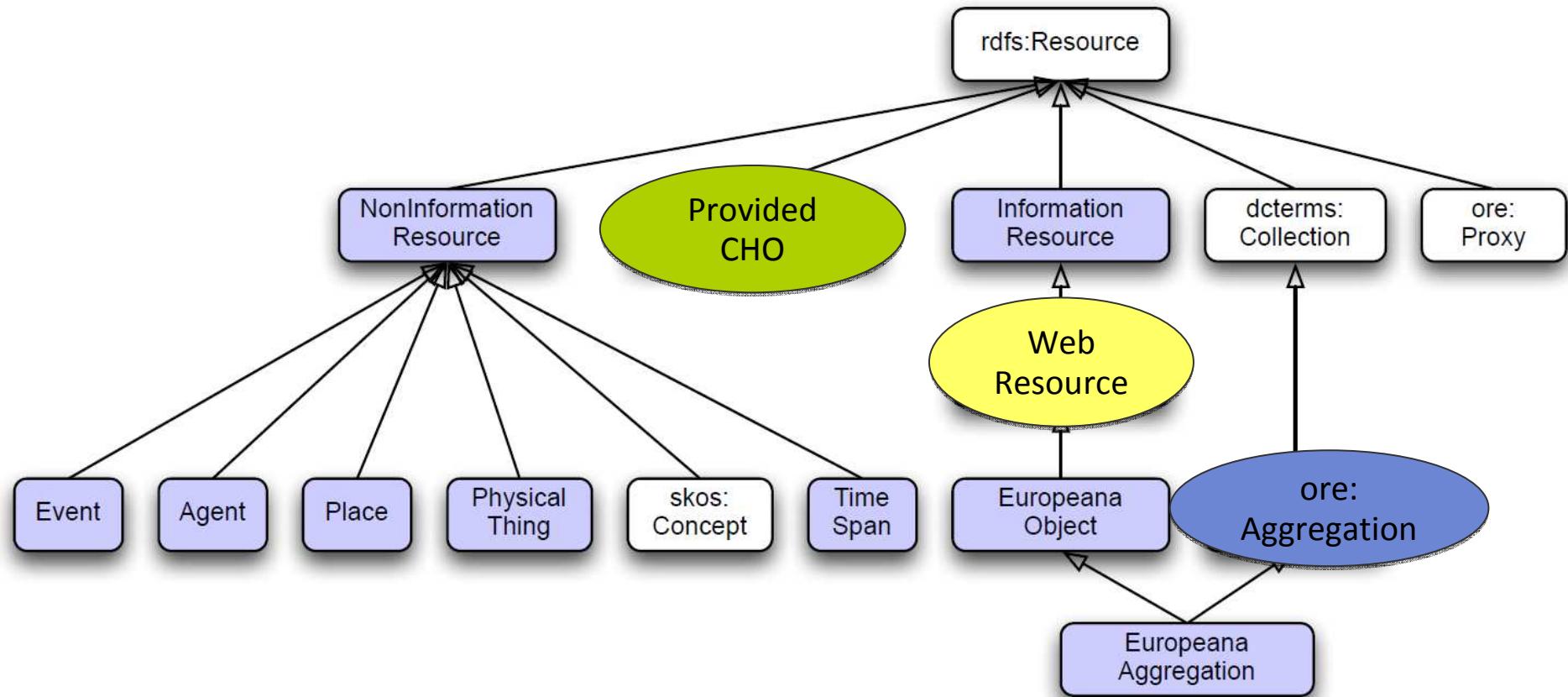
| Element          | Content   | Format            |
|------------------|---|-------------------|
| Source           | Metadata as provided by the data provider                       | LIDO, MARCXML,... |
| Provider         | Information about the data provider                             | DDB-Intern-XML    |
| Preview          | Sectorspecific Information used in the hitlist                  | DDB-Intern-XML    |
| View             | Detailed sectorspecific description of the cultural object      | DDB-Intern-XML    |
| Binaries         | References to digital objects used in the DDB (e.g. thumbnails) | DDB-Intern-XML    |
| EDM              | RDF Tripple for facets, hierarchies and data export             | EDM-RDF           |
| Indexing Profile | Indexing values   | DDB-Intern-XML    |



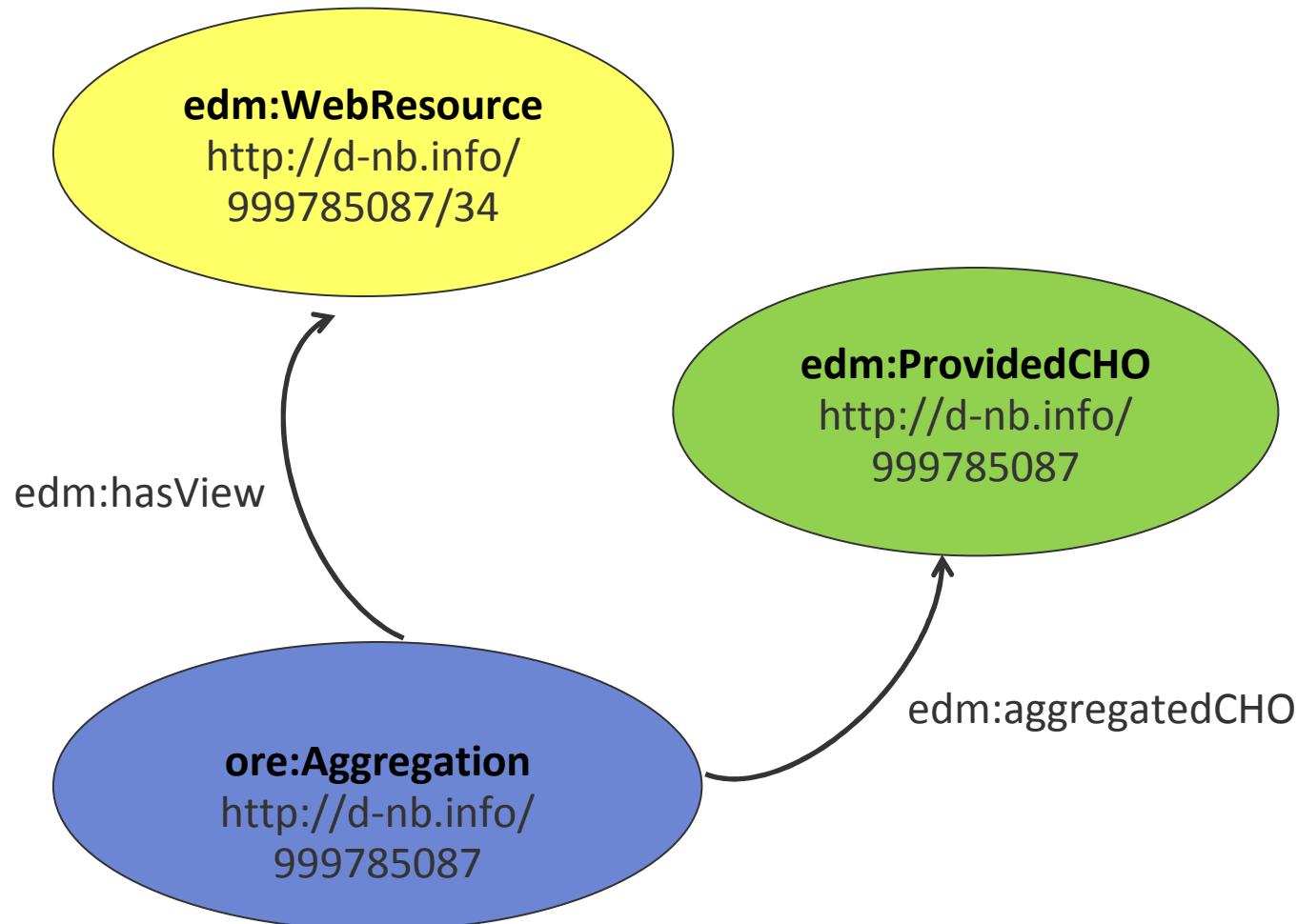
# DDB-EDM Application Profile



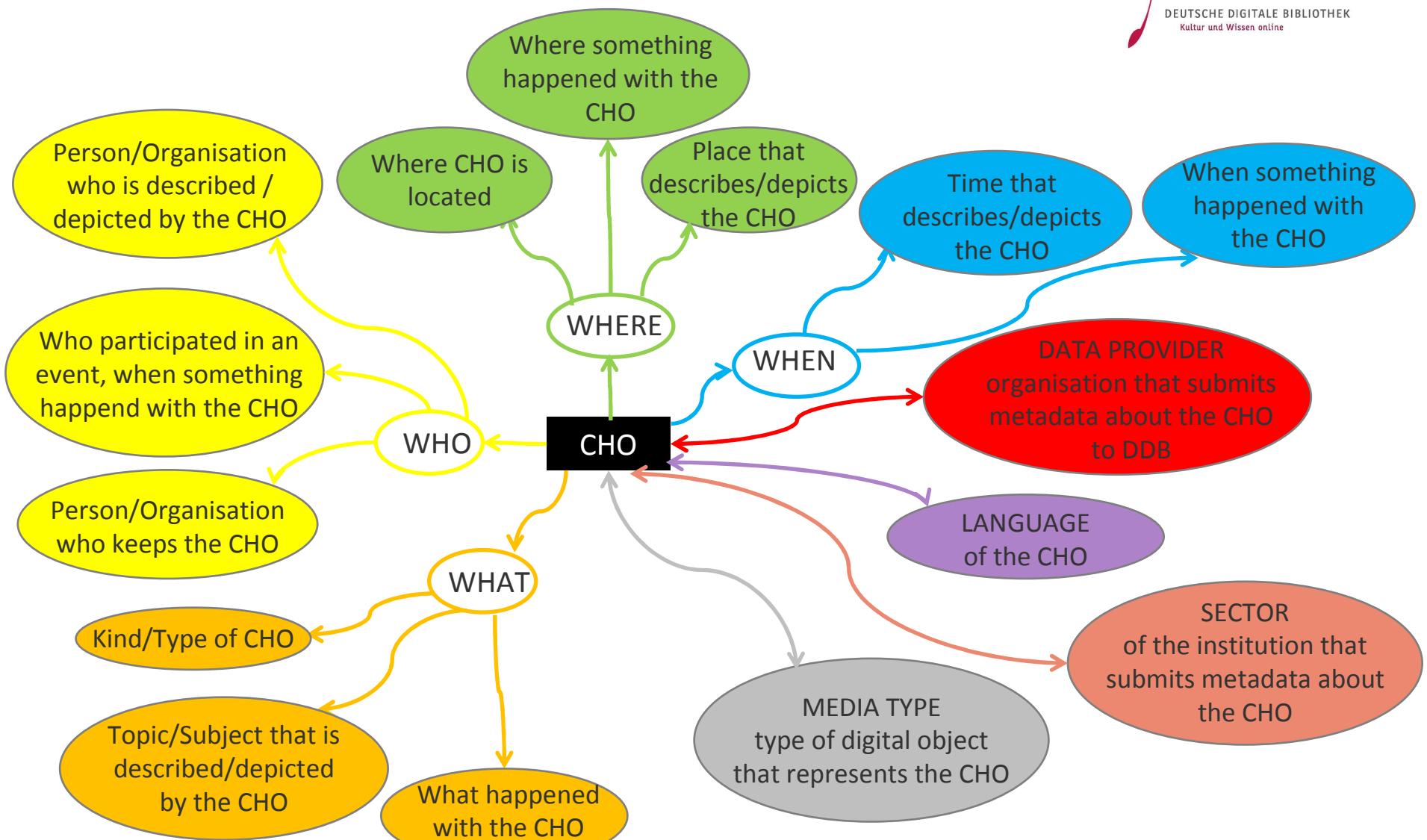
# Europeana Data Model



# EDM - Main Classes

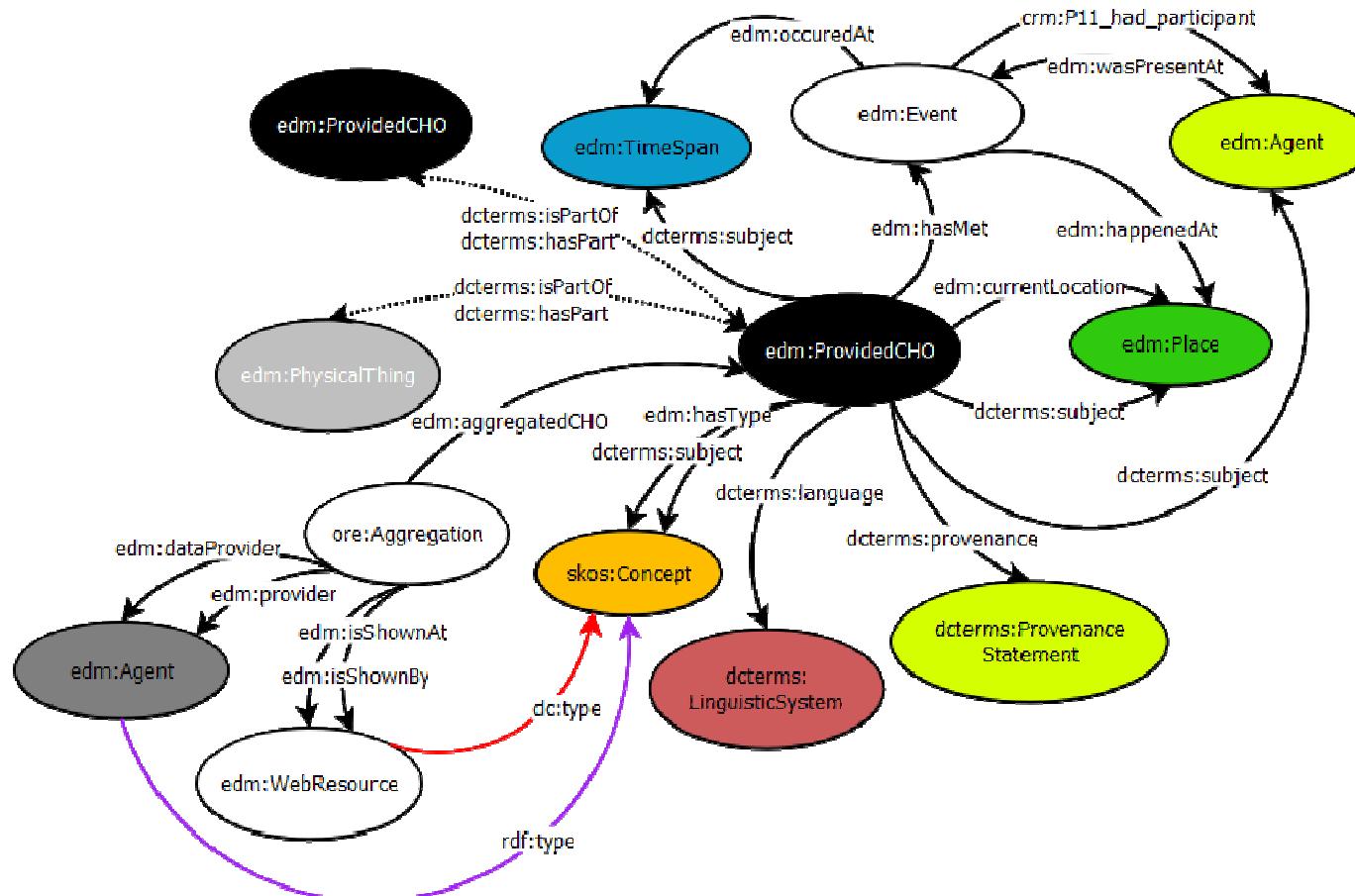


# Model of DDB's search facets



- Facet based search
  - Time = edm:TimeSpan
  - Location = edm:Place
  - Person/Organisation = edm:Agent
  - Keyword = skos:Concept
  - Language = dcterms:LinguisticSystem
  - Media type = skos:Concept
  - Sector = skos:Concept
  - Data provider = edm:Agent

# DDB Classes and Properties



# Mapping MARCXML to EDM

## Facets and hierarchies



# Conceptual Mapping (Person as Creator)



| MARCXML   |   | MARC |     |    |     |                  | EDM             |              |                                |  |                 |
|---|---|------|-----|----|-----|------------------|-----------------|--------------|--------------------------------|--|-----------------|
| Originalpfad  | Subfield  | Tag  | Ind | SF | Pos | Name/Description | EDM domain      | EDM property | EDM Range / Domain             |  | DDB / Europeana |
| <datafield tag="100" ind1="anyattribute" ind2="anyattribute"> | <subfield code="a">value</subfield> <subfield code="b">value</subfield> <subfield code="c">value</subfield> <subfield code="d">value</subfield> <subfield code="0">value</subfield> | 100  | a   |    |     | Verfasser        | edm:ProvidedCHO | dc:creator   | rdfs:Literal                   |  | Europeana       |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      | 0   |    |     | Identifier       | edm:ProvidedCHO | edm:hasMet   | DDB Event URI (Creation Event) |  | DDB             |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |
|   |   |      |     |    |     |                  |                 |              |                                |  |                 |

# DDB-EDM Record (Person as Creator)



```
<!-- Referenz Creator -->
<edm:Agent rdf:about="http://d-nb.info/gnd/118540238">
  <skos:prefLabel xml:lang="de">Goethe, Johann Wolfgang von</skos:prefLabel>
  <edm:wasPresentAt rdf:resource="http://deutsche-digitale-bibliothek.de/event/999785087-c" />
</edm:Agent>
```

```
<!-- Creation Event -->
<edm:Event rdf:about="http://deutsche-digitale-bibliothek.de/event/999785087-c">
  <edm:hasType>http://terminology.lido-schema.org/lido00012</edm:hasType>
  <crm:P11_had_participant rdf:resource="http://d-nb.info/gnd/118540238" />
</edm:Event>
```

```
<!-- Provided CHO -->
<edm:ProvidedCHO rdf:about="http://d-nb.info/999785087">
  <edm:type>TEXT</edm:type>
  <edm:hasType rdf:resource="#/providedCHOType" />
  <dc:type>Monografie</dc:type>
  <edm:type>Text</edm:type>
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/999785087-c" />
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/999785087-p" />
  <dc:language>ger</dc:language>
  <dcterms:language rdf:resource="http://id.loc.gov/vocabulary/iso639-2/ger" />
```

```
<dc:creator>Goethe, Johann Wolfgang von</dc:creator>
<dc:title>Reineke Fuchs</dc:title>
<dc:publisher>München : Recht</dc:publisher>
<dcterms:issued>1922</dcterms:issued>
<dcterms:extent>167 S.</dcterms:extent>
</edm:ProvidedCHO>
```

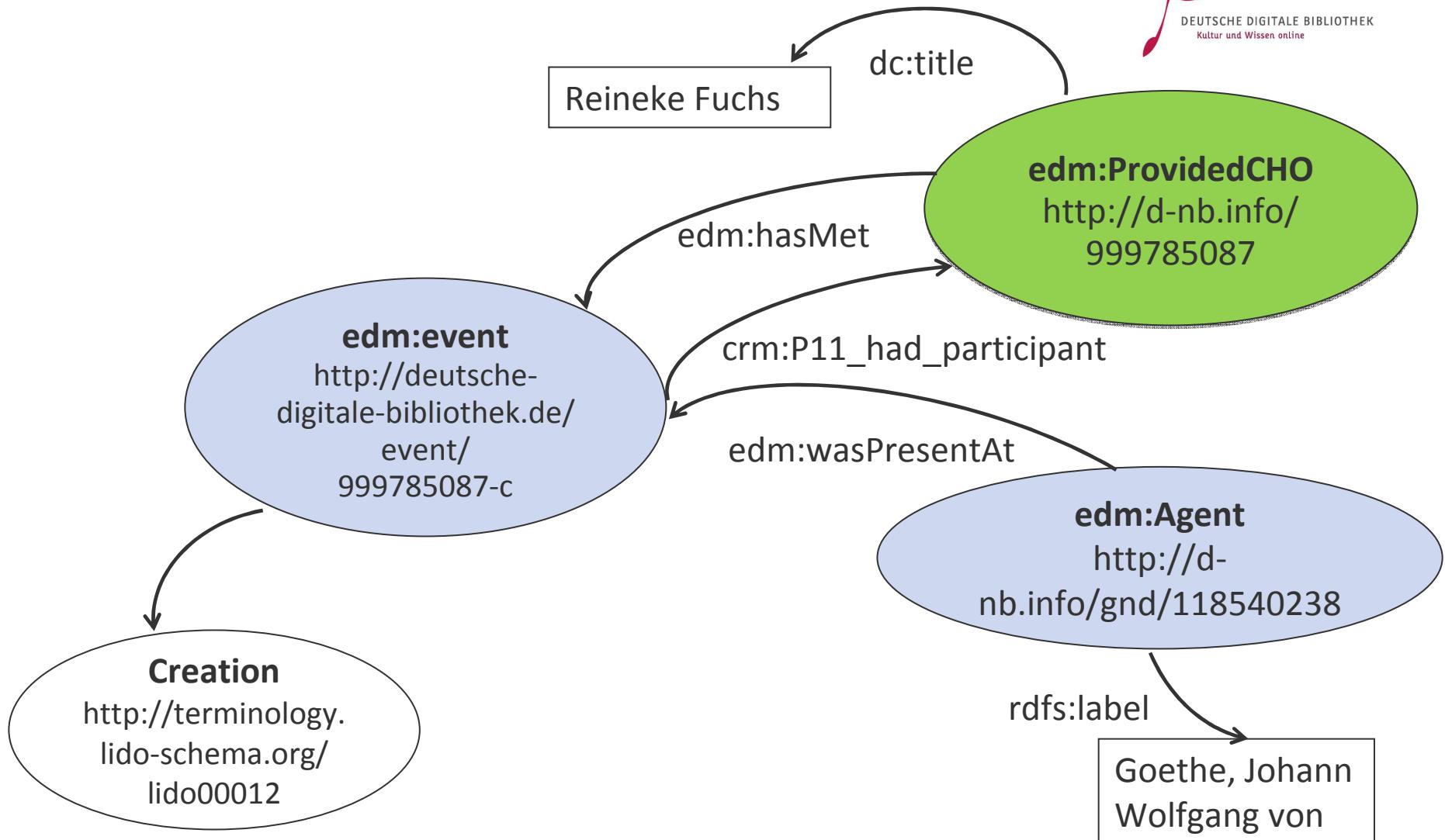
## DDB:

Event-based solution:  
Relation from  
edm:Agent to  
edm:ProvidedCHO  
via edm:Event (DDB-  
URI) and Property  
edm:hasMet

## Europeana:

Use of dc:creator  
with preferred name  
of the author (literal  
value)

# Example EDM RDF Graph



# Conceptual Mapping (Person as Subject)

| MARCXML   |                                     | MARC |     |    |     |                                    |                 |                 | EDM                |                 |  |  |  |  |
|---|-------------------------------------|------|-----|----|-----|------------------------------------|-----------------|-----------------|--------------------|-----------------|--|--|--|--|
| Originalpfad  | Subfield                            | Tag  | Ind | SF | Pos | Name/Description                   | EDM domain      | EDM property    | EDM Range / Domain | DDB / Europeana |  |  |  |  |
| <datafield tag="600" ind1="anyattribute" ind2="anyattribute"> |                                     |      |     |    |     | Subject Added Entry, Personal Name | edm:ProvidedCHO | dc:subject      | rdfs:Literal       | Europeana       |  |  |  |  |
|   | <subfield code="a">value</subfield> | 600  |     | a  |     | Personal Name                      |                 |                 |                    |                 |  |  |  |  |
|   | <subfield code="b">value</subfield> | 600  |     | b  |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   | <subfield code="c">value</subfield> | 600  |     | c  |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   | <subfield code="d">value</subfield> | 600  |     | d  |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   | <subfield code="0">value</subfield> | 600  |     | 0  |     | Identifier                         | edm:ProvidedCHO | dcterms:subject | GND-URI            | DDB             |  |  |  |  |
|   |                                     |      |     |    |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   |                                     |      |     |    |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   |                                     |      |     |    |     |                                    |                 |                 |                    |                 |  |  |  |  |
|   |                                     |      |     |    |     |                                    |                 |                 |                    |                 |  |  |  |  |

# DDB-EDM-Record (Person as Subject)

```
<!-- Reference Subject 1, Concept-->
<skos:Concept rdf:about="http://d-nb.info/gnd/4112587-3" >
  <skos:prefLabel xml:lang="de">Architekturtheorie</skos:prefLabel>
</skos:Concept>
```

```
<!-- Reference Subject 2, Person-->
<edm:Agent rdf:about="http://d-nb.info/gnd/118540238">
  <skos:prefLabel xml:lang="de">Goethe, Johann Wolfgang von</skos:prefLabel>
</edm:Agent>
```

```
<!-- Provided CHO -->
<edm:ProvidedCHO rdf:about="http://d-nb.info/997102462">
  <dc:type>Monografie</dc:type>
  <edm:type>Text</edm:type>
  <edm:hasType rdf:resource="#/providedCHOType" />
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/997102462-c" />
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/1997102462-p" />
  <dc:language>ger</dc:language>
  <dcterms:language rdf:resource="http://id.loc.gov/vocabulary/iso639-2/ger" />
  <dc:creator>Büchsenschuß, Jan</dc:creator>
  <dc:title>Goethe und die Architekturtheorie</dc:title>
  <dcterms:issued>2009</dcterms:issued>
  <dc:description>Berlin, Techn. Univ., Diss., 2009</dc:description>
  <dcterms:subject rdf:resource="http://d-nb.info/gnd/4112587-3" />
  <dc:subject>Architekturtheorie</dc:subject>

  <dcterms:subject rdf:resource="http://d-nb.info/gnd/118540238" />

  <dc:subject>Goethe, Johann Wolfgang von</dc:subject>
</edm:ProvidedCHO>
```



## DDB:

Relation from  
edm:Agent and  
edm:ProvidedCHO via  
Property  
dcterms:subject and  
GND-URI

## Europeana:

Use of dc:subject for  
preferred name of the  
person (literal value)

# Hierarchies

 Data provider's object view

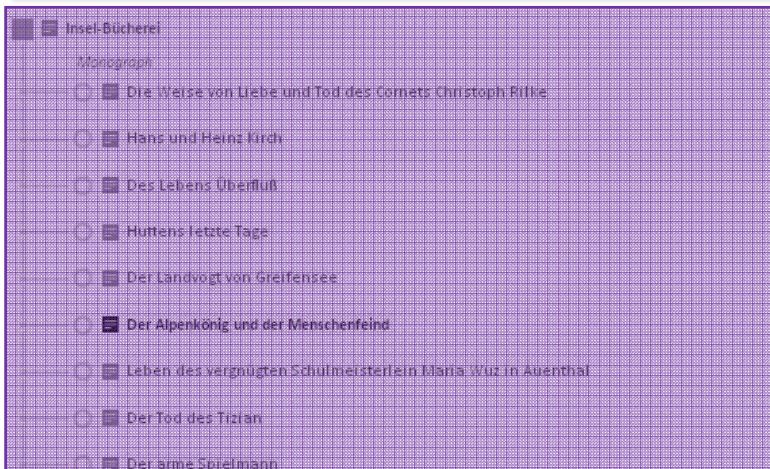
## Der Alpenkönig und der Menschenfeind : romantisch-komisches Original-Zauberspiel in zwei Aufzügen

Contributor: Raimund, Ferdinand (1790-1836)  
Publication: Monografie  
Published: Leipzig : Insel-Verl., 1921  
Published: [Online-Ausg.]: 2010  
Language: Deutsch  
Extent: 78 S.  
Series: Insel-Bücherei ; Nr. 336  
DNB-IDN: DE-101  
Link zum Katalogisat/OPAC: <http://d-nb.info/1000095037>  
URN: <http://nbn-resolving.de/urn:nbn:de:101:2-2010020903>  
EKI: DNB1000095037  
Rights: Der Zugriff auf das Objekt ist unbeschränkt möglich.

 Data provider's object view



Related objects 



Hierarchical relation between DDB-Objects  
e.g. monographs of a serials

# Conceptual Mapping (Hierarchies)



| MARCXML   |                                     | MARC |     |    |     |                  |                 | EDM                           |                    |                 |  |
|---|-------------------------------------|------|-----|----|-----|------------------|-----------------|-------------------------------|--------------------|-----------------|--|
| Originalpfad  | Subfield                            | Tag  | Ind | SF | Pos | Name/Description | EDM domain      | EDM property                  | EDM Range / Domain | DDB / Europeana |  |
| <datafield tag="830" ind1="anyattribute" ind2="anyattribute"> | <subfield code="w">value</subfield> | 830  |     | w  |     | Identifier       | edm:ProvidedCHO | dcterms:isPartOf              | edm:ProvidedCHO    | DDB ; Europeana |  |
|   | <subfield code="a">value</subfield> |      |     |    |     | Title            | edm:ProvidedCHO | dcterms:BibliographicCitation | rdfs:Literal       | DDB ; Europeana |  |
|   | <subfield code="v">value</subfield> |      |     |    |     | Volume number    |                 |                               |                    |                 |  |

## DDB and Europeana:

Relation from edm:ProvidedCHO (here: volume) to superior part with dcterms:isPartOf to edm:ProvidedCHO (here: series)

## DDB and Europeana:

Title of superior part and volume number as literal value in dcterms:bibliographicCitation

# DDB-EDM-Record (Hierarchies)

```
...  
<!-- Provided CHO -->  
<edm:ProvidedCHO rdf:about="http://d-nb.info/1000095037">  
  <dc:type>Monografie</dc:type>  
  <edm:type>Text</edm:type>  
  <edm:hasType rdf:resource="#/providedCHOType" />  
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/1000095037-c" />  
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/1000095037-p" />  
  <dc:language>ger</dc:language>  
  <dcterms:language rdf:resource="http://id.loc.gov/vocabulary/iso639-2/ger" />  
  <dc:creator>Raimund, Ferdinand</dc:creator>  
  <dc:title>Der Alpenkönig und der Menschenfeind : romantisch-komisches Original-Zauberspiel in  
zwei Aufzügen</dc:title>  
  <dc:publisher>Leipzig : Insel-Verl.</dc:publisher>  
  <dcterms:isPartOf rdf:resource="http://d-nb.info/014538970" />  
  <dcterms:bibliographicCitation>Insel-Bücherei ; Nr. 336</dcterms:bibliographicCitation>  
  <dcterms:issued>1921</dcterms:issued>  
  <dcterms:extent>78 S.</dcterms:extent>  
</edm:ProvidedCHO>  
...  
  
<edm:ProvidedCHO rdf:about="http://d-nb.info/014538970">  
  <dc:type>Schriftenreihe</dc:type>  
  <edm:type>Text</edm:type>  
  <edm:hasType rdf:resource="#/providedCHOType" />  
  <edm:hasMet rdf:resource="http://deutsche-digitale-bibliothek.de/event/01453897-p" />  
  <dc:language>ger</dc:language>  
  <dcterms:language rdf:resource="http://id.loc.gov/vocabulary/iso639-2/ger" />  
  <dc:title>Insel-Bücherei</dc:title>  
  <dc:publisher>Berlin : Insel-Verl.</dc:publisher>  
  <dcterms:issued>1912 -</dcterms:issued>  
</edm:ProvidedCHO>
```



**edm:ProvidedCHO**  
http://d-nb.info/  
1000095037

dcterms:isPartOf

**edm:ProvidedCHO**  
http://d-nb.info/  
014538970



## DDB-EDM vs. Europeana-EDM



# DDB vs. Europeana



- Subject
- Location
- Type
- Language
- Provider
- Rights
- Hierarchies
- Provenance
- To fulfill requirements of two different applications: DDB and Europeana

# DDB Subject Descriptions



```
<skos:Concept rdf:about="ex:myTopicURI">
    <skos:prefLabel>My Topic</skos:prefLabel>
</skos:Concept>

<edm:Place rdf:about="ex:myPlaceURI">
    <skos:prefLabel>My Place</skos:prefLabel>
</edm:Place>

<edm:TimeSpan rdf:about="ex:myTimeSpanURI">
    <skos:notation>My Time Span Notation</skos:notation>
</edm:TimeSpan>

<edm:Agent rdf:about="ex:myAgentURI">
    <skos:prefLabel>Agent, My</skos:prefLabel>
</edm:Agent>
```

# Subject



- Europeana

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dc:subject>My Subject</dc:subject>
</edm:ProvidedCHO>
```

- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dcterms:subject rdf:resource="ex:myTopicURI"/>
  <dcterms:subject rdf:resource="ex:myPlaceURI"/>
  <dcterms:subject rdf:resource="ex:myTimeSpanURI"/>
  <dcterms:subject rdf:resource="ex:myAgentURI"/>
</edm:ProvidedCHO>
```

## Location



- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
    <edm:currentLocation rdf:resource="ex:myLocationURI"/>
</edm:ProvidedCHO>
```

```
<edm:Place rdf:about="ex:myLocationURI">
    <skos:prefLabel>My Location</skos:prefLabel>
    <wgs84_pos:lat>My Latitude</wgs84_pos:lat>
    <wgs84_pos:long>My Longitude</wgs84_pos:long>
</edm:Place>
```

- Europeana ??

# Provenance



- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">  
  <dcterms:provenance  
    rdf:resource="ex:myProvenanceStatementURI"/>  
</edm:ProvidedCHO>
```

```
<dcterms:ProvenanceStatement  
  rdf:about="ex:myProvenanceStatementURI">  
  <rdf:value>My Provenance Statement</rdf:value>  
<dcterms:ProvenanceStatement>
```

- Europeana ??

# Type



- Europeana

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
    <dc:type>My Object Type</dc:type>
    <edm:type>TEXT or IMAGE or etc.</edm:type>
</edm:ProvidedCHO>
```

- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
    <edm:hasType rdf:resource="ex:myObjectTypeURI"/>
</edm:ProvidedCHO>
```

```
<skos:concept rdf:about="ex:myObjectTypeURI">
    <skos:prefLabel>My Object Type</skos:prefLabel>
</skos:concept>
```

# DDB Mediatype



```
<edm:WebResource rdf:about="ex:myWebResourceURI">
    <dc:type rdf:resource="ex:myMediatypeURI"/>
</edm:WebResource>
```

```
<skos:concept rdf:about="ex:myMediatypeURI">
    <skos:notation>My Media Type Notation</skos:notation>
</skos:concept>
```

# Language



- Europeana

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dc:language>My Language Code</dc:language>
</edm:ProvidedCHO>
```

- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dcterms:language rdf:resource="ex:myLanguageCodeURI"/>
</edm:ProvidedCHO>
```

```
<dcterms:LinguisticSystem rdf:about="ex:myLanguageCodeURI">
  <rdf:value>My Language Code</rdf:value>
</dcterms:LinguisticSystem>
```

# Provider



- Europeana

```
<ore:Aggregation rdf:about="ex:myAggregation">
    <edm:dataProvider>My Organisation</edm:dataProvider>
    <edm:provider>My Aggregator</edm:provider>
</ore:Aggregation>
```

- DDB

```
<ore:Aggregation rdf:about="ex:myAggregation">
    <edm:dataProvider rdf:resource="ex:myOrganisationURI"/>
    <edm:provider rdf:resource="ex:myAggregatorURI">
</ore:Aggregation>
```

# DDB Provider



```
<edm:Agent rdf:about="ex:myOrganisationURI">
    <skos:prefLabel>My Organisation</skos:prefLabel>
    <dcterms:isPartOf rdf:about="ex:myParentOrganisationURI"/>
    <rdf:type rdf:about="ex:mySectorURI"/>
</edm:Agent>

<edm:Agent rdf:about="ex:myParentOrganisationURI">
    <skos:prefLabel>My Parent Organisation</skos:prefLabel>
</edm:Agent>

<skos:concept rdf:about="ex:mySectorURI">
    <skos:notation>My Sector Notation</skos:notation>
</skos:concept>

<edm:Agent rdf:about="ex:myAggregatorURI">
    <skos:prefLabel>My Aggregator</skos:prefLabel>
</edm:Agent>
```

# Rights



- Europeana

```
<edm:WebResource rdf:about="ex:myWebResourceURI">
  <edm:rights>http://creativecommons.org/xxx/</edm:rights>
</edm:WebResource>
```

- DDB

```
<edm:WebResource rdf:about="ex:myWebResourceURI">
  <dcterms:rights>http://creativecommons.org/xxx/deed.de</dcterms:rig
  hts>
</edm:WebResource>
```

# DDB Hierarchies



```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dcterms:isPartOf rdf:resource="ex:myProvidedCHOURI"/>
  <dcterms:isPartOf rdf:resource="ex:myPhysicalThingURI"/>
</edm:ProvidedCHO>

<edm:PhysicalThing rdf:about="ex:myPhysicalThingURI">
  <dcterms:isPartOf rdf:resource="ex:myProvidedCHOURI"/>
  <dc:title>Title of Undescribed Level</dc:title>
  <rdf:type rdf:resource="ex:myHierarchyTypeURI">
</edm:ProvidedCHO>

<skos:Concept rdf:about="ex:myHierarchyTypeURI">
  <skos:notation>My Hierarchy Type Notation <skos:notation>
</skos:Concept>
```

# Creation and Publication



- Europeana

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <dc:contributor>Contributor, My</dc:contributor>
  <dc:creator>Creator, My</dc:creator>
  <dcterms:created>YYYY</dcterms:created>
  <dcterms:publisher>My Publisher</dcterms:publisher>
  <dcterms:issued>yyyy</dcterms:issued>
<edm:ProvidedCHO>
```

- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
  <edm:wasPresentAt rdf:resource="ex:myCreationEventURI"/>
  <edm:wasPresentAt rdf:resource="ex:myPublicationEventURI"/>
<edm:ProvidedCHO>
```

# DDB Creation Event



```
<edm:Event rdf:about="ex:myCreationEventURI">
    <edm:hasType rdf:resource="http://terminology.lido-schema.org/lido00012"/>
    <crm:P11_had_participant rdf:resource="ex:myCreatorURI"/>
    <edm:occurredAt rdf:resource="ex:myTimeSpanURI"/>
    <edm:happenedAt rdf:resource="ex:myPlaceURI"/>
</edm:Event>

<edm:Agent rdf:about="ex:myCreatorURI">
    <skos:prefLabel>Creator, My</skos:prefLabel>
</edm:Agent>

<edm:TimeSpan rdf:about="ex:myTimeSpanURI">
    <skos:notation>My Time Span Notation</skos:notation>
</edm:TimeSpan>

<edm:Place rdf:about="ex:myPlaceURI">
    <skos:prefLabel>My Place</skos:prefLabel>
</edm:Place>
```

# DDB Publication Event



```
<edm:Event rdf:about="ex:myPublicationEventURI">
  <edm:hasType rdf:resource="http://terminology.lido-schema.org/lido00012"/>
  <crm:P11_had_participant rdf:resource="ex:myPublisherURI"/>
  <edm:occurredAt rdf:resource="ex:myTimeSpanURI"/>
  <edm:happenedAt rdf:resource="ex:myPlaceURI"/>
</edm:Event>

<edm:Agent rdf:about="ex:mPublisherURI">
  <skos:prefLabel>Creator, My</skos:prefLabel>
</edm:Agent>

<edm:TimeSpan rdf:about="ex:myTimeSpanURI">
  <skos:notation>My Time Span Notation</skos:notation>
</edm:TimeSpan>

<edm:Place rdf:about="ex:myPlaceURI">
  <skos:prefLabel>My Place</skos:prefLabel>
</edm:Place>
```

# Provenance



- DDB

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
    <dcterms:provenance rdf:resource="ex:myProvenanceStatementURI"/>
</edm:ProvidedCHO>

<dcterms:ProvenanceStatement rdf:about="ex:myProvenanceStatementURI">
    <rdf:value>My Provenance Statement</rdf:value>
<dcterms:ProvenanceStatement>
```

- Europeana

```
<edm:ProvidedCHO rdf:about="ex:myProvidedCHOURI">
    <dcterms:provenance>My Provenance Statement</dcterms:provenance>
</edm:ProvidedCHO>
```

# Data cleaning and normalisation

## Example Time Spans



# Example: Time spans



SEARCH ABOUT US HELP

Eichendorff Advanced Search

Filter results

Results per page: 20 Sort by: Relevance

Time

| Time         | Count | Time Span    | Count |
|--------------|-------|--------------|-------|
| 20th century | (54)  | 1931 to 1940 | (12)  |
| 19th century | (34)  | 1961 to 1970 | (10)  |
| 1851 to 1875 | (20)  | 1991 to 2000 | (10)  |
| 1921 to 1930 | (14)  | 1951 to 1960 | (9)   |
| 1826 to 1850 | (12)  | 1911 to 1920 | (7)   |

Location Person/organisation Keyword Language Media type Sector Data provider

Keep all filters

Sorted by frequency

Page 1 Next >

Page 1 of 6 Next > Last <

**Eichendorff, Joseph Freiherr von**

**Gedenktafel für Josef von Eichendorff**

**Gedenkstätte für Josef von Eichendorff**

**Reiter: Handzeichnungen aus dem Tagebuch von Joseph...**

**Grab des Joseph von Eichendorff**

**Eichendorff-Denkmal im Scheitniger Park**

**Spätmantiker : Eichendorff und E. T. A. Hoffmann**

**Joseph Frhr. v. Eichendorff's sämmtliche Werke : Kritisches Verzeichnis**

**Joseph Frhr. v. Eichendorff's sämmtliche Werke : Kritisches Verzeichnis**

## DDB Time Spans

### Data cleaning

-Semi-automatic cleaning of source values

-Based on statistical analyses and defined rules

### Values converted to:

-DDB vocabulary: VocNet-URIs and notations

-ISO 8601 for more granular time spans  
-In EDM modelled in two TimeSpans related to one Event

# Web-based management of DDB vocs in xTree



DEUTSCHE DIGITALE BIBLIOTHEK  
Kultur und Wissen online

Vocabulary Media Sources Configuration log off

Welcome Vocabulary DDB Zeitvok

Tree Search Systematic

**Geological Periods (en) (ID: dat00112)**

- Precambrian (en) (ID: dat00109) [G]
- Palaeozoic (en) (ID: dat00108) [G]
- Triassic (en) (ID: dat00107) [G]
- Jurassic (en) (ID: dat00106) [G]
- Cretaceous (en) (ID: dat00105) [G]
- Tertiary (en) (ID: dat00104) [G]
- Quaternary (en) (ID: dat00103) [G]

**Prehistorical Periods (en) (ID: dat00111)**

- 7th millennium BC (en) (ID: dat00102) [G]
- 6th millennium BC (en) (ID: dat00101) [G]
- 5th millennium BC (en) (ID: dat00100) [G]
- 4th millennium BC (en) (ID: dat00089) [G]
- 3rd millennium BC (en) (ID: dat00078) [G]
- 2nd millennium BC (en) (ID: dat00067) [G]
- 1st millennium BC (en) (ID: dat00056) [G]

**Historical Periods (en) (ID: dat00110)**

- 1st century (en) (ID: dat00055) [G]
- 2nd century (en) (ID: dat00054) [G]
- 3rd century (en) (ID: dat00053) [G]
- 4th century (en) (ID: dat00052) [G]
- 5th century (en) (ID: dat00051) [G]
- 6th century (en) (ID: dat00050) [G]
- 7th century (en) (ID: dat00049) [G]
- 8th century (en) (ID: dat00048) [G]
- 9th century (en) (ID: dat00047) [G]
- 10th century (en) (ID: dat00046) [G]
- 11th century (en) (ID: dat00043) [G]
- 1001 to 1050 (en) (ID: dat00044) [G]
- 1051 to 1100 (en) (ID: dat00045) [G]
- 12th century (en) (ID: dat00040) [G]
- 13th century (en) (ID: dat00037) [G]
- 14th century (en) (ID: dat00034) [G]
- 15th century (en) (ID: dat00031) [G]

**Basic data Relations Mappings Notes Forum**

**Id:** dat00044  
**Label:** 1001 to 1050 (en)  
**Type:** Concept

| Label                                     | Qualifier | Language | Role        | Numerus  | Variety  |
|---|-----------|----------|-------------|----------|----------|
| 1001 to 1050                              |           | en       | preferred   | singular | standard |
| 1st half 11th century                     |           | en       | alternative | singular | standard |
| 1st half 11th century - 1001 to 1050      |           | en       | alternative | singular | standard |
| 1001 bis 1050                             |           | de       | preferred   | singular | standard |
| 1. Halfte 11. Jahrhundert                 |           | de       | alternative | singular | standard |
| 1. Halfte 11. Jahrhundert - 1001 bis 1050 |           | de       | alternative | singular | standard |

**prefLabel@en**  
**altLabel@en**  
**prefLabel@de**  
**altLabel@de**

**Vocabularies can be organised in categories**

# Relations

Vocabulary ▾ Media ▾ Sources Configuration log off

Welcome Vocabulary DDB-Zeitvok

Tree Search Systematic

Geological Periods (en) (ID: dat00112)

- Precambrian (en) (ID: dat00109) [G]
- Palaeozoic (en) (ID: dat00108) [G]
- Triassic (en) (ID: dat00107) [G]
- Jurassic (en) (ID: dat00106) [G]
- Cretaceous (en) (ID: dat00105) [G]
- Tertiary (en) (ID: dat00104) [G]
- Quaternary (en) (ID: dat00103) [G]

Prehistorical Periods (en) (ID: dat00111)

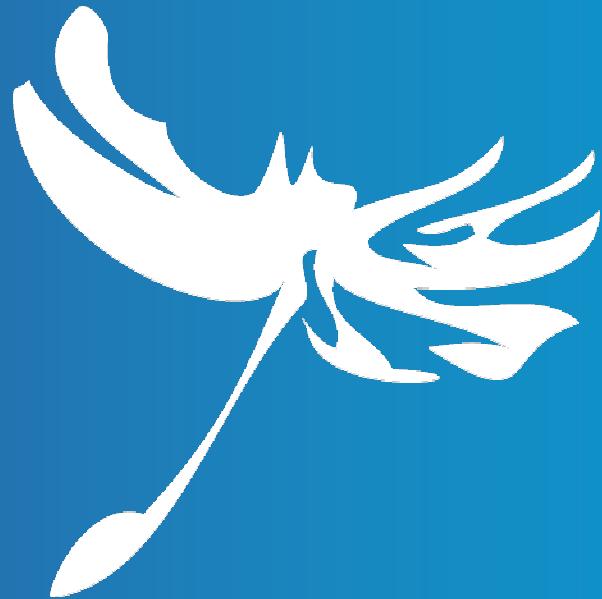
- 7th millennium BC (en) (ID: dat00102) [G]
- 6th millennium BC (en) (ID: dat00101) [G]
- 5th millennium BC (en) (ID: dat00100) [G]
- 4th millennium BC (en) (ID: dat00089) [G]
- 3rd millennium BC (en) (ID: dat00078) [G]
- 2nd millennium BC (en) (ID: dat00067) [G]
- 1st millennium BC (en) (ID: dat00056) [G]

Historical Periods (en) (ID: dat00110)

- 1st century (en) (ID: dat00055) [G]
- 2nd century (en) (ID: dat00054) [G]
- 3rd century (en) (ID: dat00053) [G]
- 4th century (en) (ID: dat00052) [G]
- 5th century (en) (ID: dat00051) [G]
- 6th century (en) (ID: dat00050) [G]
- 7th century (en) (ID: dat00049) [G]
- 8th century (en) (ID: dat00048) [G]
- 9th century (en) (ID: dat00047) [G]
- 10th century (en) (ID: dat00046) [G]
- 11th century (en) (ID: dat00043) [G]
  - 1001 to 1050 (en) (ID: dat00044) [G]
  - 1051 to 1100 (en) (ID: dat00045) [G]
- 12th century (en) (ID: dat00040) [G]
- 13th century (en) (ID: dat00037) [G]
- 14th century (en) (ID: dat00034) [G]
- 15th century (en) (ID: dat00031) [G]



## 5. Further Developments 2013 (selection)



# Connecting data in DDB: Person Page



Link auf diese Seite

## GND

Johann Wolfgang von Goethe

Schriftsteller, Politiker, Jurist, Naturwissenschaftler, Maler, Zeichner  
Geboren: 28. August 1749, Frankfurt am Main  
Gestorben: 22. März 1832, Weimar

Objekte:

Goethe, Johann Wolfgang von Goethe, Johann Wolfgang von Goethe, Johann Wolfgang von Goethe, Johann Wolfgang von

Alle Bilder (XX) | Alle Videos (XX) | Alle Audios (XX)

Werke von:

Clavigo : Ein Trauerspiel in fünf Aufzügen  
Goethe, Johann Wolfgang von - [S.l.] : 1778

Egmont : Ein Trauerspiel in fünf Aufzügen  
Goethe, Johann Wolfgang von - Leipzig : Göschen, 1788

Erwin und Elmire : Ein Schauspiel mit Gesang  
Goethe, Johann Wolfgang von - Bern : Walthard, 1776

Faust : Ein Trauerspiel [richtig: Fragment]  
Goethe, Johann Wolfgang von - Leipzig : Göschen, 1790

Götter, Helden und Wieland : Eine Farce  
Goethe, Johann Wolfgang von - Leipzig : 1774

Alle Objekte (xx)

Nur Objekte mit Normdaten

Thema in:

Goethe über den Faust  
Dieck, Alfred - Göttingen : Vandenhoeck & Ruprecht, 1963

Goethe und Klopstock  
Pfeiffer, Freimund - Leipzig : Engelmann, 1842

Goethe bei den Serben  
Perišić, Dragoslava - München : Sagner, 1968

Alle Objekte (xx)

Nur Objekte mit Normdaten

## Wikipedia



Johann Wolfgang von Goethe, Ölgemälde von Joseph Karl Stieler, 1828

Suche:

Johann Wolfgang von Goethe in der DDB

## GND

## DDB

- Connect external authority data service with DDB repository
- Data from external data sources (e.g. German National Authority File, Wikipedia)
- GND-URIs need to be supplied by data provider
- Explorative search in DDB and other catalogues
- Role-based facets
  - Event-based modelling (EDM)
  - Controlled vocabularies for event-types (e.g. Creation)

# Rights indications for digital objects



DEUTSCHE DIGITALE BIBLIOTHEK **BETA**

SUCHE    ÜBER UNS    HILFE

Deutsch ▾

Erweiterte Suche

Zurück zur Ergebnisliste   Link auf diese Seite

Institution  
→ Deutsches Filminstitut - DIF e.V.  
<http://www.deutsches-filminstitut.de>

Objekt beim Datenlieferanten anzeigen

Filmplakat "Goethe!"

Entstanden: 2010  
Medientyp: Bild  
Objekttyp: Plakat  
Beschreibung: Filmplakat "Goethe!"  
Quelle: Warner; DIF  
Rechteinformation: Warner Bros.  
Rechtsstatus:    Namensnennung – Nicht-kommerziell – Weitergabe unter gleichen Bedingungen

Objekt beim Datenlieferanten anzeigen

Ergebnis 1 von 1

deutsches filminstitut

ALEXANDER FEHLING    MIRIAM STEIN    MORITZ BLAUSTEIN

Goethe!

Filmplakat "Goethe!". Quelle: Warner, Deutsches Filminstitut

Alle (1) | Bilder (1) | Videos (0) | Audios (0)

<    >

Filmplakat "Goet..."

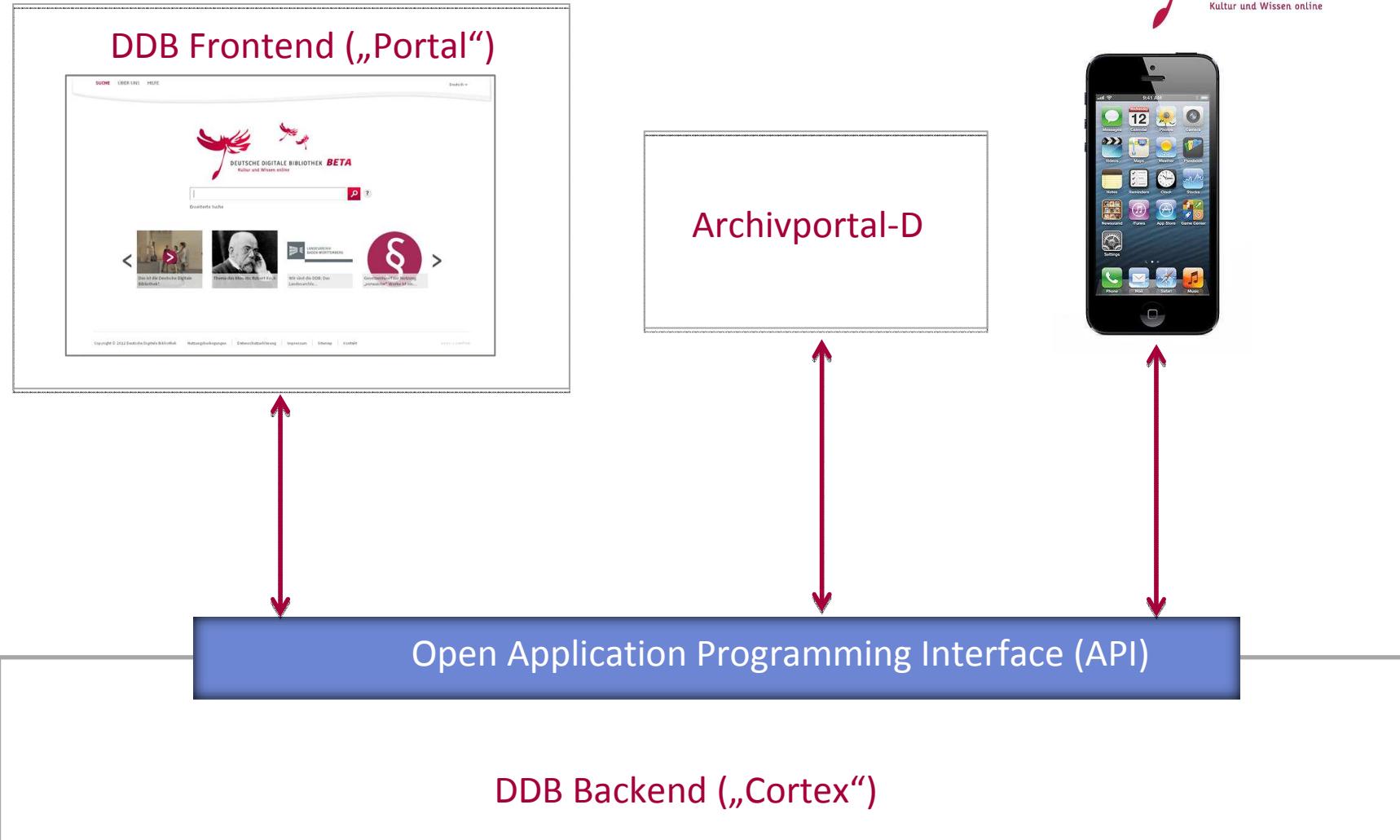
1/1

Copyright © 2012 Deutsche Digitale Bibliothek    Nutzungsbedingungen    Datenschutzerklärung    Impressum    Sitemap    Kontakt    next 0.0 RC2 / 1.2 // 13518

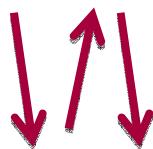
New mandatory element  
„Rights status“

- In DDB-View-Format
- Viewable in the portal after reingestion of data with new mappings

# Publication of DDB-API



# What is an API ?

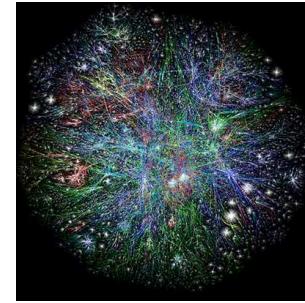


- Acronym: Application Programming Interface
- Through an API a programme offers other programmes the possibility to communicate with it.
- Purpose is **not** the mass **export** of data
- Security measures
  - Developer Keys
  - Flow control
  - Terms of use
  - Licensing of metadata and digital objects

# Possible Applications on basis of DDB-API



- Search with sector-specific perspective
- Vizualisations (e.g. search results in a map)



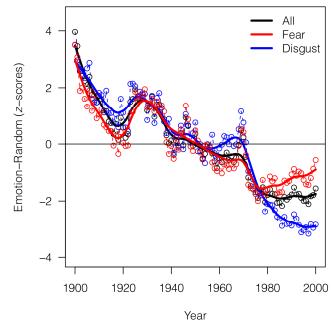
© the opte project  
<http://www.opte.org>

- Virtual Exhibitions



© Foto: Ägyptisches Museum und  
Papyrussammlung der Staatlichen  
Museen zu Berlin - Preußischer  
Kulturbesitz  
Fotograf/in: Sandra Steiß

- Statistical Analyses



Acerbi A, Lampis V, Garnett P, Bentley RA (2013) The Expression of Emotions in 20th Century Books. PLoS ONE 8(3): e59030.



# Thank you! Questions?

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<http://www.deutsche-digitale-bibliothek.de>

# Further Reading



- Europeana-EDM Documentation
  - <http://pro.europeana.eu/web/guest/edm-documentation>
  - Definition of EDM v.2.5.4 <http://pro.europeana.eu/documents/900548/0d0f6ec3-1905-4c4f-96c8-1d817c03123c>
- Data Delivery to DDB
  - [http://www.deutsche-digitale-bibliothek.de/content/ddb/data\\_delivery](http://www.deutsche-digitale-bibliothek.de/content/ddb/data_delivery)
- DDB Cooperation Agreement
  - [http://www.deutsche-digitale-bibliothek.de/content/ddb/cooperation\\_agreement](http://www.deutsche-digitale-bibliothek.de/content/ddb/cooperation_agreement)