

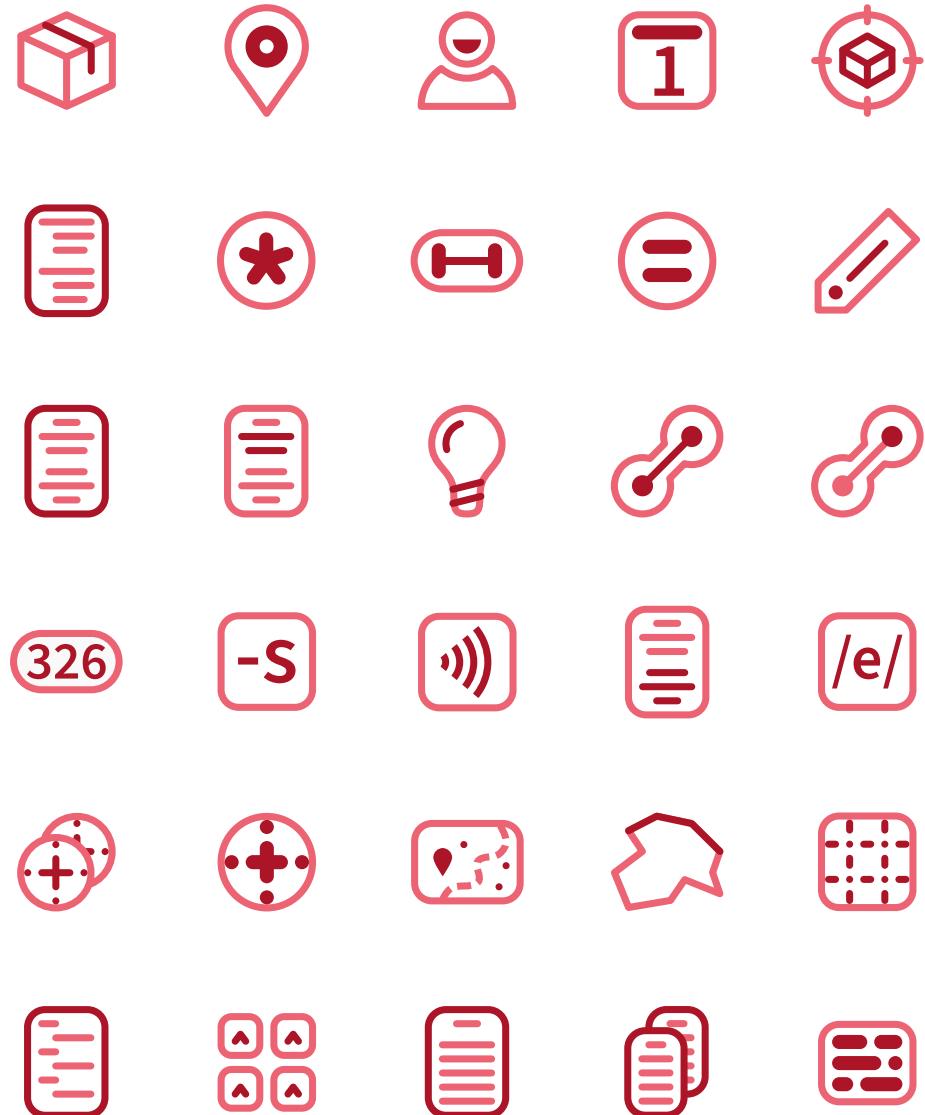


# Sustainability, coherence, and accessibility: Reinventing the Cultural Heritage Framework for convergent multimodal editions



Digital Academy

Introduction  
Methodology  
Ecosystems  
Components  
Coherence/a10y



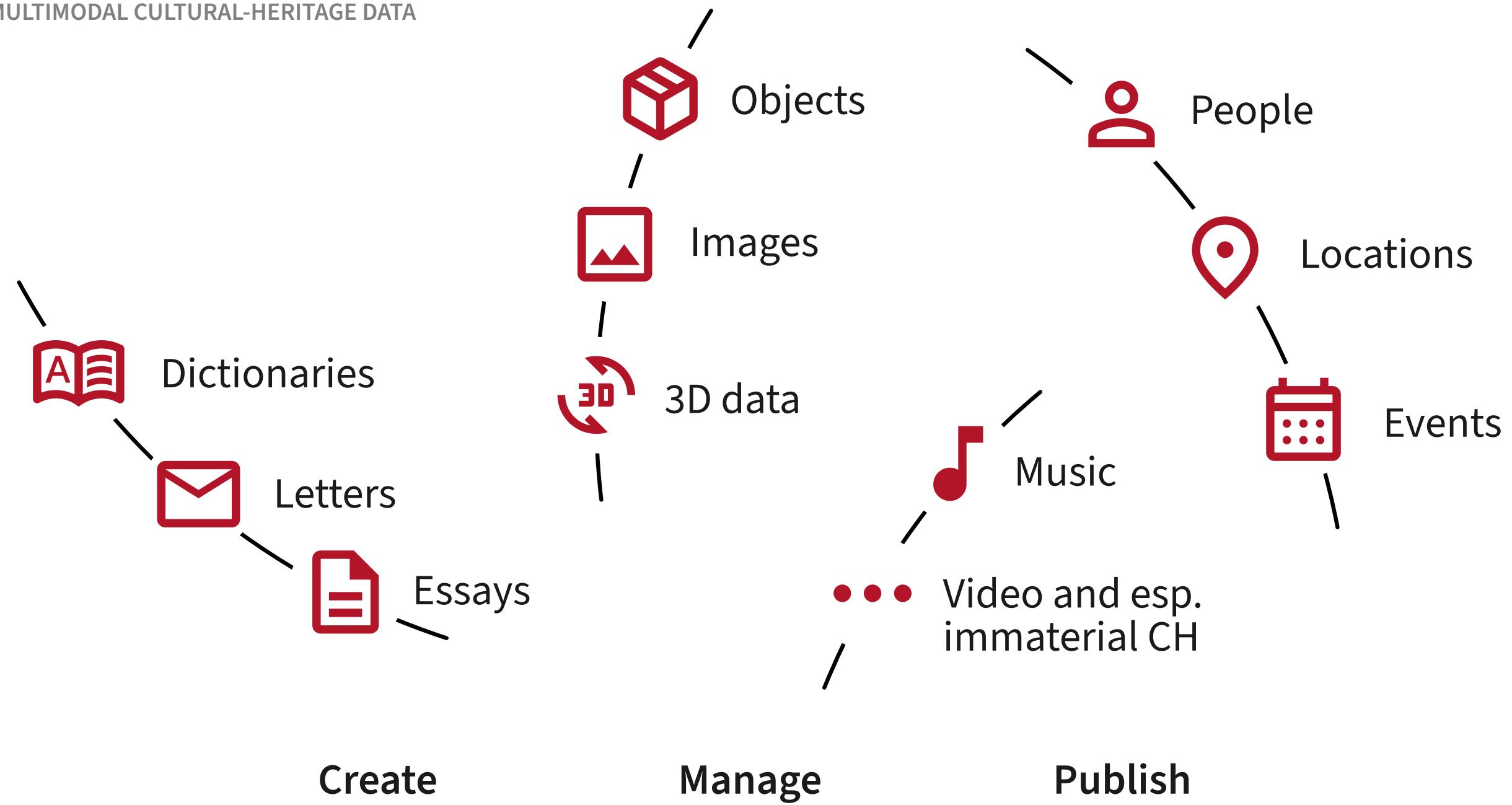
German academies conduct **humanities** and social-sciences projects

Usually with **long funding periods** of 12 or more years

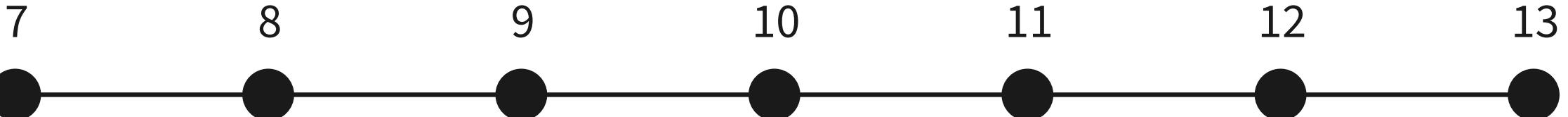
Various **editions** and cultural-heritage projects

Websites are, in theory, obliged to be **privacy-preserving** and accessible

AdWL Mainz also coordinates NFDI4Culture, a **research infrastructure** provider



## ISSUES ENCOUNTERED IN PREVIOUS EFFORTS



● Most sites, but with residue of code from previous versions

● Most recent site upgrade, dev. left

● Prominent component

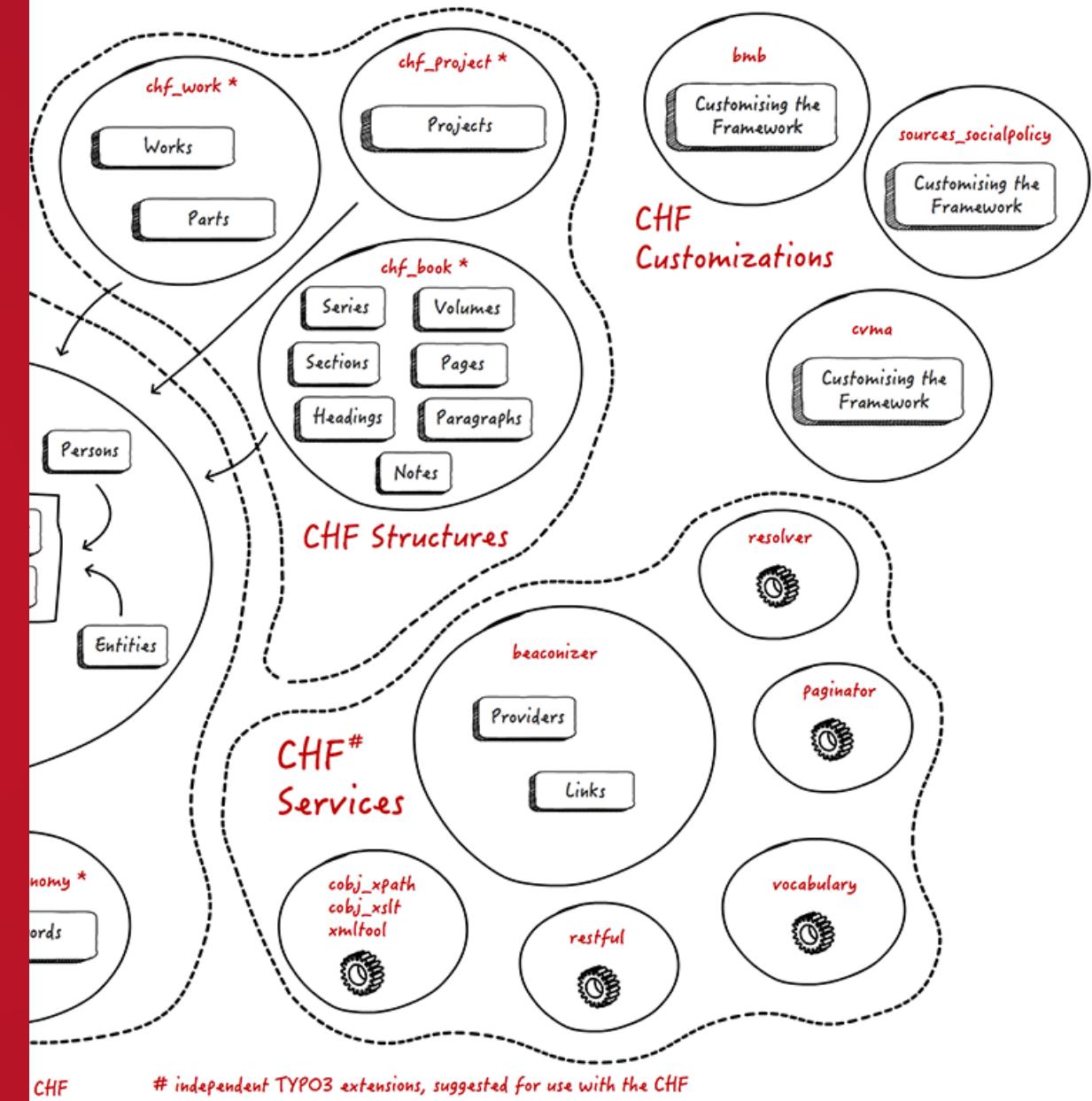
● Multiple incompatible versions

Breakage

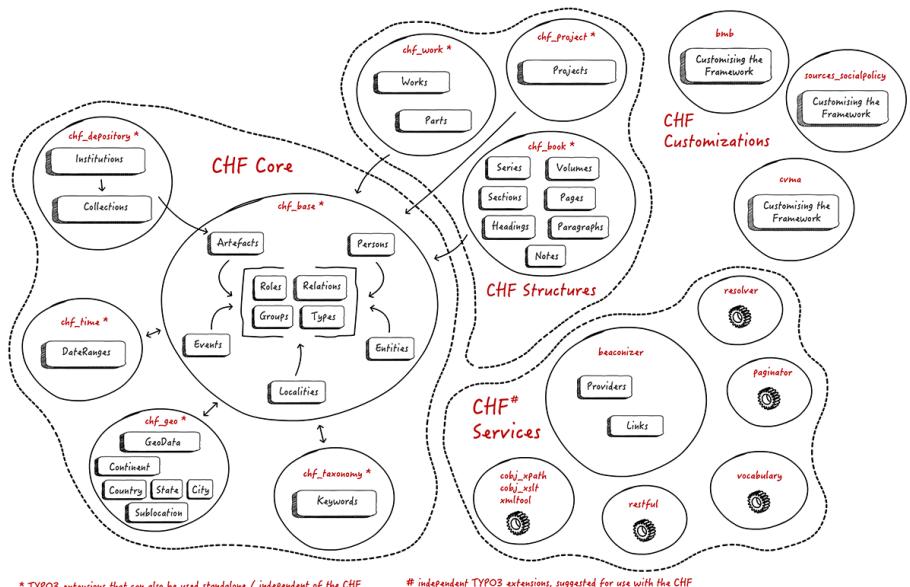
● Heavily patched third-party component

Overwhelmed staff

# Introduction Methodology Ecosystems Components Coherence/a10y



## SELECTION OF EXISTING OPEN-SOURCE SOLUTIONS



2017 CHF concept by Torsten Schrade

LEXONOMY  
Lexonomy

COLLECTIVE  
ACCESS  
CollectiveAccess



Omeka

Arches®  
Arches



WissKI



Wikibase Suite

KITODO  
KEY TO DIGITAL OBJECTS

Kitodo



TEI Publisher

ediarum  
Ediarum

MerMEId  
MerMEId

Edirom  
Edirom

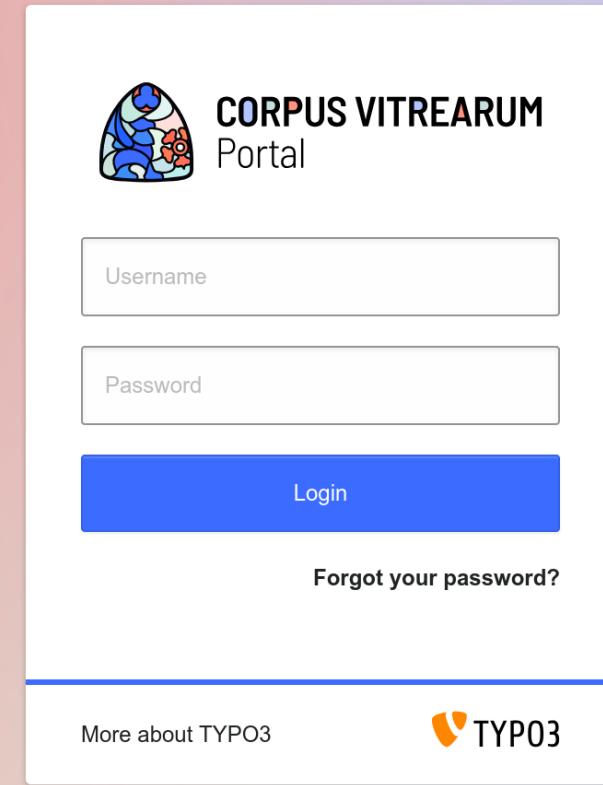


Media ecology tries to find out what roles media force us to play, how media structure what we are seeing or thinking, and why media make us feel and act as we do. [...] Ecology is the scientific study on organisms and their interactions with the environment. In this context, an ecological approach focuses on the distributions, abundances, and relations between organic and nonorganic beings in an ecosystem.

Carlos A. Scolari. “Media Ecology: Exploring the Metaphor to Expand the Theory.” *Communication Theory*, vol. 22, no. 2, 2012, pp. 204–225, DOI: 10.1111/j.1468-2885.2012.01404.x.

- User stories ▶ Desires of communities?
- Mapping a domain ▶ Generic models and formats?
- Ubiquitous language ▶ Existing ontologies?
- Component reuse ▶ Components removable?
- Bounded contexts ▶ Resilient tech and data flow?  
And how these may change!

Introduction  
Methodology  
**Ecosystems**  
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## (DIGITAL) ECOSYSTEMS

As few physical servers as possible  
Limited data duplication  
Energy-preserving frontend

Semantic annotation and search  
Screenreader-ready interfaces  
No vendor lock-ins

Responsive design  
In-text glossaries  
Multiple paths into the data

Include XML-based serialisation like TEI  
Options to download all data  
Standardised data models if possible

Atomic design  
Machine-readable metadata  
Serialisations, APIs, ML, LOD

Data licences  
Privacy  
Limited telemetry

Maintainable for newbies  
Simple code beats elegant code  
Documentation & education

Stay up to date  
Act in good faith & contribute  
Engage with the community

Compatible to DoS protection  
Download availability  
Containerisation

Environment

Accessibility

Interested public

Domain-specific communities

Web and digital humanities infrastructure

International legal frameworks

German academia

Software stack

Bad-faith actors

## Analysis of digital ecosystems

Relational, but **web app-**  
and graph-enabled

Multilingual, a10y-  
enabled web software

PHP plus Python (RDF) and  
Rust (search) on the server

One coherent, **semantic** data  
model fits all, incl. serialisations

**Visualisations**  
and testing (TBD)

Semantic portal with  
equitable access

Embedded  
metadata

Atomic, accessible  
frontend HTML/CSS

Rule of least power,  
as little JS as possible

## EXTENSIBLE DESIGN

TYPO3 with  
Cultural Heritage  
Framework

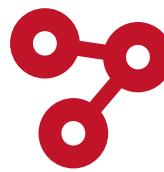
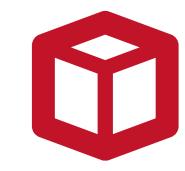
Optional automated  
ingest routines

Data models   Editing   Serialisations   UI   Embedded metadata   Search   Social   Container

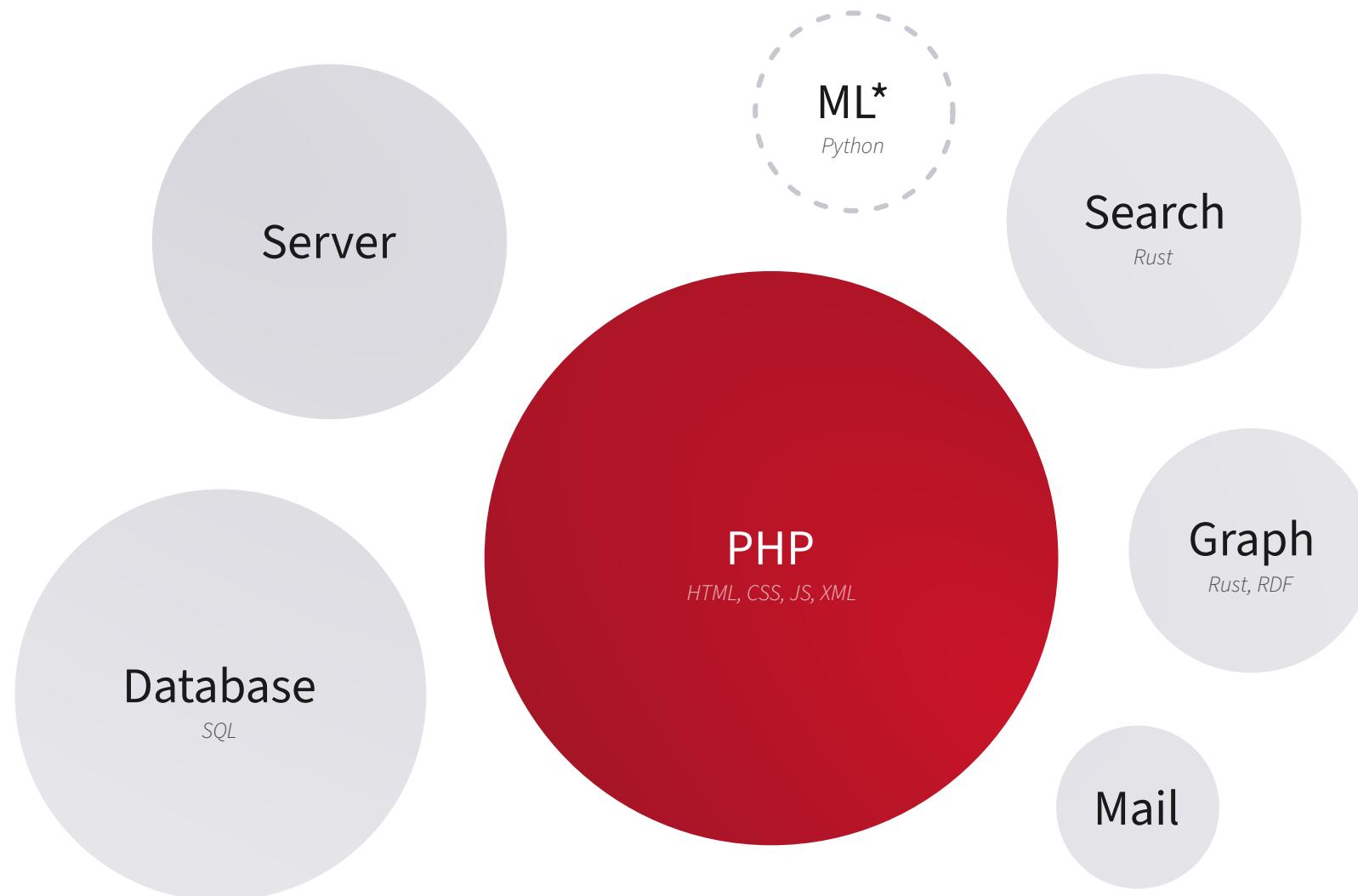
Project-specific overwrites

Optional additional APIs   Optional QA routines   Optional visualisations

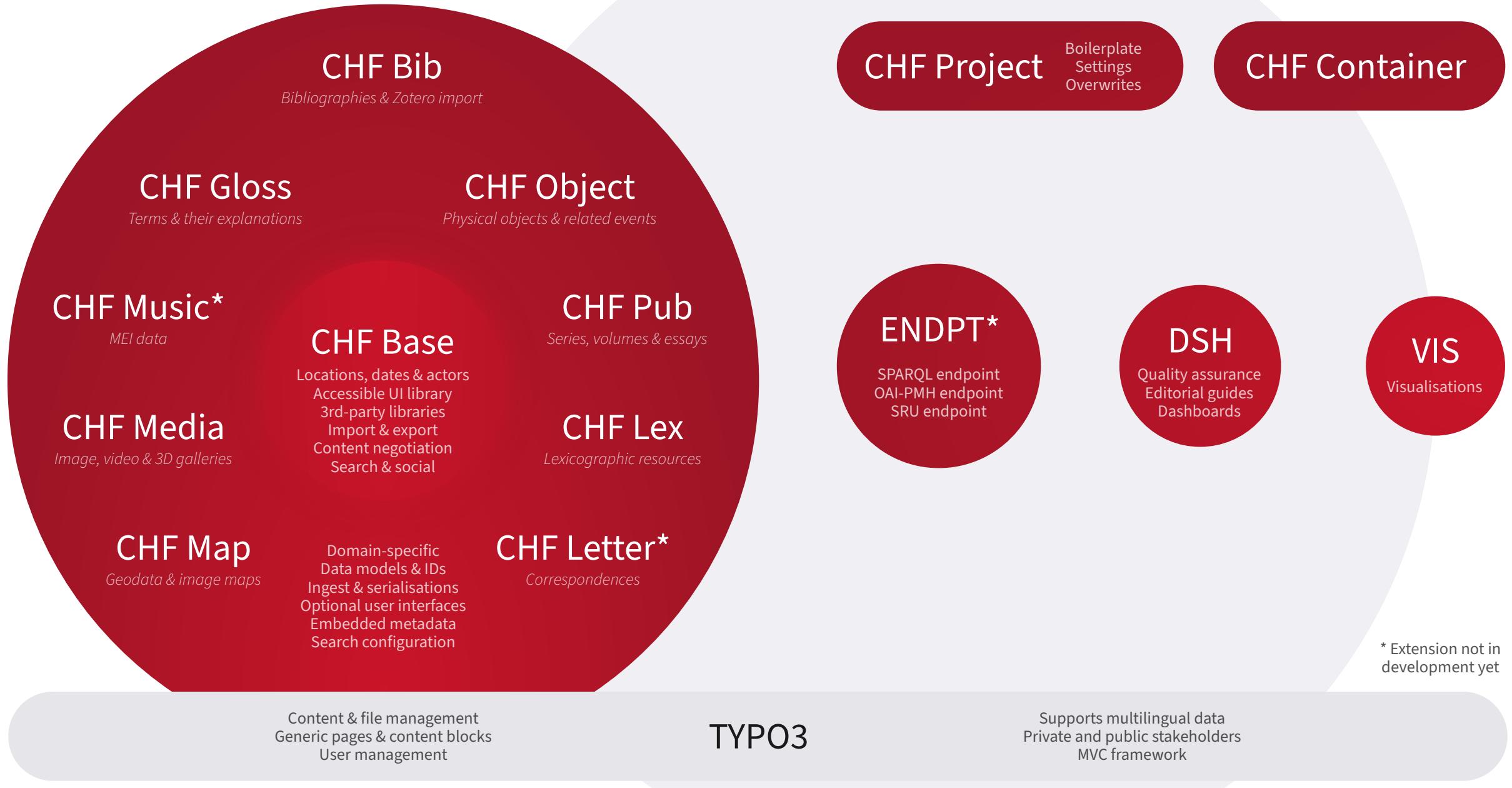
Introduction  
Methodology  
Ecosystems  
Components  
Coherence/a10y



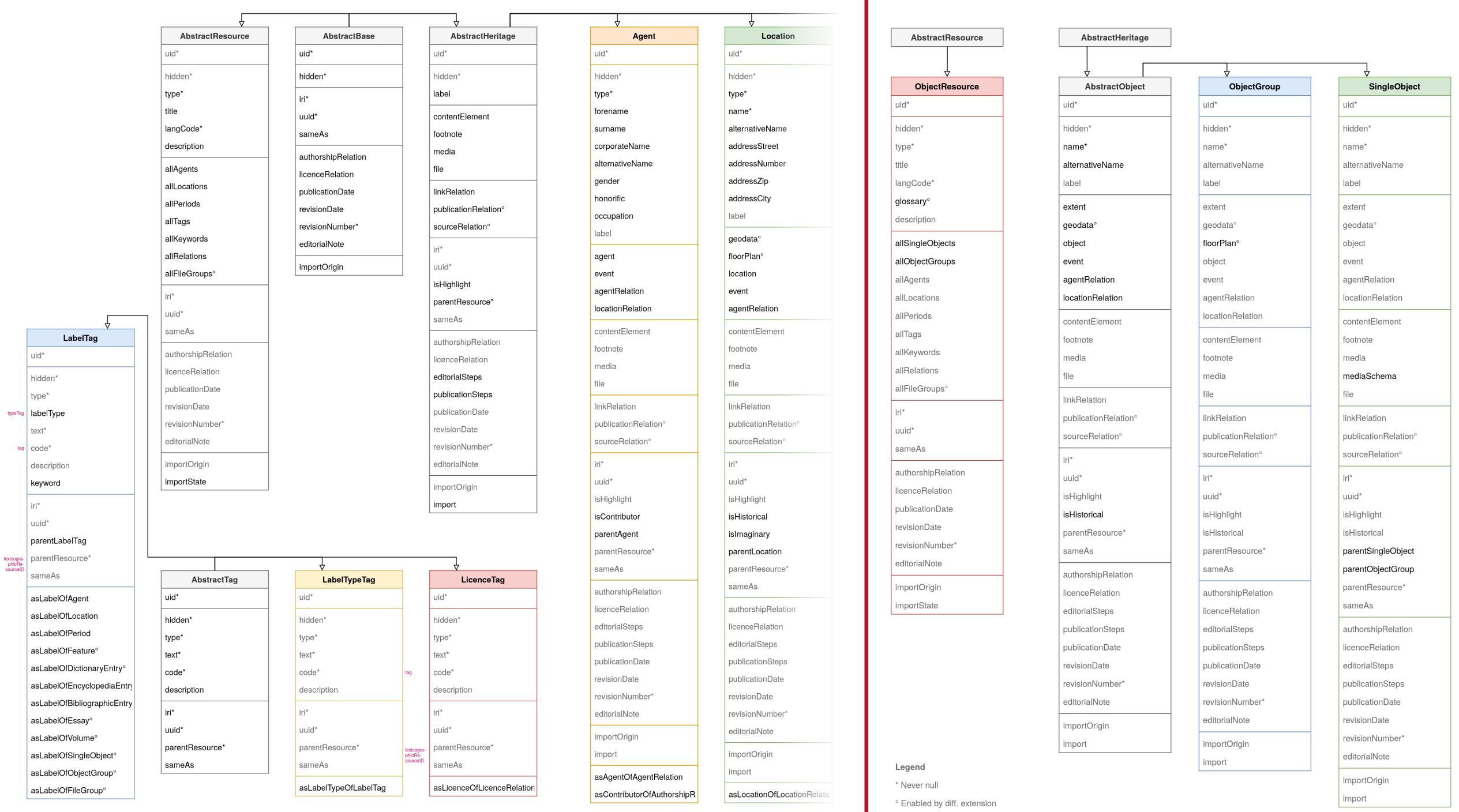
## CONTAINERS



\* Container not implemented yet







Introduction  
Methodology  
Ecosystems  
Components  
Coherence/a10y



DFD



Corpus  
Vitrearum

# Digitales Familiennamenwörterbuch Deutschlands

## Familiennamen suchen

Suchbegriff eingeben

Name der Woche: Düring

Benennungsmotiv ▾

Sprachvorkommen ▾

Eintragsart ▾

1 Vorkommen 501 10.001 50.001 50.000+ 100.000+

A B C D E F G H I J K L M N O P Q R S T

Wörterbuch Erkunden Daten Namenforschung Projekt

## In Einträgen stöbern

Häufig Beliebt Zufall ERKUNDEN

Rang ⓘ	Name	Vorkommen ⓘ
1	Müller	256.003
2	Schmidt	190.584
3	Schneider	115.749
4	Fischer	97.658
5	Weber	86.061

Schäfer Bauer Hartmann Koch Braun  
Schröder Schmidt Lange Weber  
Neumann Klein Hoffmann Krause  
Fischer Wolf Schneider Schmitz Meyer  
Becker Schulz Werner Meier Hofmann  
Müller Zimmermann Krüger Schwarz  
Wagner Schmitt Richter

INFOARTIKEL GLOSSAR ERKUNDEN

DATEN NAMENFORSCHUNG

Wörterbuch Erkunden Daten Namenforschung Projekt

Zwick

ETYMOLOGIE HINTERGRUND QUELLEN METADATEN

### Hauptbedeutung

1 Benennung nach Beruf zu mittelhochdeutsch *zwic* 'Nagel, Bolzen, Zwickel, einmaliges Zwicken mit einer Zange, Kniff, Schlag'. Es handelt sich um einen indirekten Berufsnamen für verschiedene Berufe wie z. B. Nagelschmied, Böttcher oder Schuhmacher.

Beruf Metallverarbeitung Schmied (indirekt)  
Beruf Leder- und Textilverarbeitung Schuhmacher (indirekt)  
Beruf Holzverarbeitung Böttcher (indirekt)

2 Benennung nach Wohnstätte ⓘ zu mittelhochdeutsch *zwic* 'Nagel, Bolzen, Zwickel, einmaliges Zwicken mit einer Zange, Kniff, Schlag' für jemanden, der an einem keilförmigen Flurstück wohnt.

Wohnstätte Örtlichkeit Geländeform

### In Einzelfällen

3 Benennung nach Übername ⓘ zu mittelhochdeutsch *zwic* 'Nagel, Bolzen, Zwickel, einmaliges Zwicken mit einer Zange, Kniff, Schlag' für einen kleinen, gedrungenen, derben Menschen. Unklar ist, ob es sich auch um einen Übernamen ⓘ für einen Zwitter oder Kastraten handeln kann (siehe Zoder 1968, Bd. 2: 900).

4 Benennung nach Übername ⓘ, siehe [Cwik 1](#). Es handelt sich um eine eingedeutschte ⓘ Variante.

### Weitgehend auszuschließen

CORPUS VITREARUM Deutschland

Glasmalereien Im Kontext Scheibenweise Buchreihe Projekt

← Zurück

Verkündigung an Maria

Ikonografie Weinrebe 471422

Ikonografie Die Wurzel Jesse Ein genealogischer Baum, der aus Jesses Lenden spricht und die Vorfahren Christi zeigt (+ Variante) 73A21(+0)

Ikonografie Die Verkündigung Maria steht 73A521

Ahn Bauernhof Baum belauschen Berufe besuchen Bibel Christus Eltern Erzengel Frucht Gabriel Geburt Gesellschaft Gewerbe Handwerk Industrie Jesse (Wurzel) Kultur Lenden lesen Lukas 01 Maria (Jungfr...) Neues Testa... Obst Pfanne Stammhaus

Bild: Renate Roloff, CVMA Potsdam/BBAW, CC BY-NC Permalink: <https://corpusvitrearum.de/d/F18429>

Metadaten: CCO

Projekt

Map showing the distribution of the name 'Zwick' across Germany in 2005, overlaid on a map from 1890. The map shows green dots indicating the locations of telephone connections in 2005, with a higher density in urban areas like Berlin, Hamburg, and Munich.

Diese Karte basiert auf anonymisierten Telefonanschlüssen von 2005. Historische Karten von ca. 1890 basieren auf Verlustlisten und sind nur bedingt vergleichbar.

Accessibility is a **social** challenge more than a technical one

Plain-language **summaries** benefit everyone's experience

**Full dataset** downloads may help both harvesters and users

Semantic HTML may require a **custom CSS** framework

**Browser APIs** are smoother than custom tech

Conservative frontend tech and embedded metadata **improve bot access**

**Be willing to respond** to browser, mobile, keyboard, Zotero, harvesting tests

**To do:** user and screenreader tests, a10y-focused QA dashboard

Research software suite for the production  
and publication of humanities data,  
built with ❤️ by [@digicademy](#) in Mainz



[github.com/digicademy-chf](https://github.com/digicademy-chf)  
[jonatan.steller@adwmainz.de](mailto:jonatan.steller@adwmainz.de)  
[@jonatan@mastodon.social](https://@jonatan@mastodon.social)

WIP

CHF2 designed to be useful for various types of **cultural-heritage data**

Combines highly structured **semantic classes** with annotatable fields

To become an extensible **one-stop solution** for editing/management/publication

Based on an analysis of **(digital) ecosystems**, usability and accessibility first