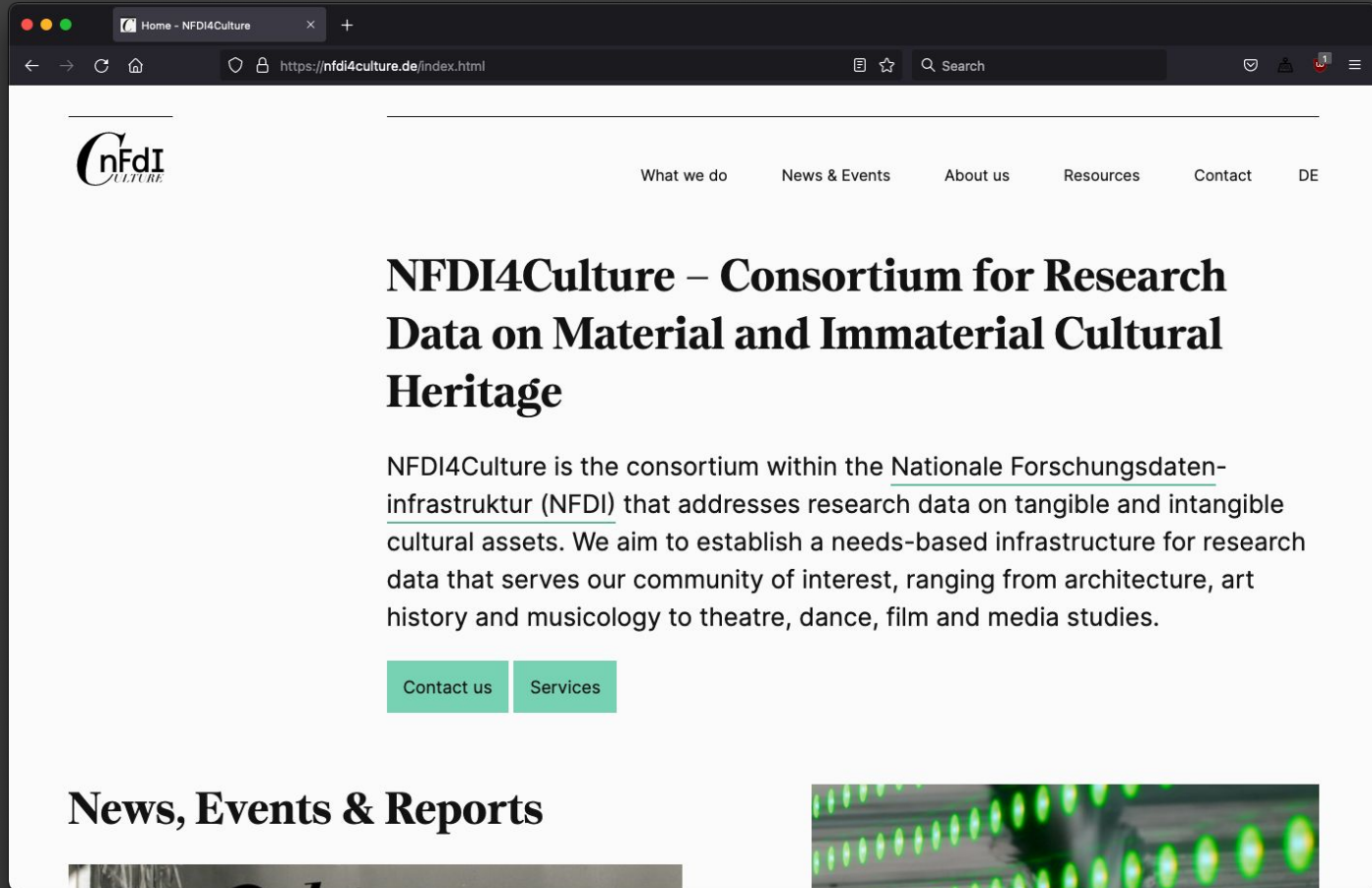


Wikibase and the challenges and possibilities of knowledge graphs for RDM in NFDI4Culture

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Dr. Lozana Rossenova
Paul Duchesne





The image shows a browser window displaying the homepage of NFDI4Culture. The browser's address bar shows the URL <https://nfdi4culture.de/index.html>. The website features a navigation menu with links for 'What we do', 'News & Events', 'About us', 'Resources', 'Contact', and 'DE'. The main heading is 'NFDI4Culture – Consortium for Research Data on Material and Immaterial Cultural Heritage'. Below this, a paragraph describes the consortium's mission: 'NFDI4Culture is the consortium within the Nationale Forschungsdateninfrastruktur (NFDI) that addresses research data on tangible and intangible cultural assets. We aim to establish a needs-based infrastructure for research data that serves our community of interest, ranging from architecture, art history and musicology to theatre, dance, film and media studies.' Two teal buttons labeled 'Contact us' and 'Services' are positioned below the text. At the bottom left, the section 'News, Events & Reports' is visible, accompanied by a partial image of a person. On the bottom right, there is a decorative image of green fiber optic lights.

Home - NFDI4Culture

https://nfdi4culture.de/index.html

Search

CnFdi
CULTURE


What we do News & Events About us Resources Contact DE

NFDI4Culture – Consortium for Research Data on Material and Immaterial Cultural Heritage

NFDI4Culture is the consortium within the Nationale Forschungsdateninfrastruktur (NFDI) that addresses research data on tangible and intangible cultural assets. We aim to establish a needs-based infrastructure for research data that serves our community of interest, ranging from architecture, art history and musicology to theatre, dance, film and media studies.

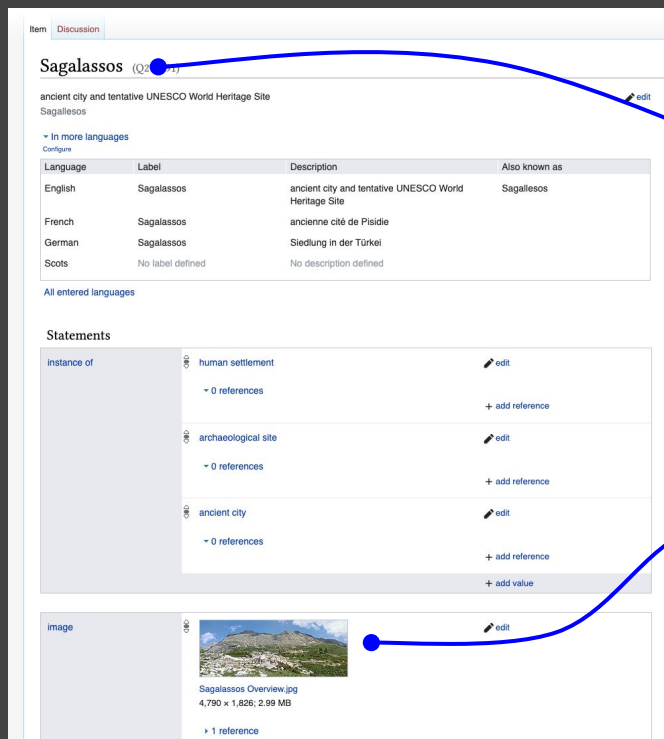
Contact us Services

News, Events & Reports



Task area 1: Data Capture and Enrichment

MVP (minimum viable product): Connecting a Wikibase instance for LOD management with the Kompakkt viewer for 3D image preview and annotation; Data upload pipeline via OpenRefine;



Item Discussion

Sagalassos (Q22019)

ancient city and tentative UNESCO World Heritage Site

Sagalassos

In more languages

Language	Label	Description	Also known as
English	Sagalassos	ancient city and tentative UNESCO World Heritage Site	Sagalassos
French	Sagalassos	ancienne cité de Pisidie	
German	Sagalassos	Siedlung in der Türkei	
Scots	No label defined	No description defined	


All entered languages

Statements

instance of

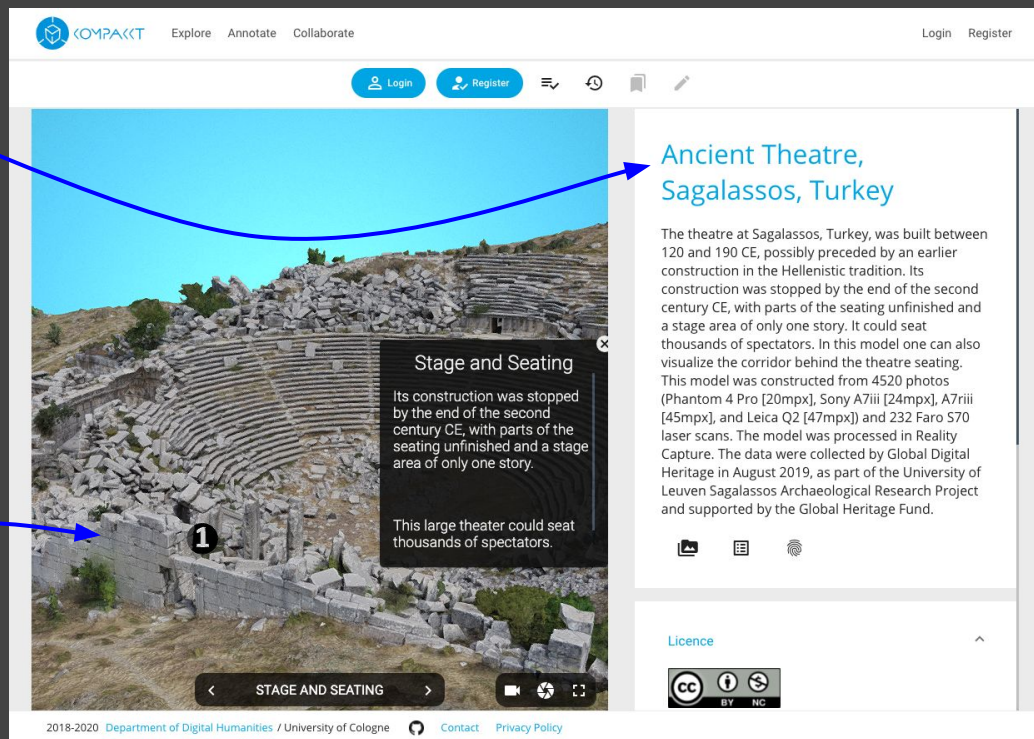
- human settlement
- archaeological site
- ancient city

image



Sagalassos Overview.jpg
4,790 x 1,826; 2,99 MB

1 reference



COMPAKKT Explore Annotate Collaborate Login Register

Ancient Theatre, Sagalassos, Turkey

The theatre at Sagalassos, Turkey, was built between 120 and 190 CE, possibly preceded by an earlier construction in the Hellenistic tradition. Its construction was stopped by the end of the second century CE, with parts of the seating unfinished and a stage area of only one story. It could seat thousands of spectators. In this model one can also visualize the corridor behind the theatre seating.

This model was constructed from 4520 photos (Phantom 4 Pro [20mpx], Sony A7iii [24mpx], A7riii [45mpx], and Leica Q2 [47mpx]) and 232 Faro S70 laser scans. The model was processed in Reality Capture. The data were collected by Global Digital Heritage in August 2019, as part of the University of Leuven Sagalassos Archaeological Research Project and supported by the Global Heritage Fund.

Stage and Seating

Its construction was stopped by the end of the second century CE, with parts of the seating unfinished and a stage area of only one story.

This large theater could seat thousands of spectators.

2018-2020 Department of Digital Humanities / University of Cologne Contact Privacy Policy

What is Wikibase?

- **FOSS** maintained by Wikimedia Germany; Wikidata is the largest public instance of Wikibase
- **Not a single tool, but an “umbrella” of services:**
 - graphical user interface with collaborative and version control features;
 - triple store editable down to the triple statement level via the GUI;
 - SPARQL endpoint with GUI;
 - API for easy programmatic access;
 - wide range of script libraries, as well as user-friendly tools, for data import / export.
- Fulfills the need to provide a friendly environment to **“LOD”-ify cultural data.**
- **Lowering the learning curve** to working with LOD compared to other existing KG tools.

Example wikibase instance

The screenshot shows a web browser window displaying the main page of a Wikibase instance. The browser's address bar shows the URL `https://enrich-nfdi4culture.wiki.opencura.com/wiki/Main_Page`. The page features a dark header with navigation options like 'British English', 'Request account', and 'Log in'. The main content area is titled 'Main Page' and includes a 'Contents' table of contents with seven items. The first item, 'Semantic annotation for 3D cultural artefacts: About our MVP', is expanded to show a detailed paragraph and a bulleted list of tools. The list includes 'OpenRefine', 'Wikibase', and 'Kompakt'. Below this, there are sections for 'About our case study' and 'Adding new data in the archive', each with a list of links.

CnFDI
3D DATA
ENRICHMENT

Main page Discussion Read View source View history Search NFDI4Culture Data Enrichment

Main Page

Contents [hide]

- 1 Semantic annotation for 3D cultural artefacts: About our MVP
- 2 About our case study
- 3 Adding new data in the archive
- 4 Example item pages for different types of data
- 5 Data model reference
- 6 Some example data queries
- 7 Indexes for quick reference

Semantic annotation for 3D cultural artefacts: About our MVP

A suite of tools for semantic annotation of 3D cultural artefacts is being developed as part of the NFDI4Culture project across several partner organisations (led by the [Open Science lab at TIB, Hannover](#)). Operating within Task area 1: Data capture and enrichment, the proposed toolchain focuses on the annotation of 3D data within a knowledge graph environment, so that 3D objects' geometry, attendant metadata, as well as annotations remain searchable, while data interconnections are not lost. The project builds on several existing FOSS tools:

- [OpenRefine](#), a data cleaning, reconciliation and batch upload tool;
- [Wikibase](#) (the tool behind the interface you are viewing now), a suite of services developed by Wikimedia Germany; it combines the ability to handle large volumes of data points with sophisticated data querying and extraction services via a dedicated SPARQL endpoint;
- [Kompakt](#), a browser-based open-source 3D- and multimedia viewer Kompakt with built-in collaborative annotation features.

The integrated suite of tools follows FAIR principles and facilitates linking 3D-objects and annotations, and their cultural context (including historical people and places, geo-location and capture-technology metadata), to the broader semantic web and various national and international authority records (GND, VIAF and more).

By the end of 2021, the toolchain will be developed as an MVP (minimum viable product) to be tested and refined further with more data partnerships. It will allow a wide range of users to interact with 3D- and other types of multimedia objects and annotations, and ultimately open up new digital spaces for research, education and discourse around cultural stewardship and memory preservation without siloing knowledge.

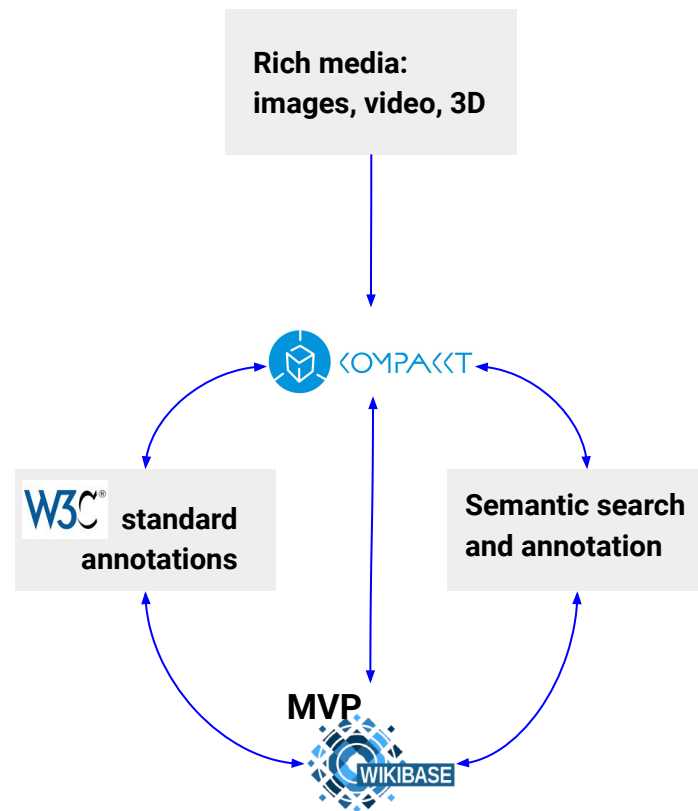
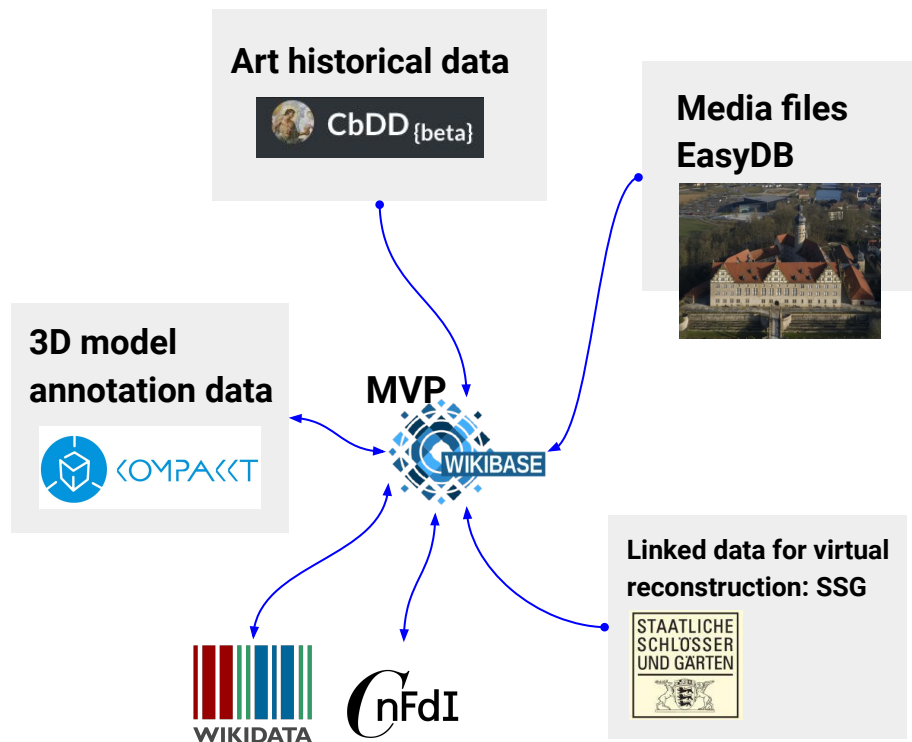
About our case study

This Wikibase instance contains sample data about Weikersheim Castle from the [Corpus der barocken Deckenmalerei in Deutschland](#), provided the MVP data partners at [The Institute of Art History](#) at Ludwig-Maximilians-Universität in Munich.

Adding new data in the archive

- [Create new item](#)
- [Create new property](#)

MVP for semantic enrichment of non-textual media: Wikibase + Kompakt



MVP for semantic enrichment of non-textual media: Illustration of annotation in Kompakt

The screenshot displays the Kompakt web application interface. At the top, the navigation bar includes the Kompakt logo, 'Explore Annotate Collaborate' links, and buttons for 'New Object' and 'New Collection'. Below this, there are buttons for 'Explore collections with this object' and 'Use this object in a collection'. The main content area features a large image of a decorative doorway with a handscan overlay. The overlay contains the following text:

1
Venus und Amor beweinen den Tod Adonis'
Zwischen Saal und Tafelstube vermittelte ein niedriger tonnengewölbter Durchgang, von dem an der Gartenseite eines der beiden Servicekabinette abging.

Related:

- Venus mourning Adonis
- Balthasar Katzenberger

The right sidebar displays the following information:

Weikersheim, Durchgang Tafelstube Rittersaal, Tonnengewölbe, Stuckatur und Malerei

Handscan (Arctec) des flachen Tonnengewölbes im Durchgang zwischen der Tafelstube (Raum 69a) und dem Rittersaal (Raum 72) von Schloss Weikersheim

Related agents

License

Creation

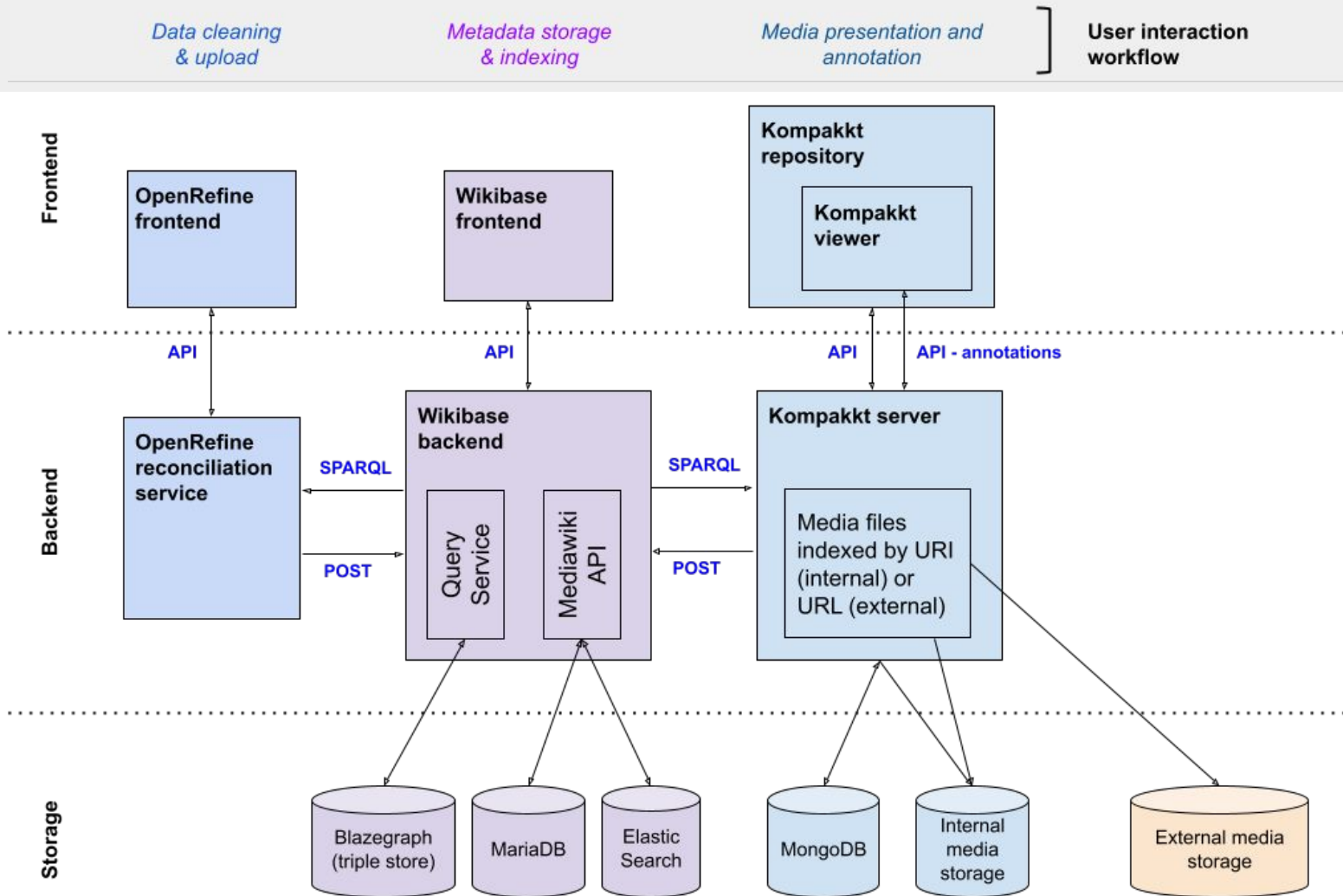
External links

Bibliography

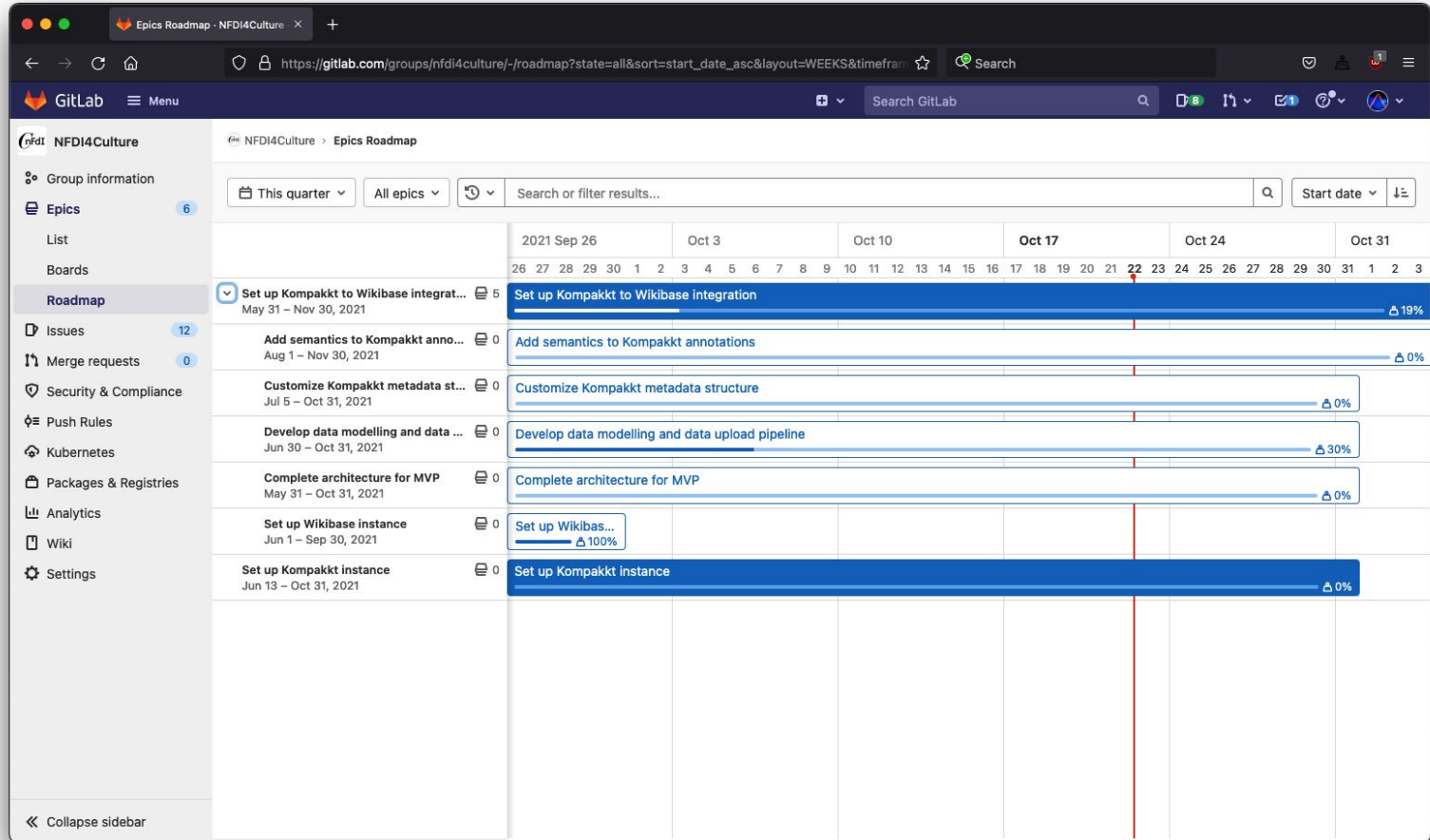
Related object structure

- Weikersheim Schloss
 - Saalbau
 - Erschließungsraumfolgen
 - Tafelstube
 - Durchgang
 - Rittersaal

MVP architecture

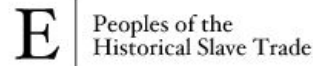


Open development – GitLab



Wikibase Stakeholder Group

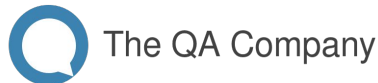
- NFDI4Culture staff are directly involved in the development, planning and growth of the international **Wikibase Stakeholder Group**, with **17 institutional members** across Europe and North America so far.
- The Group is working on growing developer capacity in the ecosystem around Wikibase, commissioning and developing new Wikibase extensions, and building sustainable new funding models for Open Source Software Development.



RHIZOME



Semantic Lab
at Pratt Institute



Extending Wikibase in the context of NFDI Base Services

- We are participating in the cross-NFDI **Section Metadata: Working Group Semantic Interoperability**.
- This WG is focused on terminology services, ontology mappings and harmonization, and the use-cases for knowledge graph deployment.
- In this context, we are proposing the development of **terminology services** (for access & curation of ontologies & vocabularies); **application profiles** (which perform ontology harmonization via access to the terminology services); and lastly corresponding **extensions towards Wikibase**, so that standard, harmonized ontologies and vocabularies can be used directly in a user-friendly and already popular tool framework.
- We see a lot of potential for **cooperation** with the new **Base Services** consortium.

Thank you!

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