

PEPAdb: putting FAIR principles into practice

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Funding

Projects and contracts

-Networks and Rare Rocks in the Iberian Peninsula and the Mediterranean (6th-2nd Millennium BC)

Principal Investigator: Carlos Patricio Odriozola Lloret

Type of project: State Plan 2013-2016 Excellence - R&D Projects

Reference: HAR2017-83474-P

Start date: 01-01-2018

End date: 31-12-2021

-Research and development of new technologies for the discourse of power: imitating amber ornaments in recent prehistoric Iberia

Principal Investigator: Carlos Patricio Odriozola Lloret

Type of project: PAIDI - R&D Projects

Reference: P20_01080

Start date: 05-10-2021

End date: 31-12-2022

-Scholarship under the program aid for university teacher training (FPU) provided by the Ministry of Universities

Coordinator: Carlos Patricio Odriozola Lloret

Reference: FPU20/05028

Start date: 01-12-2021

End date: 30-11-2025

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-Today, we refer to any information, *“of or relating to the relative position of things on the earth's surface”* as geospatial data (McCoy, 2017).

-Archaeology → Spatial Data → Open Data

-According to Directive (EU) 2019/1024: *“Open data as a concept is generally understood to denote data in an open format that can be freely used, re-used and shared by anyone for any purpose”*.

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-PEPADB origins dates to 2010 → projects lead by Víctor Hurtado Pérez:
[P06-HUM-02159](#) and [MAT2005-00790](#).

-PEPADB own funding dates to 2012 → projects lead by Carlos P. Odriozola Lloret: [HAR2012-34620](#), [HAR2017-83474-P](#) and [P20_01080](#).

-[P20_01080](#) principal aim → comply with Directive (EU) 2019/1024 and FAIR policy

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PEPAdb contains personal adornment records referred to late Prehistory. The actual geographical coverage of PEPAdb is restricted to the ***Iberian Peninsula***.

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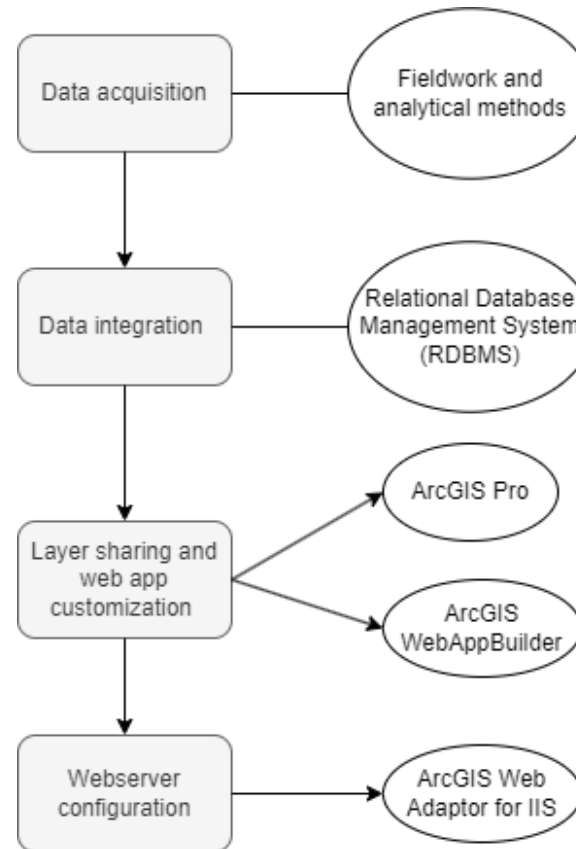


Figure 1: Research workflow.

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-Data acquisition

The dataset is composed by:

- 1) Molecular level analysis of geological samples and artifacts including FTIR
- 2) Elemental composition analysis of geological samples and artifacts by means of energy dispersive x-ray fluorescence analysis (XRF)
- 3) Agent Based Models (ABM): a) mineral classification and artifacts provenance
- 4) Chronological model for the production and distribution of the different minerals consumed as personal adornment

<i>Description of Data</i>	<i>Data Type</i>	<i>Format</i>
Geological survey data and artifacts' location	Spatial	WMS, WFS, JSON, csv, KMZ, JSON
Artifacts and geological samples molecular level, and elemental analysis	Experimental	csv
Artifacts' mineralogy	Experimental Modeled	csv, JSON, .py
Artifacts' origin	Modeled	csv, JSON, .py
Space time patterns	Spatial	WMS, WFS, JSON, csv, KMZ, JSON
ABM	Modeled	csv, JSON, .py

Figure 2: Type and format of the data produced by PEPAdb.

-Layer sharing and webapp customization

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Figure 3: ArcGIS Pro logo.

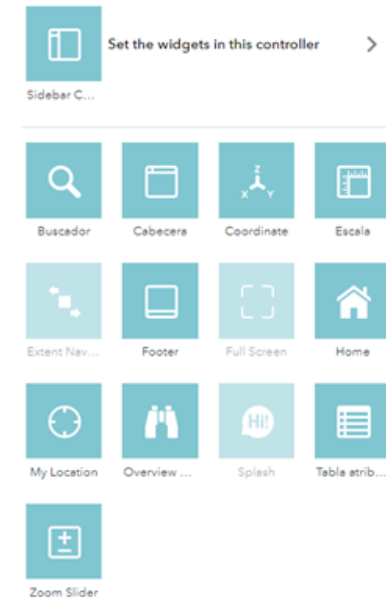


Figure 4: ArcGIS WebAppBuilder widgets.

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-Webserver configuration

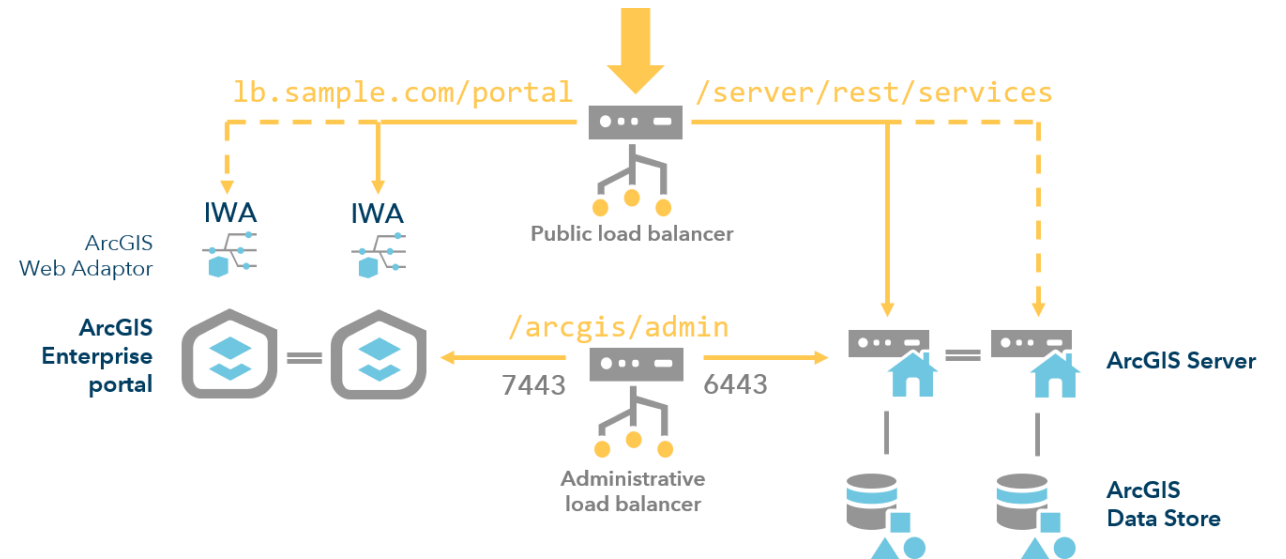


Figure 5: Configuration process of a highly available portal

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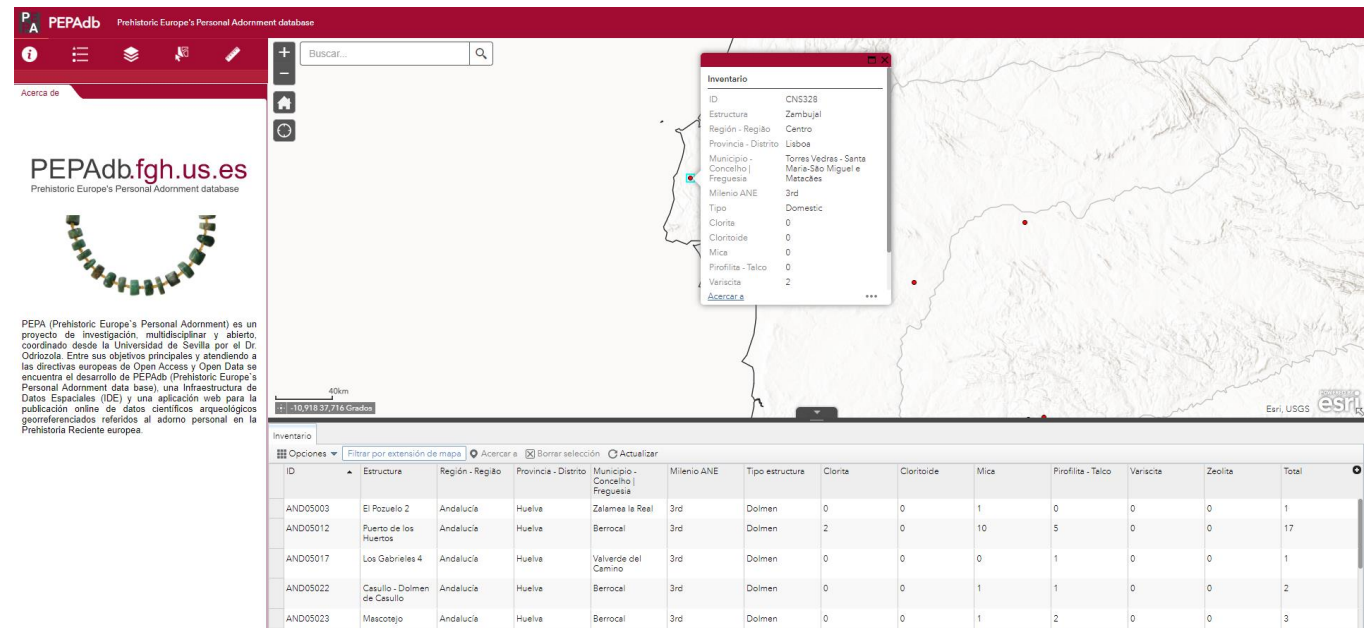


Figure 6: PEPAdb visualization in Google Chrome web browser.

https://pepadb.fgh.us.es/inventario_mineral

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We would like to integrate...

- 1) Query widget
- 2) Graphical popup's
- 3) Machine learning predictive function

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-Concluding remarks

Archaeological web applications for late Prehistory information management are completely necessary in the transfer of knowledge. These tools give more visibility to results developed by researchers (Saavedra-Duarte et al 2017). Data automation is a major challenge considering that PEPAdb has thousands of records related to prehistoric materials. This is why it is necessary to establish a workflow capable of overcoming some of the limitations associated with the massive amount of data.

References

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Thanks