



OpenAtlas

A Database System for the Humanities and
Beyond



Bernhard Koschiček-Krombholz

- Studied
 - Computer Science at Applied University Technikum Vienna
 - History at University of Vienna
- First contact with OpenAtlas
 - “Digitising Pattern of Power” in 2015
 - Since 2019 developer at ACDH-CH through “THANADOS”
- Responsibilities
 - API
 - Backend development
 - Server administration



THANADOS



OpenAtlas

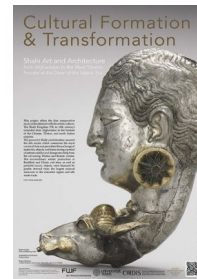
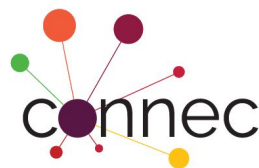
- Project website: <https://openatlas.eu>
- Initiated about 10 years ago
- Mainly developed at the ACDH-CH
- Open source, browser based database software
- Acquire, edit and manage research data



OpenAtlas Collaborations

- With projects from all fields of the humanities
- Mostly historical, archaeological and CH projects
- A lot of synergies between the projects

THANADOS





Mission Statement

- Open source - open access



Mission Statement

- Open source - open access
- Transparent workflow and communication



Mission Statement

- Open source - open access
- Transparent workflow and communication
- High-quality data integrity and coding standards



Mission Statement

- Open source - open access
- Transparent workflow and communication
- High-quality data integrity and coding standards
- Usability



Mission Statement

- Open source - open access
- Transparent workflow and communication
- High-quality data integrity and coding standards
- Usability
- Interoperable through
 - CIDOC CRM
 - API
 - FAIR principles
 - External references

Features

- Spatial, object, actor and event centered
 - Person networks
 - Hierarchically member of groups and their functions
 - Detailed description of objects
 - Sequence of events
 - Hierarchically structure of events
 - Spatial localization of each entity

Features

- Spatial, Actor and Event centered
- Fully customizable type and reference system

Standard types	Custom types	Place types	Value types	System types
Actor function				▼
Actor relation				▼
Artifact				▼
Bibliography				▼
Edition				▼
Event				▲

Type to search

+ Type

Selection: single

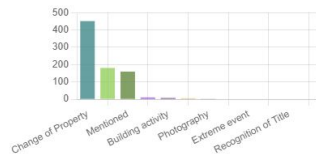
Required: false (make required)

Classes: Acquisition, Activity, Creation, Event, Modification, Move, Production

Untyped entities: [show](#)

Description

Categories for the type of events like Change of property, Conflict, Movement, Attendance etc.



Dimensions

Type to search

+ Type

Edit

Delete

Azimuth 0

Degrees 2,700

Diameter 2,735 (983)

Bottom diameter 317

Max Diameter 321

Min Diameter 85

Top Diameter 260

Distance 0

Elevation 801

Height 6,336 (150)

Height max 75

Height min 75

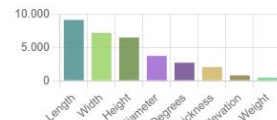
Length 8,756 (356)

Classes: Artifact, Feature, Place, Stratigraphic unit

Multiple linked entities: [show](#)Untyped entities: [show](#)

Description

Physical dimensions like weight and height.



+ Reference system

Show 10 entries

Search:

Name	Count	Website URL	Resolver URL	Example ID	Default precision	Description
AMA number	2424				exact match	Fortlaufende ...
Archaeologi...			https://diglar...	C-TX-20220...	exact match	
ArchWort	4	https://archw...	https://archw...	2873	exact match	
English Tra...	83			english name	exact match	EN
GeoNames	798	https://www....	https://www....	1234567	close match	Geographical...
German Tra...	85			Name auf De...	exact match	DE
Getty AAT	327	http://vocab....	http://vocab....	300400650	exact match	The Getty Re...
GND	4	https://gnd.n...	https://d-nb.i...	119338467	exact match	
NHWM Prae...	425			1234	exact match	Inventory Nu...
PeriodO	38	https://perio....	http://n2t.net/...	p0qbh66dr9	exact match	

Showing 1 to 10 of 12 entries

Previous

1

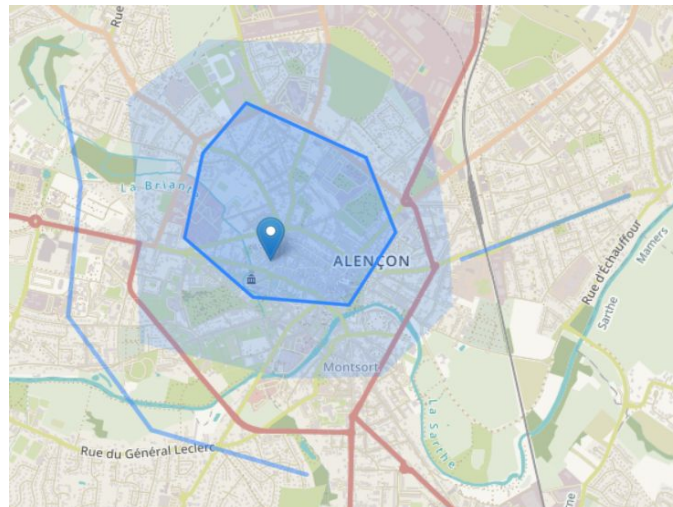
2

Next

Features

- Spatial, Actor and Event centered
- Solutions for uncertainty in space and time
- Uncertainty in space and time

Begin	1011	01	01	comment
	1020	12	31	
End	1425	08	01	destruction
	1425	10	31	



Features

- Spatial, Actor and Event centered
- Fully customizable type system
- Solutions for uncertainty in space and time
- Archaeological features
 - subunits
 - radiocarbon dating
 - sex estimation

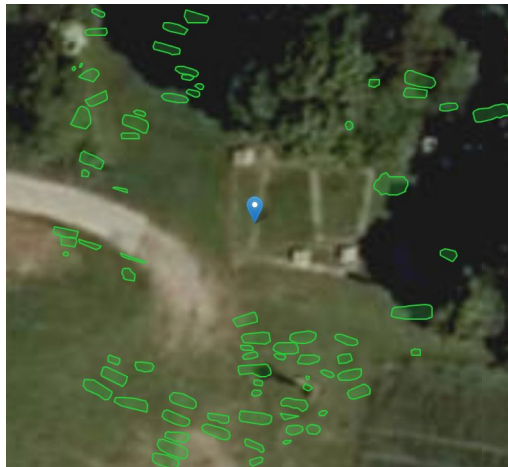
Radiocarbon dating

Laboratory ID *

Specimen ID *

Radiocarbon year *

Range *



Sex estimation

Skull

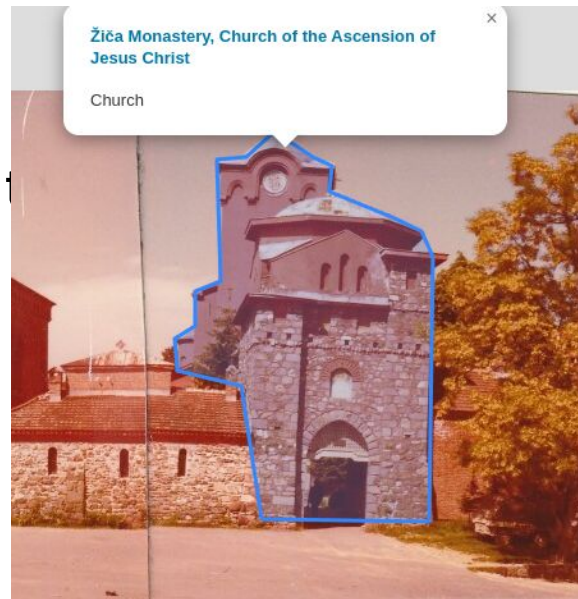
Glabella	3	Not preserved
Arcus superciliaris	2	Not preserved
Tuber frontalis and parietalis	2	Not preserved
Inclinatio frontalis	1	Not preserved
Processus mastoideus	3	Not preserved
Relief of planum nuchale	3	Not preserved
Protuberantia occipitalis externa	2	Not preserved
Processus zygomaticus	3	Not preserved
Os zygomaticum	2	Not preserved
Crista supramastoideum	2	Not preserved
Margo supraorbitalis	1	Not preserved
Shape of orbita	1	Not preserved

Mandible

Overall appearance	3	Not preserved
Mentum	2	Not preserved
Angulus	1	Not preserved

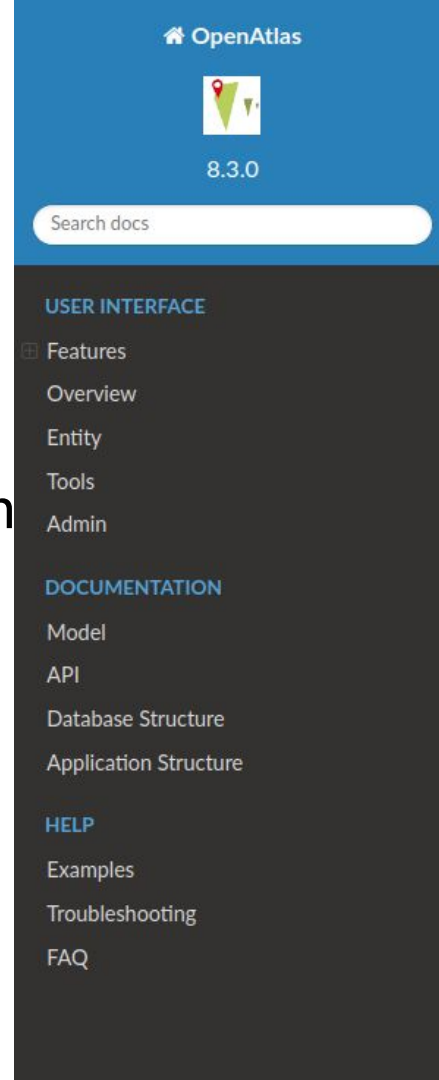
Features

- Spatial, Actor and Event centered
- Fully customizable type system
- Solutions for uncertainty in space and time
- Archaeological features
- Image annotation



Features

- Spatial, Actor and Event centered
- Fully customizable type system
- Solutions for uncertainty in space and time
- Archaeological features
- Image annotation
- Extensive (up-to-date) [user manual](#)



Features

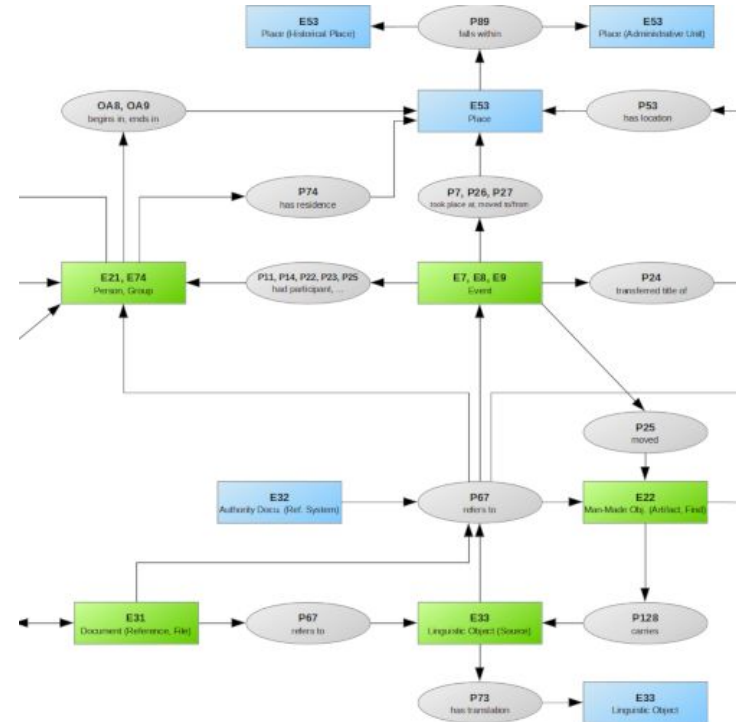
- Spatial, Actor and Event centered
- Fully customizable type system
- Solutions for uncertainty in space and time
- Archaeological features
- Image annotation
- Extensive (up-to-date)
[user manual](#)
- User management

	Admin	Manager	Editor	Contributor	Readonly	Guest
Browse data	yes	yes	yes	yes	yes	
Edit data	yes	yes	yes	yes*		
Edit types	yes	yes	yes			
Add custom types	yes	yes				
Add reference systems	yes	yes				
Import/Export	yes	yes				
User management	yes	yes				
System settings	yes					



Model - CIDOC Conceptual Reference Model

- International standard (ISO)
- Developed by CIDOC CRM Special Interest Group
- Specifies classes for entities like actor, source, event, place and rules how to link them





Structuring data

Why?

- (complex) Search
- Compare
- Merge
- Ask research questions

How?

- Identify and classify entities
- Add attributes
- Link entities to create a network
- Balance simplification and data loss

CIDOC CRM example



E18 Mes Aynak

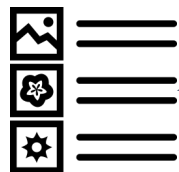


E18 Mes Aynak

P53 current or
former location



E53 Location

**E55 Type**

- Settlement
- Collection
- Kingdom
- ...

P2 has type



E18 Mes Aynak

P53 current or
former location



E53 Location



E22 Artifact



Buddha



Bowl



Coin

P46 composed of



E18 Mes Aynak

P2 has type



E55 Type

- Settlement
- Collection
- Excavation
- ...

P53 current or
former location



E53 Location



E18 Feature

E22 Artifact



Buddha



Bowl

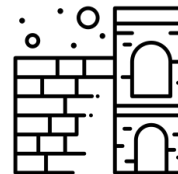


Coin

P46 composed of



Monastery



Walls

P2 has type



E18 Mes Aynak



E55 Type

- Settlement
- Collection
- Excavation
- ...

P53 current or
former location

E53 Location



E22 Artifact



Buddha



Bowl

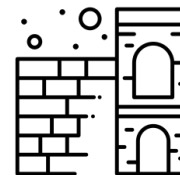


Coin

P46 composed of



Monastery



Walls

P2 has type

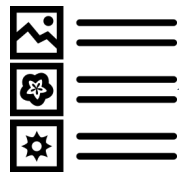


E18 Mes Aynak

P67 refers to



E31 References



E55 Type

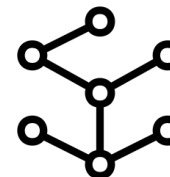
- Settlement
- Collection
- Excavation
- ...

P53 current or
former location

E53 Location



E31 Image files

E32 Authority
Document



Conclusion of OpenAtlas

- OpenAtlas is open source and completely based on open source software
- Data is structured according to the international standard of CIDOC CRM (v7.1.2)
- Actively developed with high quality standards in mind
- Emphasis on documentation and close contact with users
 - [User manual](#)
 - [Technical wiki and issue tracker](#)
 - [Public meeting protocols](#)
- API to connect with external systems
- Great synergies between projects using OpenAtlas
- Tested and proven in many productive systems and projects

Thank you!

bernhard.koschicek-krombholz@oeaw.ac.at



Logos originate from the respective project pages.
Source and, if available, licence of external images are indicated.
The remaining content is licenced under [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).

Live demonstration

<https://demo.maps-of-power.at>

User: Demolina, Pass: Demolina