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GOETHE
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From raw data to rich(er) data

Lessons learned while aggregating metadata

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SWIB 2019

Session: Aggregation and Interlinking

26.11.2019

Back to 2016 – What this talk will be about

- Review 2016

- What worked out and what did not?
- Which challenges did we face then and which do we face now?
- What does the metadata management workflow look like today?
- Not every challenge is solved yet,

  so we are looking forward to feedback and suggestions for tools

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Specialized Information Service
Performing Arts

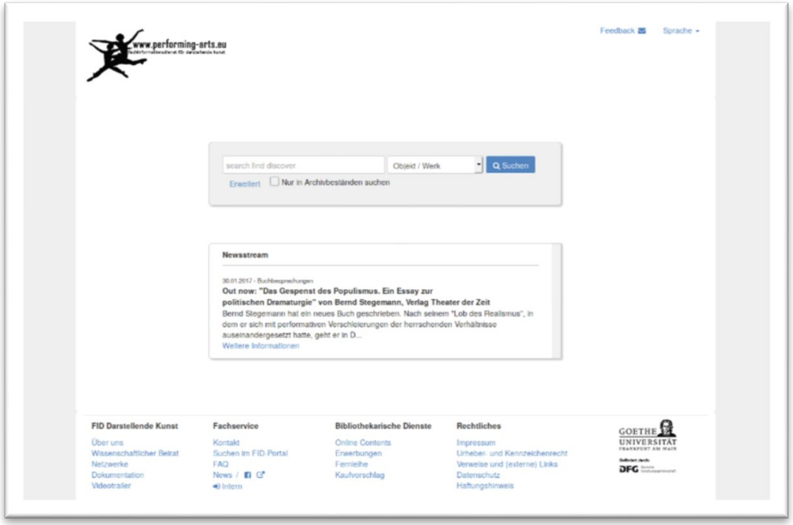
„Past forward“
Project documentation
Recording, 2018
[Tanzfonds Erbe]

Specialized Information Service Performing Arts

- Aggregates metadata from GLAM institutions from the performing arts domain (at the moment especially German-speaking institutions from Germany, Austria and Switzerland)
- Funded by the German Research Foundation
- What we are doing is best seen here:

- And here:

http://www.performing-arts.eu



□ Nur in Archivbeständen suchen

Newsstream

30.01.2017 - Buchbesprechungen

Out now: "Das Gespenst des Populismus. Ein Essay zur politischen Dramaturgie" von Bernd Stegemann, Verlag Theater der Zeit

Bernd Stegemann hat ein neues Buch geschrieben. Nach seinem "Lob des Realismus", in dem er sich mit performativen Verschleierungen der herrschenden Verhältnisse auseinandergesetzt hatte, geht er in D...

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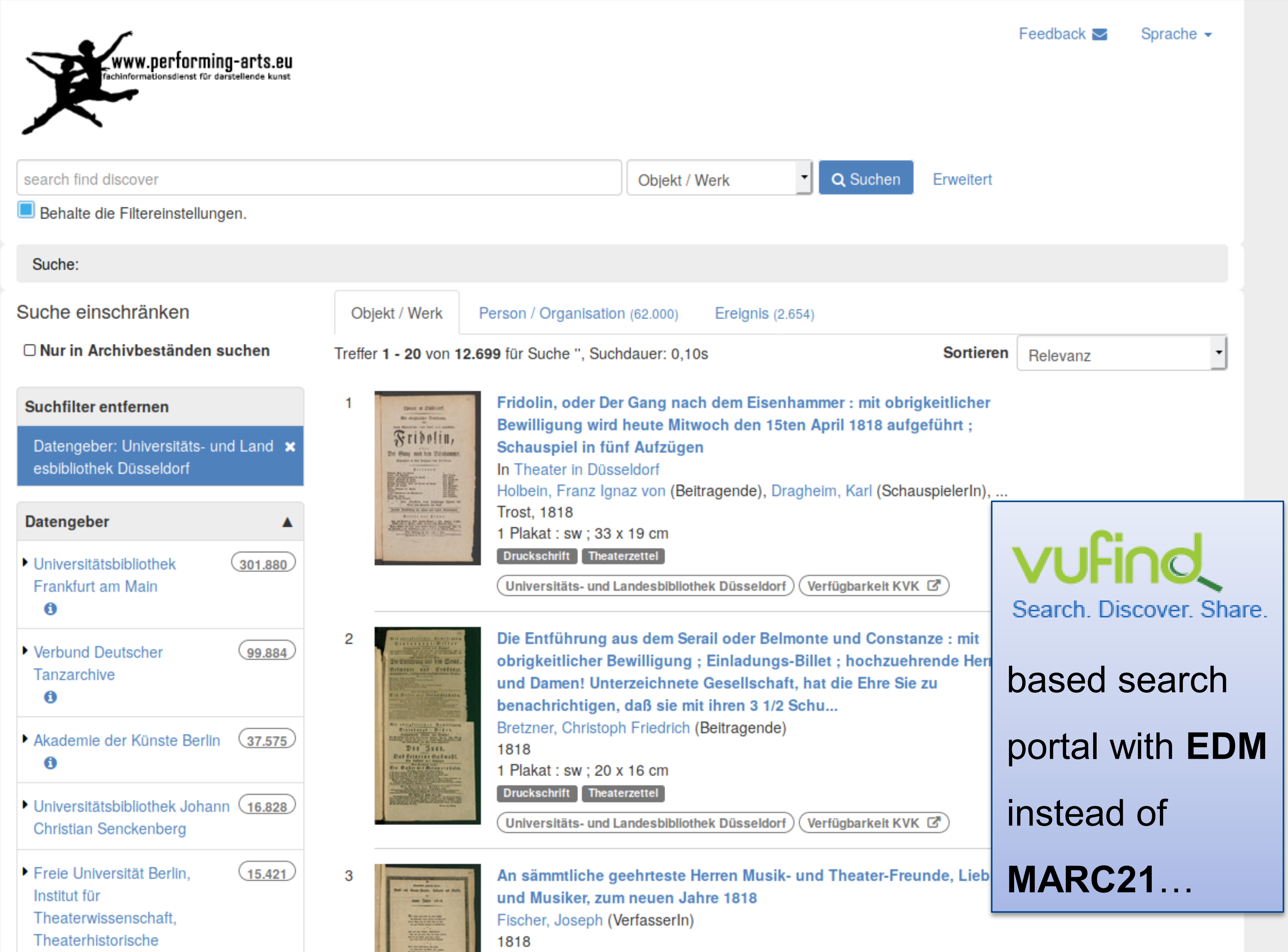
Specialized Information Service Performing Arts



Feedback ✉ Sprache ▾

search find discover | Objekt / Werk ▾ | 🔍 Suchen | Erweitert

☑ Behalte die Filtereinstellungen.

Suche:

Suche einschränken

□ Nur in Archivbeständen suchen

Suchfilter entfernen

Datengeber: Universitäts- und Landesbibliothek Düsseldorf ✖

Datengeber ▲

Universitätsbibliothek Frankfurt am Main	301.880
Verbund Deutscher Tanzarchive	99.884
Akademie der Künste Berlin	37.575
Universitätsbibliothek Johann Christian Senckenberg	16.828
Freie Universität Berlin, Institut für Theaterwissenschaft, Theaterhistorische	15.421

Objekt / Werk | Person / Organisation (62.000) | Ereignis (2.654)

Treffer **1** - **20** von **12.699** für Suche '', Suchdauer: 0,10s

Sortieren Relevanz ▾

1 **Fridolin, oder Der Gang nach dem Eisenhammer : mit obrigkeitlicher Bewilligung wird heute Mitwoch den 15ten April 1818 aufgeführt ; Schauspiel in fünf Aufzügen**
In Theater in Düsseldorf
Holbein, Franz Ignaz von (Beitragende), Dragheim, Karl (SchauspielerIn), ...
Trost, 1818
1 Plakat : sw ; 33 x 19 cm
Druckschrift Theaterzettel
Universitäts- und Landesbibliothek Düsseldorf | Verfügbarkeit KVK

2 **Die Entführung aus dem Serail oder Belmonte und Constanze : mit obrigkeitlicher Bewilligung ; Einladungs-Billet ; hochzuehrende Her und Damen! Unterzeichnete Gesellschaft, hat die Ehre Sie zu benachrichtigen, daß sie mit ihren 3 1/2 Schu...**
Bretzner, Christoph Friedrich (Beitragende)
1818
1 Plakat : sw ; 20 x 16 cm
Druckschrift Theaterzettel
Universitäts- und Landesbibliothek Düsseldorf | Verfügbarkeit KVK

3 **An sämmtliche geehrteste Herren Musik- und Theater-Freunde, Lieb und Musiker, zum neuen Jahre 1818**
Fischer, Joseph (VerfasserIn)
1818

vufind Search. Discover. Share.

based search portal with **EDM** instead of **MARC21**…

Specialized Information Service Performing Arts

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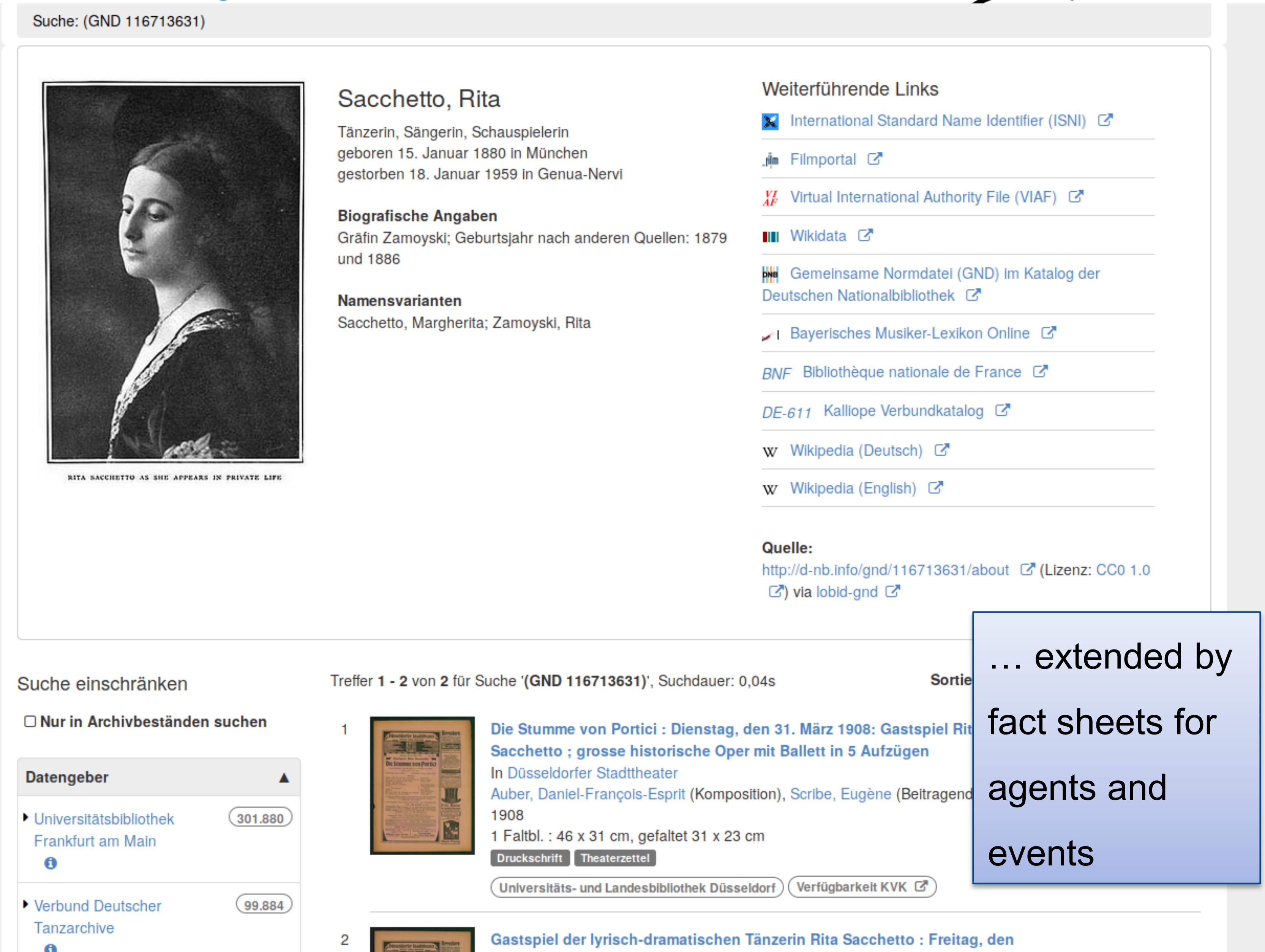


Suche: (GND 116713631)

RITA SACCHETTO AS SHE APPEARS IN PRIVATE LIFE

Sacchetto, Rita

Tänzerin, Sängerin, Schauspielerin
geboren 15. Januar 1880 in München
gestorben 18. Januar 1959 in Genua-Nervi

Biografische Angaben
Gräfin Zamoyski; Geburtsjahr nach anderen Quellen: 1879 und 1886

Namensvarianten
Sacchetto, Margherita; Zamoyski, Rita

Weiterführende Links

- International Standard Name Identifier (ISNI)
- Filmportal
- Virtual International Authority File (VIAF)
- Wikidata
- Gemeinsame Normdatei (GND) im Katalog der Deutschen Nationalbibliothek
- Bayerisches Musiker-Lexikon Online
- BNF Bibliothèque nationale de France
- DE-611 Kalliope Verbundkatalog
- W Wikipedia (Deutsch)
- W Wikipedia (English)

Quelle:
http://d-nb.info/gnd/116713631/about (Lizenz: CC0 1.0) via lobid-gnd

Suche einschränken

☐ **Nur in Archivbeständen suchen**

Datengeber ▲

- Universitätsbibliothek Frankfurt am Main 301.880
- Verbund Deutscher Tanzarchive 99.884

Treffer **1 - 2** von **2** für Suche '**(GND 116713631)**', Suchdauer: 0,04s

Sortie

1 **Die Stumme von Portici : Dienstag, den 31. März 1908: Gastspiel Rit Sacchetto ; grosse historische Oper mit Ballett in 5 Aufzügen**
In Düsseldorfer Stadttheater
Auber, Daniel-François-Esprit (Komposition), Scribe, Eugène (Beitragend
1908
1 Faltbl. : 46 x 31 cm, gefaltet 31 x 23 cm
Druckschrift | Theaterzettel
Universitäts- und Landesbibliothek Düsseldorf | Verfügbarkeit KVK

2 **Gastspiel der lyrisch-dramatischen Tänzerin Rita Sacchetto : Freitag, den**

… extended by fact sheets for agents and events

Specialized Information Service Performing Arts

- The Specialized Information Service in numbers:

~800.000 Objects

(Theatre bills, Photos, Videos, …)

~60.000 Persons

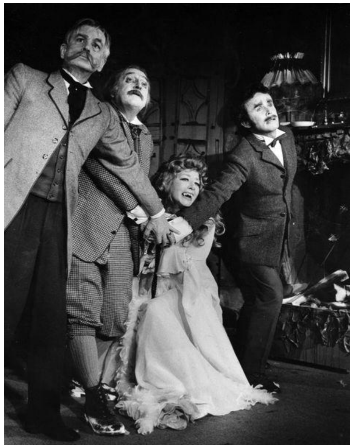
(Actors, Dancers, Directors, ...)

~6.000 Organizations

(Ensembles, Institutions, Groups, …)

~60.000 Events

(Festivals, Performan-ces, Conferences, …)

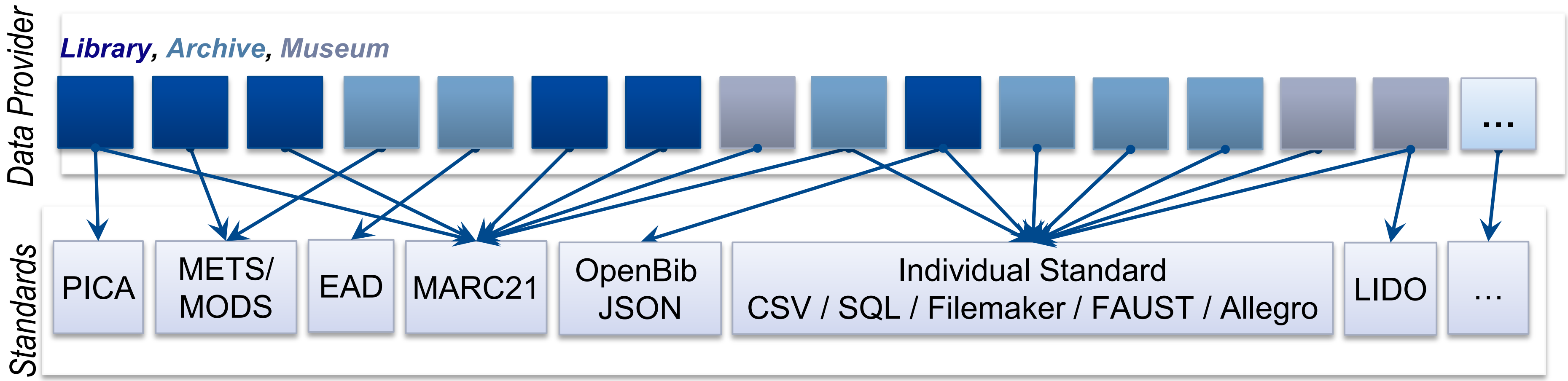


The Challenges then and now

THE LAUGHING AUDIENCE.
A Fac-Simile of Hogarth's own Engraving

„The Laughing Audience and A Chorus of Singers“ Copperplate by William Hogarth, 1733 [Theatre Museum of the State Capital of Düsseldorf]

Raw data - challenges



Typical challenges regarding the original metadata

- Different ways and frequency of delivery (mail, harvest, floppy disks, …)
- Different data formats and metadata standards
- Different scope and detail of description, no common vocabulary
- Little or no documentation
- Unstructured data / free text / “hidden information“
- Expectations vs. actual existing data

Raw data - challenges

Those challenges are basically the same as in 2016

- We face many of these challenges for each new data provider
- Many conversions and mappings are needed

  ⚠ potential loss of information
- Normalization, enriching and interlinking is needed
- Many small conversion steps that depend on each other
- Amount of data and steps to perform increases with each new data provider
- You can produce wonderful rich(er) data, but there is one thing to keep in mind: Giving back

How to give back?

Giving back to data providers

- Possibility to give back is very heterogeneous (various in-house systems, man power, financial situation, “mapping back”?)
- Take time to plan how to give back (which format/standard?) in close communication with the data provider
- Easy first step: hand data providers the results of your analysis
- Give out best practice recommendations (e.g. KIM)
- Make the data providers see the benefits

How to give back?

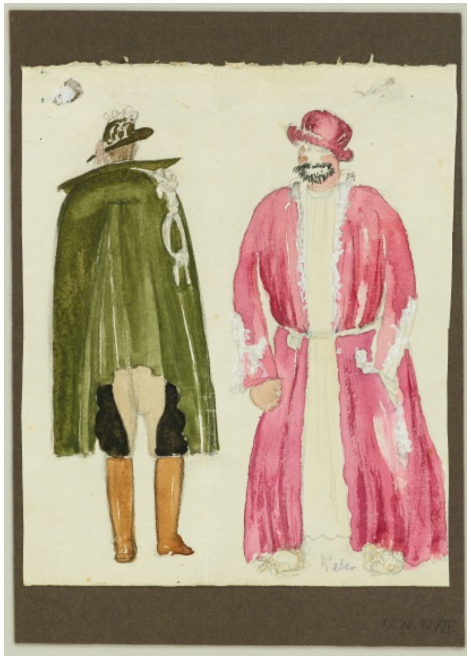
Giving back to the (tech or subject-specific) community

- Give out best practices
- Give out recommendations for tools
- Make code and documentation available
- Use mailing lists, ask questions, do pull requests
- Provide API / access

Update needed

Todo with highest priority

Workflow
→ „Behind the scenes“



„The Taming of the Shrew [IV]“
Set design draft
by Traugott Müller, 1942
[Freie Universität Berlin, Institut für Theaterwissenschaft, Theaterhistorische Sammlungen]

Workflow in 2016

1) Analysis and normalization

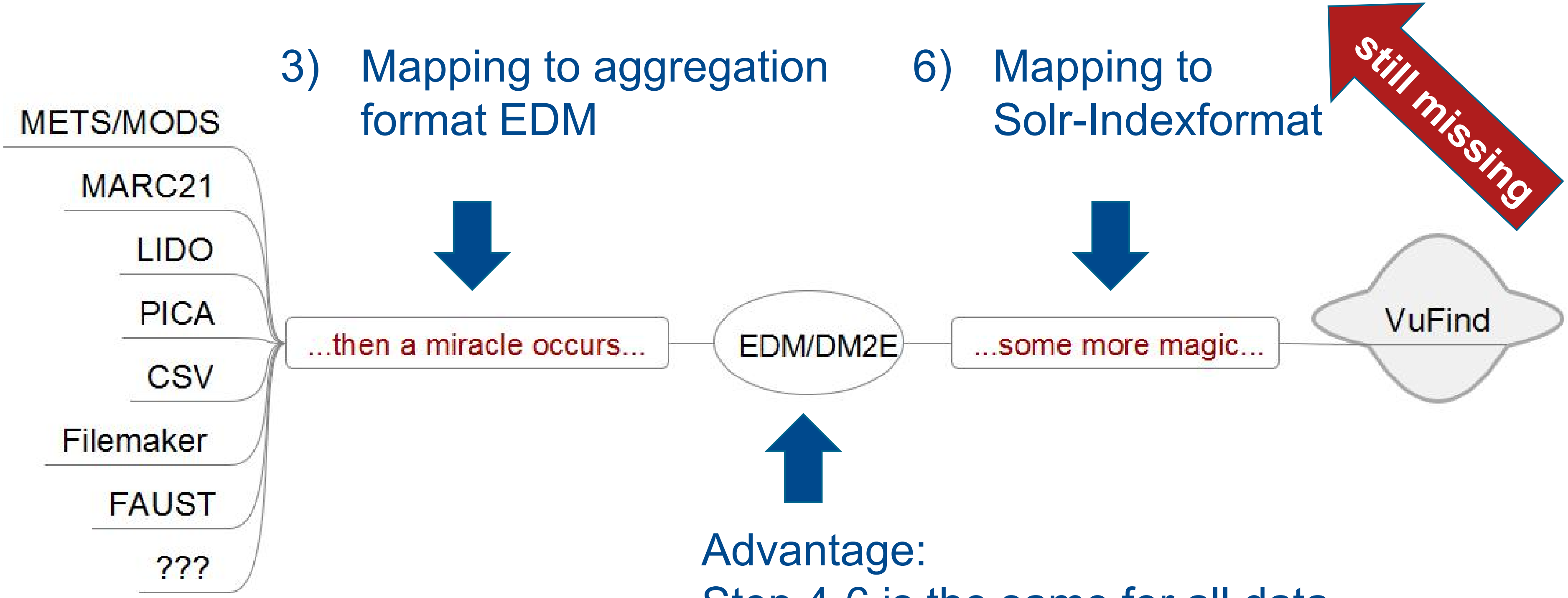
2) Transformation to XML

3) Mapping to aggregation format EDM

4) Enrichment (entityFacts, geonames,…)

5) Deduplication (tbd)

6) Mapping to Solr-Indexformat



Advantage:
Step 4-6 is the same for all data

Workflow in 2019

What is still the same in 2019?

- Thorough **analysis** and **documentation** of delivered data is still the key step
- still following the principle of doing as many steps as possible for **all data** in the same way
- The wonderful world of XPath, XSLT and Xquery
- Europeana Data Model (EDM) as data model
- “Basic“ methods to normalize and interlink the data
- Still no deduplication, no API (yet)

Workflow in 2019

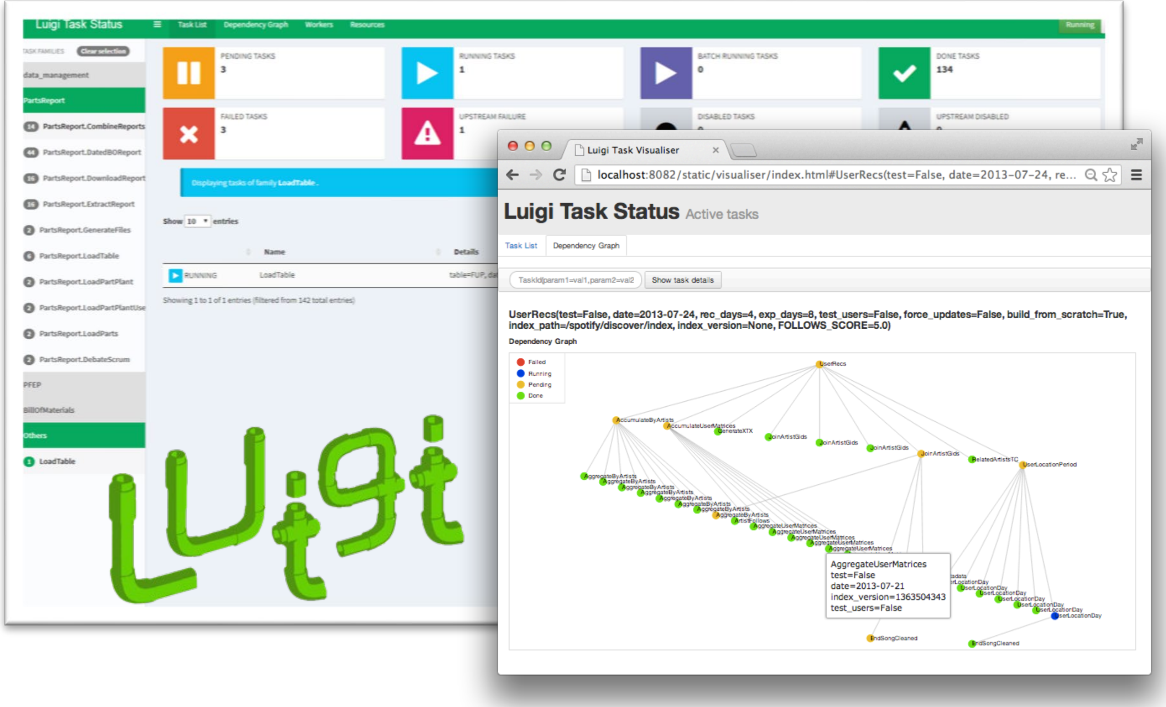
What has changed since 2016?

- Analysis step is partly automated now
- Mappings to EDM are “less clever“

  → clever steps are done later in the same way for all data
- Tools we use

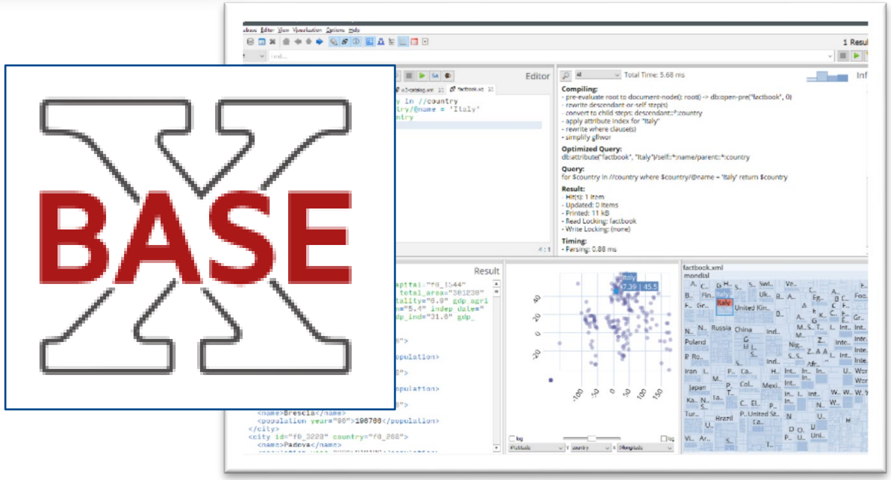
  → especially to use of an XML-Database and a pipeline tool
- More modular
- Better performance :-)

Workflow in 2019



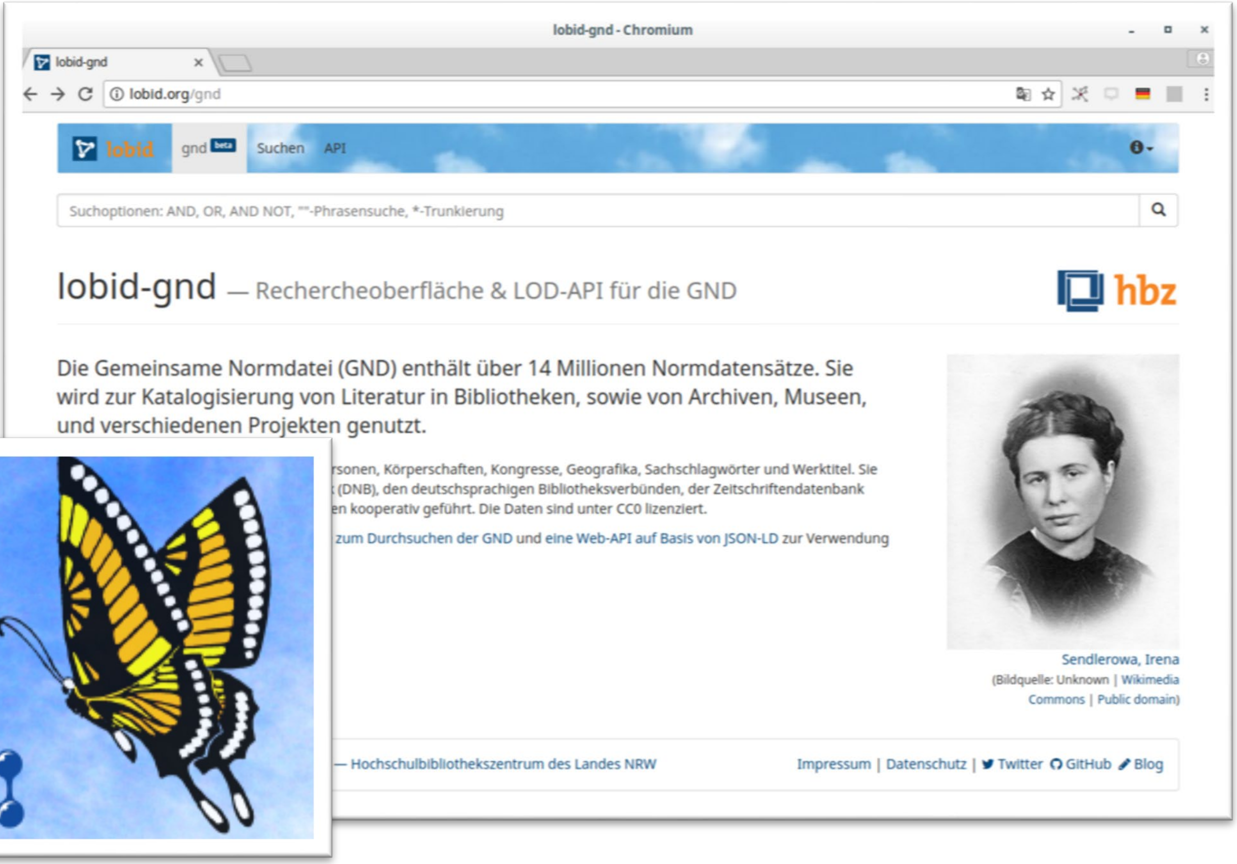
- currently ~200 tasks
- documents the workflow
- more modularity
- new providers are easily added
- easier to proceed from where it failed

- XML-Database
- fast manipulations on each record
- great for analysis and visualization of huge collections
- supports JSON and CSV as well


BASE X
Editor
Result
Compiling:
Optimized Query:
Query:
for $country in //country where $country/@name = 'Italy' return $country
Result:
Timing:

Workflow in 2019

- favourite API for GND
- it is used in the fact sheets
- great for more complicated queries / facetting



lobid-gnd - Chromium

lobid-gnd

lobid.org/gnd

Suchoptionen: AND, OR, AND NOT, ""-Phrasensuche, *-Trunkierung

lobid-gnd — Rechercheoberfläche & LOD-API für die GND

Die Gemeinsame Normdatei (GND) enthält über 14 Millionen Normdatensätze. Sie wird zur Katalogisierung von Literatur in Bibliotheken, sowie von Archiven, Museen, und verschiedenen Projekten genutzt.

rsonen, Körperschaften, Kongresse, Geografika, Sachschlagwörter und Werktitel. Sie (DNB), den deutschsprachigen Bibliotheksverbünden, der Zeitschriftendatenbank en kooperativ geführt. Die Daten sind unter CC0 lizenziert.

zum Durchsuchen der GND und eine Web-API auf Basis von JSON-LD zur Verwendung

Sendlerowa, Irena
(Bildquelle: Unknown | Wikimedia Commons | Public domain)

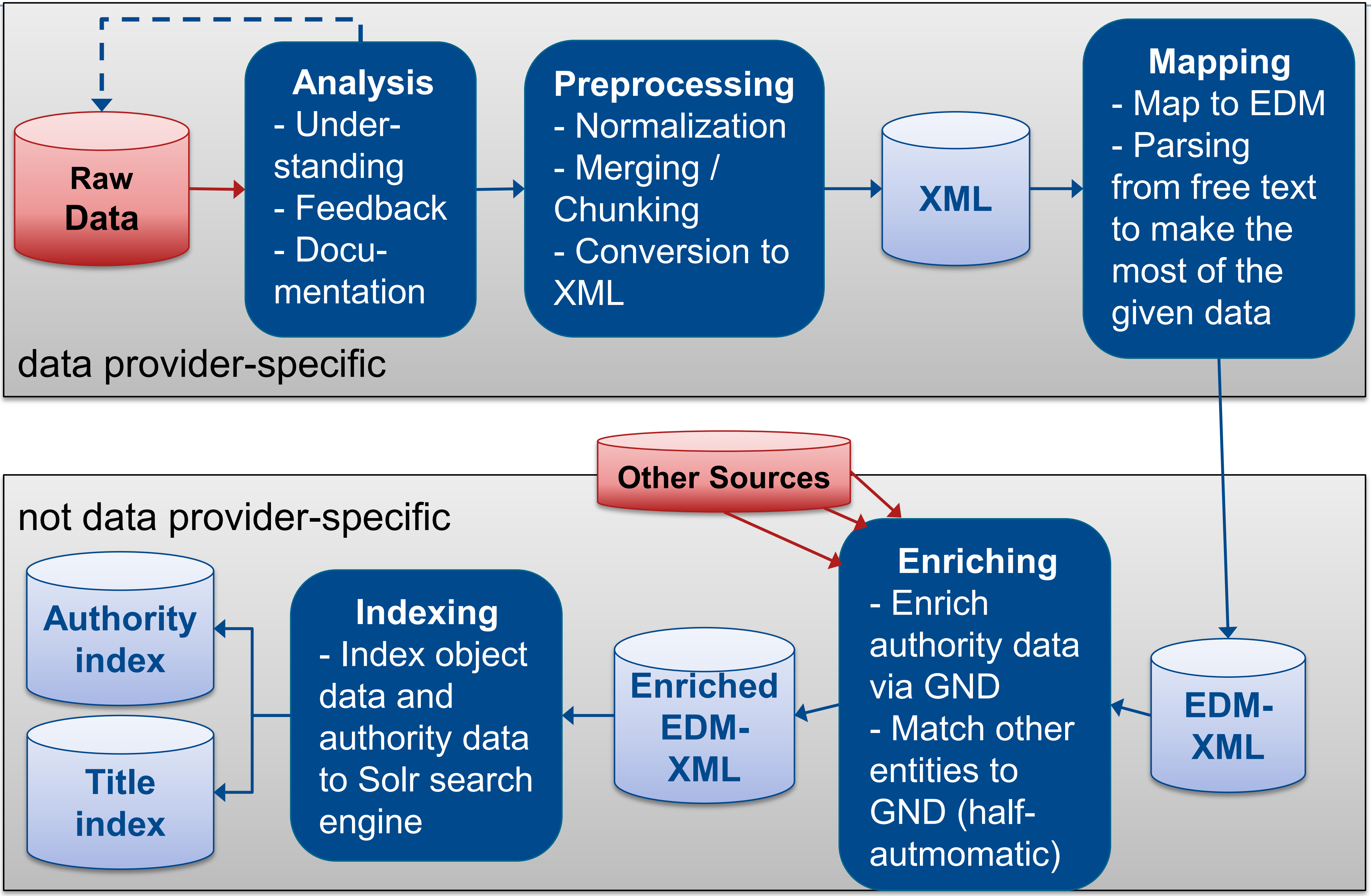
— Hochschulbibliothekszentrum des Landes NRW

Impressum | Datenschutz | Twitter GitHub Blog

OpenRefine

- matching of “other“ authority data to GND via Reconciliation in OpenRefine with lobid-gnd
- results currently reviewed

Workflow



Raw Data

Analysis
- Under-standing
- Feedback
- Docu-mentation

Preprocessing
- Normalization
- Merging / Chunking
- Conversion to XML

XML

Mapping
- Map to EDM
- Parsing from free text to make the most of the given data

data provider-specific

not data provider-specific

Other Sources

EDM-XML

Enriching
- Enrich authority data via GND
- Match other entities to GND (half-autmomatic)

Enriched EDM-XML

Indexing
- Index object data and authority data to Solr search engine

Authority index

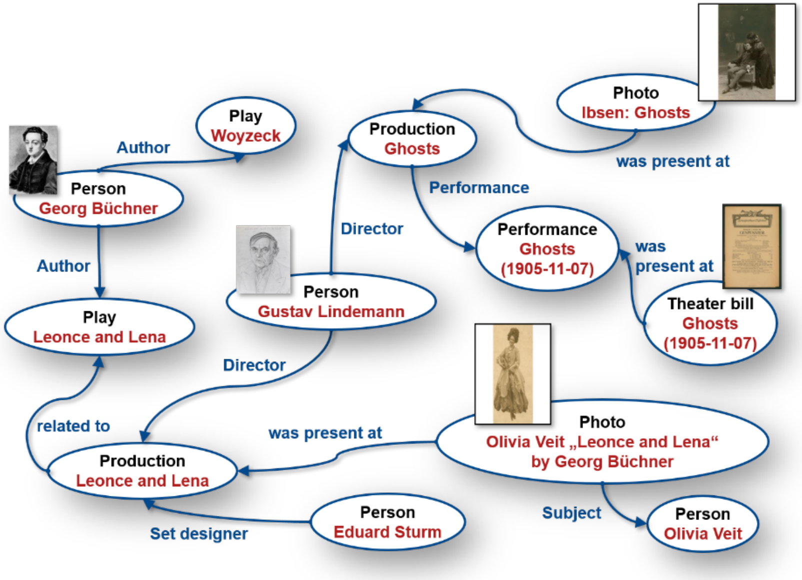
Title index

Still challenging

- There is still no common vocabulary that is used by our data providers but they are working on it with our help
- Uniquely identifying entities from literals automatically is prone to error
- Keeping up with updates and changes of tools, namespaces, …
- You can not make information magically appear when it is not there…

What would be nice to have?

- Natural language processing to extract more events and agents from the description fields
- Visualization
- API (a sparql endpoint would be nice)



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Thank you!
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Project leader: **Franziska Voß** | f.voss@ub.uni-frankfurt.de