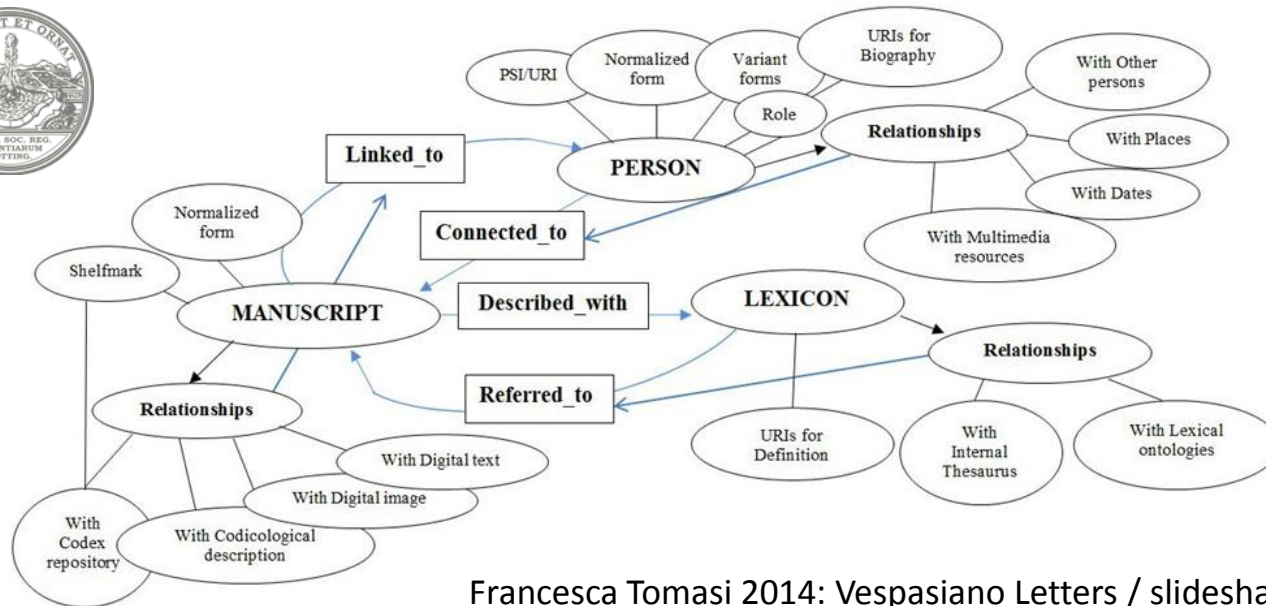


Der nächste Schritt? Semantic Web und digitale Editionen

CROSSREFERENCE and INTERNAL/EXTERNAL RELATIONSHIPS



Francesca Tomasi 2014: Vespasiano Letters / slideshare / slide 14

„I will never touch that crap of RDF or the semantic web; this is a pipe dream of reality ignoring academics and I will not have it. I will only use JSON-LD.“

- Phil Archer, W3C Data Activity Lead 2014

[Robert Sanderson: RDF - Resource Description Failures and Linked Data Letdowns](#)

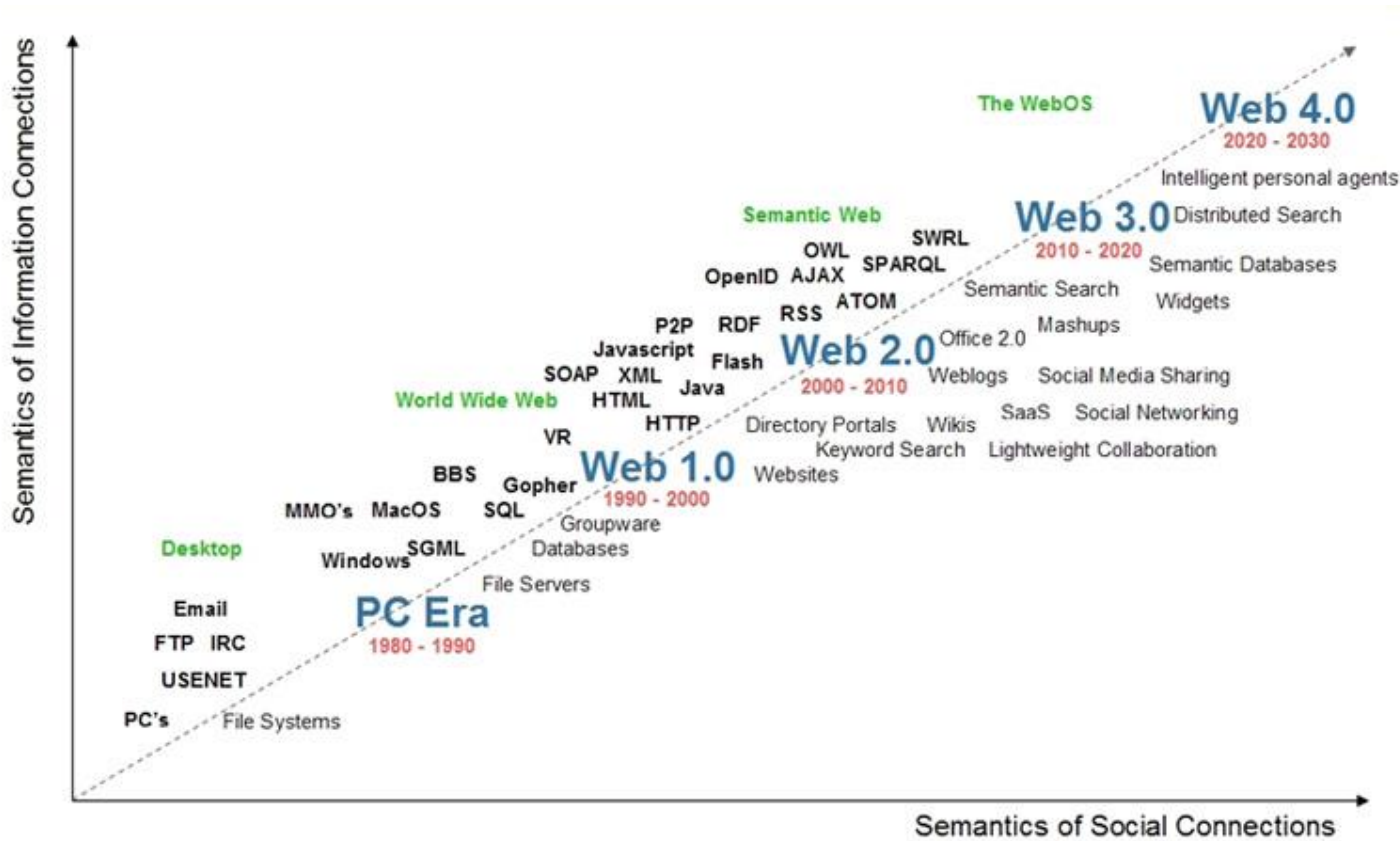
(Mai 2013) <http://www.cni.org/pbs/rdf-resource-description-failures-and-linked-data-letdowns/>

Gefördert von

„The Semantic Web is not a separate Web but an extension of the current one, in which information is given well-defined meaning, better enabling computers and people to work in cooperation“

- Sir Tim Berners Lee

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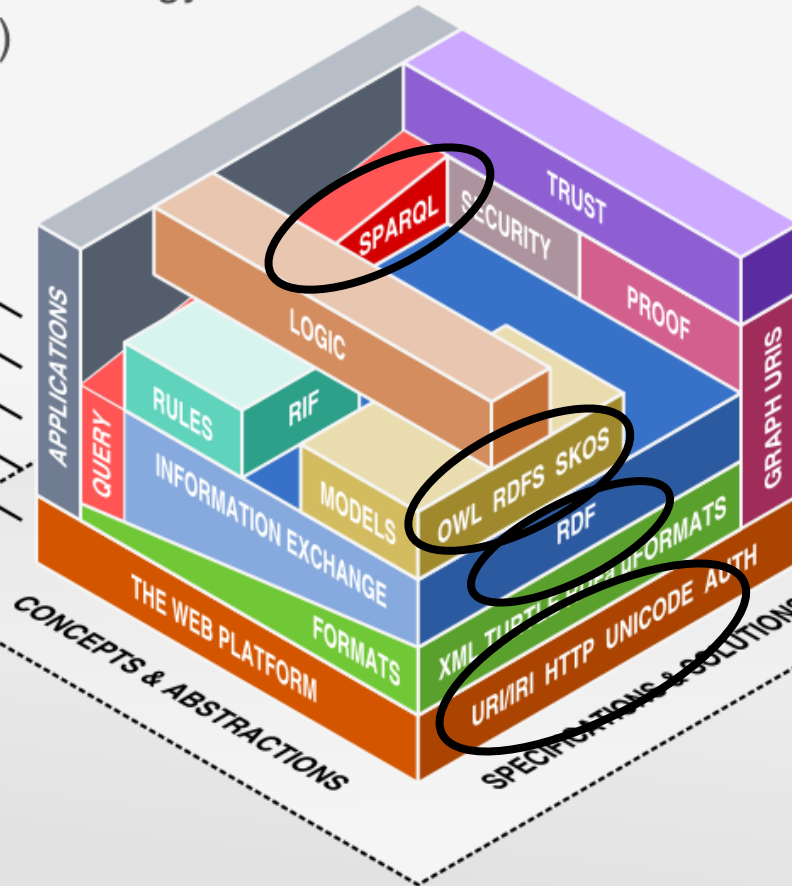
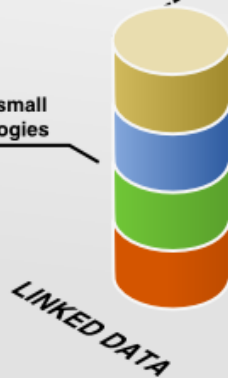


<https://thepaisano.files.wordpress.com/2008/03/webtimeline.jpg>

The Semantic Web Technology Stack (not a piece of cake...)

- Most apps use only a subset of the stack
- Querying allows fine-grained data access
- Standardized information exchange is key
- Formats are necessary, but not too important
- The Semantic Web is based on the Web

Linked Data uses a small selection of technologies



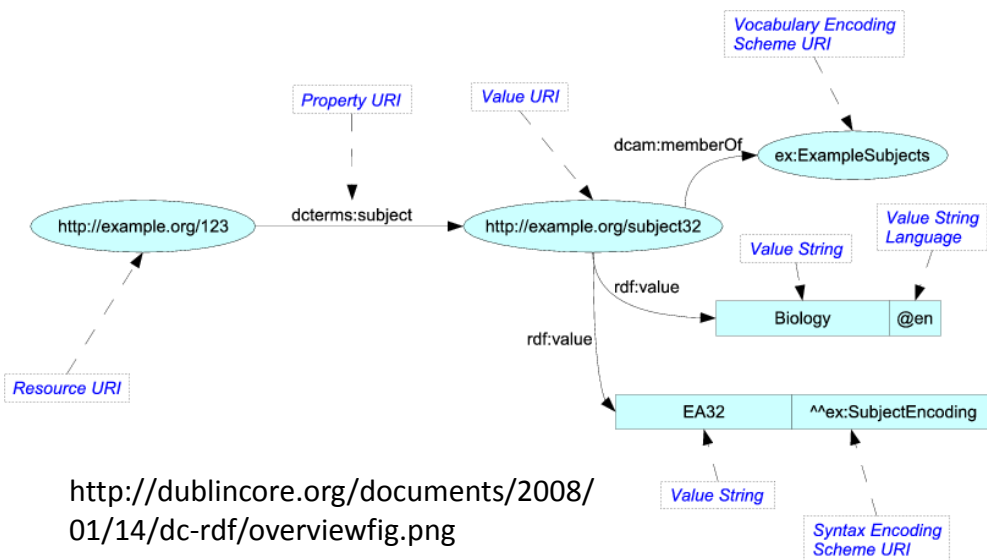
http://bnode.org/media/2009/07/08/semantic_web_technology_stack.png

Cool URIs don't change

What makes a cool URI?
A cool URI is one which
does not change.

Tim Berners Lee (1998)

<http://www.w3.org/Provider/Style/URI>



SPARQL

```
SELECT * WHERE {  
  <http://dhfv-ent2.gcdh.de/blumenbach/wiski/content/object3> ?p ?o .  
}  
LIMIT 100
```

<http://dhfv-ent2.gcdh.de/blumenbach/wiski/wiski/endpoint>

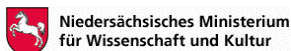
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- ★ Available on the Web (whatever format), but with an open licence
- ★ ★ Available as machine-readable structured data (e.g. instead of image scan of a table)
- ★ ★ ★ As 2 plus non-proprietary format (e.g. CSV instead of excel)
- ★ ★ ★ ★ All above plus use open standard from W3C (RDF and SPARQL) to identify things, so that people can point at your stuff
- ★ ★ ★ ★ ★ Available the above, plus: Link your data to other people's data to provide context



http://www.w3.org/DesignIssues/diagrams/od/597992118v2_350x350_Back.jpg

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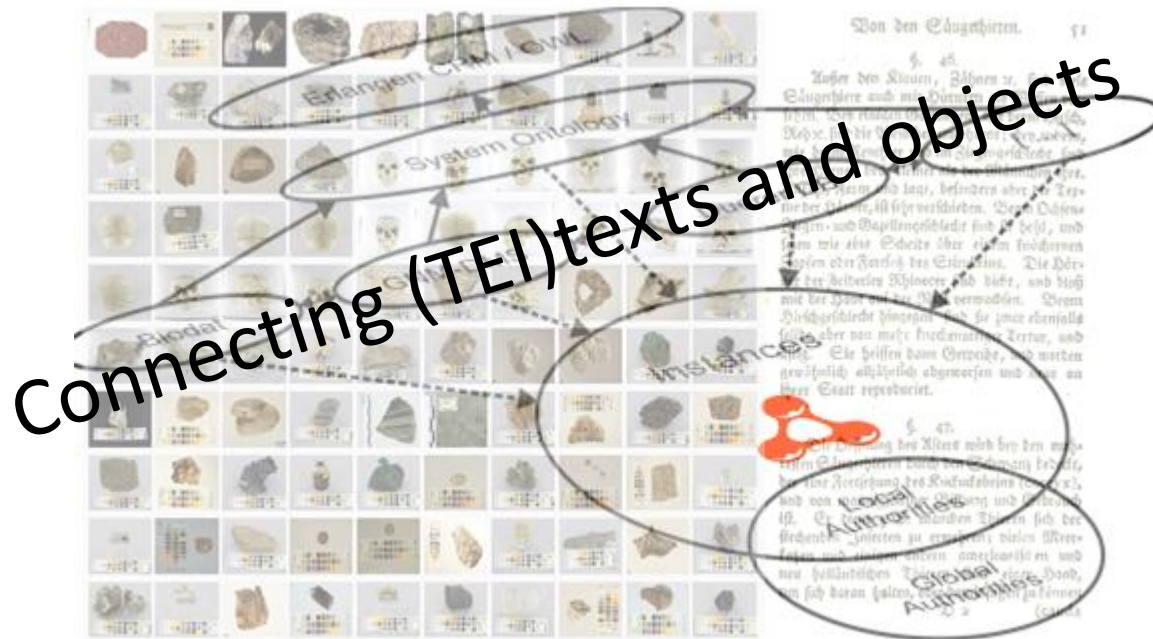


Semantic Technologies in the History of Science



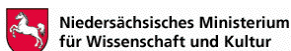
WissKI

Semantic Blumenbach at DHFV Göttingen



<http://dhfv-ent2.gcdh.de/blumenbach/wiski/>

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CIDOC
COMITÉ INTERNATIONAL
POUR LA DOCUMENTATION



Erlangen CRM / OWL

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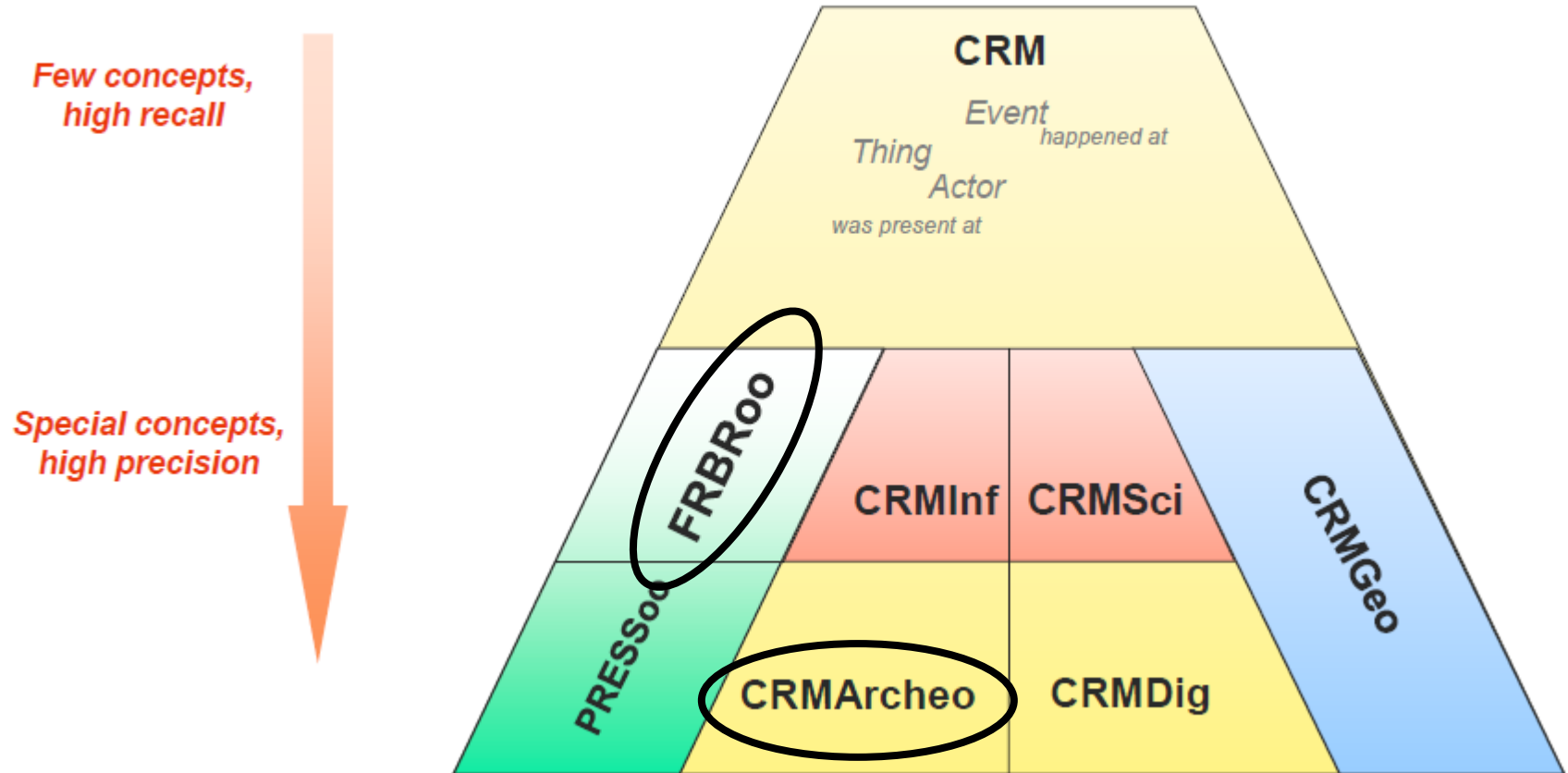


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CIDOC
Conceptual Reference Model (CRM)

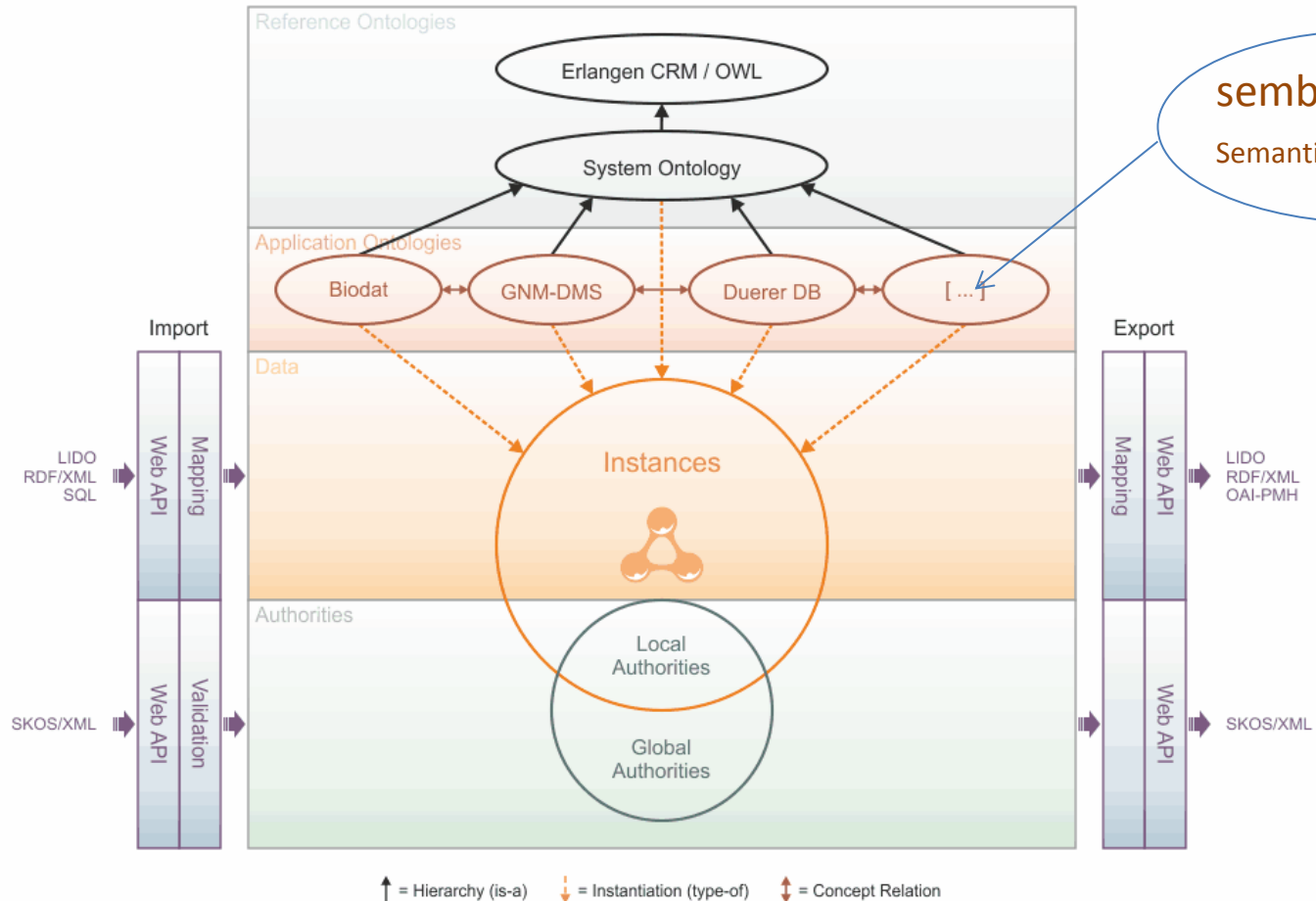


Martin Doerr, CIDOC CRM Family, Harmonized models for the Digital World: CIDOC CRM and extensions, Mai 2015, Nürnberg.

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WissKI Wissenschaftliche Kommunikationsinfrastruktur 1.0



semblu
Semantic Blumenbach OWL

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WissKI

Wissenschaftliche Kommunikationsinfrastruktur

Menu item	Path	Enabled	Operations
+ Ungrouped		<input checked="" type="checkbox"/>	
+ Text	Group [ecrm:E33_Linguistic_Object]	<input checked="" type="checkbox"/>	edit delete
+ Title	ecrm:E33_Linguistic_Object -> ecrm:P1_is_identified_by -> ecrm:E35_Title	<input checked="" type="checkbox"/>	edit delete
+ ID	ecrm:E33_Linguistic_Object -> ecrm:P48_has_preferred_identifier -> ecrm:E42_Identifier	<input checked="" type="checkbox"/>	edit delete
+ SembluKapitel	Group [semblu:E33_div]		
+ Object	semblu:E33_div -> ecrm:P106_is_composed_of -> semblu:E33_term -> ecrm:P67_refers_to -> semblu:E18_PThing -> ecrm:P48_has_preferred_identifier -> semblu:E42_KerndatenID		
+ Person	semblu:E33_div -> ecrm:P67_refers_to -> semblu:E21_NewPerson -> ecrm:P131_is_identified_by -> semblu:E82_PersonName		
+ Place	semblu:E33_div -> ecrm:P67_refers_to -> semblu:E44_NewPlace -> ecrm:P1_is_identified_by -> semblu:E48_PlaceName		
+ Title	semblu:E33_div -> ecrm:P1_is_identified_by -> ecrm:E35_Title		
+ Sammlungsobjekte	Group [semblu:E18_PThing]		
+ Identifier	semblu:E18_PThing -> ecrm:P48_has_preferred_identifier -> semblu:E42_KerndatenID		
+ Objektbezeichnung	semblu:E18_PThing -> ecrm:P1_is_identified_by -> ecrm:E41_Appellation		
+ Domaene	semblu:E18_PThing -> ecrm:P2_has_type -> ecrm:E55_Type -> ecrm:P1_is_identified_by -> ecrm:E41_Appellation		
+ InventarNr	semblu:E18_PThing -> ecrm:P48_has_preferred_identifier -> ecrm:E42_Identifier		
+ Originalbezeichnung	semblu:E18_PThing -> ecrm:P1_is_identified_by -> ecrm:E41_Appellation		
+ Donator	Group [semblu:E18_PThing -> ecrm:P51_has_former_or_current_owner -> semblu:E21_NewPerson]	<input checked="" type="checkbox"/>	edit delete
+ Name	semblu:E18_PThing -> ecrm:P51_has_former_or_current_owner -> semblu:E21_NewPerson -> ecrm:P131_is_identified_by -> semblu:E82_PersonName	<input checked="" type="checkbox"/>	edit delete
+ Carl	semblu:E18_PThing -> ecrm:P51_has_former_or_current_owner -> semblu:E21_NewPerson -> ecrm:P48_has_preferred_identifier -> ecrm:E42_Identifier	<input checked="" type="checkbox"/>	edit delete
+ Bilder	semblu:E18_PThing -> ecrm:P65_shows_visual_item -> ecrm:E38_Image -> ecrm:P1_is_identified_by -> ecrm:E42_Identifier	<input checked="" type="checkbox"/>	edit delete
+ Bilder	Group [ecrm:E38_Image]	<input checked="" type="checkbox"/>	edit delete
+ Bild	ecrm:E38_Image -> ecrm:P65i_is_shown_by -> semblu:E18_PThing -> ecrm:P48_has_preferred_identifier -> semblu:E42_KerndatenID	<input checked="" type="checkbox"/>	edit delete
+ BildID	ecrm:E38_Image -> ecrm:P1_is_identified_by -> ecrm:E42_Identifier	<input checked="" type="checkbox"/>	edit delete

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Wissenschaftliche Kommunikationsinfrastruktur

The diagram illustrates the data flow in a digital library system. On the left, a screenshot of a web application shows the TEI (Text Encoding Initiative) XML interface. A box labeled 'TEI' with the text 'TEXT ENCODING INITIATIVE' is overlaid on the interface. A blue arrow points from the TEI box to a central funnel labeled 'XSLT'. From the XSLT funnel, two blue arrows point to the right: one to a box labeled 'SQL' with a database icon, and another to a code block containing XML and XSLT snippets. The SQL box contains a table definition and a select query. The code block shows an XSLT transformation that maps TEI XML elements to SQL database fields.

```
<?xml version="1.0" encoding="UTF-8"?>
<server>
  <url>localhost</url>
  <database>SemBlumenba
  <port>3306</port>
  <user>XXXX</user>
  <password>XXXXXX</pa

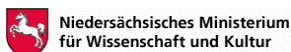
  <table><select>`tx_bol` in
  `Bezeichnung`, `a1` AS `nb
  `Originalbezeichnung` .3a`
  `Cerl`, `a18` AS `Er` inung`</select>

  <name>tx_...line_Kerndaten</name>
  <`mp`...rupid>135</template_groupid>
  &...&/delimiter>
  .d>`trim>TRUE</trim><row>

  <path id="136"><fieldname>kerndatenID</fieldname></path>
  <path id="141"><fieldname>Bezeichnung</fieldname></path>
  <path id="147"><fieldname>Fachbereich</fieldname></path>
  <path id="140"><fieldname>InventarNR</fieldname></path>
  <path id="142"><fieldname>Originalbezeichnung</fieldname></path>
  <path id="145"><fieldname>Fundort</fieldname></path>
  <path id="144"><fieldname>Funddatum</fieldname></path>
  <path id="155"><fieldname>Donator</fieldname></path>
  <path id="154"><fieldname>Cerl</fieldname></path>
  <path id="148"><fieldname>Erwaehnung</fieldname></path>

</row></table></server>
```

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WissKI

Wissenschaftliche

Infrastruktur



ecrm_E33_Linguistic_Object740e3e1f-d96b-0ee4-8835-3ba1a8636a67

3ba1a8636a67

[View](#) [Delete](#) [Edit Form](#) [Edit Text](#) [Export](#) [JSON](#) [Triples](#) [XML](#) [Revisions](#)

Note: Some intermediate triples may be inlined.

<input checked="" type="checkbox"/>	object577	rdf.type	semblu:E18_PThing
<input checked="" type="checkbox"/>	kerndatenid577	rdf.type	semblu:E42_Kerndaten_ID
<input checked="" type="checkbox"/>	object577	ecrm:P48_has_preferred_identifier	kerndatenid577
<input type="checkbox"/>	object577	ecrm:P67i_is_referred_to_by	wordidp829120
<input checked="" type="checkbox"/>	kerndatenid577	ecrm:P3_has_note	577
<input type="checkbox"/>	wordidp830720	rdf.type	semblu:E33_term
<input type="checkbox"/>	wordidp830720	ecrm:P106i_forms_part_of	semblu_E33_dive32c861f-4b11-5a74-8db4-6f09f3d21e2e
<input type="checkbox"/>	wordidp830720	ecrm:P3_has_note	Wasserwanzen

<input type="checkbox"/>	nameidp341072	rdf.type	ecrm:E75_Conceptual_Object_Appellation
<input type="checkbox"/>	instidp341072	ecrm:P1_is_identified_by	nameidp341072
<input type="checkbox"/>	instidp341072	ecrm:P67i_is_referred_to_by	ecrm_E33_Linguistic_Object740e3e1f-d96b-0ee4-8835-3ba1a8636a67
<input type="checkbox"/>	nameidp341072	ecrm:P3_has_note	lynx
<input type="checkbox"/>	instidp344576	rdf.type	ecrm:E55_Type
<input type="checkbox"/>	nameidp344576	rdf.type	ecrm:E75_Conceptual_Object_Appellation
<input type="checkbox"/>	instidp344576	ecrm:P1_is_identified_by	nameidp344576
<input type="checkbox"/>	instidp344576	ecrm:P67i_is_referred_to_by	ecrm_E33_Linguistic_Object740e3e1f-d96b-0ee4-8835-3ba1a8636a67
<input type="checkbox"/>	nameidp344576	ecrm:P3_has_note	Torquilla

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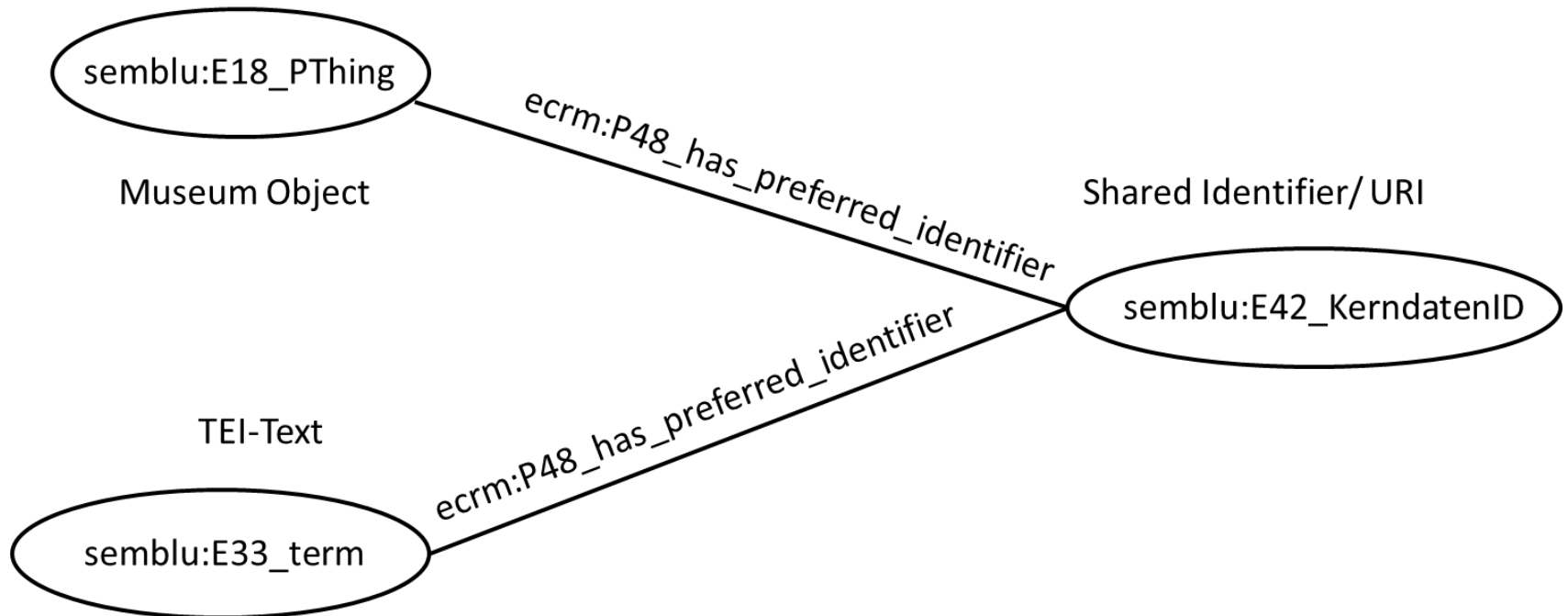
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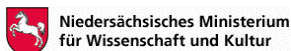


Wissenschaftliche Kommunikationsinfrastruktur

@prefix semblu: <<http://dhfv-ent2.gcdh.de/blumenbach/semblu/>>



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Wissenschaftliche Kommunikationsinfrastruktur

der Biber vieles verschönert und übertrieben worden, so wissen sich doch diese Thiere, nach dem einstimmigen Zeugniß verschieden Welttheilen, dabey so nach zufälligen Umständen zu bequemen, daß sie sich dadurch weit über die einförmigen Kuns

19. **Hystrix**. Stachelschwein. (Fr. porcepic. Engl. porcupine.) Corpus spinis tectum.

1. Dorsata. (Urson.) H. spinis breuibus sub pilis occultis.

v. Schrebertab. 169.

In Canada, auf Labrador, um die Hudsonsbay etc. Thut zumahl im Winter den junge

2. **Cristata**. H. spinis longissimis, capite cristato, cauda abbreviata.

v. Schrebertab. 167.

Ursprünglich im wärmern Asien und fast ganz Africa; nährt sich zumahl von Ba
besonders im Herbst, ausfallen; kann sie aber nicht gegen seine Verfolger von sich

VI. FERAE.

▼ **Sammlungsobjekte**

Identifizier
3

Objektbezeichnung
Rasselbecher vom rezenten Kap-Stachelsch

Domaene
Zoologie

InventarNr
0.343

Originalbezeichnung
Hystrix cristata

Fundort
Kapstadt, Province of the Western Cape - Sol

Images



Vocabulary information

276
277
278 **Sammlungsobjekte**
279 <http://dhfv-ent2.gcdh.de/blumenbach/wisski/content/object3>
280
281 Vocabulary:
282 Object
283 Label:
284 **Rasselbecher vom rezenten Kap-Stachelschwein Hystrix**
285 africaeaustralis
202 Hystrix cristata
202
202 Domaene:
3 Zoologie
3
567 Donator:
567 Lichtenstein, Martin Hinrich Karl von
125 Fundatum:
126 1802-01-01
128 Fundort:
129 Kapstadt, Province of the Western Cape - South Africa -
131 Africa - World
132 URIs:
134 <http://dhfv-ent2.gcdh.de/blumenbach/wisski/content/object3>
135
136
137

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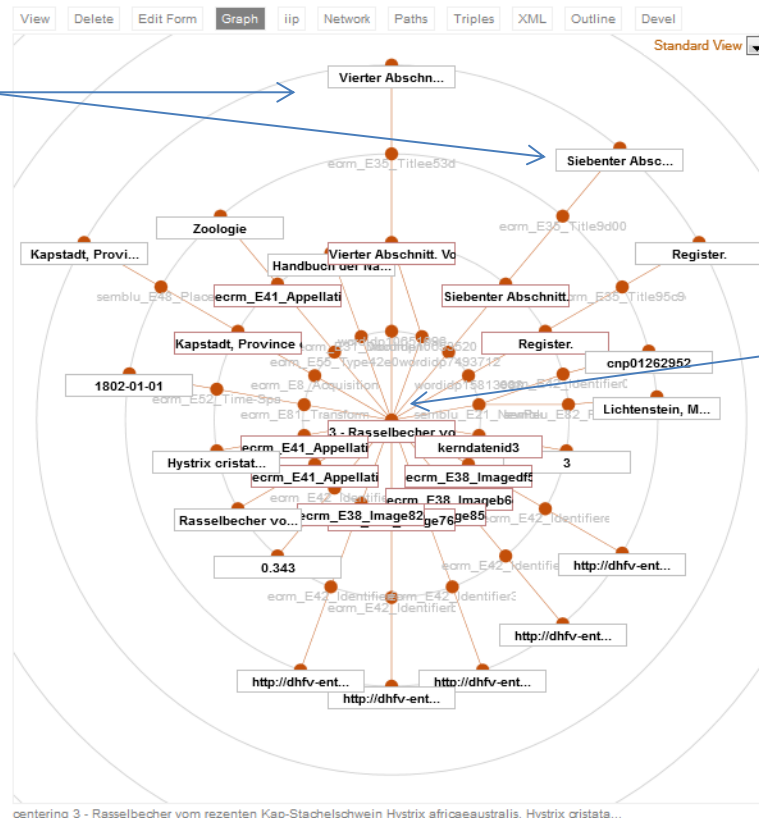


WissKI Wissenschaftliche Kommunikationsinfrastruktur

3 - Rasselbecher vom rezenten Kap-Stachelschwein *Hystrix africae australis*, *Hystrix cristata*

Photo: GZG Museum / G. Hundertmark

Text



Connections (3 - Rasselbecher vom rezenten Kap-Stachelschwein *Hystrix africae australis*, *Hystrix cristata*)

- ecrm:P48_has_preferred_identifier » kermdatenid3
- ecrm:P65_shows_visual_item » ecrm_E38_Imagedf5c65b3-e88f-3694-8ec8-05f5ed02bc79
- ecrm:P65_shows_visual_item » ecrm_E38_Imageb6e82e23-7e41-62f4-acd3-31c6ca25b8cf
- ecrm:P65_shows_visual_item » ecrm_E38_Image858348f0-8fc1-89f4-a0ea-9dc2d5325371
- ecrm:P65_shows_visual_item » ecrm_E38_Image76412db3-d7bc-bc84-8883-7a4b3ac52ce1
- ecrm:P65_shows_visual_item » ecrm_E38_Image82da6355-af15-c924-8e6e-c607695083ea
- ecrm:P48_has_preferred_identifier » ecrm_E42_Identifier8146bba2-5473-dfe4-9c06-4060a1481564
- ecrm:P1_is_identified_by » ecrm_E41_Appellationaa7e2051-a6d0-b194-ad4e-77000600a36a
- ecrm:P1_is_identified_by » ecrm_E41_Appellation17c16f21-4cb5-e644-9c52-3455187ddbc
- ecrm:P1_is_identified_by » ecrm_E41_Appellationaa7e2051-a6d0-b194-ad4e-77000600a36a
- ecrm:P1_is_identified_by » ecrm_E41_Appellation17c16f21-4cb5-e644-9c52-3455187ddbc

Images



Vocabulary information

Vocabulary:
Object
Label:
Rasselbecher vom rezenten Kap-Stachelschwein *Hystrix africae australis*, *Hystrix cristata*
URIs:
<http://dhfv-ent2.gcdh.de/blumenbach/wisski/content/object3>

Objekt

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LESSONS

LEARNED

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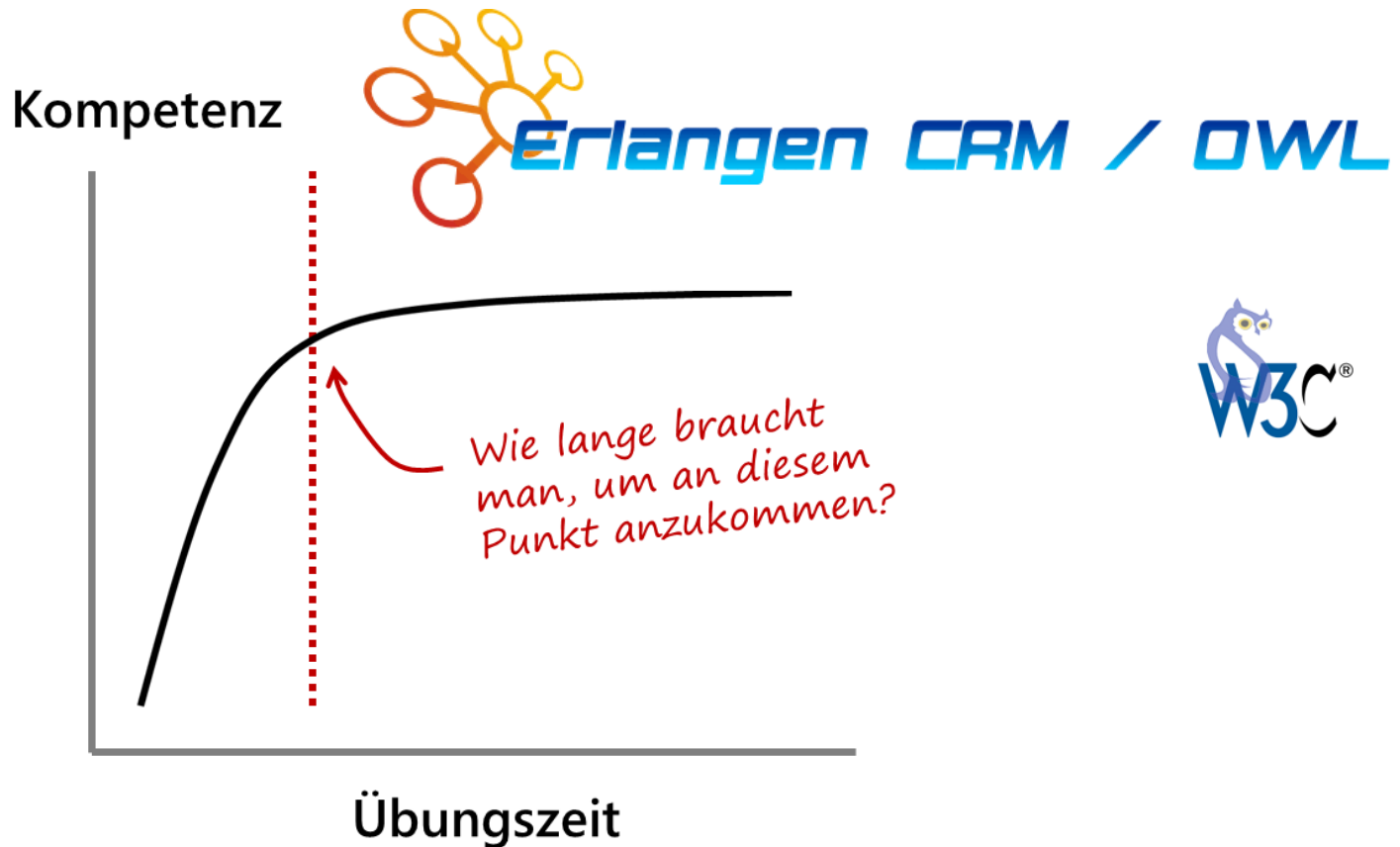
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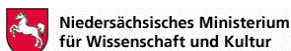
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www.worlde.net

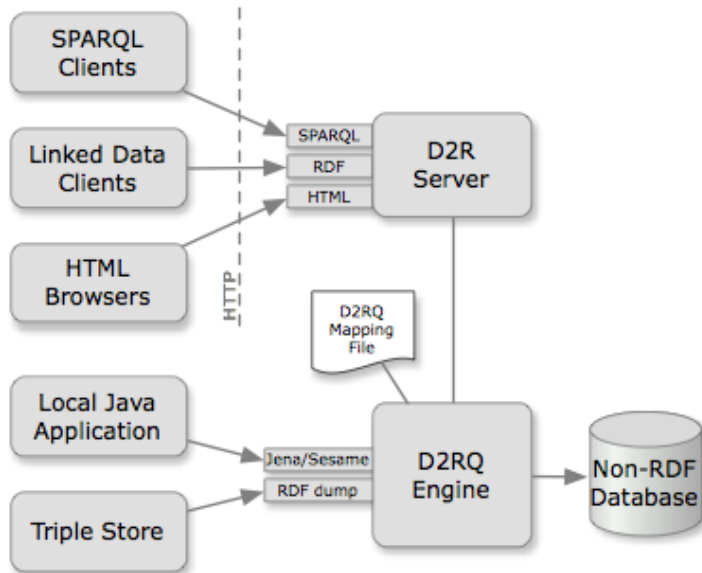
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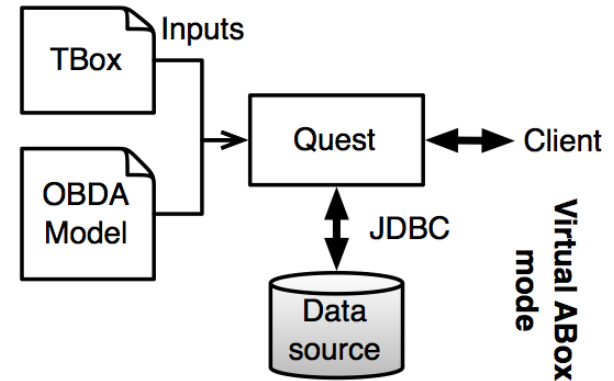
D2RQ



<http://www.w3.org/2007/03/RdfRDB/papers/d2rq-positionpaper/architecture.png>

ontop

a platform to query
DBs as Virtual RDF
Graphs using SPARQL



ODBA

<http://ontop.inf.unibz.it/>



DIGITALE AKADEMIE

XTriples

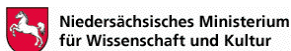
A generic webservice to extract RDF statements from XML resources.

xtriples.spatialhumanities.de

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<http://stack.linkeddata.org/>



Semantic Annotations

Create Content

Name: Alan Turing
Title: Alan Turing
Description: Alan Turing Bio

Content:

Alan Mathison Turing, OBE, FRS (23 June 1912 - 7 June 1954), was a British mathematician, logician, cryptanalyst, and computer scientist. He was highly influential in the development of computer science, providing a formalisation of the concepts of "algorithm" and "computation" with the Turing machine. Turing is widely considered to be the father of computer science and artificial intelligence. During World War II, Turing worked for the Government Code and Cypher School (GCCS) at Bletchley Park, Britain's codebreaking centre. For a time he was head of Hut 8, the section responsible for German naval cryptanalysis. He devised a number of techniques for breaking German ciphers, including the method of the bombe, an electromechanical machine that could find settings for the Enigma machine.

After the war he worked at the National Physical Laboratory, where he created one of the first designs for a stored-program computer, the ACE. In 1948 Turing joined Max Newman's Computing Laboratory at Manchester University, where he assisted in the development of the Manchester computers[4] and became interested in mathematical biology. He wrote a paper on the chemical basis of morphogenesis, and predicted oscillating chemical reactions such as the Belousov-

Entities

- Person: Gordon Brown X, Max Newman X, Alan Mathison Turing X
- Organisation: National Physical Laboratory X, Computing Laboratory X, Manchester University X
- City: ACC X, Manchester X
- Country: United Kingdom X
- Location: Britain X, Manchester University X, Manchester X, Bletchley Park X

Blank Accept all

Entity extraction using Apache Stanbol
Entities include names of people, places and organisations

https://i.vimeocdn.com/video/314789701_640.jpg

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<https://audiothek.philo.at/>

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Top 20 Timelines

Start searching for your topic...



Manual



Pipe rolls

1130 - 1833

Magna Carta

1215 - Present

Codex on the Flight of Birds

1505

Levinus Warner

1618 - 22 Jun 1665

Matenadaran

3 Mar 1959 - Present

Maithili Karna Kayasthak Panjik...

1973

मैथिल करण कायस्थक
पाँजिक सवेंदण

Della mercatura e del mercante...

1573

Johannes de Thurocz

1435 - 1489

Discovery of the Dead Sea Scrolls

1946 - 1956



मेजर विनोद बिहारी वर्मा

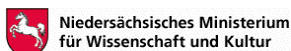
POWERED BY



WIKIDATA

100 1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 2100 2150

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https://www.hastac.org/sites/default/files/styles/post_image/public/upload/images/post/linked_data.png?itok=gcyOI-iC

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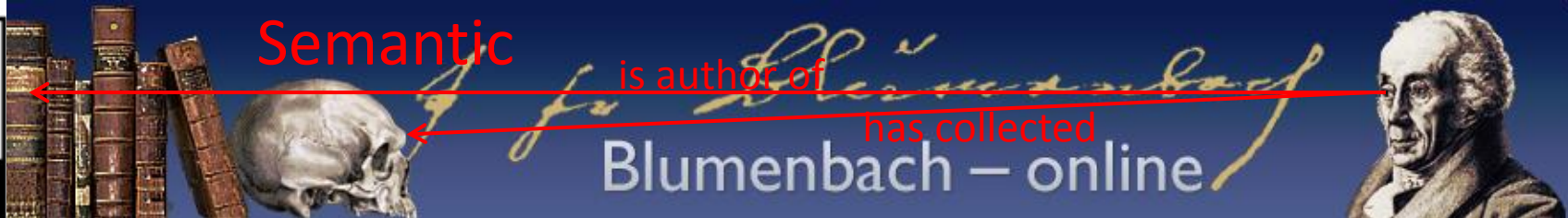


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Vielen Dank !

weitere Infos / Kontakt:

jwettla@gwdg.de

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