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OpenAtlas

A Database System for the Humanities and Beyond

April 25th, 2024 - Bernhard Koschiček-Krombholz

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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

DPP Digitising Patterns of Power

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

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OpenAtlas Collaborations

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

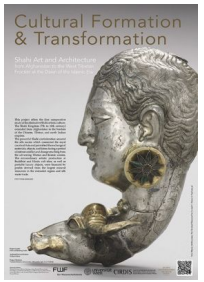
THANADOS

MAPS OF POWER

D·I·G·T·I·B
DIGITAL TABULA IMPERII BYZANTINI

connec

bITEM



MAMEMS

indigo

APPROACHING BYZANTIUM

MEDCON

DPP Digitising Patterns of Power

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Mission Statement

- Open source – open access

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- Transparent workflow and communication

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- Usability

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- 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

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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

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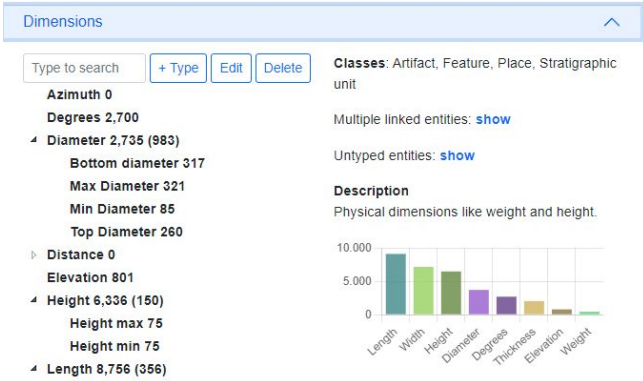
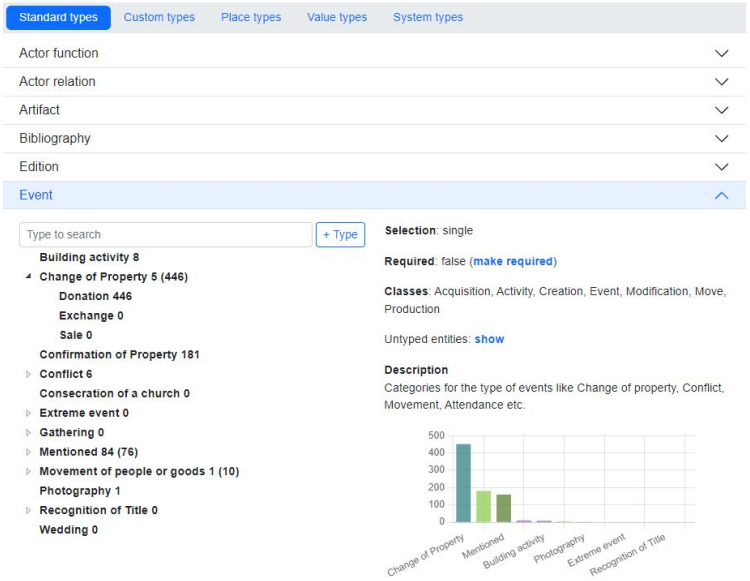
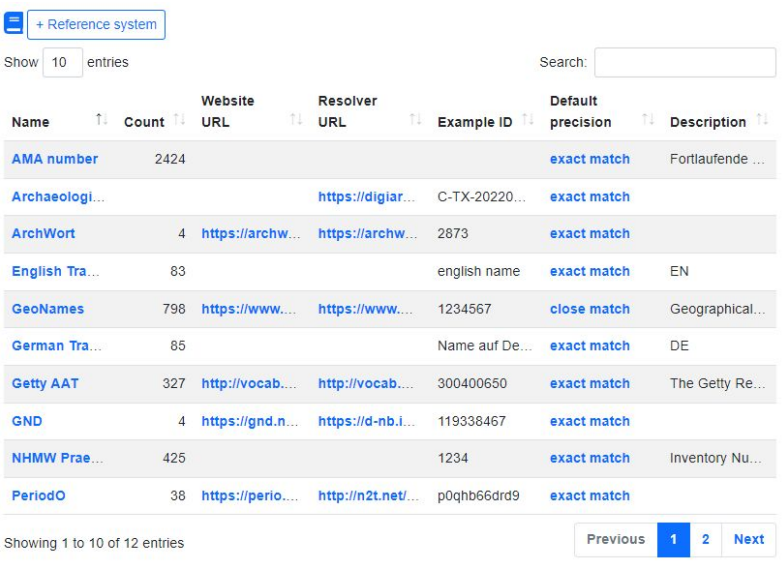
Features

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







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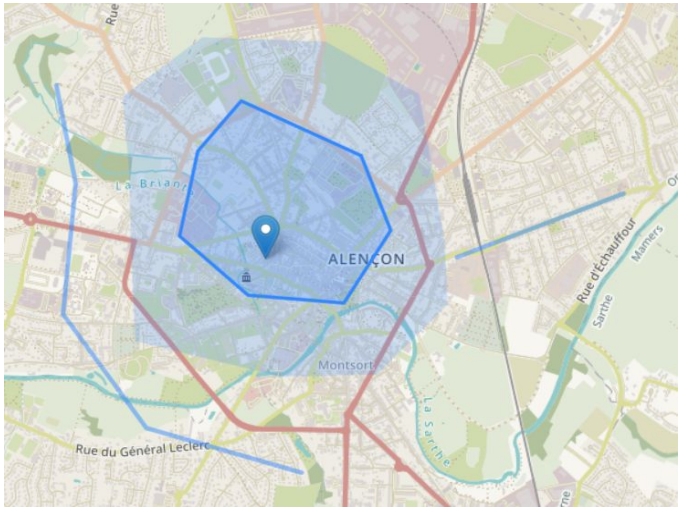
Features

- 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	



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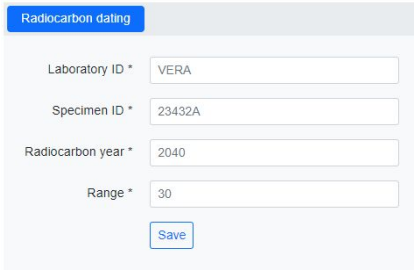
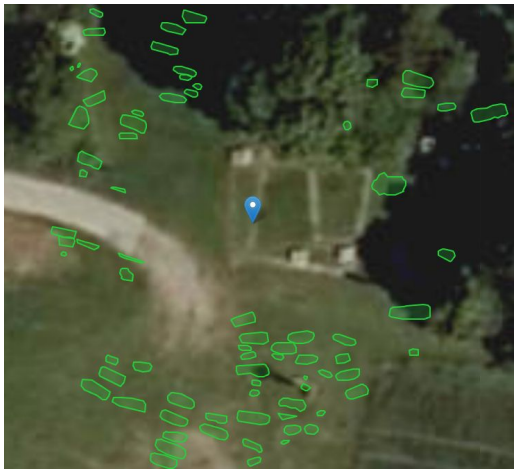
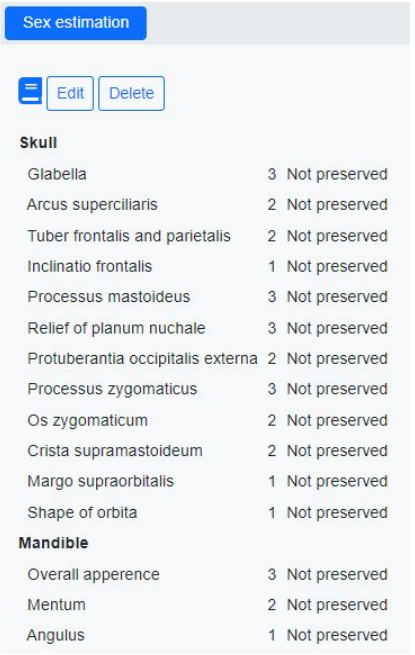
Features

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







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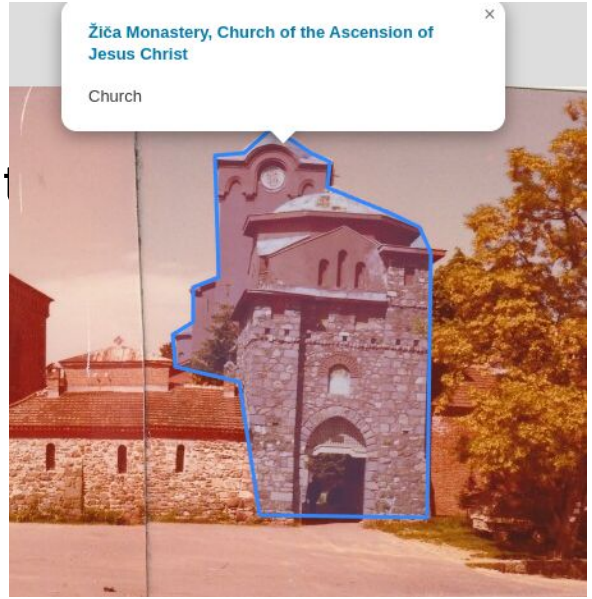
- Archaeological features
- Image annotation



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Features

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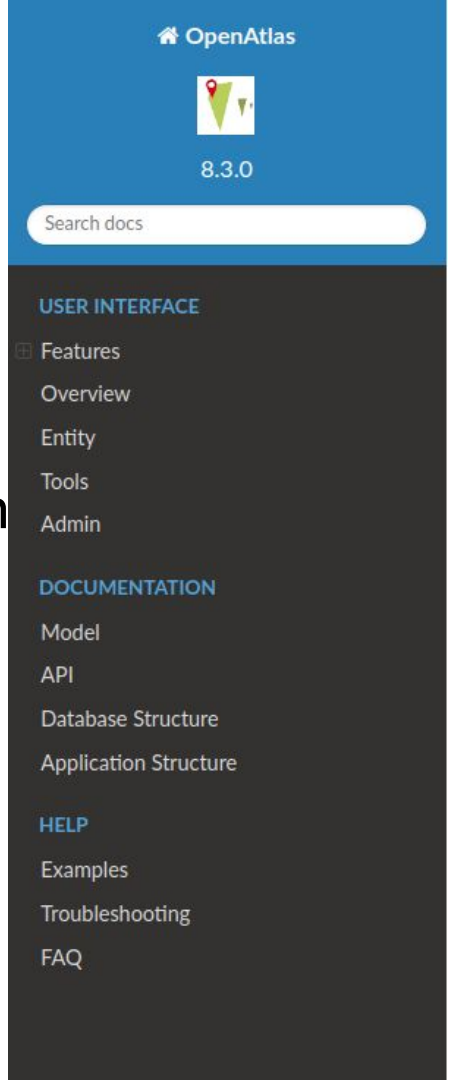
- Image annotation
- Extensive (up-to-date) user manual



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- 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					

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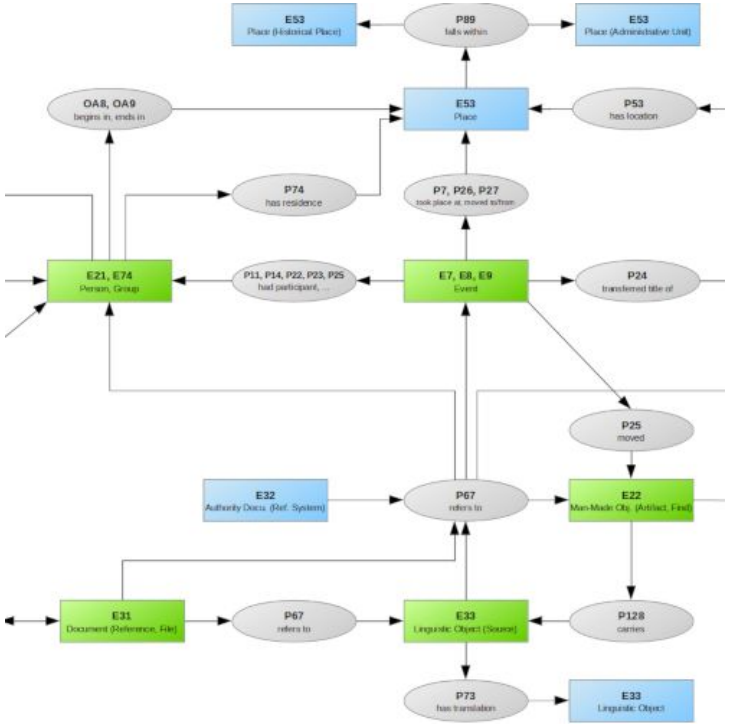
Model - CIDOC Conceptual Reference Model

- 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



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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

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CIDOC CRM example

E18 Mes Aynak

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E18 Mes Aynak

P53 current or former location

E53 Location

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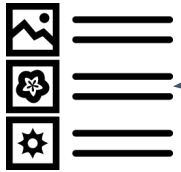

P2 has type

E18 Mes Aynak

E55 Type

- Settlement
- Collection
- Kingdom
- …

P53 current or former location

E53 Location

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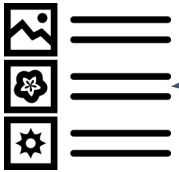
E22 Artifact

Buddha Bowl Coin

P46 composed of

E18 Mes Aynak

P2 has type



E55 Type

- Settlement
- Collection
- Excavation
- …

P53 current or former location

E53 Location

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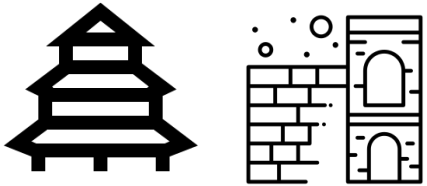
E18 Feature

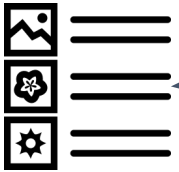
E22 Artifact

Buddha Bowl Coin

P46 composed of



Monastery Walls



P2 has type

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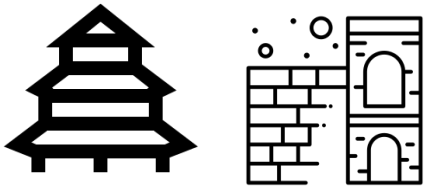
E18 Feature



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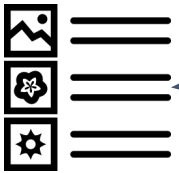


P2 has type

E55 Type

- Settlement
- Collection
- Excavation
- …

E18 Mes Aynak

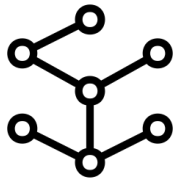
P67 refers to

E31 References

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!

austrian centre for digital humanities & cultural heritage

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OpenAtlas

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Live demonstration

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

User: Demolina, Pass: Demolina