

Object Biography for Stained Glass Research

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Autumn School “Modern Stained Glass - Metadata - AI”
15.-18. September 2025
Münster





NFDI4OBJECTS IN A NUTSHELL

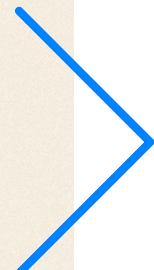


WHO WE ARE



NFDI4Objects aims to meet the infrastructural needs of researchers and practitioners who work on the **material remains** of around three million years of human and environmental history.

WHAT BRINGS US TOGETHER



The specific needs of our community stem from the connection between objects and their archaeological contexts and often complex object biographies.

WE ARE A CONSORTIUM OF

- Universities & Universities of Applied Sciences
- Museums & Collections
- Non-University Research Institution
- Societies & Association
- Libraries & Archives
- Authorities (State / Federal)





NFDI4
Objects

C | A | U

Kiel University
Christian-Albrechts-Universität zu Kiel



DBM
Deutsches Bergbau-Museum
Bochum



UNIVERSITÄT BONN



RheinlandPfalz
GENERALDIREKTION
KULTURELLES ERBE



HOCHSCHULE MAINZ
UNIVERSITY OF
APPLIED SCIENCES



LEIBNIZ-ZENTRUM
FÜR ARCHÄOLOGIE



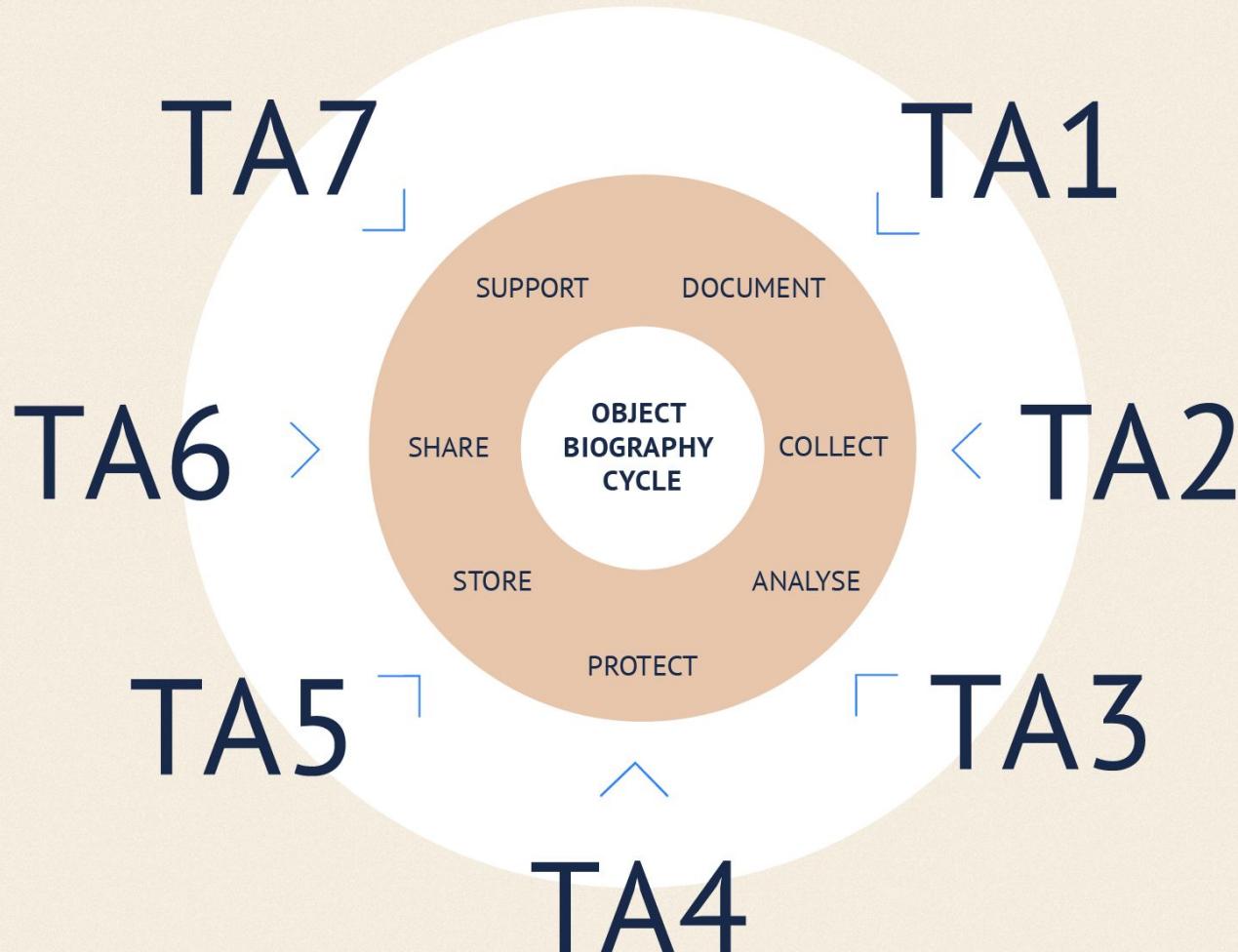
Baden-Württemberg
LANDESAMT FÜR DENKMALPFLEGE
IM REGIERUNGSPRÄSIDIUM STUTTGART



DEUTSCHES
ARCHÄOLOGISCHES INSTITUT



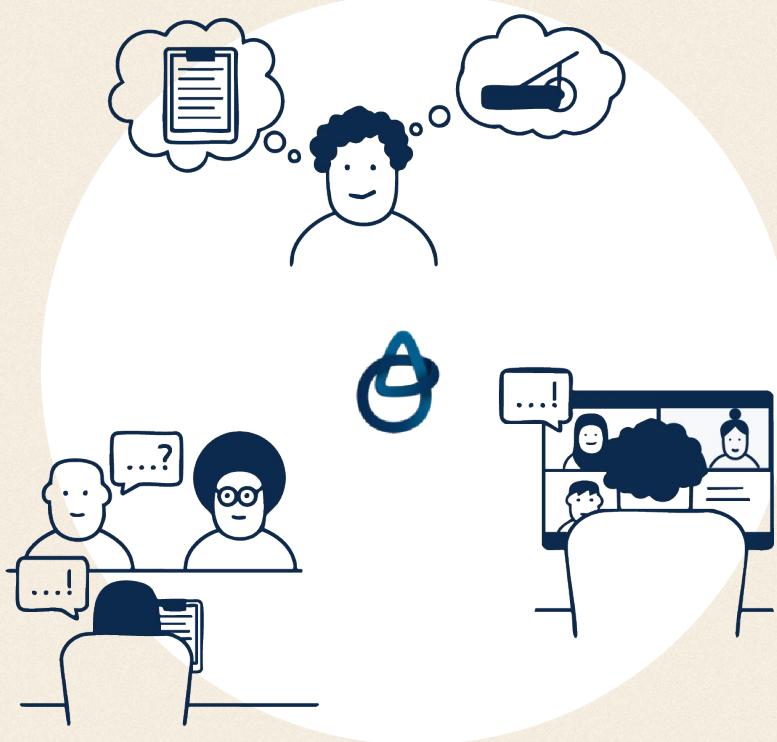
VZG | Verbundzentrale
des GBV



COMMUNITY ENGAGEMENT

TEMPORARY WORKING GROUPS

are inspired by the needs of the community and triggered by activities outlined in the work program, they also discuss drafts and developments



TRAILs

Task Related Activities for the Implementation of Services

COMMUNITY CLUSTER serve to integrate communities that are not yet part of the work program and to incorporate individual expertise, particularly from neighboring disciplines or new fields of expertise.



30.09. - 02.10.2025

NFDI4Objects Community Meeting

Deutschen Bergbaumuseum Bochum

HOW TO GET IN TOUCH WITH US

Website:

<https://www.nfdi4objects.net/en/>

NFDI4Objects

Eine Forschungsdateninfrastruktur für die materiellen Hinterlassenschaften der Menschheitsgeschichte

Aktuelles

Dienste

Commons

Helpdesk

Neuigkeiten und Aktivitäten

Unser Dienstesportfolio

Die Wissensammlende

Direkter Kontakt

Home / Portal / Helpdesk

Helpdesk

Do you have research data management-specific topics that NFDI4Objects should work on?

Would you like to get actively involved, do you want to participate in our working groups?

Then contact us.

We are happy to help.

Name:

Given Name:

Email:

Title:

Your message:

a Protection statement.

@nfdi4objects
Konsortium für Forschungsdaten zum materiellen Erbe der Menschheitsgeschichte

Veranstaltungen

- Ask your Data-Dude
- Rückblick CM24
- Rückblick Regionaltreffen

Newsletter & Support

- Helpdesk
- Newsletter
- Zenodo Community Space

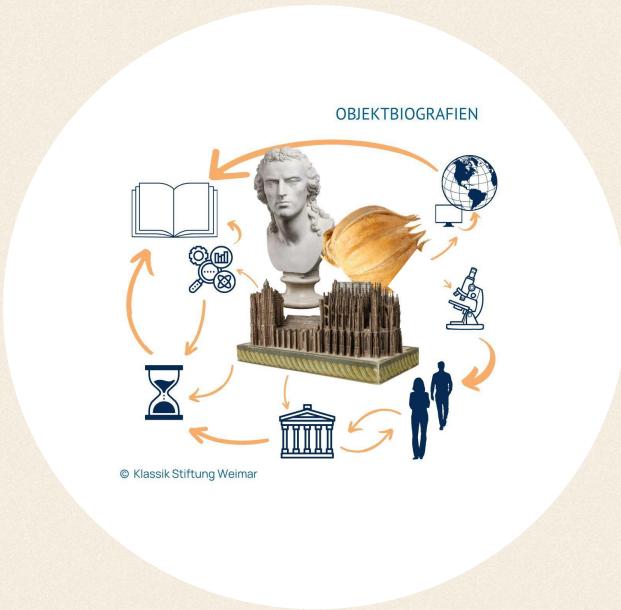
Community Cluster (CCs)

Helpdesk:
<https://www.nfdi4objects.net/en/portal/helpdesk/>

Research Data in NFDI4Objects



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, **conservation** measures, **building** research, **research** of cultural monuments
- Various (meta)data, formats, systems, models, ontologies, authority files, terminologies, ...
- Orientation towards the object data lifecycle

RESEARCH DATA IN NFDI4OBJECTS



- Objects → related to **place and time** (e. g. place of origin, place of discovery, place of storage, always in the **context** of time periods...)
- Mapping of places and processes (who, when, where, what) → **Object Biographies**
 - Modelling with attribute events
- **Uncertainty** and **inaccuracies** ('Looks Celtic, 300-600 BC?', 'Elbe site')
- Relation to **scientific** methods (measurements, analyses...)
- **Heterogeneous** and **unstructured** data (e. g. free text fields and text documents)
- Data needs to be non-public due to theft and looted excavations
- **Special vocabularies** hidden in various systems or under development to cover own data collection needs

THE NFDI4OBJECTS KNOWLEDGE GRAPH

[NFDI4Objects Knowledge Graph](#) [SPARQL](#) [Collections](#) [Repositories](#) [Terminologies](#) [Manual](#)

A collection is an individual set of research data imported into the knowledge graph. Each collection is identified by an URI starting with <https://graph.nfdi4objects.net/> where its data has been published.

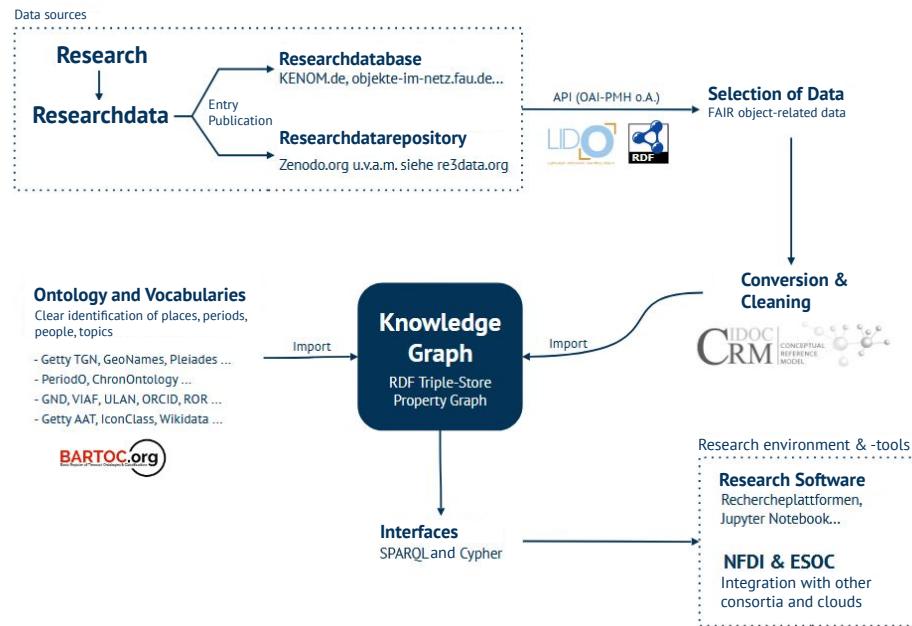
Information about collections is stored in the RDF graph <https://graph.nfdi4objects.net/collection/>.

Table	Response	14 results
collection	name	
1 n4oc:1	Ur- und Frühgeschichtliche Sammlung der FAU	
2 n4oc:2	Paläontologischen Sammlung der FAU Geowissenschaftliche Sammlung der FAU	
3 n4oc:3	Graphische Sammlung der FAU	
4 n4oc:4	Musikinstrumentensammlung der FAU	
5 n4oc:5	Medizinische Sammlung der FAU	
6 n4oc:6	Schulgeschichtliche Sammlung der FAU und Schulmuseum	
7 n4oc:7	KENOM Virtuelles Münzportal (via LIDO)	
8 n4oc:8	Samian Research Database	
9 n4oc:9	Linked Open Ogham	
10 n4oc:10	African Red Slip Ware	
11 n4oc:11	Digitale Sammlungen der Museen der Klassikstiftung Weimar	
12 n4oc:12	Graphische Sammlung des Germanischen Nationalmuseums	
13 n4oc:13	KENOM (via Nomisma)	
14 n4oc:16	Berliner Kunstkammer	

Showing 1 to 14 of 14 entries

[license](#) | [imprint](#) | [contact](#)

<https://graph.nfdi4objects.net/>



- based on **CIDOC CRM** and **LIDO XML**
- **Terminologies** for the uniform description of research data

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Information about collections is stored in the RDF graph <https://graph.nfdi4objects.net/collection/>.

Table	Response	14 results	
collection	name	repository	license
1	n4oc_1	Ur- und Frühgeschichtliche Sammlung der FAU	wd:Q124695065
2	n4oc_2	Paläontologischen Sammlung der FAU Geowissenschaftliche Sammlung der FAU	wd:Q124695065
3	n4oc_3	Graphische Sammlung der FAU	wd:Q124695065
4	n4oc_4	Musikinstrumentensammlung der FAU	wd:Q124695065
5	n4oc_5	Medizinische Sammlung der FAU	wd:Q124695065
6	n4oc_6	Schulgeschichtliche Sammlung der FAU und Schulmuseum	wd:Q124695065
7	n4oc_7	KENOM Virtuelles Münzportal (via LIDO)	wd:Q21040628
8	n4oc_8	Samian Research Database	wd:Q22661177
9	n4oc_9	Linked Open Ogham	wd:Q22661177
10	n4oc_10	African Red Slip Ware	wd:Q22661177
11	n4oc_11	Digitale Sammlungen der Museen der Klassikstiftung Weimar	wd:Q14536091
12	n4oc_12	Graphische Sammlung des Germanischen Nationalmuseums	wd:Q478695
13	n4oc_13	KENOM (via Nomisma)	wd:Q24578999
14	n4oc_16	Berliner Kunstkammer	wd:Q22661177

Showing 1 to 14 of 14 entries

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<https://graph.nfdi4objects.net/>

- serves to integrate all data sources from the consortium and further networking within the NFDI
- provides a semantic layer to interlink objects, places, persons, and concepts for cross-domain search and reuse
- already in operation and can be used with initial data sets

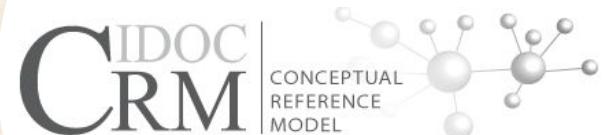


WHY CIDOC CRM AND LIDO?



- Proven tools for **standardisation** in the field of digital cultural heritage
- Integration of heterogeneous and scattered information
- Annotation of various file types, such as images, 3D, text
- Focus on **detailed presentation of provenance information** to **illustrate the history of an object from its creation to its loss/current location**
- Consideration of **attributions to actors and groups, places, events and time periods** even outside the collection, museum or own research context
- Goal: To offer information outside one's own (collection) context in a comprehensible and reusable form

WHY CIDOC CRM AND LIDO?



- Developed by the Documentation Committee of the International Council of Museums (ICOM CIDOC)
- Ontology and standard for **representing cultural heritage data** in the semantic web
- Consists of approx. 90 classes (e.g. physical object, place, actor, time, events, activities, etc.) and approx. 150 relations/properties for **contextualising** the information
- Ensures long-term interpretability and interoperability
- **Event-centred**
- **Version 7.1.3** as the current ISO 21127 standard
Starting point for developments in NFDI4Objects

WHY CIDOC CRM AND LIDO?



- XML schema for exchange and standardised recording of **object information** from relational databases
- Aggregation of cultural heritage data (harvesting format)
- Based on CIDOC CRM, CDWA (Categories for the description of works of art) and Spectrum
- Few mandatory elements, therefore various application profiles, e.g. DDB, colonial contexts, painting and graphic art, sculpture, architecture
- Contains Metadata on the Physical Object, Metadata on Reproductions/Representations, Administrative Metadata
- LIDO terminologies (value lists)

MINIMUM DATA RECOMMENDATION FOR MUSEUMS AND COLLECTIONS



- Supporting museums and collections in publishing their object data online
- Low-threshold communication of relevant standards (CIDOC CRM, LIDO, EDM, etc.)
- Awareness of data quality
- Facilitating the integration of standard data and controlled vocabularies
- Important use case: data exchange and data delivery to portals
- Concordances with other standards and specifications
- Provides recording tips and vocabulary recommendations
- [https://wiki.deutsche-digitale-bibliothek.de/spaces/DFD
/pages/218628097/English+Translation+Minimum+Recommendation+for+Museums+and+Collections+v1.0.1](https://wiki.deutsche-digitale-bibliothek.de/spaces/DFD/pages/218628097/English+Translation+Minimum+Recommendation+for+Museums+and+Collections+v1.0.1)

MINIMUM DATA RECOMMENDATION FOR MUSEUMS AND COLLECTIONS

www.minimaldatensatz.de

Data fields that are usually populated during or after export from the local database system:

- Record ID (mandatory)
- Record language (mandatory)
- Record type (mandatory)
- Repository of object (mandatory)
- Institution providing record (mandatory)
- Media file: type of media file (mandatory)
- Usage rights of metadata record (mandatory)
- Link to published metadata record (recommended)
- Record date (recommended)

Data elements that are usually populated during data entry:

- Object title or name (mandatory)
- Object type or designation (mandatory)
- Classification (recommended)
- Inventory number (mandatory)
- Object description (recommended)
- Materials (recommended)
- Techniques (recommended)
- Measurements (recommended)
- Event in object history [element set] (mandatory)
 - Event type (mandatory)
 - Person/corporate body (conditionally mandatory)
 - Date (conditionally mandatory)
 - Place (conditionally mandatory)
- Subject keyword (recommended)
- Media file [element set] (mandatory)
 - Link to media file (mandatory)
 - Usage rights of media file (mandatory)
 - Rights holder of media file (conditionally mandatory)
 - Alternative text (recommended)

TASKS OF TA 6 TEAM INTEGRATION AND HARMONISATION

<https://www.nfdi4objects.net/en/portal/tas/ta6/>



COMPETENCE IN
RESEARCH
DATA &
INFORMATION



Friedrich-Alexander-Universität
Erlangen-Nürnberg

| KLASSEK
STIFTUNG
WEIMAR

- Development of an **Object Core Metadata Profile (N40 OCMDP)** in cooperation with the TA 1-4 as a core schema for data integration in NFDI4Objects and **MaCHECO** (Material Cultural Heritage Crosswalk Ontology) **with TA 2** to define basic entities (classes) in individual ontologies through a hierarchical crosswalk to CIDOC CRM (**via a TWG**)
- Development of the NFDI4Objects **Object Ontology N40 OO** based on the CIDOC CRM 7.1.3. and other ontologies **to describe the Object Biography**
- Development, implementation and proof of concept of a knowledge graph to represent **Object Biographies** in the **VRE WissKI (“Maximum Dataset”)** based on N40 OO
- Organisation of the **Community Cluster “Authority Files and Community-driven Vocabularies”**
- Memberships: CRM SIG, LIDOde WG, WG Minimum Data Recommendation, WG Digital Art History, DHD

Object Biography in NFDI4Objects

WHAT IS AN OBJECT BIOGRAPHY

- Transfers the concept of **biography** to material cultural heritage
- Attaches any **information** (contexts, paths, meanings, interpretations) to an object
 - **Objects** (artifacts, plants, animals, rocks)
 - **Phases and contexts**
 - **Actors, places, time** (who? where? when? context?)
 - **Sources** (pictorial and written material, data, findings, ...)



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

WHAT IS AN OBJECT BIOGRAPHY



Fig.: Unknown (Apulian), red-figure oinochae with cloverleaf-shaped mouth, 370 to 340 BC, Klassik Stiftung Weimar

- Introduced in academia by anthropologist Igor Kopytoff in 1986 in 'The Biography of Things':
 - **Objects are individuals** due to their specific meaning and individual history.
 - Focuses on **social relationships** between object and actor.
 - **Transitional moments** are central → breaks in context and meaning.
- Term used especially in **material culture**
 - such as art history, ethnology or archaeology, disciplines that explore the 'life story' of objects.

WHAT IS AN OBJECT BIOGRAPHY

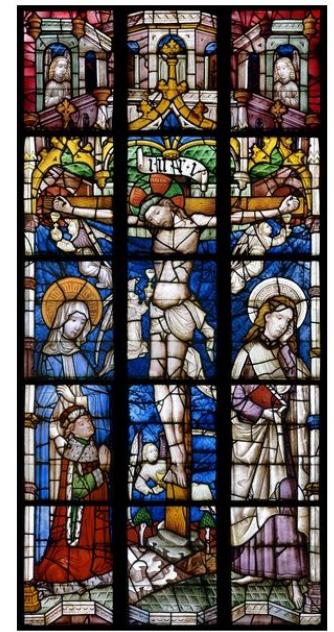
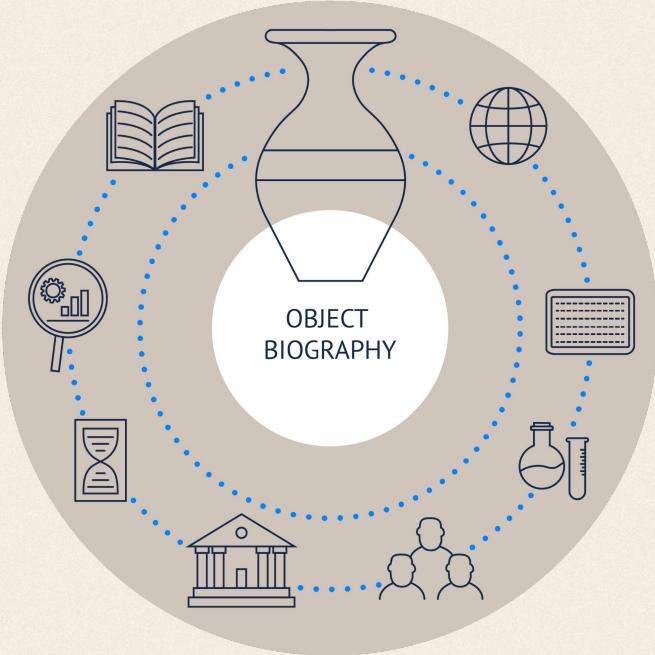


Fig.: Crucifixion of Christ, montage, Bad Wilsnack, St. Nicholas Church (1460/70), CVMA Germany Potsdam/Berlin-Brandenburg Academy of Sciences, photo: Renate Roloff/Holger Kupfer.

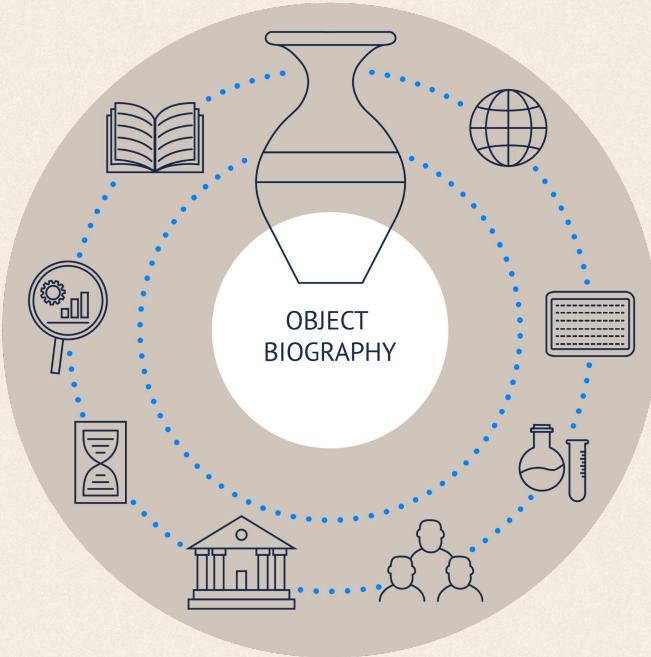
- Criticism of the term (e.g. Hans Peter Hahn 2015; Kim Siebenhüner 2017): risk of simplification;
 - biography suggests that something is alive, is an actor, has a beginning and an end;
 - further problems arise with **individual objects vs. multi-part objects** (e.g. buildings);
 - **fragmentation** (e.g. with shards: what is the main object?);
- Objects do not live or act, but can certainly have an **inviting or appealing character**, which in turn leads to certain ways of dealing with them (Jung)
- Peter Braun and Matthias Jung: Merit of the term in that **new questions about objects can be asked** and **changes in meaning** are brought to the fore.
- **Metaphorical** use of the term
- → Representation of the **object's history**

WHAT IS A DIGITAL OBJECT BIOGRAPHY



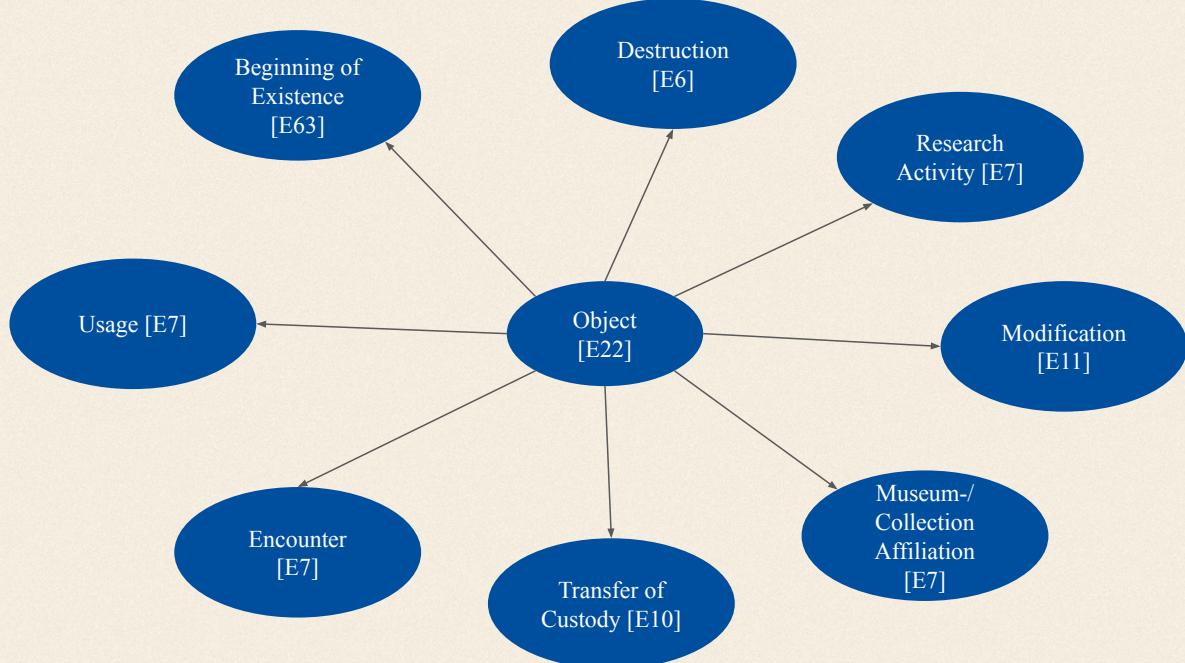
- Transfers the concept of object biography to the digital realm;
- **Event-based data model: contextualisation** of assigned object information, time, place, actors and sources across various events from creation/production to the present day;
- **Who, when, where, what, how**
- Networks data and information that is usually heterogeneous and distributed across various institutions;
- Object biography as a '**maximum data set**';
- Takes into account **information provenance, ambiguity and contradictions**.

CHANCES OF THE DIGITAL OBJECT BIOGRAPHY



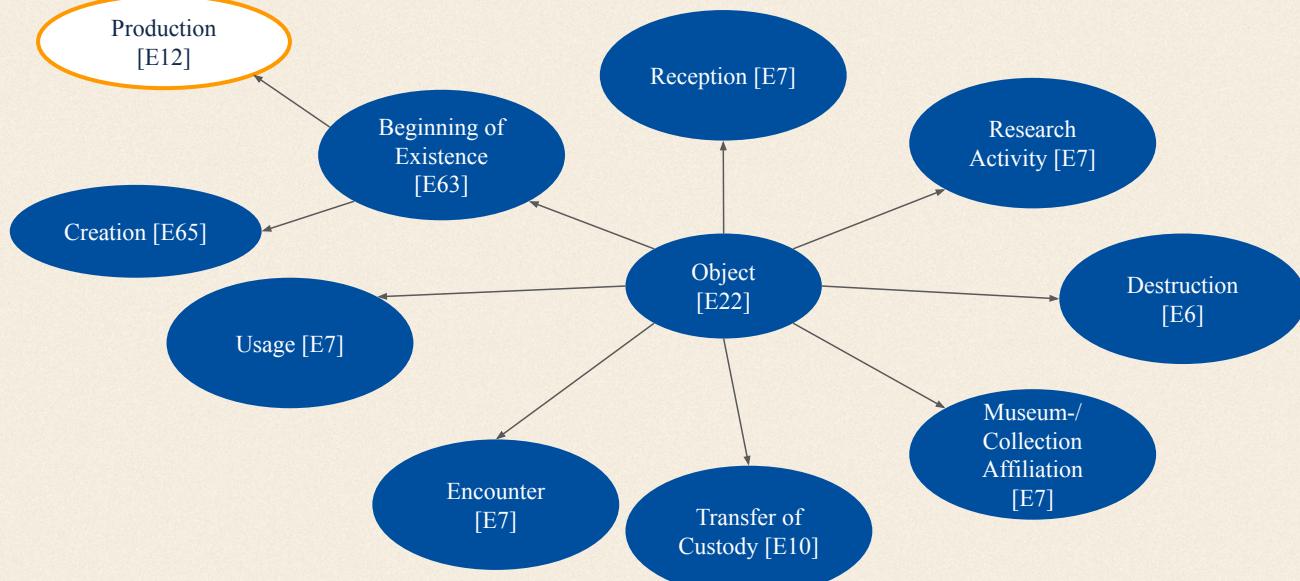
- Enables integration of **heterogeneous and distributed information**,
- detailed presentation of **provenance information** above ownership/acquisition,
- based on the indication of the origin of information, as **reconstruction**,
- creates a **meta-perspective on knowledge objects**, as previous object documentation has been carried out from the perspective of the current collection,
- **equal account of attributions** by actors and groups outside a collection, a museum or a scientific context, such as societies of origin, popular culture, etc.;
- can be fully integrated into future object catalogues and offers contexts and categories that were not previously part of the classic documentation canon.

OBJECTS AND EVENTS / CONTEXT



E22 Human-Made Object
E63 Beginning of Existence
E65 Creation
E12 Production
E10 Transfer of Custody
E11 Modification
E5 Event
E7 Activity
E6 Destruction

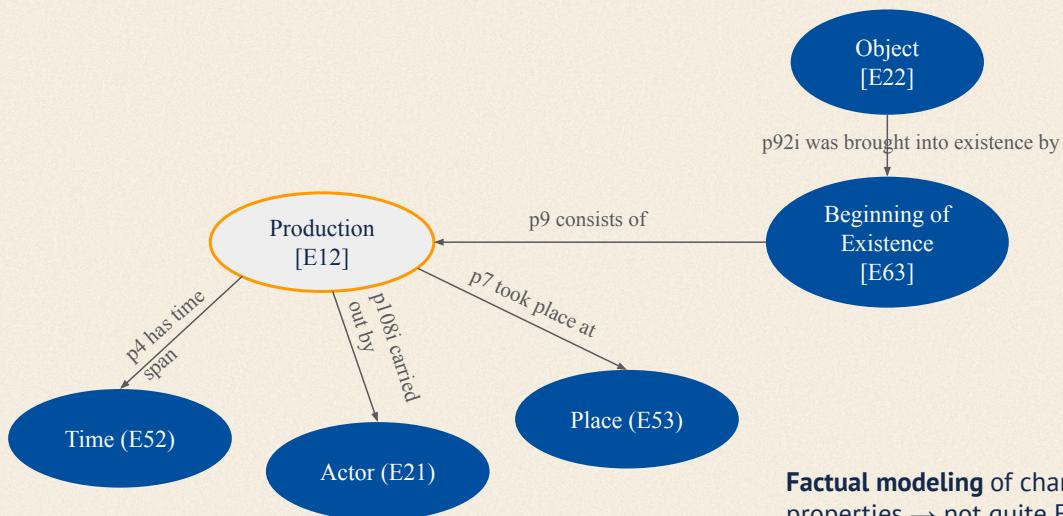
CHARACTERISTICS OF THE DATA MODEL



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



CHARACTERISTICS OF THE DATA MODEL

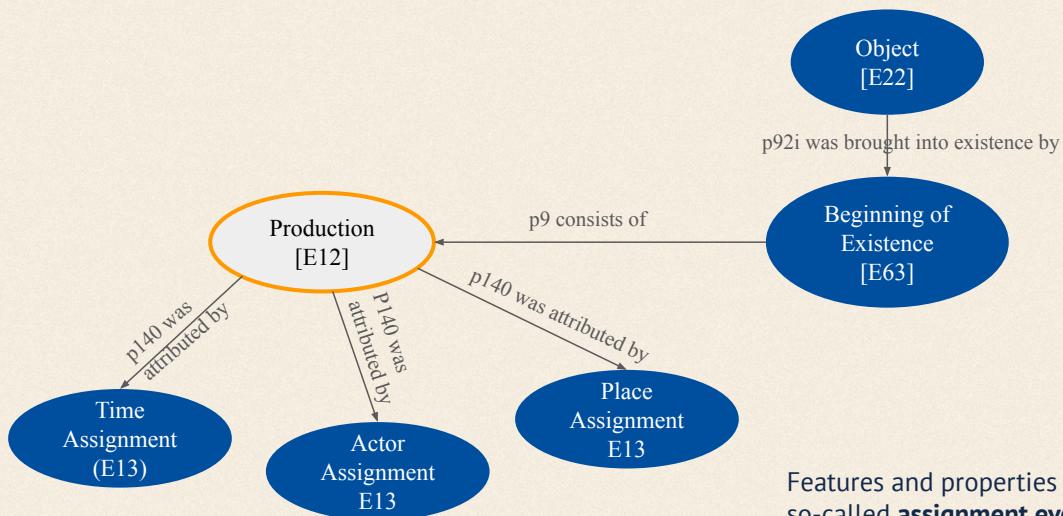


Factual modeling of characteristics and properties → not quite FAIR!
How can information provenance or uncertainties be mapped in a structured way?



E22 Man-Made Object
E63 Beginning of Existence
E12 Production
E52 Time Span
E21 Person
E53 Place

CHARACTERISTICS OF THE DATA MODEL



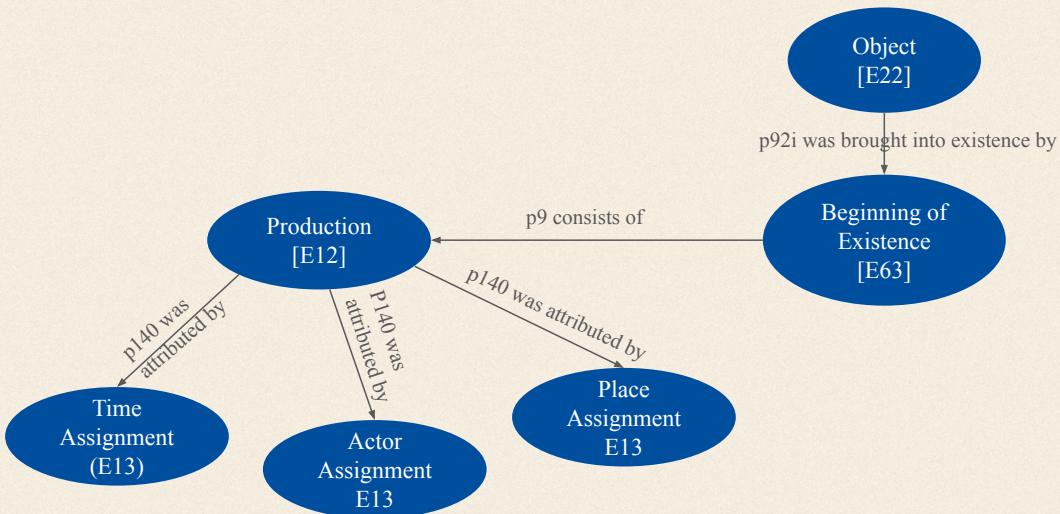
Features and properties are modeled using so-called **assignment events (= attribute assignments)**.

Events allow information to be better contextualized.

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



CHARACTERISTICS OF THE DATA MODEL: ASSIGNMENTS



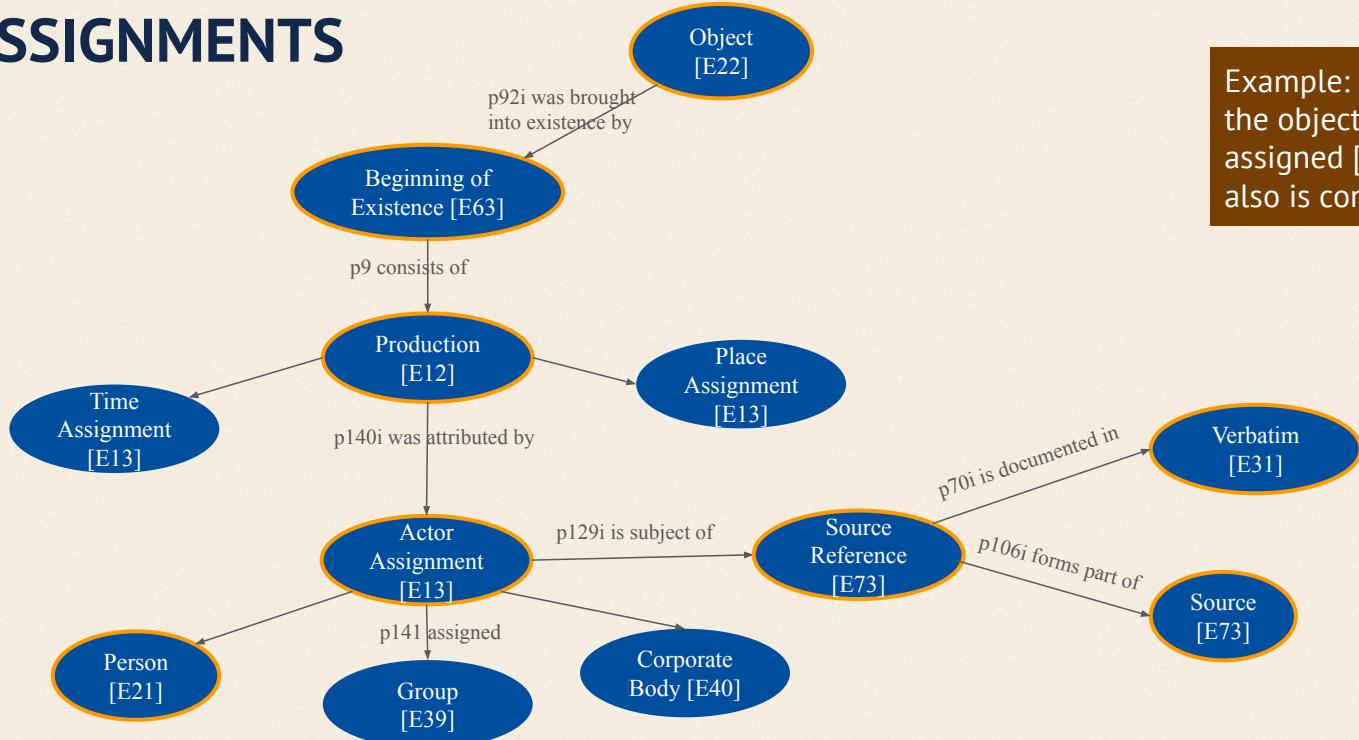
E22 Man-Made Object
E63 Beginning of Existence
E12 Production
E13 Attribute Assignment

Scope Note E13 Merkmalszuweisung:

„Diese Klasse umfasst die **Aktionen des Feststellens von Eigenschaften** eines Gegenstandes oder von Beziehungen zwischen zwei Gegenständen oder begrifflichen Konzepten. [Sie] erlaubt die Dokumentation, wie die jeweilige Feststellung zu Stande kam, und wessen Meinung es war. Alle in solch einer Aktion zugewiesenen Merkmale oder Eigenschaften können auch so verstanden werden, als ob sie direkt am jeweiligen Gegenstand oder begrifflichen Konzept fest gemacht wurden, möglicherweise auch als eine **Sammlung von widersprüchlichen Werten**. [...]“.

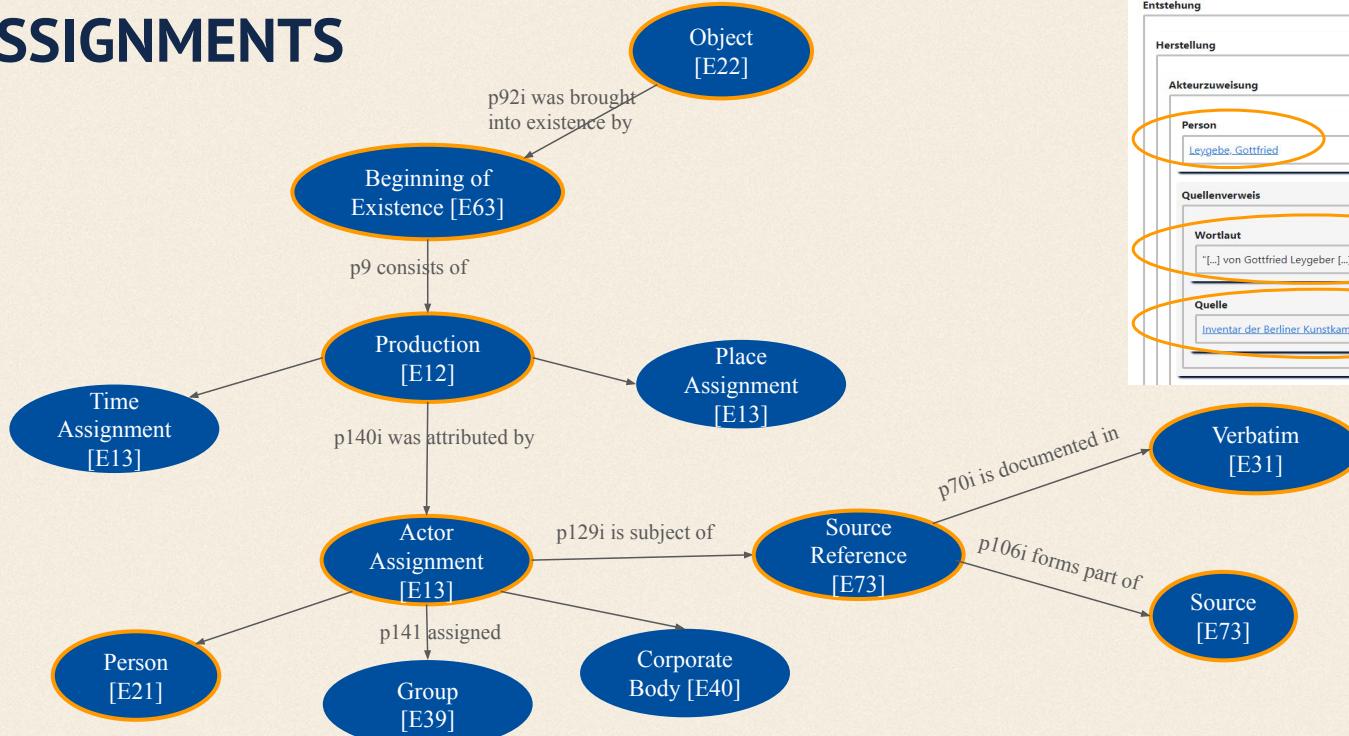
(Doerr / Lampe / Krause 2011, S. 56)

CHARACTERISTICS OF THE DATA MODEL: ASSIGNMENTS



Example: a production event [E12] in the object history to which an actor is assigned [E13] and the information also is connected with the source.

CHARACTERISTICS OF THE DATA MODEL: ASSIGNMENTS



Entstehung	
Herstellung	
Akteurzuweisung	
Person	Leygeber_Gottfried
Quellenverweis	
Wortlaut	[...] von Gottfried Leygeber [...] verfertigt [...]
Quelle	Inventar der Berliner Kunstkammer von 1694, S. 232

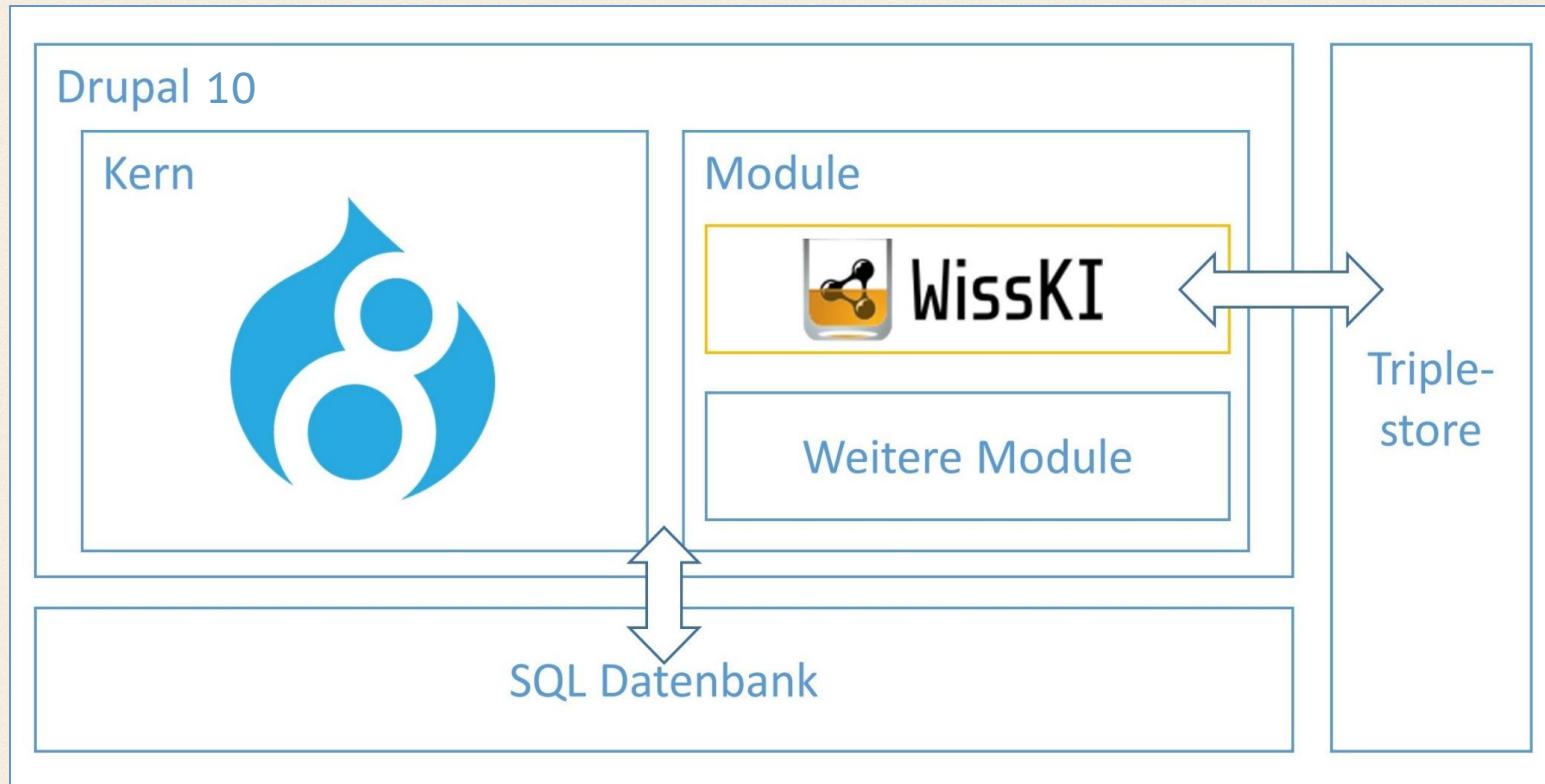
IMPLEMENTATION IN WISSKI



- Scientific communication infrastructure
 - Virtual research environment for scientific research data
 - For documenting, researching and publishing cultural heritage
 - DFG project, LIS (2009–2011, 2014–2016)
 - Open source and free to download
 - Web-based
 - Modular and customisable
 - Support for CIDOC CRM for semantic data indexing
 - Ideal for the creation and use of linked open data
 - Standard data support (GND, Geonames, Getty, etc.)
 - Import/export interfaces (SPARQL, ODBC, REST API)



THE ARCHITECTURE OF WISSKI



WISSKI PATHBUILDER

- Tool for implementing data models
- Mapping semantic paths to entry forms in the front end
- in most cases using CIDOC CRM

Pathbuilders ☆

+ Add Pathbuilder + Path usage + Export Pathbuilder and Ontologies

name	Operations
NFDI4Objects Objektbiografie	Edit
WissKI Linkblock (Linkblock)	Edit

Back to site | Administration

Configuration ☆

WissKI

Pathbuilders Administer the Pathbuilder entities

WissKI Salz Adapters WissKI Salz Module Settings

WissKI Bulkedit Tables Tables for Bulk editing

WissKI Configuration Specify display configurations, Flush caches etc.

WissKI DOI Settings Change WissKI DOI Settings

WissKI Data Merge Merge data duplicates in your system

WissKI IIIF Settings Change WissKI IIIF Settings

THE DATA MODEL IN WISSKI PATHBUILDER

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	<button>Edit</button> <button>▼</button>
❖ 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	<button>Edit</button> <button>▼</button>
❖ Entstehung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_was_brought_into_existence_by → http://erlangen-crm.org/211015/E63_Beginning_of_Existence]	<input checked="" type="checkbox"/>		Unlimited	<button>Edit</button> <button>▼</button>
❖ Kreation	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_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	<button>Edit</button> <button>▼</button>
❖ Akteurzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_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/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Actor_Assignment	<input checked="" type="checkbox"/>	Entity reference	Unlimited	<button>Edit</button> <button>▼</button>
❖ Zeitzuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_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/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Time_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	<button>Edit</button> <button>▼</button>
❖ Ortszuweisung	https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_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/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Place_Assignment	<input checked="" type="checkbox"/>	Entity reference	1	<button>Edit</button> <button>▼</button>
❖ Herstellung	Group [https://nfdi4objects.wisski.data.fau.de/ontology/Object → http://erlangen-crm.org/211015/P92l_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/P140l_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Production]	<input checked="" type="checkbox"/>		Unlimited	<button>Edit</button> <button>▼</button>

View of the WissKI Pathbuilder with the semantic paths of the object biography (excerpt)

THE DATA MODEL IN WISSKI PATHBUILDER

❖ 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/E12_Production]

❖ 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/E12_Production → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Actor_Assignment

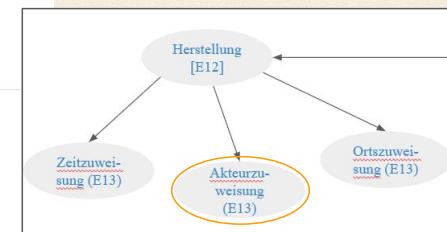
❖ Zeitzuweisung

<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/E12_Production → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Time_Assignment

❖ 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/E12_Production → http://erlangen-crm.org/211015/P140i_was_attributed_by → https://nfdi4objects.wisski.data.fau.de/ontology/Place_Assignment

View of the WissKI Pathbuilder with the semantic paths of the object biography (production – actor assignment)



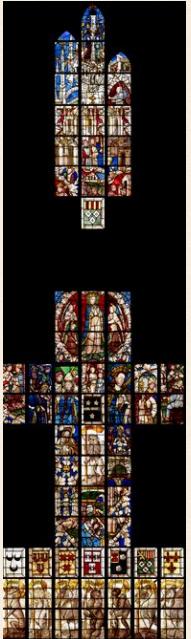
STAINED GLASS CONTAINS INFORMATION ABOUT...



Who did what
where when and
how?

- actors (*GND, Wikidata, VIAF, ORCID*), for ex.
 - people connected with the church itself, like bishops or pastors
 - donators
 - artists
 - workshops
 - restorers
- dating (*Wikidata*)
- geodata (*Geonames, WHG, Bamberger Vocabulary*)
 - (former) location of the stained glass
 - position in the (part of) building
 - (former) position in the window
 - information about the building (*Dehio, Wikidata, GND*)
- **events** like creation, production, donation, change of custody, restoration, destruction
 - always in **context with actors, places and time**

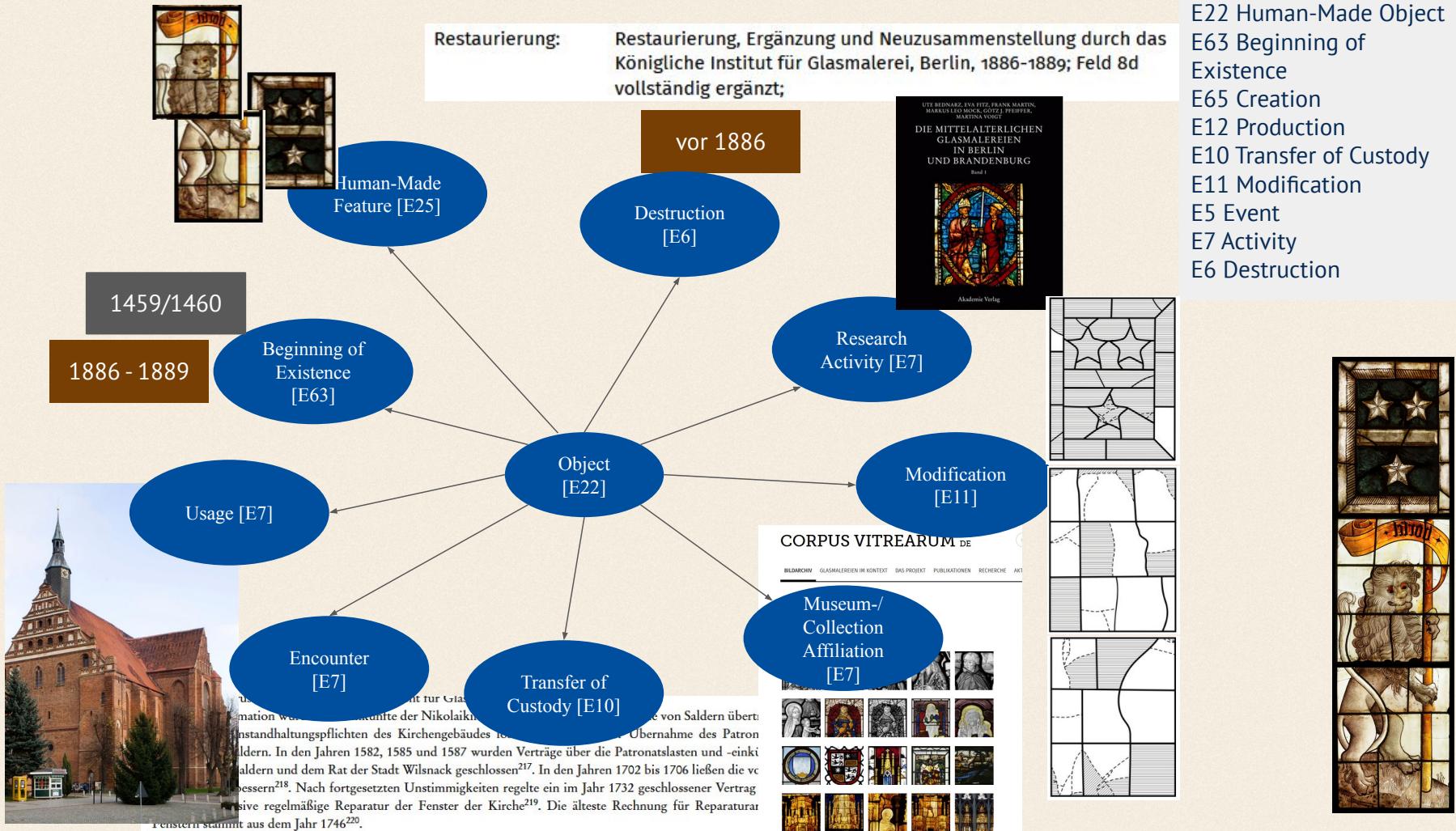
STAINED GLASS CONTAINS INFORMATION ABOUT...



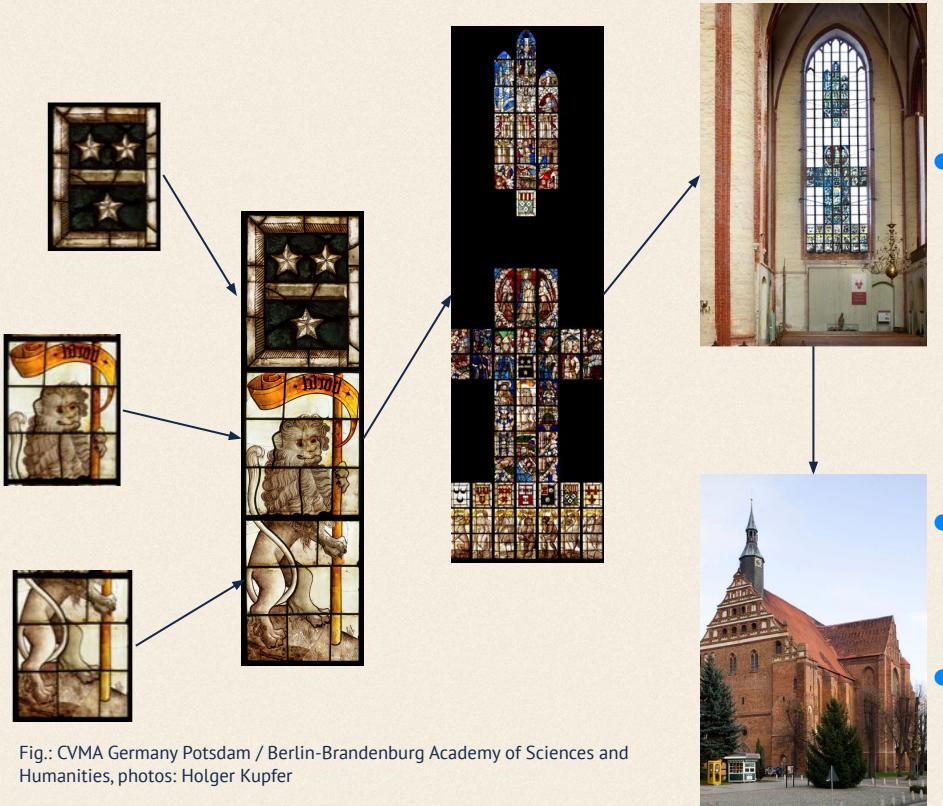
Wilsnack, St. Nikolai, exterior view from the southwest,
CVMA Germany Potsdam/Berlin-Brandenburg Academy
of Sciences and Humanities, photo: Holger Kupfer.

Fig.: Window nVIII, overall view, installation, Bad Wilsnack, St. Nicholas
Parish Church, CVMA Germany Potsdam / Berlin-Brandenburg Academy of
Sciences and Humanities, photo: Holger Kupfer

- social and political events (*Wikidata*)
- iconography (*Iconclass*)
- inscription
- material (*Getty Art & Architecture*)
- technics (*Getty Art & Architecture*)
- objects that are related to each other
- reception
- research context
- metadata of (digital) reproductions
 - images, 3D model, sketch/painting, ...
- sources



IT IS ALL ABOUT CONTEXT



- Each part of the Stained glass is **an own data set with its own events** like
 - production
 - modification
 - collection affiliation
 - transfer of custody
 - research activity
- Events are connected with
 - actors that deal with it
 - datings
 - places the object was at
 - measures
 - sources that contain the informations
- With **part of-relations** the single objects are connected to an object-group.
- A windows scene can be connected to the window in the church, to a part of the building and also to the building itself via part of-relations, too.

[Home](#) / [Navigate](#)

Löwe mit Wappenbanner (n VIII, 6–8d)

[View](#) [Edit](#) [Delete](#) [Triples](#) [Revisions](#) [DOI](#) [Devel](#)**ID** Löwe mit Wappenbanner (n VIII, 6–8d)**IST TEIL VON OBJEKT**[Fenster n VIII](#)[Nördliches Querhaus](#)[St. Nikolaus](#)

► ENTSTEHUNG

▼ MODIFIKATION

▼ TITEL/BEZEICHNUNG

Restaurierung 1886-1889

▼ AKTEURZUWEISUNG

[Königliches Institut für Glasmalerei](#)

ROLLE: Restaurator

ABBILDUNG



besteht aus Objekt

[Löwe mit
Wappenbanner,
Unterteil \(nVIII, 6d\)](#)[Löwe mit
Wappenbanner,
Oberteil \(nVIII, 7d\)](#)[Wappenbanner der
Familie van Borselen
\(nVIII, 8d\)](#)gewendet bei
Herstellung von
Objekt[Fenster n VIII](#)

INTERESTED IN CREATING AN OBJECT BIOGRAPHY?

Entwicklungsinstanz für NFDI4Objects

[View](#) [Edit](#) [Delete](#) [Revisions](#) [Devel](#)

Im Kontext von NFDI4Objects, Task Area (TA) 6 "Qualification, Integration, Harmonisation" entwickelt das FAU Competence Center for Research Data and Information der FAU Erlangen-Nürnberg in Zusammenarbeit mit der Klassik Stiftung Weimar eine integrierte Wissensbasis über Objekte. Dabei entsteht u.a. auf Grundlage bestehender Modelle und Standards ein [CIDOC CRM](#) basiertes Datenmodell zur Beschreibung und Repräsentation von Objektkenndaten (ObjectCore) und eines zur Repräsentation von Objektbiografien, die hier entwickelt werden.

Das Datenmodell für Objektbiografien wird anhand von Use Cases erprobt, u.a. die sog. Eisenstaublunge Friedrich Albert von Zenkers, deren Biografie in enger Zusammenarbeit mit dem Institut für [Anatomie der FAU](#) rekonstruiert wird, oder der Behaim Globus von 1492, der älteste erhaltene Erdglobus, der heute im [Germanischen Nationalmuseum](#) in Nürnberg verwahrt wird. Weitere Objektbiografien entstehen in Zusammenarbeit mit Provenienzforscher*innen, Sammlungs- und Fachexpert*innen deutschlandweit.

- Eine Übersicht unserer [Use Cases](#)
- Zur Objektnavigation

Diese Forschungsumgebung basiert auf der Software [WissKI](#) und dient der Implementierung und der Erprobung der Tragfähigkeit anhand von Use Cases. Die Templates für die beiden Knowledge Graphen und die ihnen zugrundeliegende CoreOntology werden regelmäßig im aktuellen Entwicklungstand auf [GitHub](#) veröffentlicht.

Für mehr Informationen:

Gerber, A., & Wagner, S. (2024, Oktober 14). Development of the N4O Objects Ontology, Object Biography data model and Minimal metadata set in NFDI4Objects. Zenodo. <https://doi.org/10.5281/zenodo.13936583>

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Abbildung: Schematische Darstellung einer Objektbiografie © Sarah Wagner, CC-BY 4.0



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 - Sarah Wagner, Friedrich-Alexander-University Erlangen-Nuremberg, sarah.wagner@fau.de
- Our Use Cases:
 - https://nfdi4objects.wisski.data.fau.de/use_cases
- The NFDI4Objects Object Ontology:
 - <https://github.com/nfdi4objects/n4o-ontology>



Resources:

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Thank you for your attention!

<https://www.nfdi4objects.net/>
<https://linktr.ee/nfdi4objects>

NFDI4Objects ist Teil der