

# OpenAtlas

A Database System for the Humanities and Beyond

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# OpenAtlas – Alexander Watzinger (Alex)



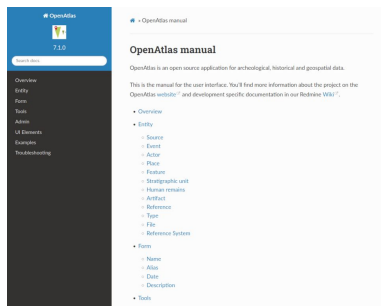
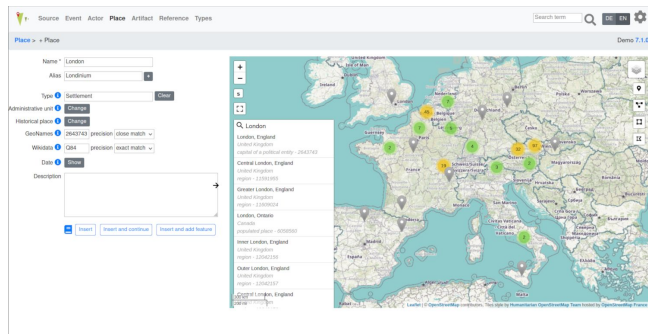
INDIGO workshop 2021

- Lead developer of OpenAtlas
- Since 2017 at the ACDH-CH
- Loves open source and scientific projects



# About OpenAtlas

- Project website: <https://openatlas.eu>
- Initiated about 10 years ago by Stefan Eichert
- 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 prosopographic projects
- A lot of synergies between the projects

MAMEMS

APPROACH — NG  
BYZANT — UM

Indigo

MEDCON

connec

Moving Byzantium

DPP | Digitising  
Patterns of  
Power



# OpenAtlas Team



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## Stefan Eichert

Idea, Concept and Data Modelling  
[stefan.eichert@nhm-wien.ac.at](mailto:stefan.eichert@nhm-wien.ac.at)

Stefan is the the initiator and master mind behind the OpenAtlas project. His main research fields are Early Medieval archaeology and history as well as computer applications in archaeology and digital humanities.



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## Alexander Watzinger

Lead Developer and Concept  
[alexander.watzinger@oeaw.ac.at](mailto:alexander.watzinger@oeaw.ac.at)

Alex is the lead developer of OpenAtlas and has a special interest in data modeling and scientific web applications. His favorite tools are Python, PostgreSQL, Linux and open source software in general.



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## Bernhard Koschicek-Krombholz

Software Development, API  
[bernhard.koschicek-krombholz@oeaw.ac.at](mailto:bernhard.koschicek-krombholz@oeaw.ac.at)

Bernhard is currently developing our API and studies Computer Sciences as well as History. His research interests include computer security, Python, digital preservation, historical geography, GIS, medieval and military history.



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## Nina Richards

Bioarchaeological Expertise  
[nina.richards@oeaw.ac.at](mailto:nina.richards@oeaw.ac.at)

Nina is an archaeologist and anthropologist, with a focus on Early Medieval burial grounds. With her expertise she provides essential support planning and implementing archeological, anthropological and scientific modules in OpenAtlas.



CC-BY 4.0, Andreas Olschnögger

## Andreas Olschnögger

Frontend Development  
[andreas.olschnoegger@oeaw.ac.at](mailto:andreas.olschnoegger@oeaw.ac.at)

Andi is a frontend developer and studies computer science at the Technical University of Vienna. He mainly develops with VueJs and is also interested in UX design to make technology more accessible.



CC-BY 4.0, Moritz Großfurther

## Moritz "Mocca" Großfurther

Frontend Development  
[moritz.großfurther@oeaw.ac.at](mailto:moritz.großfurther@oeaw.ac.at)

Mocca is a frontend developer for OpenAtlas. He's currently studying computer science at the TU Vienna and interested in design that is useful and fun to use, be that software or real life objects.



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## Veronika Gründhammer

Project Administration  
[veronika.gruendhammer@oeaw.ac.at](mailto:veronika.gruendhammer@oeaw.ac.at)

Veronika provides essential support for cooperations in her role as project officer at the [ACDH-CH](#).



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## Jan Belik

Logo Design and Design Consulting  
[buero@janbelik.com](mailto:buero@janbelik.com)

Jan is a freelance graphic designer, illustrator and art director at [janbelik.com](http://janbelik.com) in Vienna, Austria. He has plenty of experience working with local as well as international brands and has created a range of OpenAtlas project logos.

## Contributors

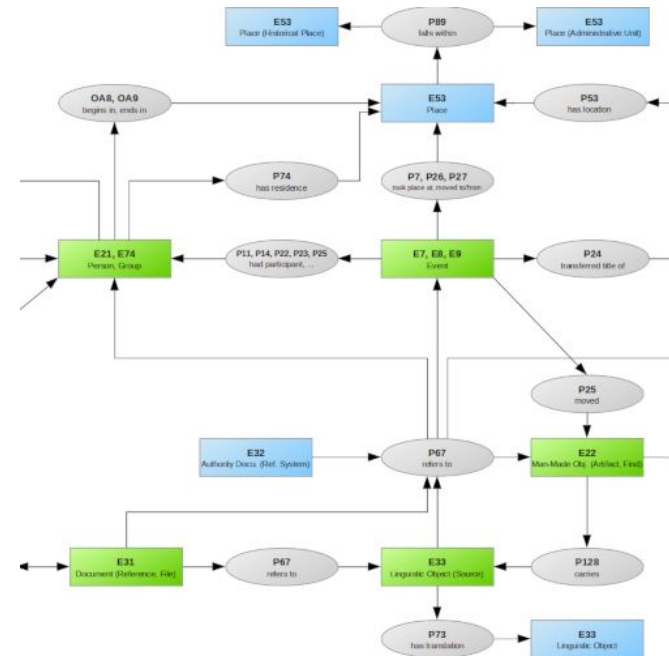
These people supported us in many different ways. Our thanks goes to all of them.

Aleksandra Apic  
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Britta Breuers  
Christof Rauchenberger  
Christoph Hoffmann  
Dalibor Pančić  
Daniel Kittel  
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Eugen Hotwagner  
Johannes Preiser-Kapeller  
Judith Pucher  
Katharina Winckler  
Klaus Illmayer  
Laura Kremser  
Ludwig Maximilian Breuer  
Mihailo Popović  
Peter Andorfer  
Petra Heinicker  
Roland Filzwieser  
Sandra Lehecka  
Saranya Balasubramanian  
Sebastian Majstorovic  
Semra Kilic-Dinler  
Seta Štuhec  
Silvia Gómez-Senovilla  
Stefan Probst



# 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
- Stored in an object oriented network





# Data enrichment with types and linked open data

- Standard types
- Custom types
- Value types
- Linked open data
  - Wikidata
  - GeoNames
  - Custom, e.g. Viaf, GND

Standard types

Custom types

Place types

Value types

System types

Actor actor relation

Actor function

Artifact

Bibliography

Edition

Event

Type to search

+ Type

Building activity 0

▸ Change of Property 2 (69)

Confirmation of Property 12

▸ Conflict 5

Consecration of a church 0

▸ Extreme event 0

▸ Gathering 0

▸ Mentioned 23 (5)

▸ Movement of people or goods 1 (8)

▸ Recognition of Title 0

Wedding 0

Selection: single

Classes: Acquisition, Activity, Event, Move, Production

Untyped entities: [show](#)

Description

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





# OpenAtlas Development

- Solely open source technology
- One release about every month
- Close cooperation with users
- High quality
  - Coding standards
  - Tests and coverage
  - Bugs have the highest priority
  - Tools to test data integrity



**Python** is an interpreted, high-level, general-purpose programming language.

Website: <https://www.python.org>

Licence: Python Software Foundation License



**Flask** is a micro web framework, written in Python, with the ability to scale up to complex applications.

Website: <https://palletsprojects.com/p/flask/>

Licence: BSD



**PostgreSQL** is a free and open source relational database management system.

Website: <https://www.postgresql.org/>

Licence: PostgreSQL License



**PostGIS** is a spatial database extender for PostgreSQL and adds support for geographic objects.

Website: <https://postgis.net>

Licence: GPL 2 or later



**Bootstrap** is a free and open source CSS framework.

Website: <https://getbootstrap.com/>

Licence: MIT



**Leaflet** is an open source JavaScript library used to build web mapping applications.

Website: <https://leafletjs.com/>

Licence: BSD-2-Clause



**Jinja** is a full-featured template engine for Python with full unicode support.

Website: <https://palletsprojects.com/p/jinja/>

Licence: BSD





# Front End



- Andreas Olschnögger
  - Studies
    - Bachelorstudium Software & Information Engineering
    - Masterstudium Software Engineering & Internet Computing
  - since January 2022 Developer for OpenAtlas



- Moritz Großfurtner
  - Studies
    - Bachelorstudium Medieninformatik und Visual Computing
  - since October 2022 Developer for OpenAtlas



# Front End – User Interface for data entry

Source Event Actor **Place** Artifact Reference Types

Search term

Place > Edit Demo 7.7.0

Name \*

Alias

Type

Administrative unit

Historical place

Artois-Picardie

GeoNames  precision

Wikidata  precision

Date

Description

→

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Leaflet

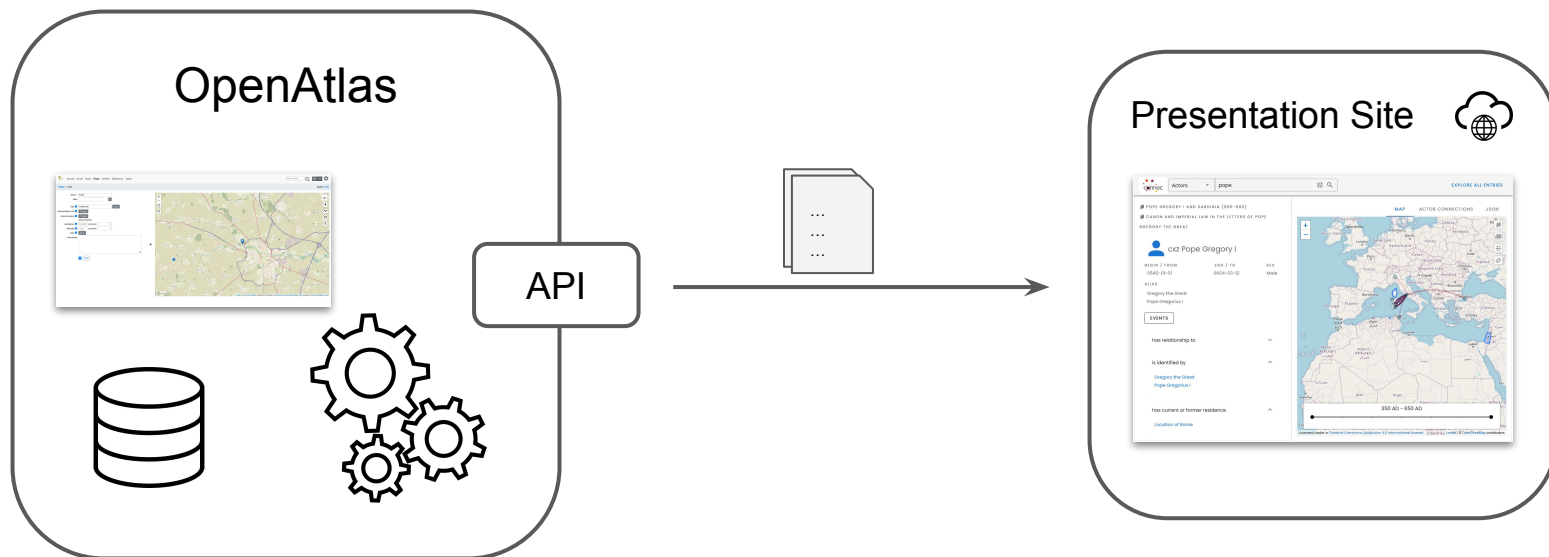
Flask

Jinja

Bootstrap

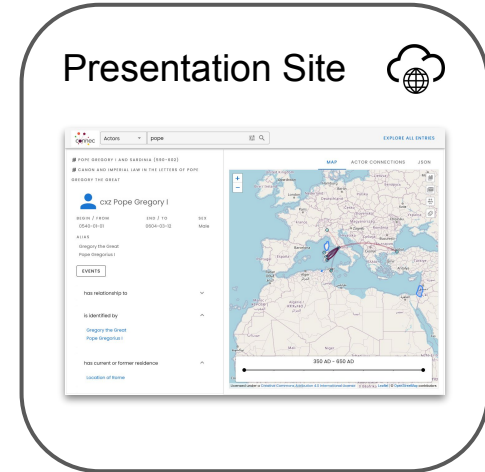


# Front End – Presentation Website







# Front End – Presentation Website











# Front End – Connec

 Actors  

[EXPLORE ALL ENTRIES](#)



The diagram shows the word 'connec' in a large, dark purple font. The letter 'c' is replaced by a central purple circle. Six lines radiate from this central circle to six smaller colored circles: green (top-left), orange (top), dark purple (top-right), red (right), yellow (bottom-right), and red (bottom-left).

-  User Guide
-  Map
-  Actor Connections
-  Case Studies
-  Methodology

The CONNEC database features four letter collections (386-603 CE), including Augustine, Paulinus, Avitus, and Gregory. The database foregrounds their spatial worlds and social connections. It contains ??? letters, ??? actors and groups, and ??? locations.





# Front End – Connec

connec

Actors

Search for Actors

EXPLORE ALL ENTRIES

+

-

350 AD - 650 AD

☒ Augustine (386-430)  
[learn more](#)

☒ Avitus (500-518)  
[learn more](#)

☐ Canon and Imperial Law in the Letters of Pope Gregory the Great  
[learn more](#)

☒ Paulinus (390-420)  
[learn more](#)

☒ Pope Gregory I and Sardinia (590-602)  
[learn more](#)

Event Types

Sender Sex

Bearer Sex

Recipient Sex

Traveller Sex

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connec

Actors

Gregory

EXPLORE ALL ENTRIES

POPE GREGORY I AND SARDINIA (590-602)

MAP

ACTOR CONNECTIONS

JSON

Philoxenus

BEGIN / FROM 0599-10-01

END / TO 0599-10-31

SEX Male

ALIAS

Filoxenus (PCBE Italie 21)

Philoxenus 4 (PLRE III B)

Philoxenus was a layman, who likely lived on Sardinia. He appears in a single letter sent from Pope Gregory to Marinianus (2), the...

read more

EVENTS

has relationship to

is identified by

[Filoxenus \(PCBE Italie 21\)](#)

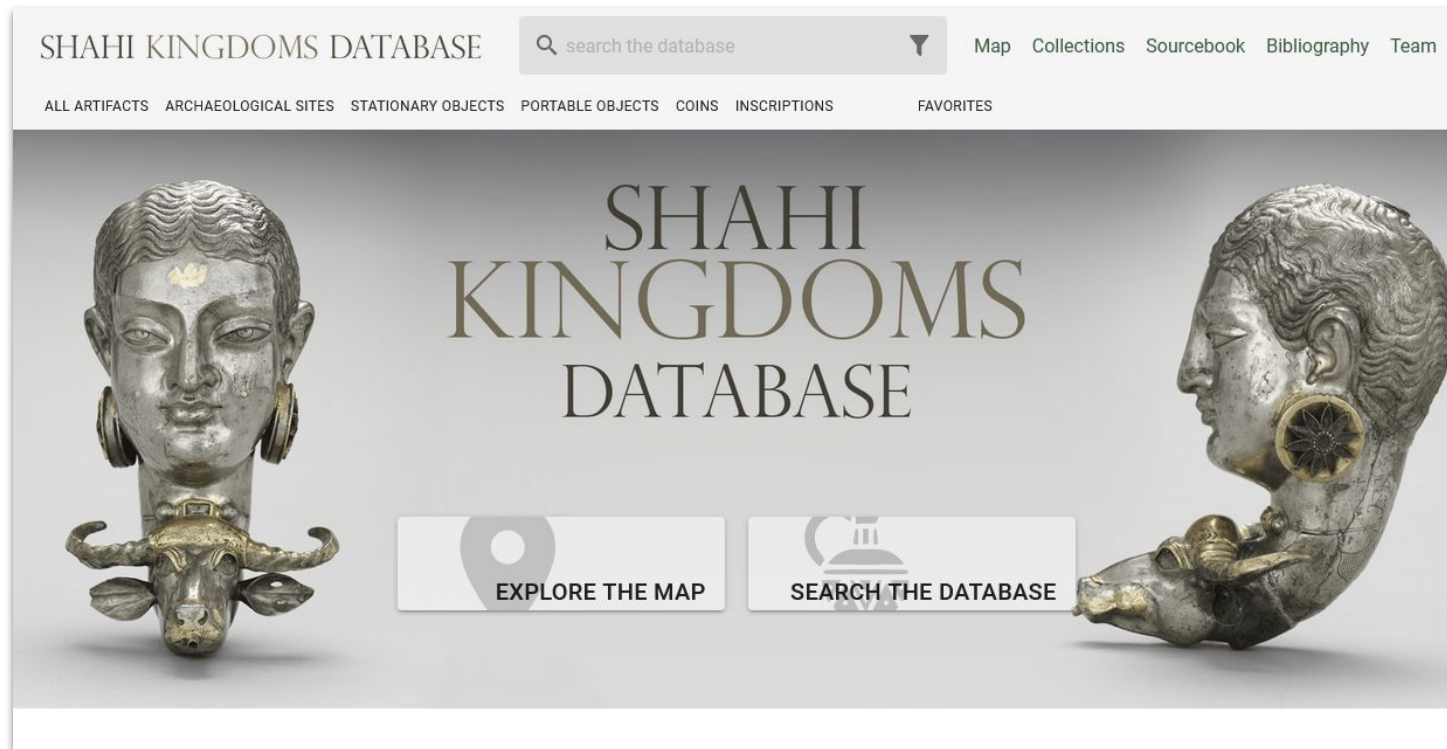
[Philoxenus 4 \(PLRE III B\)](#)

has current or former residence

Relation Types



# Front End – Shahi Kingdoms Database



Leaflet

Vuetify

NuxtJS

Vue.js





# Front End – Shahi Kingdoms Database

SHAHI KINGDOMS DATABASE

search the database

Map Collections Sourcebook Bibliography Team

ALL ARTIFACTS ARCHAEOLOGICAL SITES STATIONARY OBJECTS PORTABLE OBJECTS COINS INSCRIPTIONS FAVORITES

7

7th Century

AFGHANISTAN

Termez Sheberghan Mazar-e-Sharif Kunduz Taloqan Maymana Chaghcharan Heray Rud Kabul Jalalabad Peshawar Islamabad Rawalpindi Ghazni Khost Sialkot Jammu Gujranwala Sargodha Lahore Amritsar Faisalabad Dera Ismail Khan Kandahar Lashkar Gah

TABLE LIST MAP GALLERY

SHAHI KINGDOMS DATABASE

Portable

Map Collections Sourcebook Bibliography Team

ALL ARTIFACTS ARCHAEOLOGICAL SITES STATIONARY OBJECTS PORTABLE OBJECTS COINS INSCRIPTIONS FAVORITES

## Attendant Figure from a Halo

800 - 900

Place of production: **Historical Northwest India** Current location: **Metropolitan Museum of Art** (1987.142.310)

Credit Line: Samuel Eilenberg Collection, Gift of Samuel Eilenberg, 1987.

Open license: Metropolitan Museum, <https://www.metmuseum.org/art/collection/search/38992> (recent access: 07.05.2022). All images >

### Details

ARTIFACT: Statue

MATERIAL: copper alloy metal

DIMENSIONS: Height: 7.9 cm

CATEGORY OF AUTHENTICITY: B

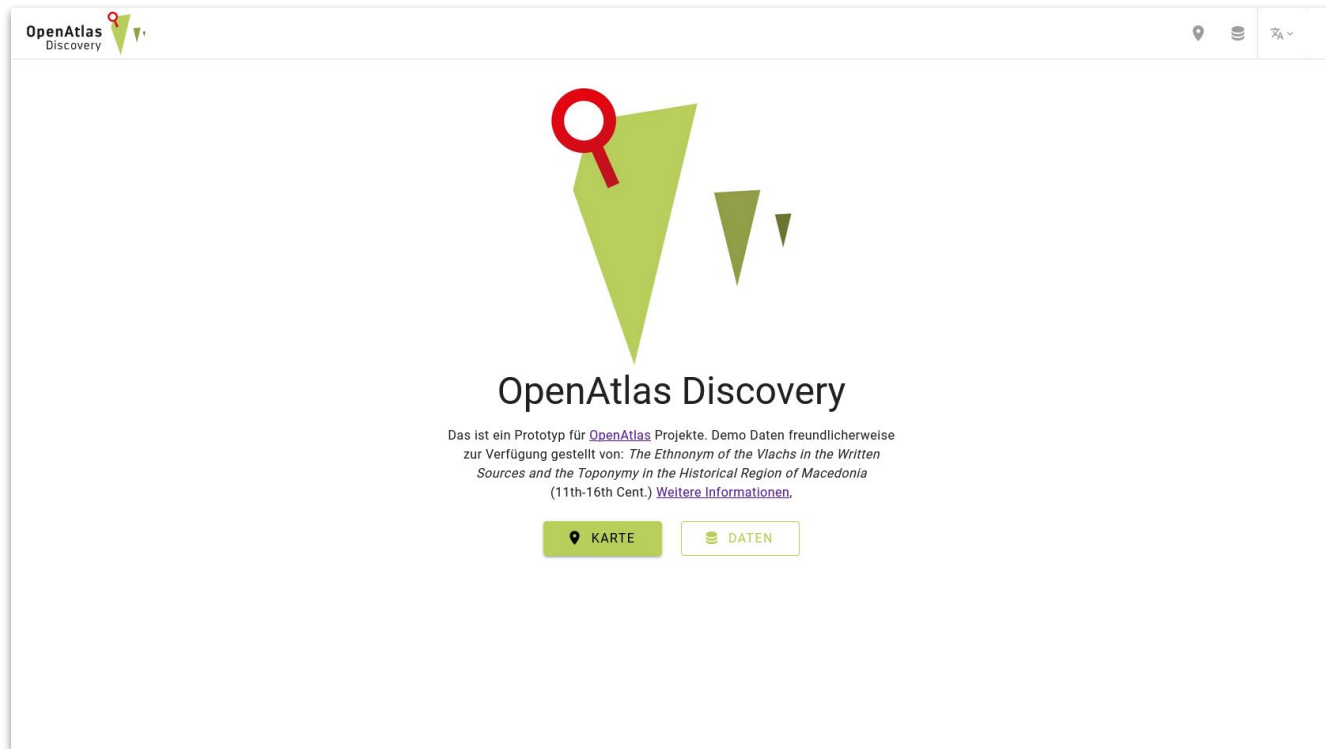
HAS INSCRIPTION: No

PLACE OF PRODUCTION: Historical Northwest India

Discover on Map >

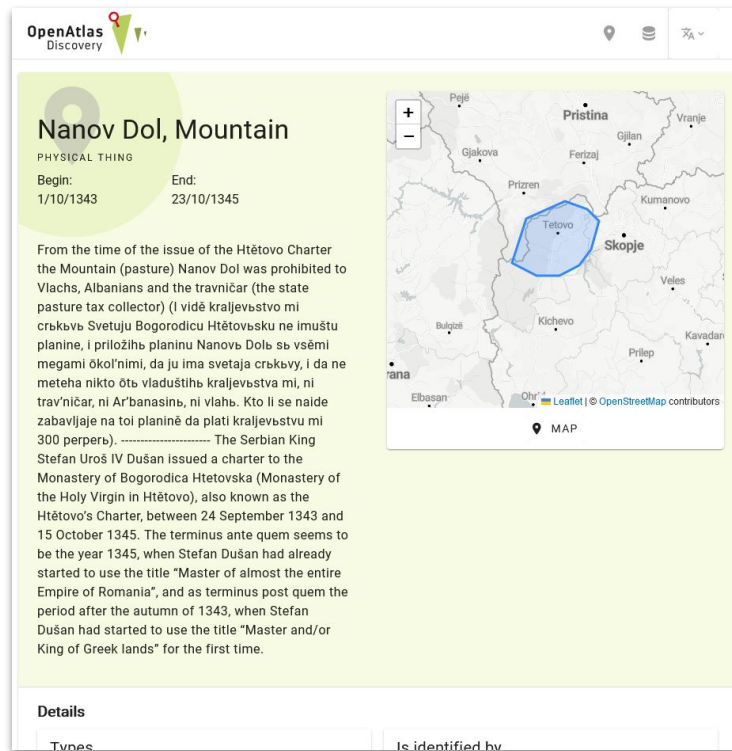
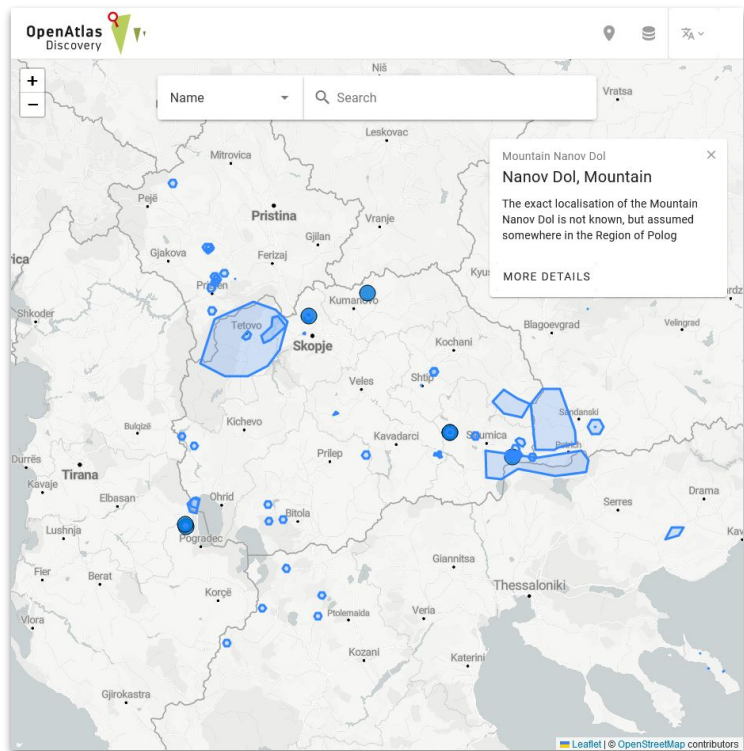


# Front End – OpenAtlas Discovery





# Front End – OpenAtlas Discovery



A large, light green, semi-transparent graphic resembling a stylized 'W' or a map outline is centered in the background. A pink location pin is placed on the leftmost peak of the 'W' shape.

**Thank you for your kind attention!**

OpenAtlas:

Web: <https://openatlas.eu>

GitHub: <https://github.com/craws/OpenAtlas>