



NFDI4Objects

Research Data Infrastructure
for the Material Remains of
Human History

KLASSIK
STIFTUNG
WEIMAR

FAU
CDI

Friedrich-Alexander-Universität
Erlangen-Nürnberg

COMPETENCE IN
RESEARCH
DATA &
INFORMATION

Development of the N4O Objects Ontology, Object Biography data model and Minimal metadata set in NFDI4Objects

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NFDI Memorandum of Understanding - Ontology Harmonization | 14 October 2024

NFDI4Objects Task Areas

- TA1 Documentation
- TA2 Collecting
- TA3 Analytics and Experiments
- TA4 Protecting
- TA5 Storage, Access, Dissemination
- **TA6 Qualification, Integration & Harmonisation**
- TA7 Support and Coordination



Foto: mika-fotografie, Berlin

Task Area 6

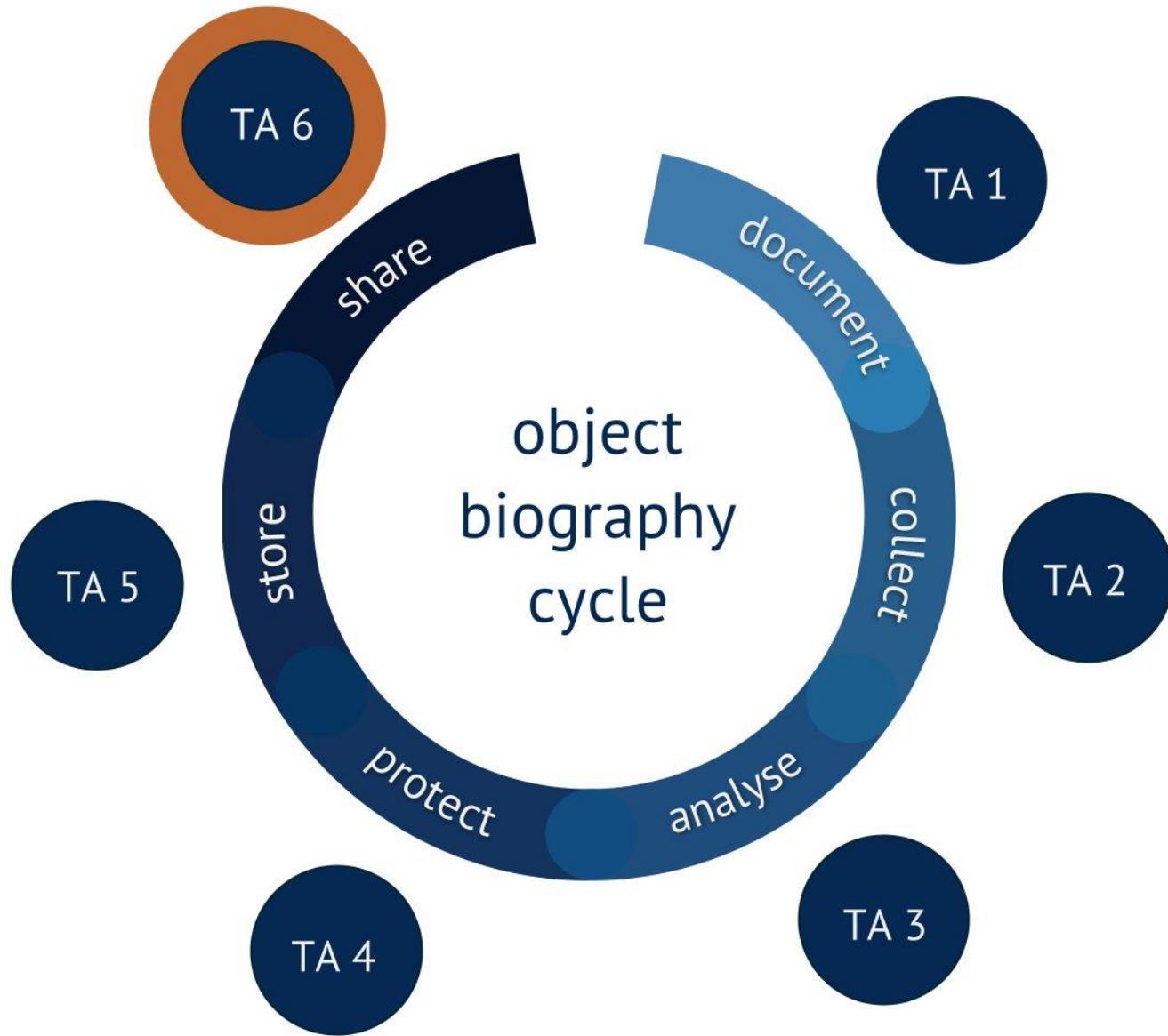
Qualification, Integration and Harmonisation

Co-Spokespersons and employees:

Prof.Dr. Kai-Christian Bruhn
Hochschule Mainz
Dr. Dirk Wintergrün
Klassik Stiftung Weimar

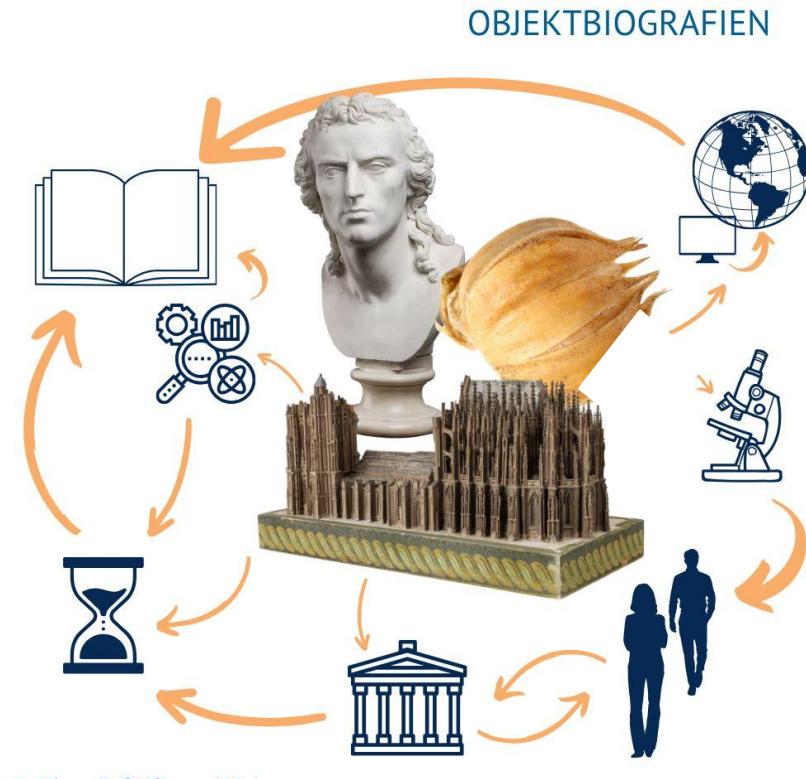
**Klassik Stiftung Weimar
(KSW)**
Dr. Dirk Wintergrün
Anja Gerber

**FAU Competence Center for
Research Data and
Information (FAU CDI)**
Prof.Dr. Michael Kohlhase
Prof.Dr. Günther Görz
Dr. Sarah Wagner



Object data in NFDI4Objects

- Generation of heterogeneous and multidisciplinary research data in Task Areas 1-4 ("Documentation", "Collection", "Analytics and Experiments", "Protection")
 - e.g. excavation data, distribution of finds, collection and provenance information, laboratory analyses such as genome determination or material analysis, restoration and conservation measures
- Various (meta)data, formats, systems, models, ontologies, authority files, terminologies, ...
- Orientation towards the object cycle



Tasks in TA6 by KSW & FAU CDI

- Development of a **Minimal Metadata Set (N4O MMDS)** in **cooperation with the TA 1-4 (via a TWG)**
- Development of the NFDI4Objects **Objects Ontology N4O OO** (based on the CIDOC CRM) (**via a TWG**)
- Development of a data model to represent the **Core Data** of objects based on N4O MMDS and N4O OO
- Development, implementation and proof of concept of a knowledge graph to represent **Object Biographies** in the **VRE WissKI (“Maximum Dataset”)** based on N4O OO

FAU Competence Center for Research Data & Information (FAU CDI)



- Central scientific institution of the University of Erlangen-Nuremberg (FAU)
- Focus: Provision research data management (RDM) services for FAU and the University Hospital
- “by researchers for researchers”
- RDM software and support (WissKI for the Humanities and Collections, Electronic Lab Books for Natural Sciences)

<https://www.cdi.fau.de/>

- The WissKI Lab provides services all around the software and its usage (hosting, maintenance, configuration,...)
- WissKI = DFG-funded open source, webbased VRE-software for documentation and publication of cultural heritage according to the FAIR-principles
- Data model and ontology development: CIDOC CRM based application ontologies, data models tailored to the research topic and question
- We offer our expertise and services to for FAU's projects and collections and in context of third party funded projects, e.g. NFDI



<https://wiss-ki.eu/>

[https://www.cdi.fau.de/
services/wisski-und-fau/
wisskicloud/](https://www.cdi.fau.de/services/wisski-und-fau/wisskicloud/)

Object Biography

- Transfers the concept of biography to objects of cultural heritage
- Compiles any kind of object information (contexts, paths they "traveled", hands they went through, meanings, ...)
- **Objects** (artifacts, living beings, rocks)
- **Contexts & Events**, e.g.
 - Origin (Creation, Production,..)
 - Usage
 - Encounter (Find, Excavation)
 - Collection/Museum context
 - Change of ownership
 - Research events
- **Actors, places, time** (context specific: who? where? when?)
- **Sources** (pictorial and written material, data, findings, ...)

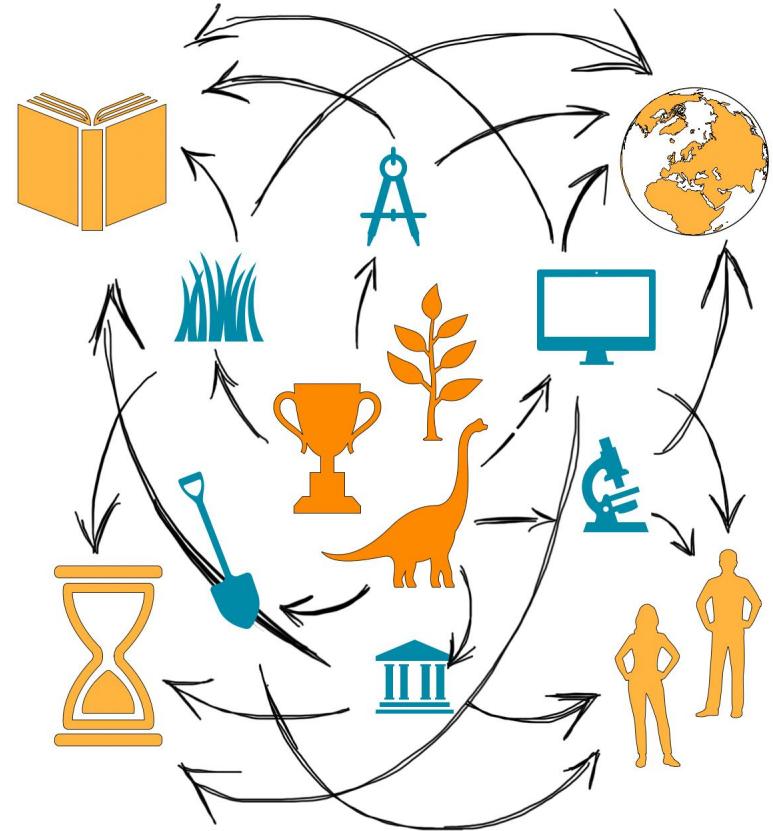


Fig.: Schematic representation of an object biography © Sarah Wagner, CC-BY 4.0

Object Biography - Chances

- Provides a model for integration of heterogeneous data
- Focuses on provenance, ambiguity and inconsistency of information
- Considers all contexts of an object equally and thus also the information assigned
- Attributions made by actors and groups outside the collection/museum or scientific context are treated equally, e.g. societies of origin

→ **CIDOC CRM** as an ideal ontology for the representation of Object Biographies and the demands of their digital representation

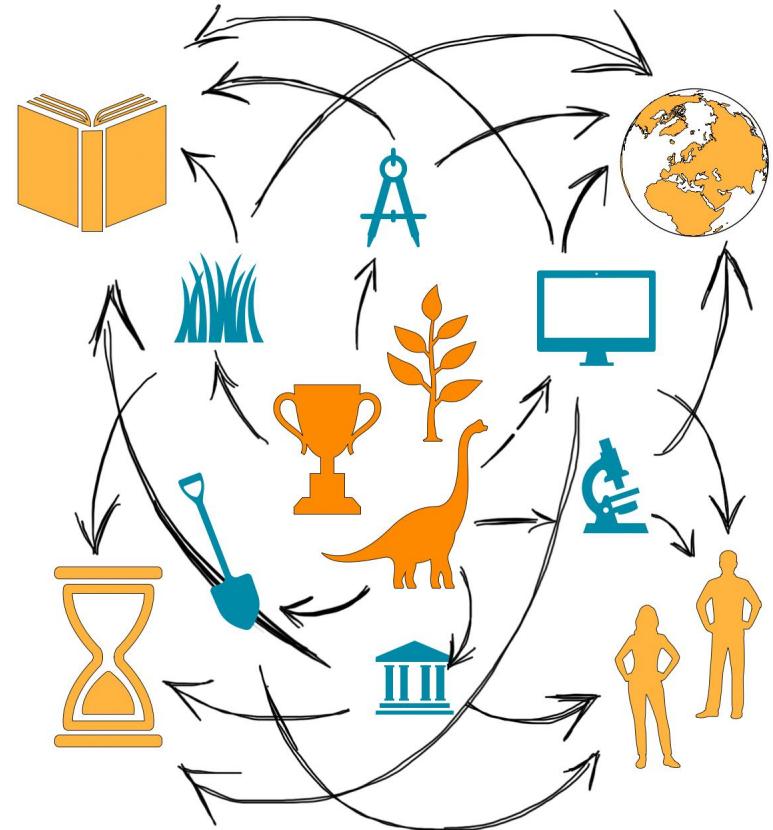


Fig.: Schematic representation of an object biography © Sarah Wagner, CC-BY 4.0

The CIDOC CRM



- Developed by the Documentation Committee of the International Council of Museums (ICOM CIDOC)
- It is the ontology and standard to represent cultural heritage in the semantic web
- Consists of ca. 90 classes (e.g. physical objects, places, actors, ...) and 150 properties
- Ensures long-term interpretability and interoperability
- Event-centered
- Version 7.1.3. as the current ISO 21127 equivalent and top-level ontology of **NFDI4Objects Objects Ontology (N4O OO)**

Use Cases for Object Biographies



Object biographies are not simply given and usually have to be **reconstructed in extensive research**. In order to develop and provide a data model, we need Use Cases.

Objekt

Displaying 1 - 13 of 13

 Giraffatitan brancai, MfN	 Eisenstaublunge, FAU PS 091/09	 Suppenterrine mit Deckel, Zitronenknauf und Landschaftsdekor, BNM 40/496	 Behaim-Globus, GNM WI1826 aus Italien, E13. Creduto Plasma.	 Suite geschliffener Gesteine aus Italien, E13. Creduto Plasma.	 Baumfragment mit Hirschgeweih, ZMB Mam 88335, Museum für Naturkunde Berlin
	 Der Große Kurfürst als Heiliger Georg, SMB 856	 Auslegerboot Sog. "Luf-Boot", SMB VI 23116 a	 Idia-Elfenbeinanhänger, BM Af1910_5-13_1	 Kaltwasserkarbonat Dünnschliff, FAU AM_415	 Münze GMM-2779
 Wunderblutkirche St. Nikolai					

View of the Use Cases (so far) in our WissKI N40 development instance

Selection criteria

- heterogeneous
- significant for a domain or representative of a current debate
- complex biography
- various information sources available
- collaborations with interested partners

Use Cases for Object Biographies



Objekt
Displaying 1 - 13 of 13

 Giraffatitan brancai, MfN	 Eisenstaublunge, FAU PS 091/09	 Suppenterrine mit Deckel, Zitronenknauf und Landschaftsdekor, BNM 40/496	 Behaim-Globus, GNM WI1826 aus Italien, E13. Creduto Plasma.	 Suite geschliffener Gesteine aus Italien, E13. Creduto Plasma.	 Baumfragment mit Hirschgeweih, ZMB Mam 88335, Museum für Naturkunde Berlin
Wunderblutkirche St. Nikolai					

View of the Use Cases (so far) in our WissKI N40 development instance

Introduction:

- Iron dust lung, PS091/09 FAU Anatomical Collection
- Behaim Globe, WI1826, Germanisches Nationalmuseum Nürnberg

Use Case 1: Iron dust lung, FAU Anatomical Collection

Selection criteria

- 160 year old wet preparation with high significance for the history of medicine and industrial hygiene
- Represents the history of anatomy and pathology at FAU
- Use case for dealing with human remains

Approach

- Collaboration with the collection's preparator Lisa Stache
- Collecting available information (database entry/current inventory, restoration reports, ...)
- Identifying relevant sources (historical inventories, section reports, publications on the collection's history, ...)
- Inspecting archival material and reprocessing historical information
- Reconstructing a timeline and detailed biography



Iron Dust Lung, PS091/09; Photo:
Lisa Stache

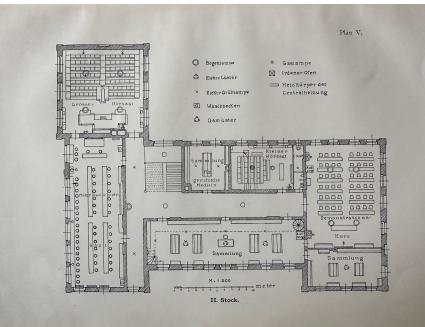
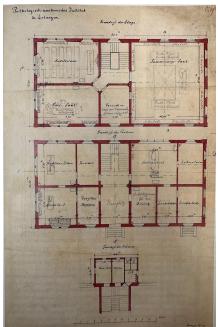
Use Case 1: Iron dust lung, FAU Anatomical Collection

Hidden stories to unveil

- The person behind the object - Marie Frank
- The pathologist - Friedrich Albert von Zenker
- A theory on illness from dust inhalation
- The context of the anatomical and pathological collection at FAU: role in teaching, collection management, location, systematization, ...



Friedrich Albert von Zenker, Pathologist



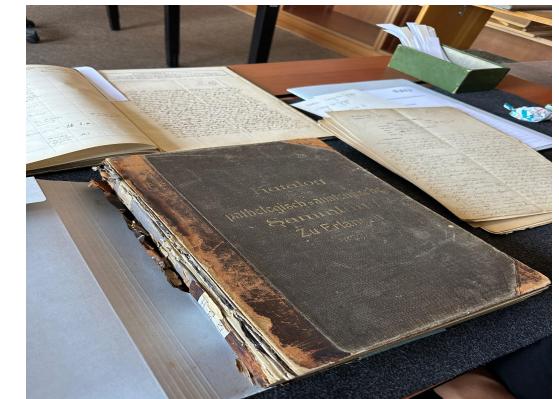
Locations throughout the centuries; sources/images f.l.t.r.: Andraschke/Ruisinger 2007; Hauser 1907; Sarah Wagner.

Frank, Marie, 31 Jahre alt, Fabrikarbeiterin aus Steinbühl bei Nürnberg, wurde am 19. Jan. 1864 im Nürnberger Krankenhaus aufgenommen.

Anamnese. Patientin war als Kind immer gesund, obwohl nie besonders kräftig. Um ihr 20. Jahr, ehe sie in die unten zu beschreibenden Fabriken eintrat, arbeitete sie einige Jahre in einer Nürnberger Zündholzfabrik. Auch dort soll sie sich im Wesentlichen wohl befunden, wenigstens nie über Brustbeschwerden geklagt haben. Sie gebärt einigemale regelmässig, zuletzt vor etwa 2 Jahren;

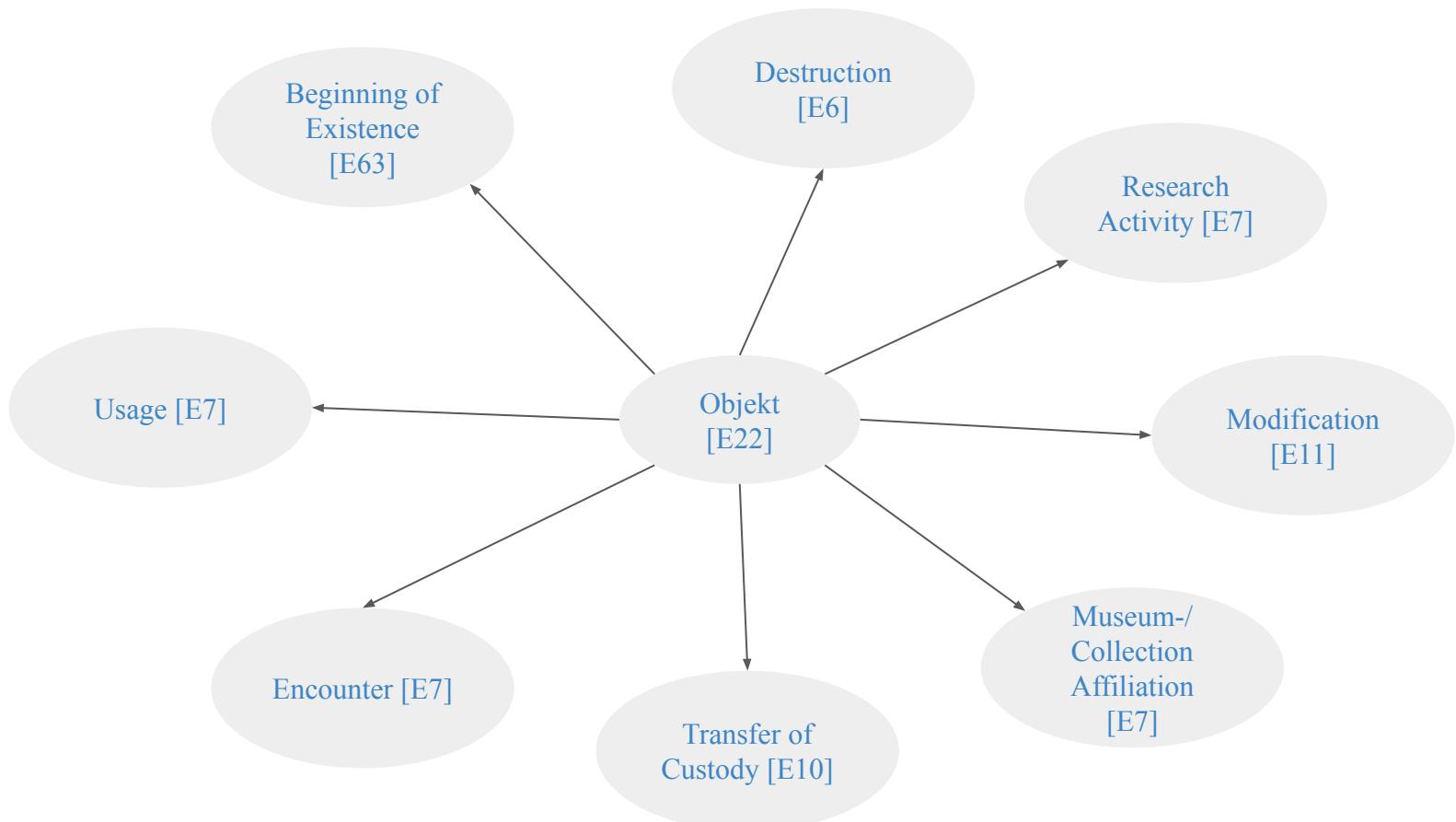
9*

Excerpt from: F.A.v.Zenker: Über Staubinhaltionskrankheiten der Lungen", in: Deutsches Archiv für Klinische Medicin, 1866/67.



Working with historical inventories at FAU's Archive,
Photo: Sarah Wagner

Events/Contexts within the Object Biography

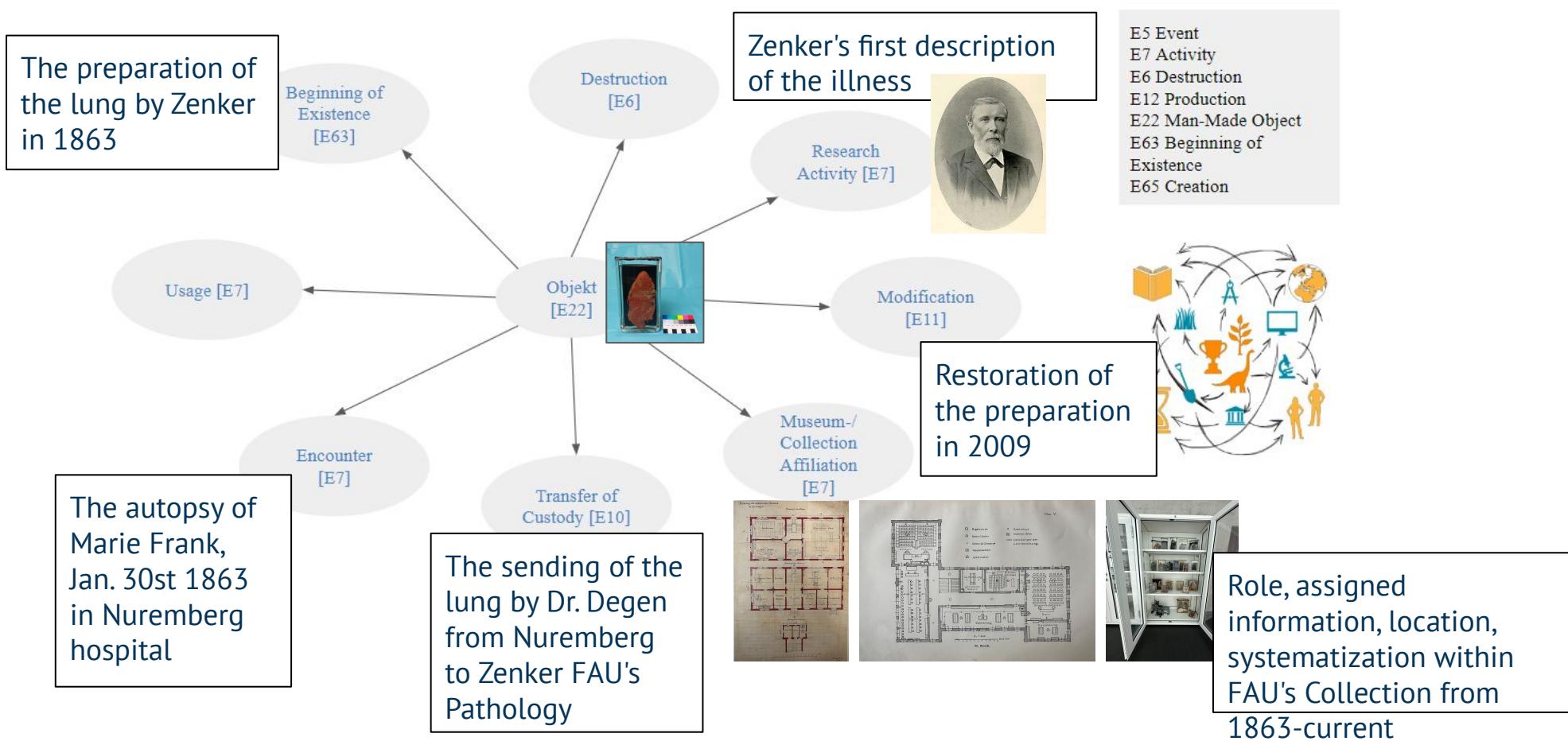


Main events and contexts in the biography of an object that we defined so far

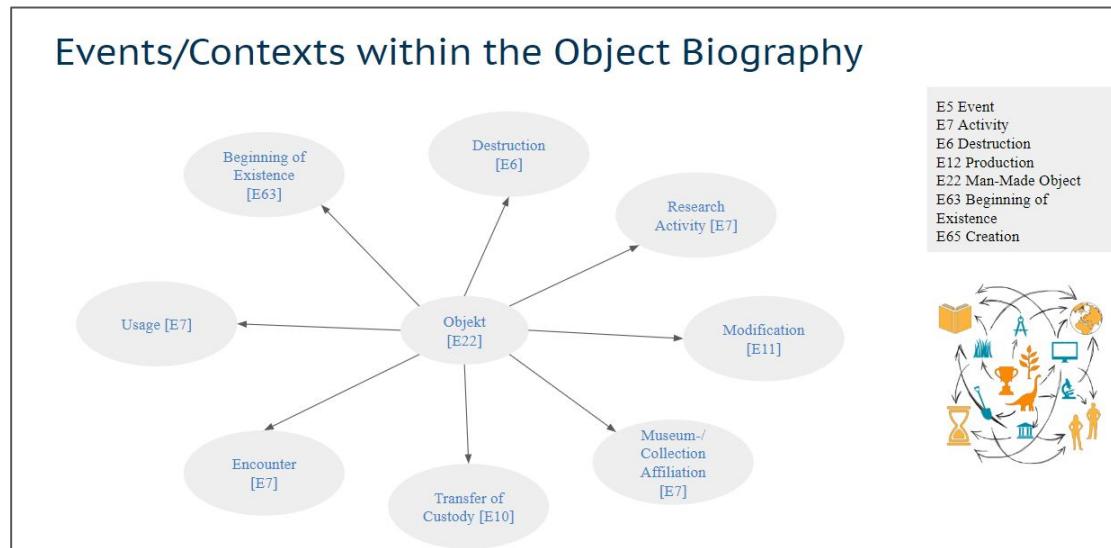
E5 Event
E7 Activity
E6 Destruction
E12 Production
E22 Man-Made Object
E63 Beginning of Existence
E65 Creation



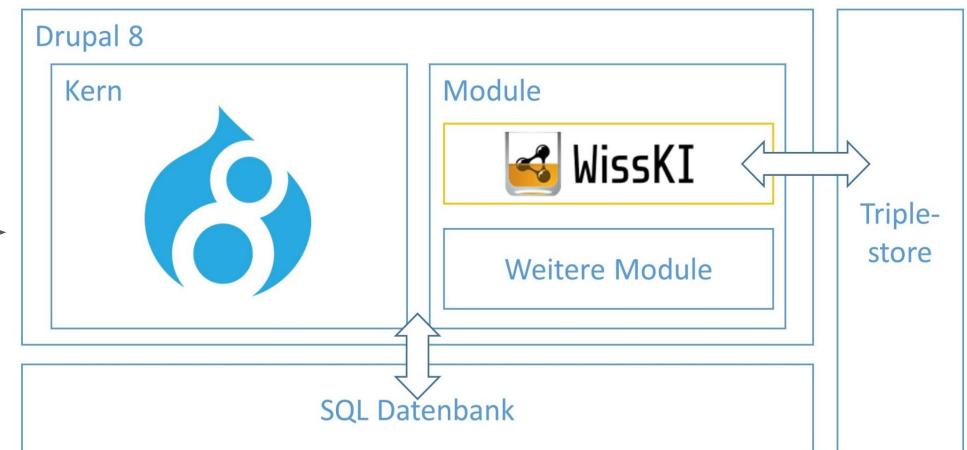
Reconstructing the Object Biography of the Iron Dust Lung



Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI



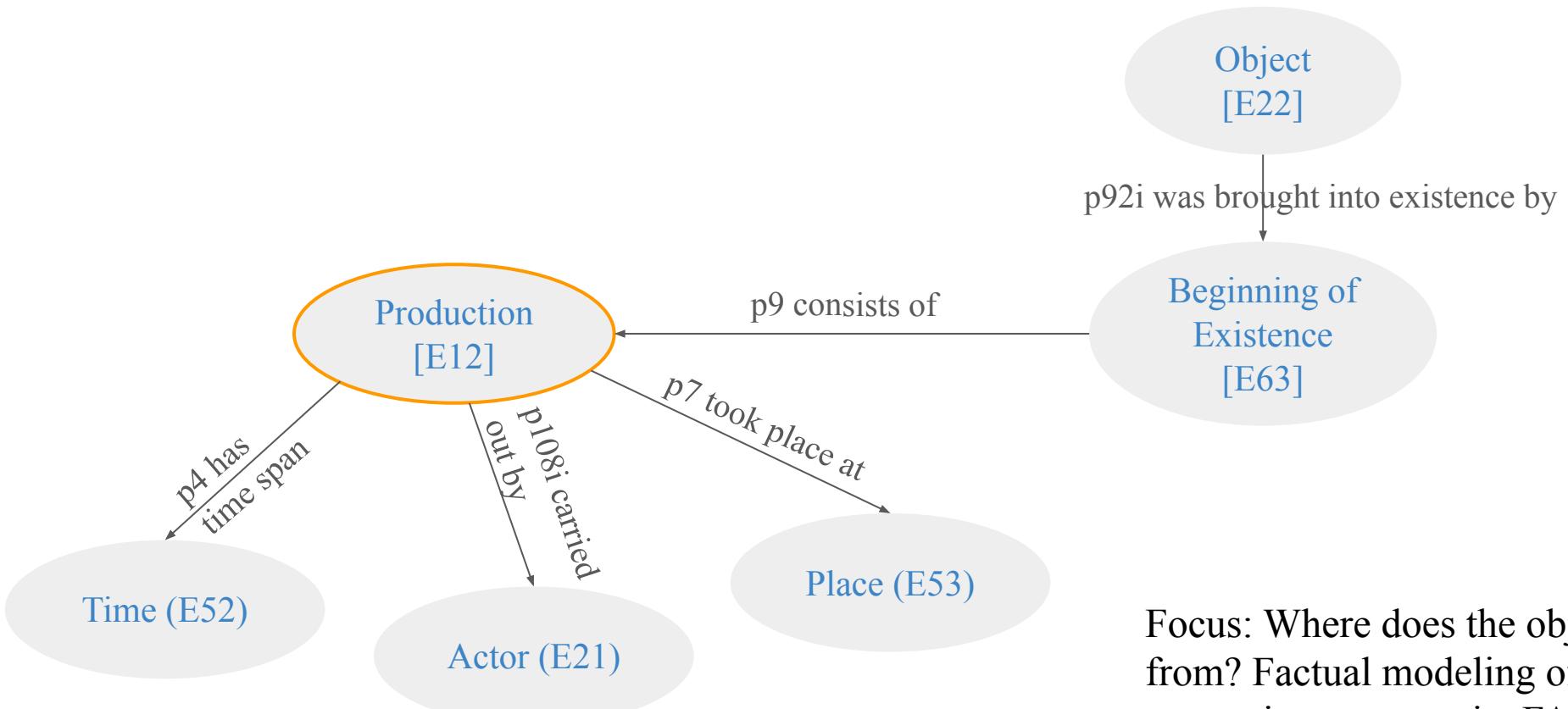
Schema of the object biography's main events/contexts



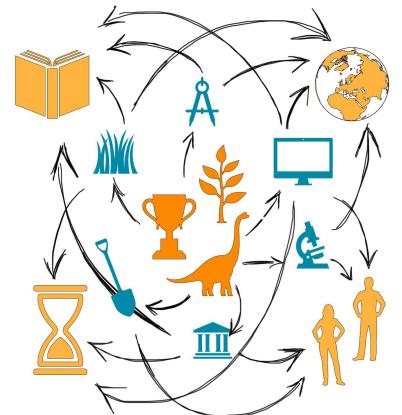
- **WissKI** is a set of drupal modules that enable the **documentation and publication** of data according to the **FAIR** principles in the semantic web
- it provides an interface for **editing and viewing data**
- data is **semantically modeled** via the **WissKI Pathbuilder** and saved in a triple store

Characteristics of the data model

E12 Production
E13 Attribute Assignment
E22 Man-Made Object
E63 Beginning of Existence

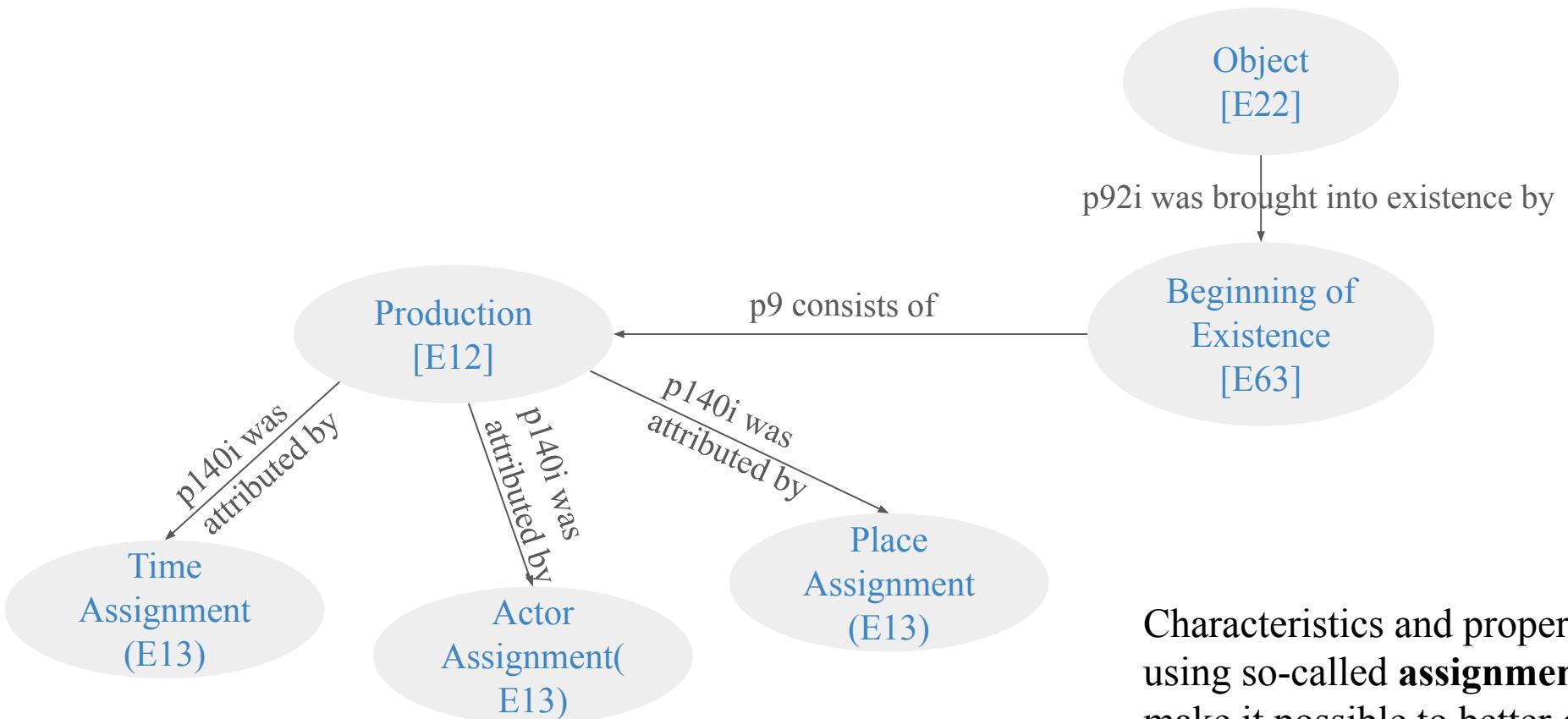


Focus: Where does the object information come from? Factual modeling of characteristics and properties → not quite FAIR!
How can **information provenance** or uncertainties be modeled in a structured way?



Characteristics of the data model

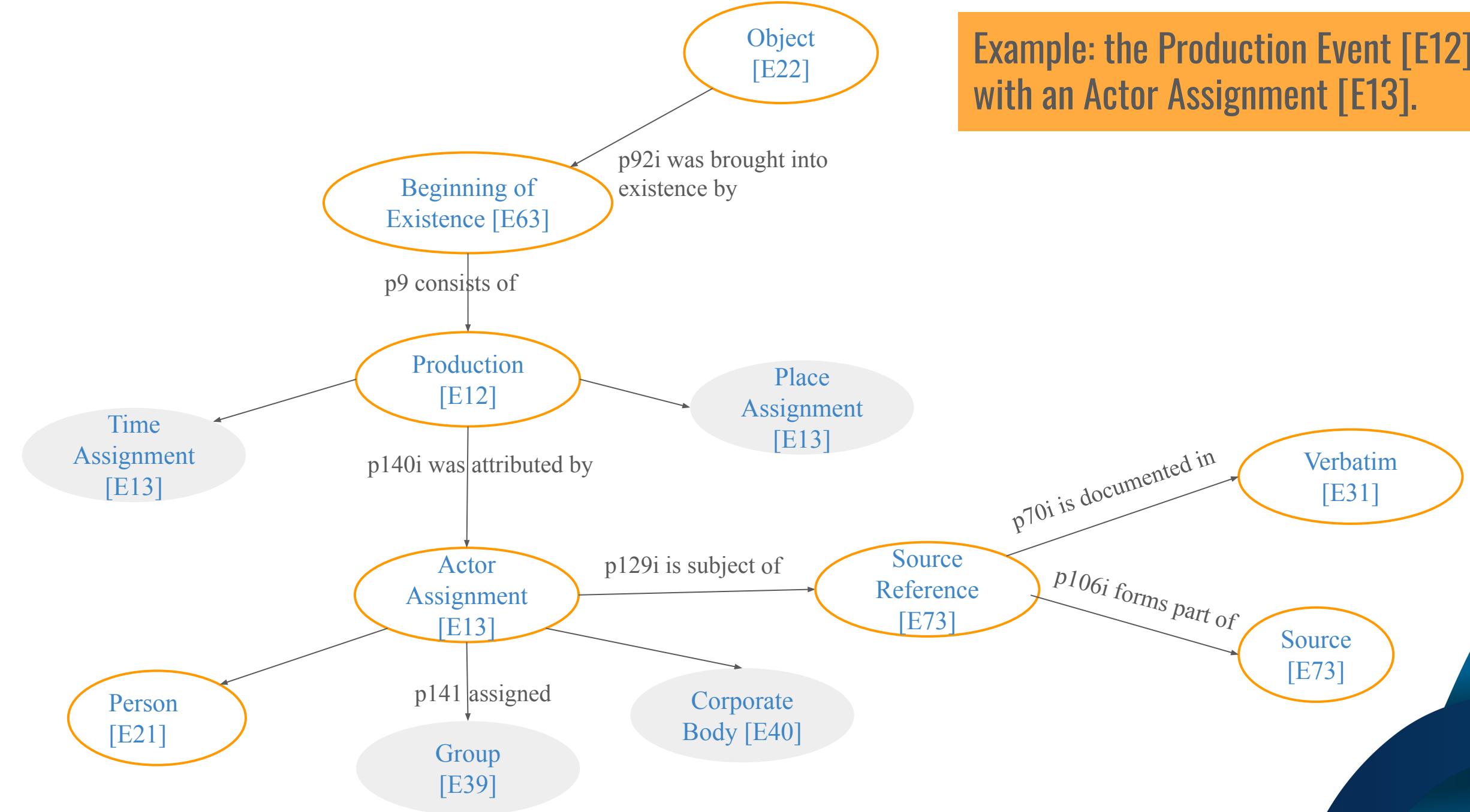
E12 Production
E13 Attribute Assignment
E22 Man-Made Object
E63 Beginning of Existence



Characteristics and properties are modeled using so-called **assignment events**. Events make it possible to better **contextualize information and assignments** in particular allows to document how and by whom a statement was made.



Example: the Production Event [E12] with an Actor Assignment [E13].



Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

Edit Pathbuilder: nfdi4o_objectbiography ☆

+ Add Path + Add Existing Path

Title	Path	Enabled	Field Type	Cardinality	Operations
↳ Objekt	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object]	<input checked="" type="checkbox"/>		Unlimited	Edit
↳ Id	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P48_has_preferred_identifier → https://nfdi4objects.wisski.data.fau.de/ontology/Identifier	<input checked="" type="checkbox"/>	Text (plain)	1	Edit
↳ Entstehung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence]	<input checked="" type="checkbox"/>		Unlimited	Edit
↳ Kreation	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation]	<input checked="" type="checkbox"/>		1	Edit
↳ Akteurzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Actor_Assignment	<input checked="" type="checkbox"/>	Entity reference	Unlimited	Edit
↳ Zeitzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Time_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	Edit
↳ Ortszuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Place_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	Edit
↳ Herstellung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92i_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Production]	<input checked="" type="checkbox"/>		Unlimited	Edit

Detail of the WissKI Pathbuilder with the Object Biography data model

Back to site | Administration / Configuration / WissKI

Pathbuilders ☆

+ Add Pathbuilder + Path usage + Export Pathbuilder and Ontologies

name	Operations
NFDI4Objects Minimaldatensatz	Edit
NFDI4Objects Objektbiografie	Edit
WissKI Linkblock (Linkblock)	Edit

Pathbuilders in N40 WissKI

Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

Edit Path ☆

Name: Id
Machine name: id_objekt

Path Type: Path

Is this Path a group?

Reasoner has run. Cache is prepared

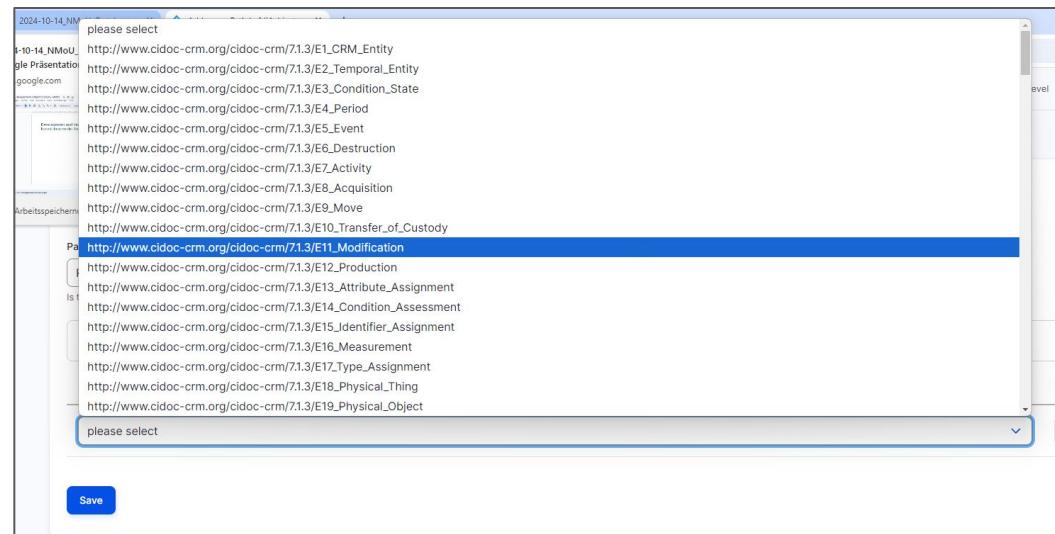
Step

- https://nfdi4objects.wisski.data.fau.de/ontology/Object
- http://www.cidoc-crm.org/cidoc-crm/7.1.3/P48_has_preferred_identifier
- https://nfdi4objects.wisski.data.fau.de/ontology/Identifier
- please select

Datatype Property: http://www.cidoc-crm.org/cidoc-crm/7.1.3/P3_has_note

Disambiguation Point: - select -

Modeling semantic paths with the WissKI Pathbuilder using the N4O Objects Ontology based on CIDOC CRM Version 7.1.3.



Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

The screenshot shows the Protégé ontology editor interface. On the left, the 'Class hierarchy' for 'E22 Human-Made Object' is displayed, showing a complex network of subclasses like E1 CRM Entität, E2 Geschehendes, E3 Zustandsphase, E4 Phase, E5 Ereignis, and many others. On the right, the 'Annotations' tab for 'E22 Human-Made Object' is open, displaying several annotations in English and French. The 'Description' tab at the bottom provides a summary of the class, mentioning it includes persistent physical objects created by human activity and aggregates of objects made for functional purposes. It also lists 'Equivalent To' classes like E19 Materieller Gegenstand and E24 Physical Human-Made Thing.

When the CIDOC CRM is not specific enough for our needs, we extend the classes and properties →
= N40 Objects Ontology

Extending the CIDOC CRM 7.1.3 to N40 Objects Ontology using protégé

Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

Edit Pathbuilder: nfdi4o_objectbiography ☆

Title	Path	Enabled	Field Type	Cardinality	Operations
⊕ Objekt	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object]	<input checked="" type="checkbox"/>	Unlimited	Edit	
⊕ Id	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P48_has_preferred_identifier → https://nfdi4objects.wisski.data.fau.de/ontology/Identifier	<input checked="" type="checkbox"/>	Text (plain)	1	Edit
⊕ Entstehung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence]	<input checked="" type="checkbox"/>	Unlimited	Edit	
⊕ Kreation	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation]	<input checked="" type="checkbox"/>	1	Edit	
⊕ Akteurzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Actor_Assignment	<input checked="" type="checkbox"/>	Entity reference	Unlimited	Edit
⊕ Zeitzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Time_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	Edit
⊕ Ortszuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Place_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	Edit
⊕ Herstellung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_was_brought_intoo_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence → http://erlangen-crm.org/211015/P9_consists_of → http://erlangen-crm.org/211015/E65_Creation → http://erlangen-crm.org/211015/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Production]	<input checked="" type="checkbox"/>	Unlimited	Edit	

Create new Objekt ☆

Back to site | Create WissKI Entity

Shortcuts Devel WissKI Announcements swagner

Id:

Entstehung: [+](#)

Benutzung: [+](#)

Modifikation: [+](#)

Begegnung: [+](#)

Museums/Sammlungskontext: [+](#)

Paths in the WissKI Pathbuilder can be mapped to fields and forms that are accessed via an editing interface; the user therefore doesn't need to get in touch with complex semantics and can still create high quality data

Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

Back to site | Create WissKI Entity

Shortcuts Devel WissKI Announcements swagner

Create new Objekt ☆

Id:

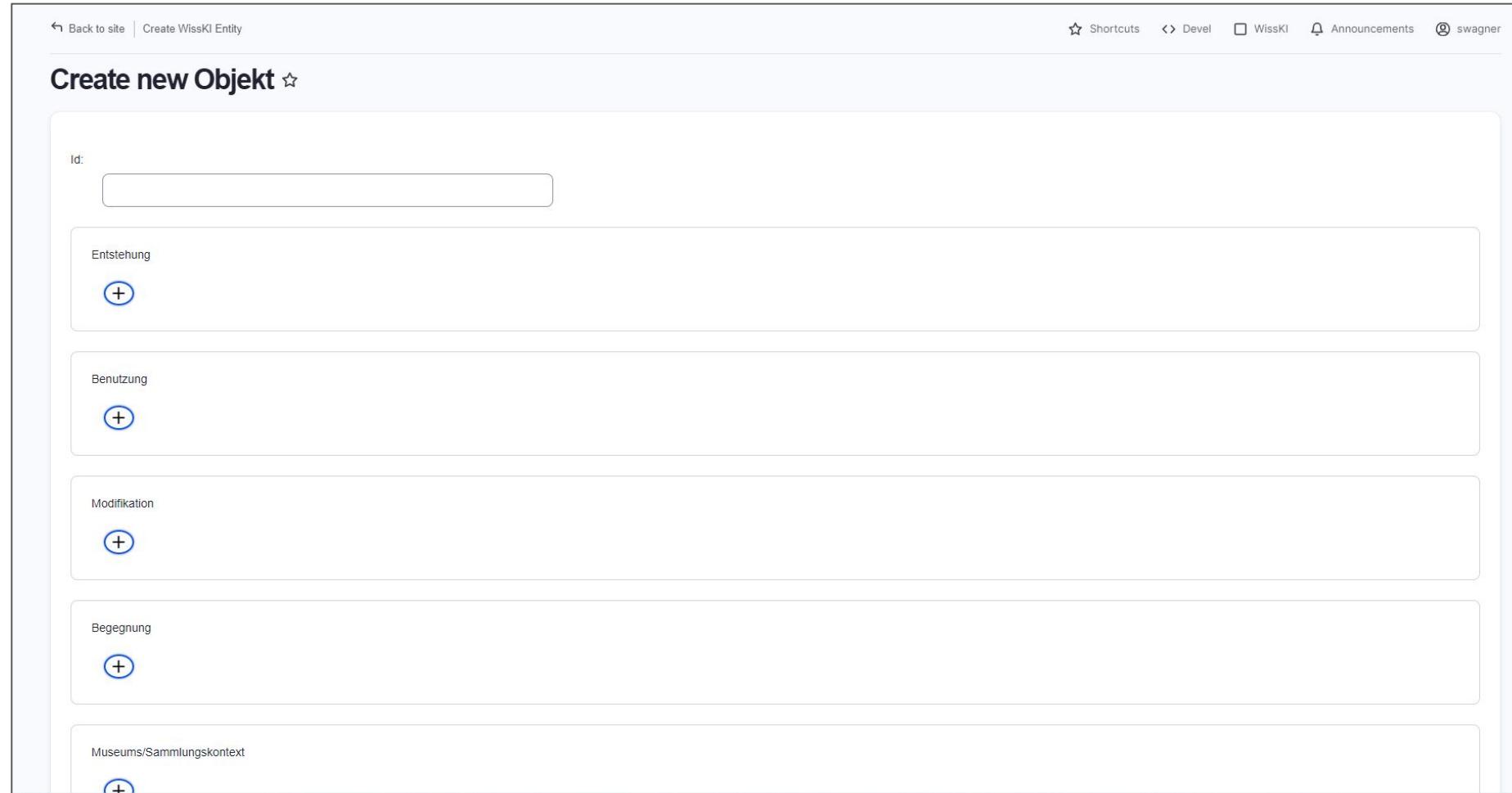
Entstehung

Benutzung

Modifikation

Begegnung

Museums/Sammlungskontext



Detail of the WissKI
Editing Mask to
document Object
Biographies

Development and implementation of the CIDOC CRM based data model for Object Biographies in WissKI

Eisenstaublunge, FAU PS 091/09

View Edit Delete Triples Revisions DOI Devel

Id
Eisenstaublunge, FAU PS 091/09

Abbildung



Begegnung
Titel
Sektion der Marie Frank

Aneignung
Aneignungsart
Entnahme

Quellenverweis
Quelle
[Zenker 1867, S. 130f](#)

Wortlaut
" [...] beide Lungen einer
31jährigen Fabrikarbeiterin
[...]"

Besitz- und Eigentumswchsel
zugewiesene Art der Übertragung
Übersendung

Zeitzuweisung
Zeitangabe
31.01.1864

Startzeitpunkt
1864-01-31

Akteurzuweisung
[Degen, Dr.](#)
[Geist, Lorenz Melchior Dr.](#)
[Städtisches Krankenhaus Nürnberg](#)

Quellenverweis
Quelle
[Zenker 1867, S. 130f](#)

Objektbewegung
Von
[Nürnberg, Städtisches](#)
[Krankenhaus](#)
Nach
[Erlangen, Pathologie](#)

Vorbesitzer
[Degen, Dr.](#)
[Geist, Lorenz Melchior Dr.](#)
Nachbesitzer
[Zenker, Friedrich Albert von](#)

Quellenverweis
Quelle
Wortlaut

View of the Iron Dust Lung in WissKI, detail

Please note: a new webdesign is currently under development, because the mass of information can no longer be adequately displayed with current drupal themes :)

Use Case 2: Behaim Globe, Germanisches Nationalmuseum

Selection criteria

- Oldest existent globe of the earth (1492)
- UNESCO World Document Heritage since 2023
- Complex object in itself (geographical map, inscriptions, miniatures, materiality, ...)
- Many actors involved in its biography
- Long exhibition and research history
- Copies and related objects around the world
- Many open questions, vague information and contradictions

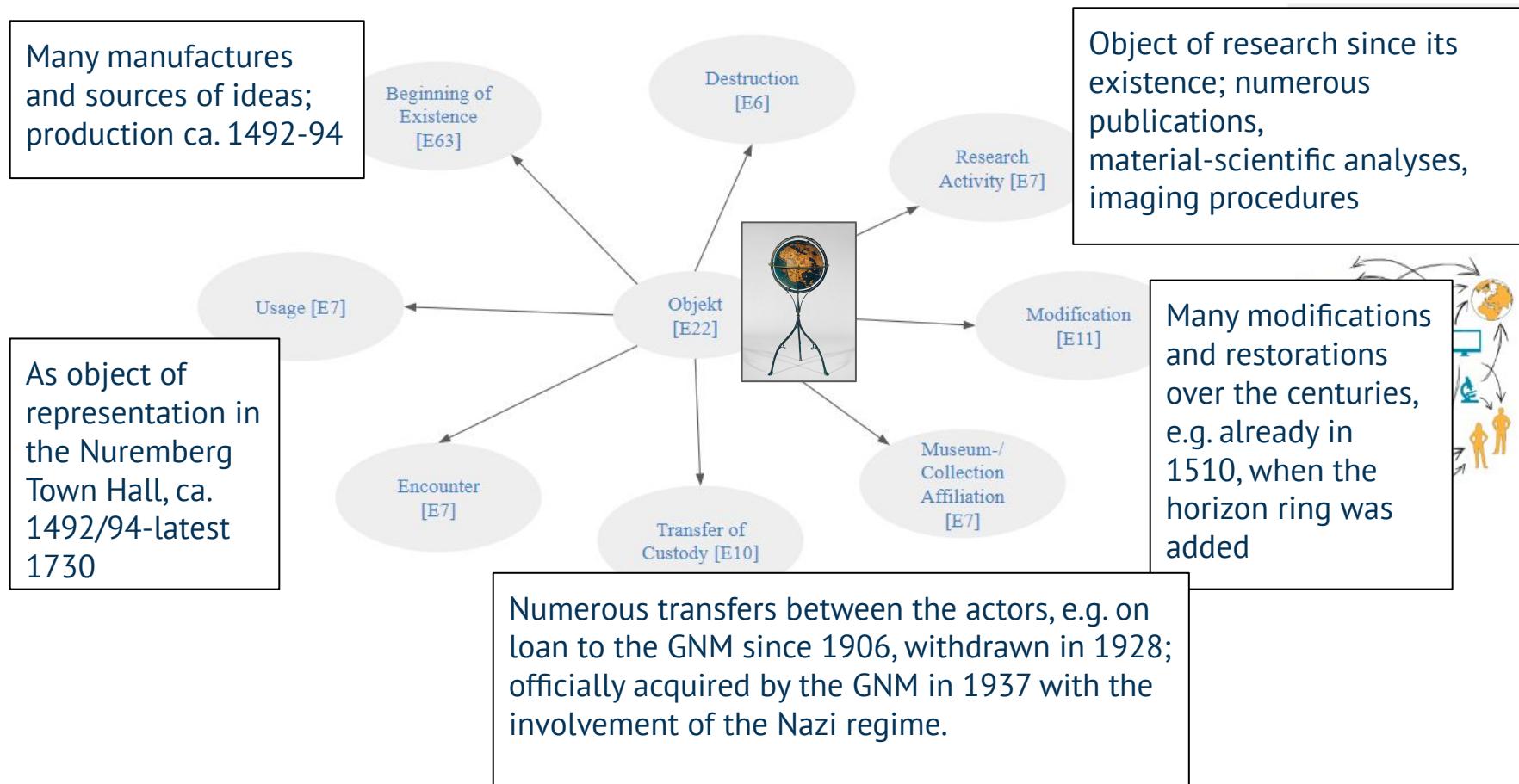
Approach

- Analogue to Use Case 1
- Cooperation with Prof. Dr. Günther Görz, who explored the globe and collected large amounts of sources and material for many years:
<https://behaim.wisski.data.fau.de/>



Behaim Globe, Germanisches Nationalmuseum, Photo: Jürgen Musolf

Reconstructing the Object Biography of the Behaim Globe



Use Cases - Conclusion

- The various use cases help us to **define and formalize** the different possible **object contexts** more precisely,
- they help us to **identify the needs** of different **domains** and **methodological procedures**.
- Data model and ontology development **contribute to collection development**, because object biographies are not simple given and have to be **reconstructed in extensive research**.
- One challenge is to do justice to the **complexity** of object biographies and at the same time offer **generic solutions** that are transferable to other objects

Merging the data into the N4O knowledge graph

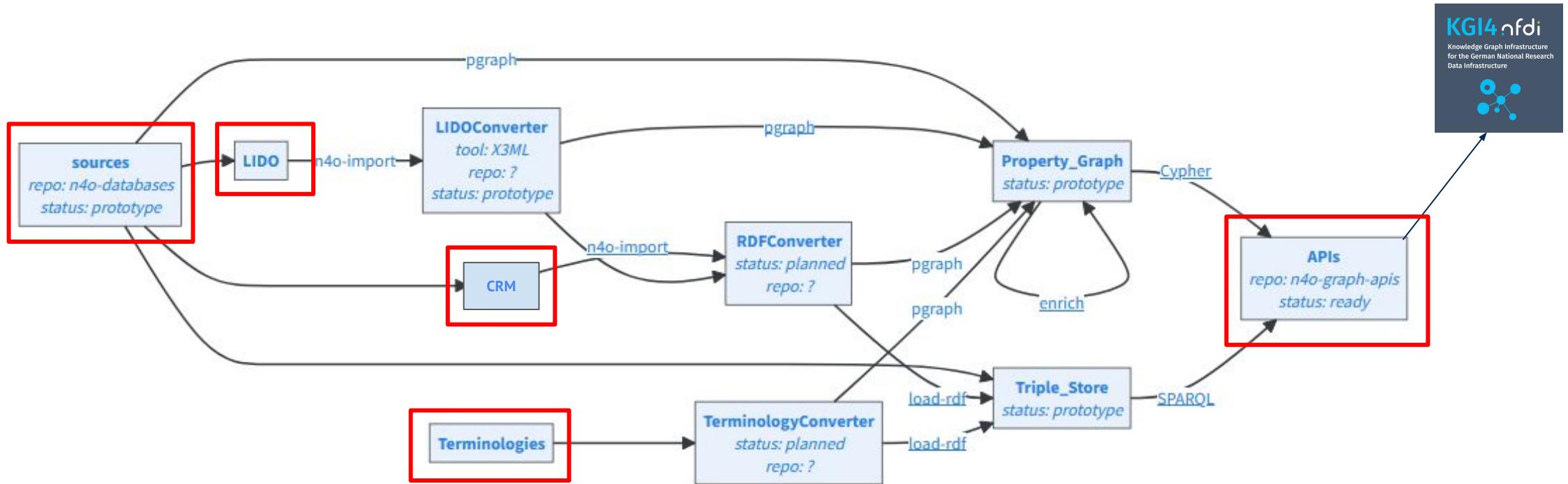


Fig.: [Data flow N4O Graph](#), © Jakob Voss, GBV

- **N4O Objects Ontology** for the knowledge graph, based on CIDOC CRM, BFO, SKOS, schema.org and others
- **N4O Minimal metadata set** for the annotation of object data based on auf LIDO (XML) and others
- **Terminologies** for the standardized description of research data

Why do we need a TWG N4O Object Ontology and N4O Minimal Metadata Set?

- Determine **requirements** and **standards** in the consortium NFDI4Objects
- Determine which data fields are **required** in the task areas 1-4 (“Documentation”, “Collecting”, “Experiments & Analytics” and “Protecting”) in NFDI4Objects
- Determine the data fields **with the close involvement of all task areas** of the consortium
- Merging the very heterogeneous and multidisciplinary research data
- Development of the **minimal metadata schema** and its **RDF representation** (NFDI4Objects object ontology)
- further development of the Object biography and its data model as a **maximum data schema**
- **mailing list:** https://www.listserv.dfn.de/sympa/info/n4o_twg_objectsontology_mmdu
- **Rocket Chat:** https://n4o-chat.nfdi.de/channel/TWG_ObjectsOntology_and_MinimalMetadataSet

Development and implementation of the Minimal Metadata set for museums and collections in WissKI

Edit Pathbuilder: nfdi4objects_minimaldatensatz ☆

+ Add Path + Add Existing Path

Show row weights

Title	Path	Enabled	Field Type	Cardinality	Operations
↳ Objekt	Group [nfdi4objects:Object]	<input checked="" type="checkbox"/>		Unlimited	Edit ▼
↳ Objekttitel oder -benennung	nfdi4objects:Object → crm:P1_is_identified_by → crm:E41_Appellation	<input checked="" type="checkbox"/>	Text (plain)	Unlimited	Edit ▼
↳ Objekttyp oder -bezeichnung	nfdi4objects:Object → crm:P2_has_type → nfdi4objects:Object_Type → crm:P1_is_identified_by → crm:E41_Appellation	<input checked="" type="checkbox"/>	Text (plain)	Unlimited	Edit ▼
↳ Themenkategorie	nfdi4objects:Object → crm:P2_has_type → nfdi4objects:Keyword → crm:P1_is_identified_by → crm:E41_Appellation	<input checked="" type="checkbox"/>	Text (plain)	Unlimited	Edit ▼
↳ Inventarnummer	nfdi4objects:Object → crm:P48_has_preferred_identifier → nfdi4objects:Inventory_Number	<input checked="" type="checkbox"/>	Text (plain)	1	Edit ▼
↳ Objektbeschreibung	nfdi4objects:Object → crm:P70i_is_documented_in → nfdi4objects:Description	<input checked="" type="checkbox"/>	Text (plain, long)	Unlimited	Edit ▼
↳ Material	nfdi4objects:Object → crm:P45_consists_of → crm:E57_Material → crm:P1_is_identified_by → crm:E41_Appellation	<input checked="" type="checkbox"/>	Text (plain)	Unlimited	Edit ▼
↳ Technik	nfdi4objects:Object → crm:P92i_was_brought_into_existence_by → crm:E12_Production → crm:P33_used_specific_technique → crm:E29_Design_or_Procedure → crm:P1_is_identified_by → crm:E41_Appellation	<input checked="" type="checkbox"/>	Text (plain)	Unlimited	Edit ▼
↳ Maße	Group [nfdi4objects:Object → crm:P43_has_dimension → crm:E54_Dimension]	<input checked="" type="checkbox"/>		Unlimited	Edit ▼

Detail of the WissKI Pathbuilder with the Minimal Metadata set implementation using the N4O Objects Ontology

Back to site | Administration / Configuration / WissKI

Pathbuilders ☆

+ Add Pathbuilder + Path usage + Export Pathbuilder and Ontologies

name	Operations
NFDI4Objects Minimaldatensatz	Edit ▼
NFDI4Objects Objektbiografie	Edit ▼
WissKI Linkblock (Linkblock)	Edit ▼

Pathbuilders in N4O WissKI

Development and implementation of the Minimal Metadata set for museums and collections in WissKI

Edit Pathbuilder: nfdi4objects_minimaldatensatz

Title	Path
+	Objekt Group [nfdi4objects:Object]
+	Objekttitel oder -benennung nfdi4objects:Object → crm:P1_is_identified_by → crm:E41_Appellation
+	Objekttyp oder -bezeichnung nfdi4objects:Object → crm:P2_has_type → nfdi4objects:Object_Type → crm:P1_is_identified_by → crm:E41_Appellation
+	Themenkategorie nfdi4objects:Object → crm:P2_has_type → nfdi4objects:Keyword → crm:P1_is_identified_by → crm:E41_Appellation
+	Inventarnummer nfdi4objects:Object → crm:P48_has_preferred_identifier → nfdi4objects:Inventory_Number
+	Objektbeschreibung nfdi4objects:Object → crm:P70i_is_documented_in → nfdi4objects:Description
+	Material nfdi4objects:Object → crm:P45_consists_of → crm:E57_Material → crm:P1_is_identified_by → crm:E41_Appellation
+	Technik nfdi4objects:Object → crm:P92i_was_brought_into_existence_by → crm:E12_Production → crm:P33_used_specific_technique → crm:E29_Design_or_Procedure → crm:P1_is_identified_by → crm:E41_Appellation
+	Maße Group [nfdi4Objects:Object → crm:P43_has_dimension → crm:E54_Dimension]

Datenfelder (Erfassung)

Erstellt von Städter, Domenic, zuletzt geändert von Chiara Marchini am Mai 17, 2024

Datenfelder, die üblicherweise bei der Erfassung gefüllt werden:

- Objekttitel oder -benennung (Pflicht)
- Objekttyp oder -bezeichnung (Pflicht)
- Klassifikation (Empfohlen)
- Inventarnummer (Pflicht)
- Objektbeschreibung (Empfohlen)
- Material (Empfohlen)
- Technik (Empfohlen)
- Maße (Empfohlen)
- Ereignis in der Objektgeschichte [Feldgruppe] (Pflicht)
 - Ereignistyp (Pflicht)
 - Person/Körperschaft (Bedingt Pflicht)
 - Datierung (Bedingt Pflicht)
 - Ort (Bedingt Pflicht)
- Inhaltsschlagwort (Empfohlen)
- Mediendatei [Feldgruppe] (Pflicht)
 - Datenfelder (Export)
 - FAQs
- Inhaltsbeschreibung (Empfohlen)
- Mediendatei [Feldgruppe] (Pflicht)
 - Link zur Mediendatei (Pflicht)
 - Nutzungsrechte Mediendatei (Pflicht)
 - Rechtswahrnehmung Mediendatei (Bedingt Pflicht)
 - Alternativtext (Empfohlen)

Detail of the WissKI Pathbuilder with the Minimal Metadata set implementation using the N4O Objects Ontology

Resources

- N4O Graph: <https://github.com/nfdi4objects/n4o-graph>
- Ontology and data models: <https://github.com/nfdi4objects/n4o-ontology>
- Terminologies in NFDI4Objects: <https://github.com/nfdi4objects/n4o-terminologies>
- Gerber, A./Wagner, S. (2024): NFDI4Objects Core Ontology und Objektbiografien
<https://zenodo.org/records/10591898>
- Gerber, A., von Hagel, F., AG Minimaldatensatz. (2024). Die
Minimaldatensatz-Empfehlung für Museen und Sammlungen. NFDI4Objects Community
Meeting, Mainz. Zenodo. <https://doi.org/10.5281/zenodo.13771750>
- Wagner, S. (2024). Digitale Objektbiografien für NFDI4Objects. 15. Jahrestagung für
Universitätssammlungen 2024, Neue Rollen, neue Ziele? Universitätssammlungen im
Spannungsfeld von Forschung, Finanzen und Politik, Zürich. Zenodo.
<https://doi.org/10.5281/zenodo.11471183>