Linked Open Data Approaches within the ARIADNE project

@ARIADNE_Network

ariadne-infrastructure.eu
portal.ariadne-infrastructure.eu

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ARIADNE is funded by the European Commission's Seventh Framework Programme

What is ARIADNE?

A proposal to integrate existing archaeological data infrastructures across Europe, so researchers can use the various distributed datasets and new technologies to explore new research methodologies.

What is ARIADNE?

Stimulate new research avenues in the field of archaeology, relying on the comparison, re-use and integration into current research, the outcomes of past and on-going field and laboratory activity.

ARIADNE Activities

- **Research Workpackages**
  - **Implementing Interoperability**
  - **Developing Integrated Services**
  - **Addressing Complexity**
  - **Linking Archaeological Data**
  - **Data Mining and Natural Language Processing**
  - **Innovation in Archaeological Research Methodology**

Focus

- How does working with Linked Data make the ARIADNE project more open?
- What Linked Data approaches are used by ARIADNE?
- Lessons learned: How can archaeological data be more open?

ARIADNE and Linked Data

- How does working with Linked Data make the ARIADNE project more open?
  - Using Linked Data is a way to make data more easily processable by machines, more automated
  - A way to make heterogeneous data more interoperable and searchable (often) by linking with other data by mapping to an authoritative vocabulary or mapping between vocabularies
  - A way to infer new information from existing data

ARIADNE and Linked Data

- Just because your using Linked Data doesn't mean your data is open (LOD)
  - Linked Data is a technical solution for breaking down data silos and creating a Web of Data instead of a Web of Documents (pages)
  - The data still has to be open and accessible, through open licensing and open dissemination

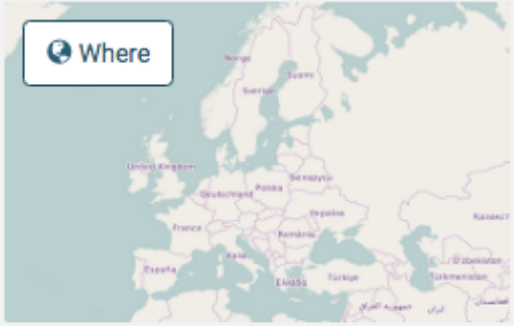
ARIADNE

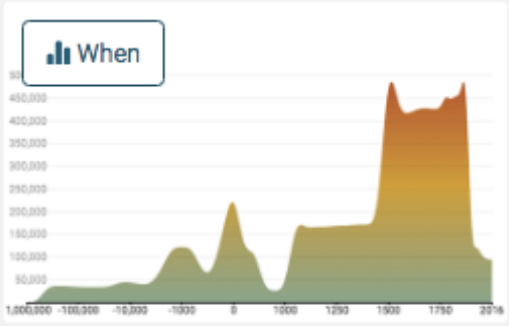
All fields ▾ | Search for resources in the Ariadne catalog ... | 🔍

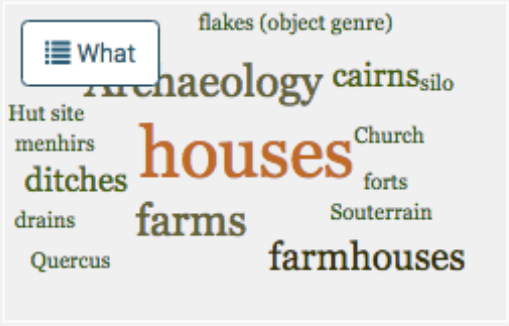
Welcome

ARIADNE brings together and integrates existing archaeological research data infrastructures so that researchers can use the various distributed datasets and new and powerful technologies as an integral component of the archaeological research methodology.

Browse the Catalog





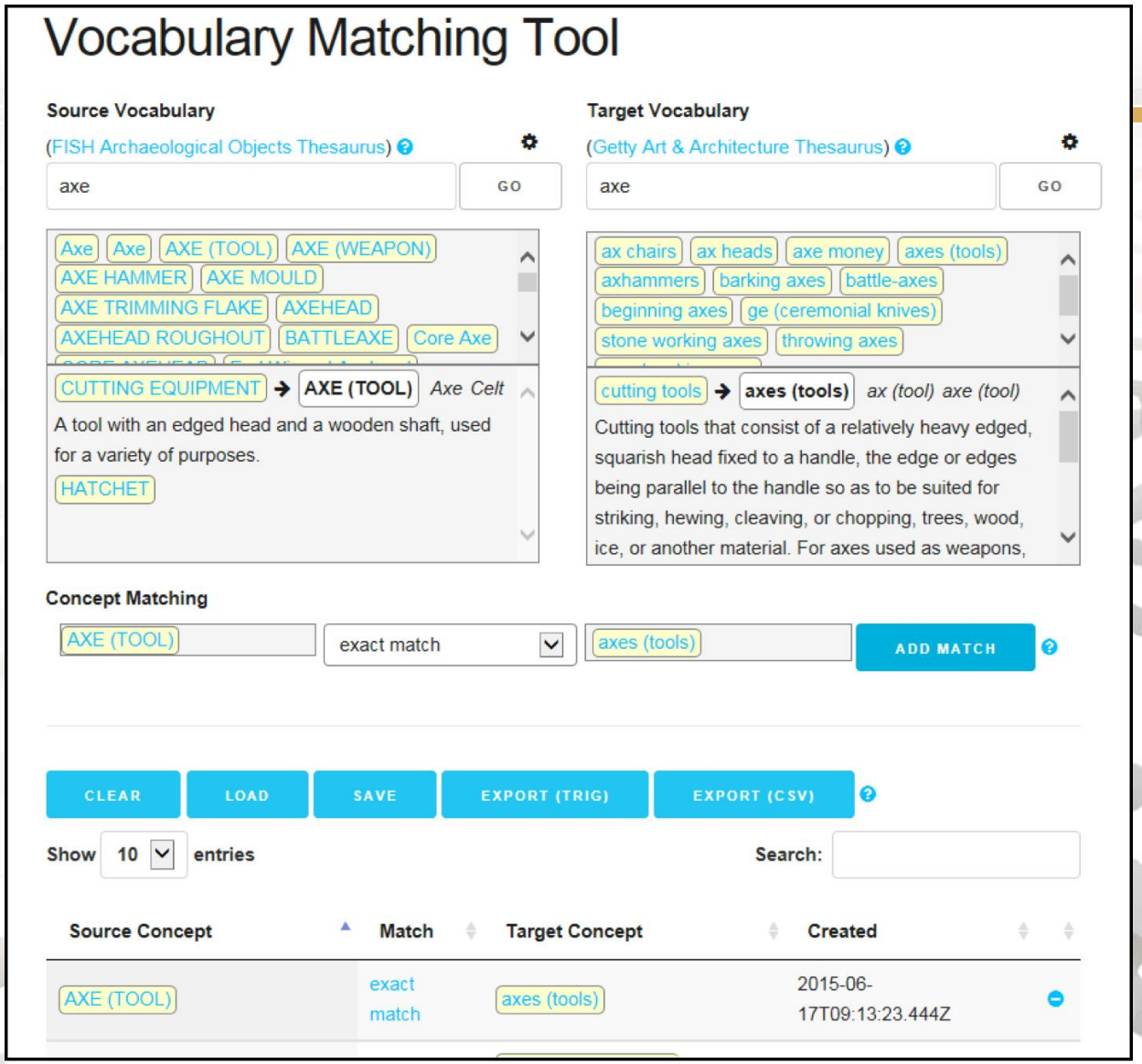


ARIADNE and Linked Data

- What Linked Data approaches are used by ARIADNE?
  - What: Mapping subjects to Getty Art & Architecture Thesaurus (controlled)
  - When: Contributing to/using PeriodO (assertions) for time periods

Mapping to the AAT

- Manually matched vocabulary concepts to Getty Art & Architecture Thesaurus (AAT) concepts; a popular LOD vocabulary
  - Used the AAT as a ‘mediating platform’ or neutral spine to map concepts in national languages
  - Partners at the University of South Wales created a bespoke thesaurus mapping tool for the task, but tool is openly available for use outside of ARIADNE



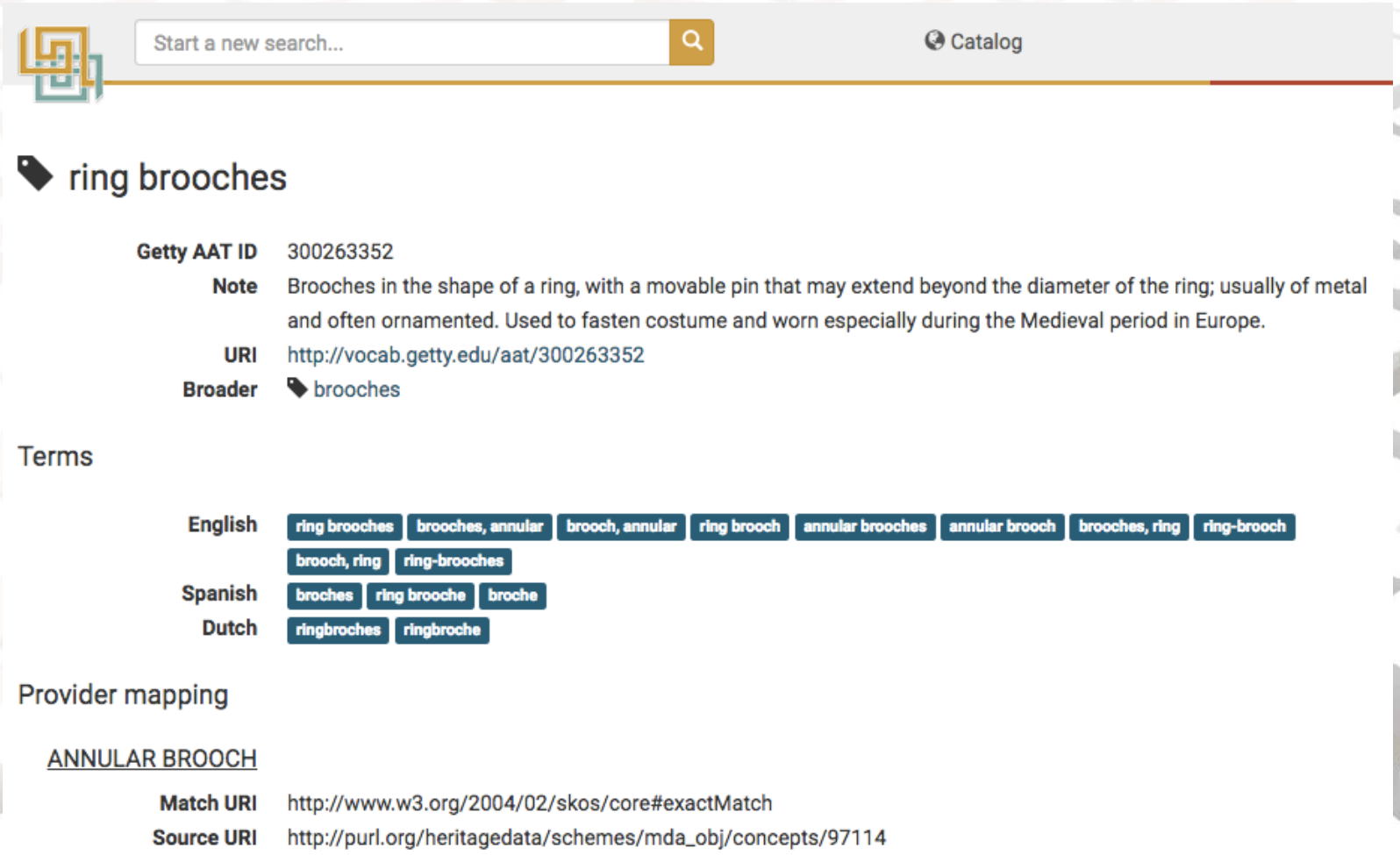
http://www.heritagedata.org/vocabularyMatchingTool/

Mapping to the AAT

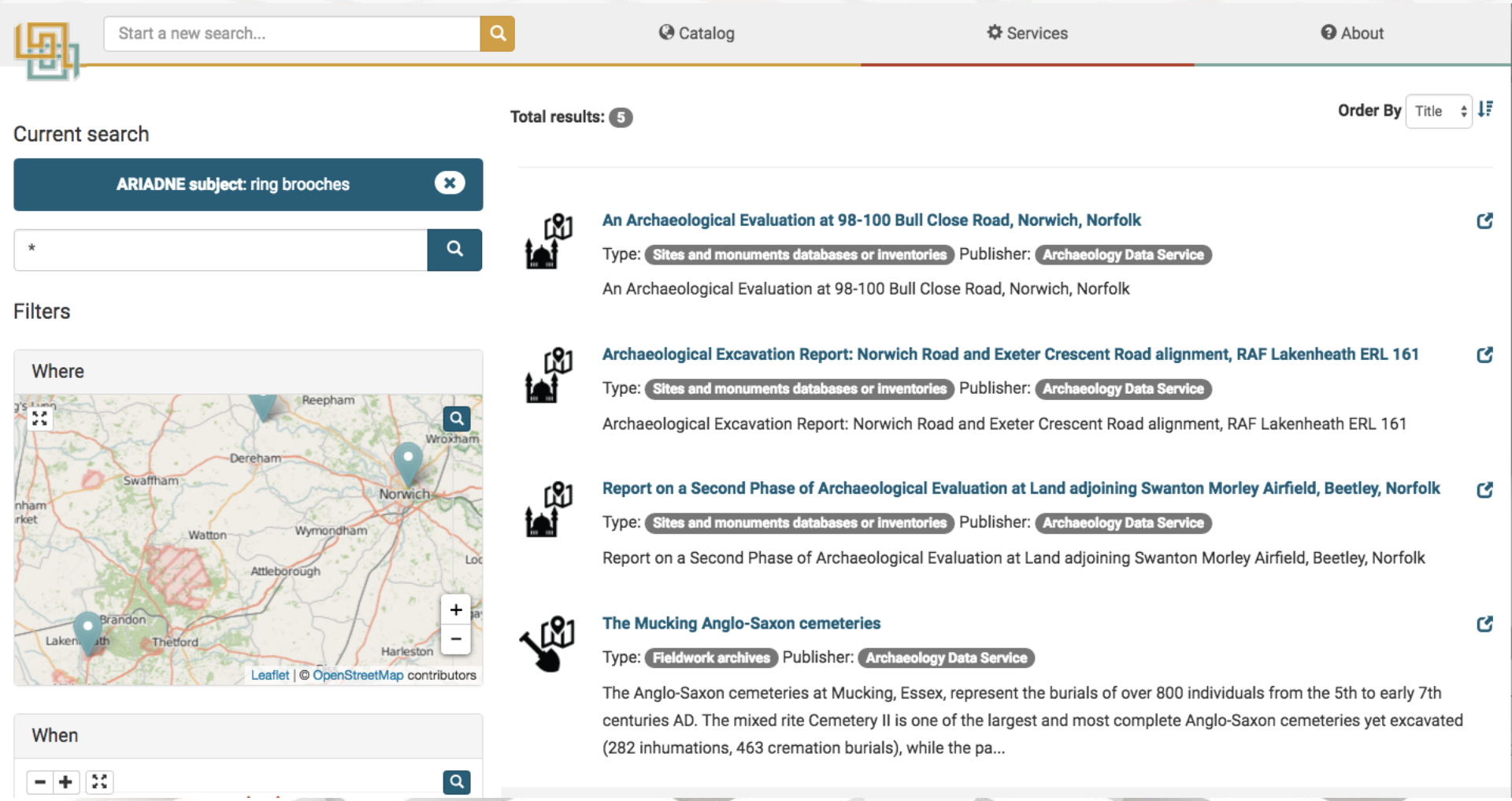
- Manually matching vocabulary concepts to Getty Art & Architecture Thesaurus (AAT) concepts
- Uses linked data – Javascript components using external SPARQL endpoints (no back-end)
- Side by side comparison of concepts, with contextual details (labels, scope notes, linked concepts)
- Multilingual - French, German, Spanish, English, Dutch AAT concept details
- Export created mappings to JSON, CSV, RDF

Mapping to the AAT

Mapping to the AAT



Mapping to the AAT



Mapping to the AAT

Start a new search... Catalog Services About

← Back to search results

Report on a Second Phase of Archaeological Evaluation at Land adjoining Swanton Morley Airfield, Beetley, Norfolk

Access resource on the web

Report on a Second Phase of Archaeological Evaluation at Land adjoining Swanton Morley Airfield, Beetley, Norfolk

ring brooches necklaces crematoria

Swanton Morley Airfield, Beetley, Norfolk

Metadata

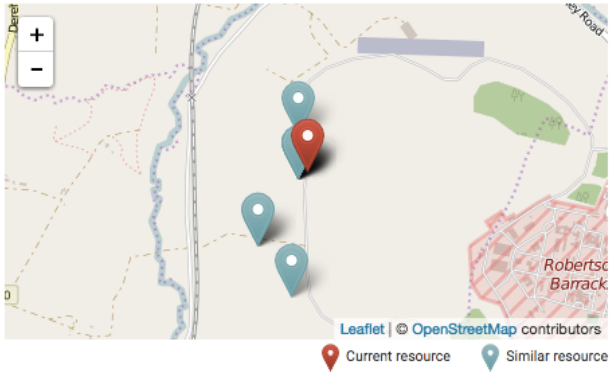
ARIADNE ID	14672180
Original ID	1942829
Language	English
Resource type	Sites and monuments databases or inventories
Subject	ring brooches necklaces crematoria
Dating	410 – 1066
Place	Swanton Morley Airfield, Beetley, Norfolk, ENGLAND *[0.954953, 52.729908]*
Type	Dataset
Publisher	Archaeology Data Service *[Organization]*
Issued	2011-10-11T00:00:00.0
Modified	2011-10-11T00:00:00.0

Responsible persons and organisations

Resource is part of

ArchSearch: ADS catalogue

Geographically similar



Thematically similar

Report on a Second Phase of Archaeological Evaluation at Land adjoining Swanton Morley Airfield, Beetley, Norfolk

Working with PeriodO

- PeriodO is a LOD gazetteer for linking and visualising data
  - It contains scholarly definitions of historical, art-historical and archaeological period
  - Allows easier linking of datasets that define periods differently (when is always linked with where in archaeology)
  - Allows users to see where period definitions overlap or diverge

Working with PeriodO

- Issues with interoperability and time in archaeology
  - We often use conceptual, rather than quantitative language to refer to time (e.g. Bronze Age)
  - Different people can use the same period terms to refer to very different things (Bronze Age happens at different times and can have different meaning depending on place)

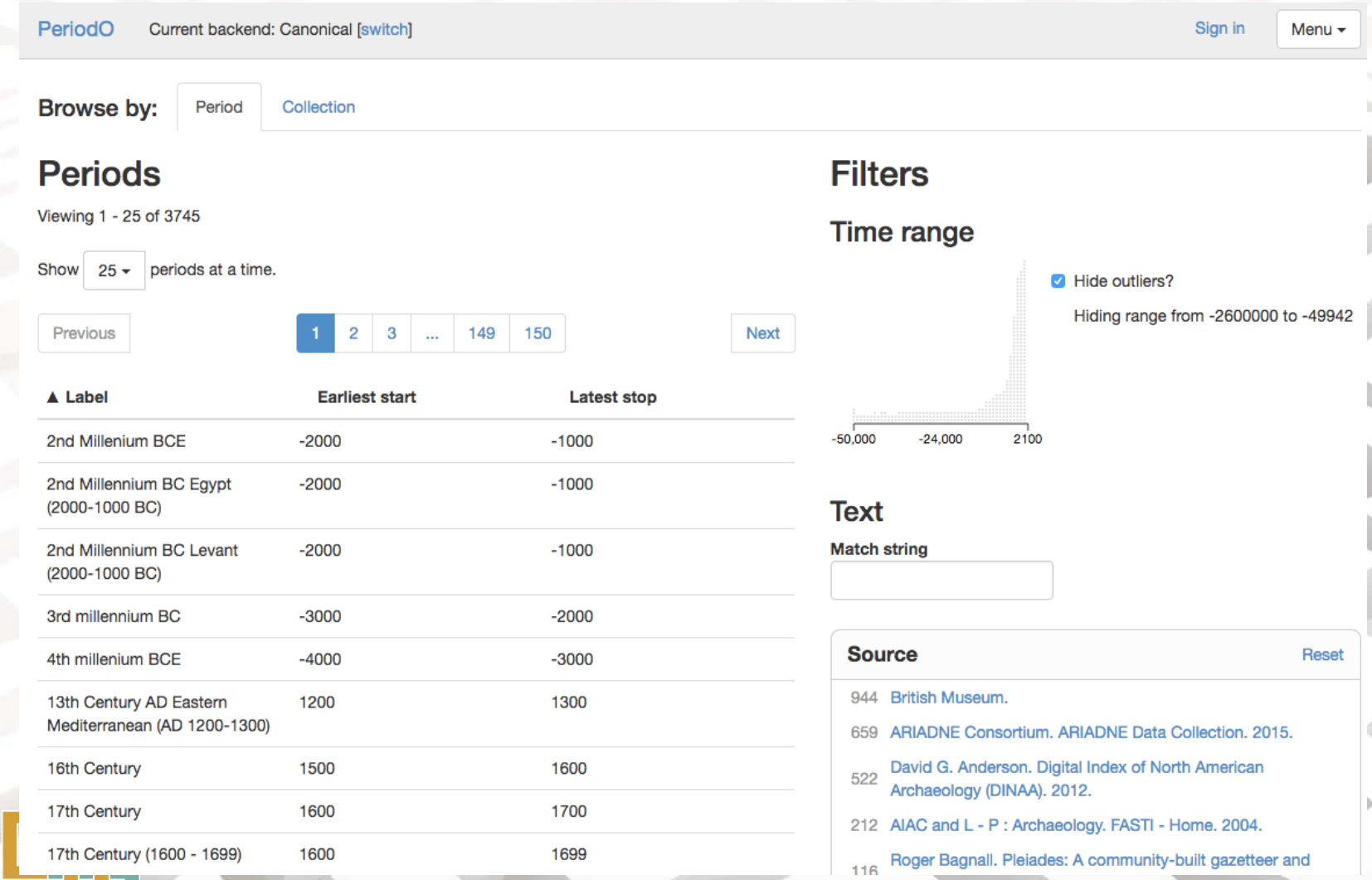
Working with PeriodO

- The PeriodO approach
  - Documents definitions of periods by authoritative sources (assertion and attribution)
  - Corresponds with traditional scholarly practice, so users know what place is associated with the assertion, and who says so (what authoritative source has contributed the assertion)

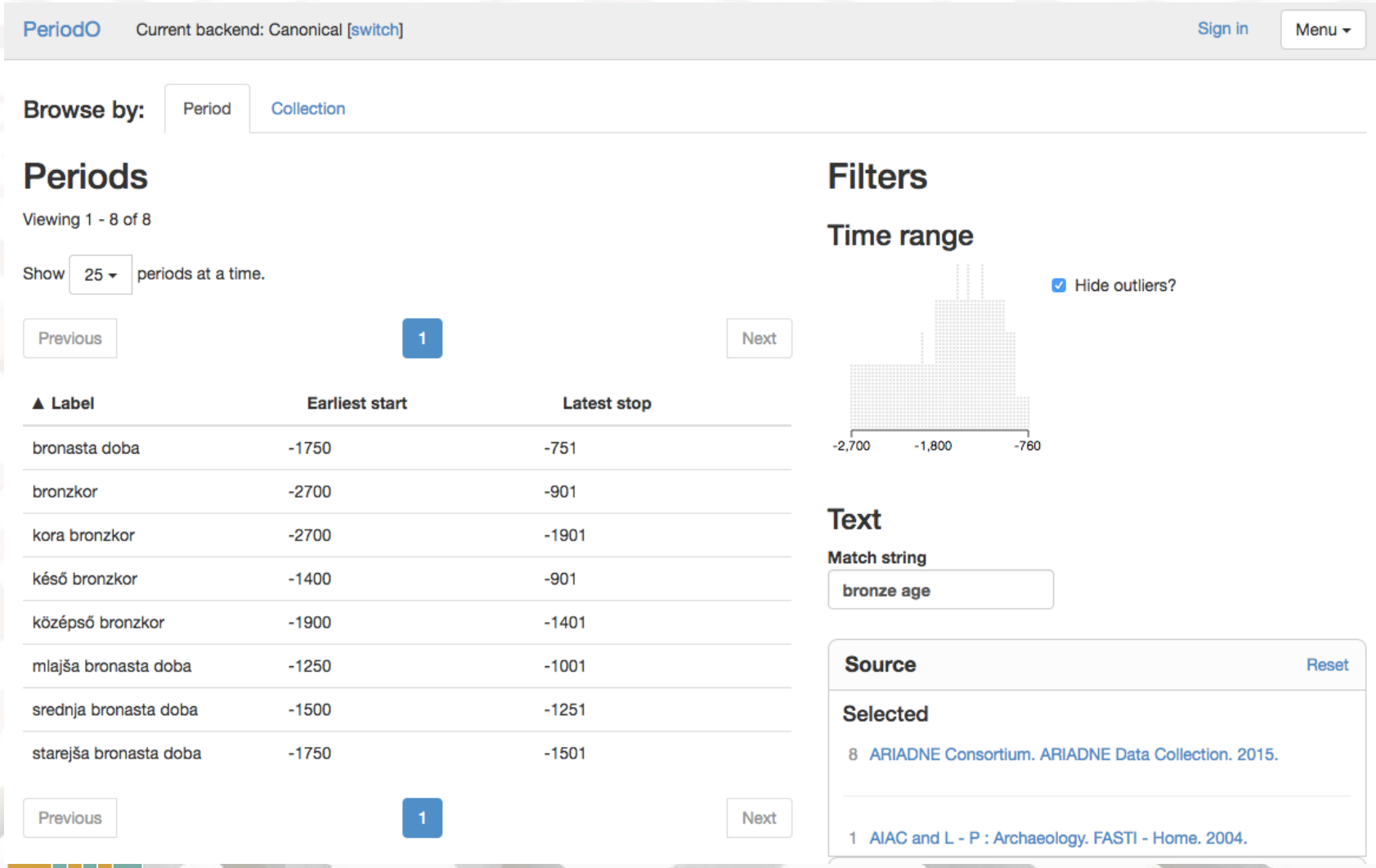
Working with PeriodO

- How ARIADNE is working with PeriodO
  - All ARIADNE content-providing partners were asked to submit the authoritative period terms in use in their country or region, in their national languages to PeriodO
  - The submitted terms were given PeriodO Linked Data URIs (Linked Data addresses) and incorporated into the gazetteer for use within ARIADNE, but allowing interoperability with any other project or researcher using PeriodO

Working with PeriodO



Working with PeriodO



Working with PeriodO

- How ARIADNE is working with PeriodO
  - PeriodO search is currently being implemented in the ARIADNE portal, and should be available within the next couple of months
  - As new associated partners are added to ARIADNE (e.g. Lithuania!) they will also be invited to submit their period terms to PeriodO, further broadening coverage across Europe

Lessons Learned

- Lessons learned: How can archaeological data be more open?
  - Linked Data provides important tools for making archaeological data more open, but working together to support open practices is the real key
  - Most researchers have bigger concerns than making their data open as Linked Data, there is a significant learning and technology curve
  - Getting to this point has taken years of cooperative work by archaeologists and developers

Lessons Learned

- Lessons learned: How can archaeological data be more open?
  - Archaeologists across Europe are coming under increasing pressure to deposit their data in an open repository and make it available for re-use
    - Pressure from funders
    - Pressure from institutions
    - Funding available but no guidance
    - No appropriate options for archaeological data

Lessons Learned

- Lessons learned: How can archaeological data be more open?
  - This initial deposit is where support is really needed; making data available with an open license is the hardest work
  - Once data is online under an open license, opportunities to make it even more open and accessible using Linked Data become possible!

Thank You!

ARIADNE is a project funded by the European Commission under the Community's Seventh Framework Programme, contract no. FP7-INFRASTRUCTURES-2012-1-313193.

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