

# What's in a name? Controlled vocabularies for European Research in the ARIADNE RI

## Julian Richards Director ADS; ARIADNE RI Deputy Chair

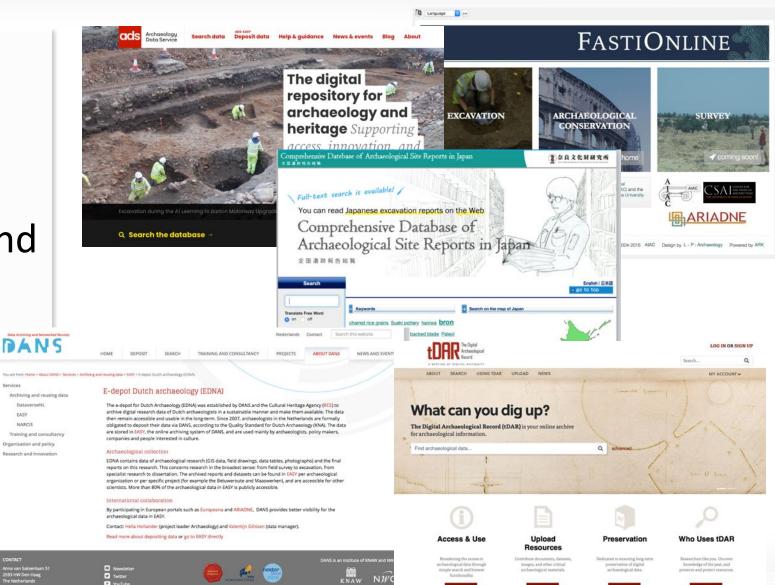


# The Challenges we face

- Multiple datasets
- Multiple repositories
- Multiple languages
- Multiple vocabularies and time periods
- Cross border searching

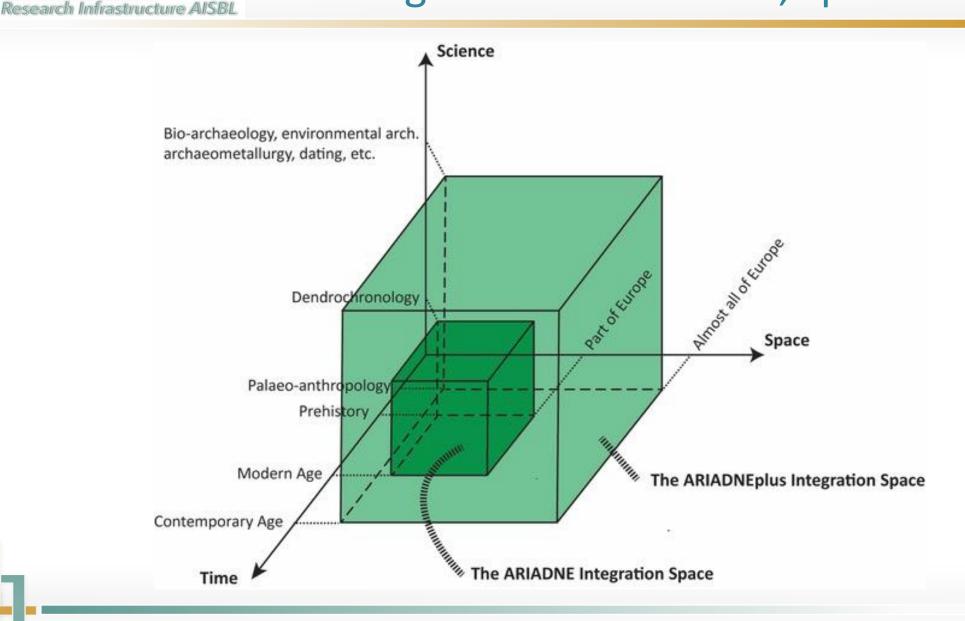
### Archiving and reusing data MARCH raining and consultan

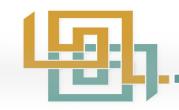
#### Organisation and policy earch and Innova





# Heterogeneous data: time, space & theme



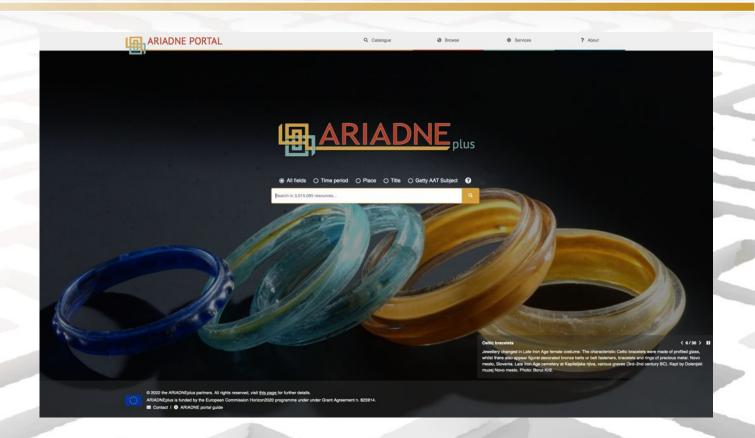




# **Quantity of resources**

### Quantity

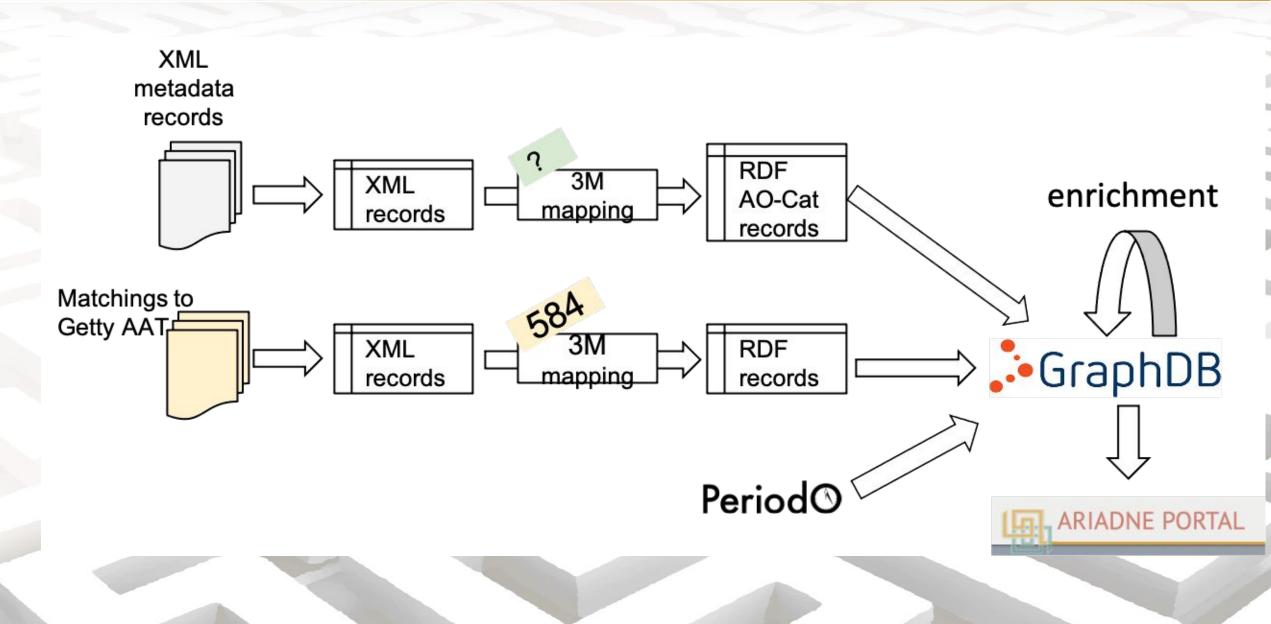
Number of records in the ARIADNE Catalogue 3.975m resources; shortly >4m

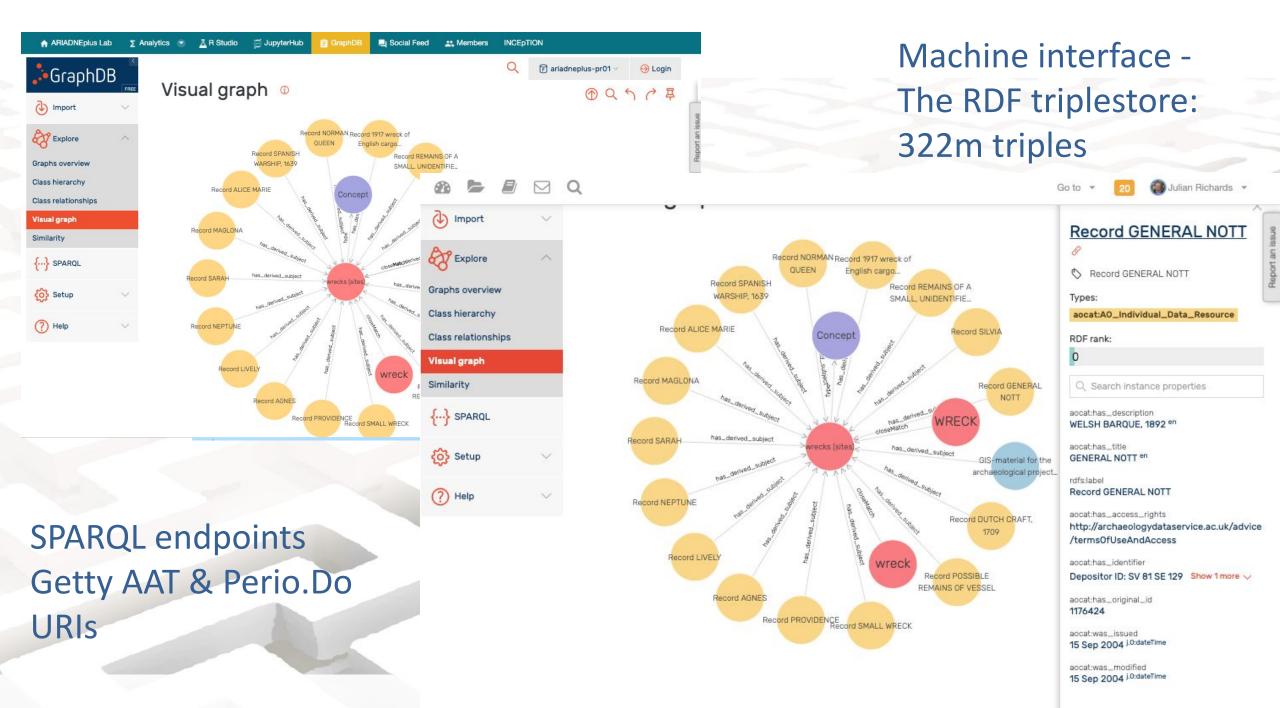


The largest research infrastructure for Archaeology & heritage - anywhere in the world



# Aggregation workflow







# Number of countries represented

## Quantity **4** continents 50 countries

ARIADNE PORTAL		Q Catalogue	Browse	Services	? About
> Getty AAT Subjects	S	National Zooarchaeological Reference Re	esource (NZRR)		
✓ Publisher		As part of Historic England (HE)'s Improving Reference Resource (NZRR) project (projec zooarchaeological research across all sector	t 7444) is to improve accessibility to z	cooarchaeological reference collection	
Enter text to filter on Publishers. Name	Hits 🗸	Resource type: Scientific analysis	,		
Archaeology Data Service	1098725	Place: World, europe, united kingdom, scotla Publisher: Archaeology Data Service Original subject: Antler, Bone, Tooth, Anima		wales, World, europe, united kingdom	, england
British Museum	945228	original subject. Antor, bond, room, Annie	a 5510, 2004015		
Historic Environment Scotland	334636				
Archaeological Information System of the Czech Republic (AIS CR)	229999	In 2009 Newcastle and Durham Universities Wearmouth and Jarrow, from their foundation a large team of professionals with funding fro	n some seven centuries after the birth	of Christ, to their place in contempor	
Nara National Research Institute for Cultural Properties	139368	Resource type: Fieldwork archive			
Data Archiving and Networked Services (DANS)	99291	Place: World, europe, united kingdom, engla sunderland, monkwearmouth	and, tyne and wear, south tyneside, ja	rrow, World, europe, united kingdom,	england, tyne and wea
• HNM	59684	Publisher: Archaeology Data Service Original subject: Optically stimulated luming	escence, Building elevation survey, C	ore sampling, Geophysical survey, Ge	eophysical magnetome
CEIPAC - Universitat de Barcelona	57054	Northamptonshire Historic Landscape Ch	haracter Assessment		
Institut national de recherches archéologiques préventives (Inrap)	37616	The Northamptonshire Historic Landscape C Northamptonshire Landscape. The Northam			
Swedish Rock Art Research Archives	25223	of broadly similar character into Character Ty	ypes, and then to sub-divide these int	o geographically distinct Character Ar	lac:
National Heritage Institute - Romania	18279	Resource type: Fieldwork archive Place: World, europe, united kingdom, engla	and, northamptonshire		
International Association for Classical Archaeology	14279	Publisher: Archaeology Data Service Original subject: Historic landscape charac	terisation		
O ZRC SAZU	8775	Land adjacent to A5, Lutterworth, Leicest	tershire: Archaeological evaluation	(OASIS ID: headland3-366701)	
Aarhus University	8687	An archaeological evaluation was undertake identified agricultural use of the land in the for			
CENIEH	8405	drainage ditches and a former hedge-line fie			ated new boundary and
Heidelberg Academy of Sciences and Humanities	7517	Resource type: Fieldwork archive Place: World, europe, united kingdom, engla	and, leicestershire, lutterworth		
IDACOR (CONICET/UNC)	2502	Publisher: Archaeology Data Service Original subject: Evaluation, Sample trench	hes, Ridge and furrow, Rural commerce	cial	
National Institute of Archaeology with Museum, Bulgarian Academy     of Sciences	1952	Land adjacent to Glebe Farm, Coventry R	load, Lutterworth: Archaeological n	nonitoring of boreholes (OASIS ID:	headland3-369514)
Swedish National Data Service	484	Archaeological borehole monitoring was und Evidence suggesting an earlier route for the			

Northamptonshire Historic Landscape Character Assessment provides a detailed review and description of the historic character of the				
hamptonshire Landscape. The Northamptonshire HLCA seeks to analyse the general surviving historic character of the County and group areas				
ly similar character into Character Types, and then to sub-divide these into geographically distinct Character Ar				
e type: Fieldwork archive				
e: World, europe, united kingdom, england, northamptonshire				
eology Data Service				
inal subject: Historic landscape characterisation				
adjacent to A5, Lutterworth, Leicestershire: Archaeological evaluation (OASIS ID: headland3-366701)				
rchaeological evaluation was undertaken by Headland Archaeology, on Land to the east of the A5, Lutterworth, Leicestershire. The evaluation				
tified agricultural use of the land in the form of extensive post-medieval ridge and furrow field system remains, undated field boundary and				
age ditches and a former hedge-line field boundary. Alluvial deposits and the course of a paleochannel wer				
ource type: Fieldwork archive				
e: World, europe, united kingdom, england, leicestershire, lutterworth				
lisher: Archaeology Data Service				
inal subject: Evaluation, Sample trenches, Ridge and furrow, Rural commercial				
a adjacent to Glebe Farm, Coventry Road, Lutterworth: Archaeological monitoring of boreholes (OASIS ID: headland3-369514)				
aeological borehole monitoring was undertaken by Headland Archaeology on land adjacent to Glebe Farm, Coventry Road, Lutterworth.				
ence suggesting an earlier route for the watercourse slightly to the south of its current position to the west of the boreholing area were produced				
g with the suggestion that intermittent and conjoining water sources contributed to deposit a sequence of allu				

Resource type: Fieldwork archive

# Just a few examples.....



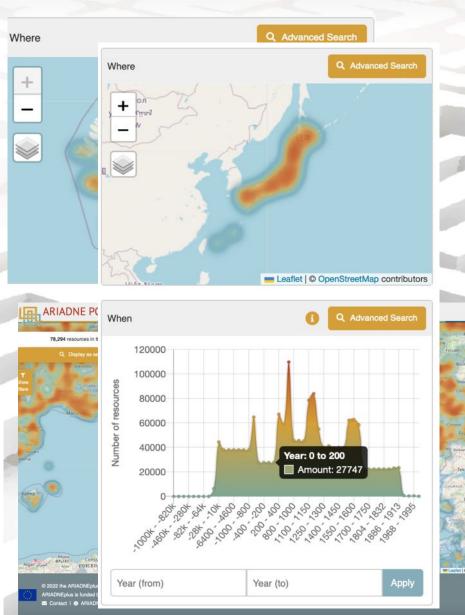
- France: 37616 fieldwork reports from Inrap
- Netherlands: 99291 records from DANS
- Iceland: 10344 sites and monuments from FSI
- FASTI: 14279 fieldwork records

## Extending into southern and eastern Europe:

- Hungary: 62401 fieldwork records from HNM
- Romania: 18279 sites & monuments from INP
- Bulgaria: 1952 sites & monuments from NIM-BAS
- Czech Republic: 229999 records from AIS CR
- Slovenia: 8775 records from ZRC-SAZU

## Extending beyond Europe:

- Japan: 139368 fieldwork reports from Nara
- United States: Casa Grande fieldwork archive from Digital Antiquity, ASU
- Argentina: 2502 records from CONICET



# Research Infrastructure AISBL

# Extending in time....



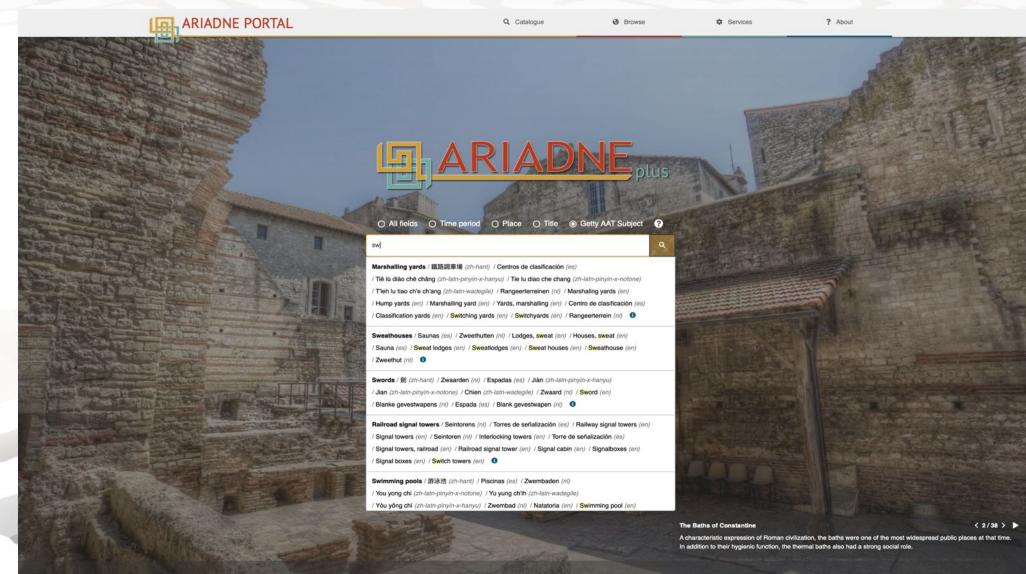
8405 records from CENIEH and 7417 from ROCEEH for early prehistory and hominid origins

Ottoman mosques and Communist farms in Dobruja, Romania, from IAVP



# Meaningful search results

## 2. Quality i. Good *meaningful* search results





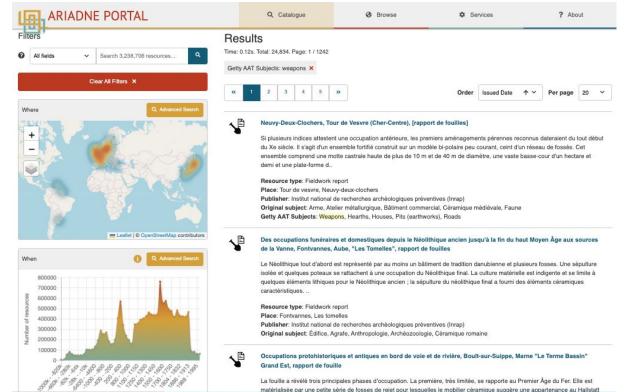
# The power of the AAT hierarchy

### Searching on "weapons" only: **753 resources**

Filters

#### ARIADNE PORTAL Q Catalogue Browse Services ? About Results Time: 0.14s. Total: 753. Page: 1 / 38 Search 3,238,706 resources. All fields Getty AAT Subjects: weapons x Clear All Filters × 2 3 4 5 » Issued Date 1 v Per page 20 v Neuvy-Deux-Clochers, Tour de Vesvre (Cher-Centre), [rapport de fouilles] Si plusieurs indices attestent une occupation antérieure, les premiers aménagements pérennes reconnus dateraient du tout début du Xe siècle. Il s'agit d'un ensemble fortifié construit sur un modèle bi-polaire peu courant, ceint d'un réseau de fossés. Cet ensemble comprend une motte castrale haute de plus de 10 m et de 40 m de diamètre, une vaste basse-cour d'un hectare et demi et une plate-forme d.. Resource type: Fieldwork report Place: Tour de vesvre, Neuvy-deux-clochers Publisher: Institut national de recherches archéologiques préventives (Inrap) Original subject: Arme, Atelier métallurgique, Bâtiment commercial, Céramique médiévale, Faune Getty AAT Subjects: Weapons, Hearths, Houses, Pits (earthworks), Roads Aspeberget Tanum - Bild 16 - Tanum 12:1 Thu fält/seminarium Q Advanced Resource type: Rock art 700 Place: Bohuslän, Sweden, Tanum, Västra götaland, Aspeberget tanum 600 Publisher: Swedish Bock Art Research Archives Original subject: Cirkelfigur, Djurfigur, Djurfigur fågel, Djurfigur hjort, Djurfigur hund 500 Getty AAT Subjects: Weapons, Anthropomorphic, Women (female humans), Boats, Cattle 400 300 Aspeberget Tanum - Bild 17 - Tanum 12:1 200 Thu fält/seminarium. Resource type: Rock art Place: Bohuslän, Sweden, Tanum, Västra götaland, Aspeberget tanum , \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$ Publisher: Swedish Rock Art Research Archives Original subject: Cirkelfigur, Cirkelfigur hjulkors, Detalj, Människofigur, Människofigur bågskytt . . . . .

### Searching on "weapons" and narrower terms: 24,834 resources





? About

### Filters

	🛱 Filter By Year		්ර Filter By T	īme Periods
	Year (from)		Year (to)	Apply
	> Resource type			
	> Getty AAT Subj	ects		
	> Publisher			
tivation	Technical overview Data	model Publications	s Contact 🔰 <b>O</b>	

A gazetteer of period definitions for linking and visualizing data.

the period definitions as JSON. Use the PeriodO period browser.

#### What is this?

Download

Pe

Guide

PeriodO is a gazetteer of scholarly definitions of historical, art-historical, and archaeological periods. It eases the task of linking among datasets that define periods differently. It also helps scholars and students see where period definitions overlap or diverge.

### Who are you?

The PeriodO project is led by Adam Rabinowitz (University of Texas at Austin), Ryan Shaw (University of North Carolina at Chapel Hill), and Eric Kansa (OpenContext). Patrick Golden developed the PeriodO software and Sarah Buchanan helped curate the initial dataset. Our work is funded by a Digital Humanities Start-Up Grant from the Office of Digital Humanities at the National Endowment for the Humanities.

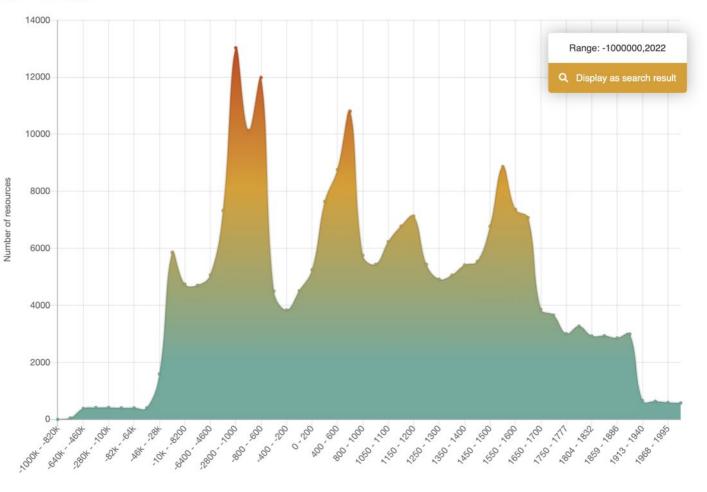
 dam Rabinowitz
 Start by looking at the guide to using PeriodO.

 Ryan Shaw
 You may also be interested in reading about the motivation for the project or getting a technical overview. Further information can be found in our publications. To keep up with PeriodO developments, follow us on Twitter: @perio\_do. Or dumanative as Kwhatever you want!

Tell me more.

Browse when

Scroll on the timeline to zoom. Drag to pan. Hold shift and drag a selection to apply a time range. Click "Display as search result" to search the time range in the catalogue.





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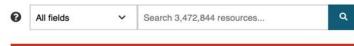
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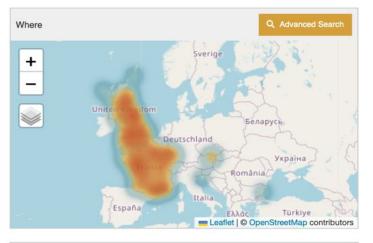
2 Services

? About

### Filters



Clear All Filters ×



### Results

Time: 0.23s. Total: 180,204. Page: 1 / 9011



### Valence (Drôme), Plateau de Lautagne, Réservoir ville de Valence, rapport de fouilles

Le projet de construction par la ville de Valence d'un réservoir d'eau sur le plateau de Lautagne, dont le riche passé antique et médiéval n'est plus à démontrer, induit la réalisation d'une opération de diagnostic en février 2017 (Ronco, 2017), laquelle s'est avérée positive avec la découverte de fosses et de fours médiévaux. Une opération de fouille d'une durée de six semaines a donc été menée e..

Resource type: Fieldwork report Place: Plateau de lautagne, Valence Publisher: Institut national de recherches archéologiques préventives (Inrap) Original subject: Acquisition de ressource naturelle, Artisanat, Céramique médiévale, Exploitation, Faune domestiquée

### Le Hameau de Haut, Digosville, (Manche), rapport de diagnostic

Le diagnostic archéologique réalisé à Digosville sur 4790 m<sup>2</sup> voués à laréalisation d'un lotissement a uniquement révélé la présence de fosséscorrespondant à différents états du parcellaire. Trois d'entre eux sesuccèdent, adoptant les mêmes orientations, depuis la fi n du Moyen âgejusqu'à nos jours en passant par la période moderne. Trois segments fossés, semblent indiquer la présence d'une trame..

Resource type: Fieldwork report Place: Digosville, Le hameau de haut Publisher: Institut national de recherches archéologiques préventives (Inrap) Original subject: Structure agraire

### Poitiers (86), Rue de l'Université, rue des Vieilles-Boucheries, entre la rue de l'Université et la rue Savatier - Suivi de travaux en contexte urbain 2015-2016, rapport de diagnostic

Une série de surveillances de travaux, prescrites sous la forme de diagnostic archéologique, a débuté en 2015, dans le secteur de la rue de l'Université à Poitiers. Ces travaux de réfection, déviation et enfouissement profond des réseaux (eau, gaz, électricité, téléphone) sont réalisés en prévision du projet de Modernisation du réseau de transport public, lancé par la communauté d'agglomération Gr.

### Resource type: Fieldwork report

Place: Poitiers, Rue de l'université, rue des vieilles-boucheries, entre la rue de l'université et la rue savatier

Publisher: Institut national de recherches archéologiques préventives (Inrap)

Original subject: Céramique gallo-romaine, Céramique médiévale, Céramique moderne, Céramique protohistorique, Céramologie





# Quality of data

## 2. Quality

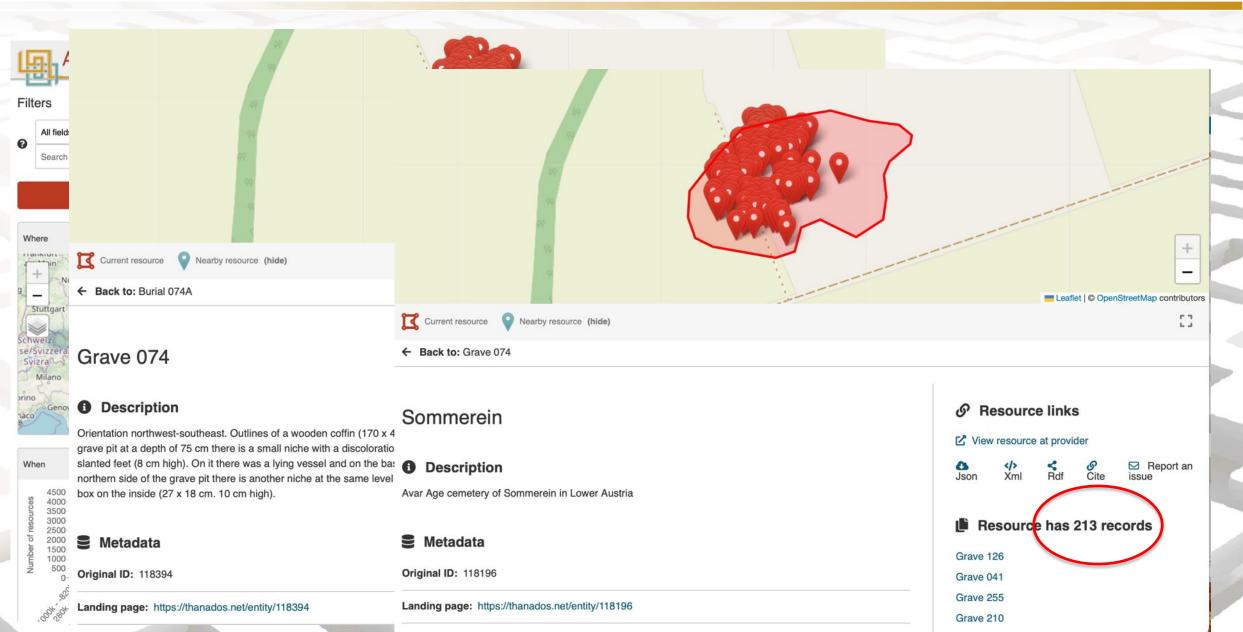
 ii. Level of *granularity* – item level interoperability e.g. individual artefacts, not just sites; individual dates; individual graves, not just cemeteries:

>550,000 artefacts – from PAS, FindSampo, DIME, PAN>500,000 coins – from RGK, BM, CY, AU>20,000 dates – from ADS, INFN, DANS DCCD>11,000 burials – from THANADOS





# Granularity: THANADOS example





## Range of data types

2. Qualityiii. Integrationof new datatypes

Enter text to filter on Res	source types.
Name	Hits 🗸
Site/monument	1218756
Artefact	539594
Coin	471403
Fieldwork	395124
Fieldwork report	276850
Fieldwork archive	113360
inscription	83357
Maritime	33666
Rock art	26805
Date	9015
Scientific analysis	7785
Building survey	1274
Burial	42

Fourteen ARIADNE resource types:

- 25523 Rock Art records from Sweden
- 57054 Inscriptions from CEIPAC
- 1061 Buildings surveys from LNEC
- Scientific analyses –
   1262 enviro records
   SEAD, C14 dating INFN



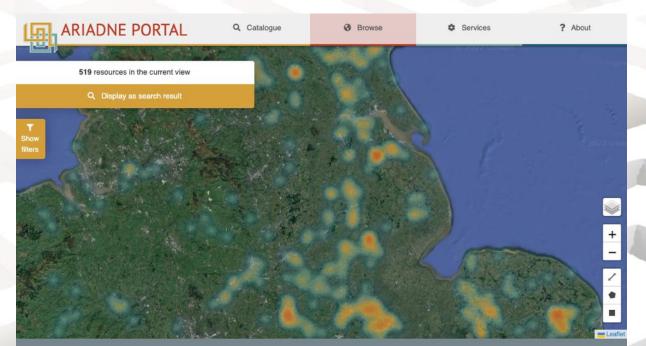
Images 



# Enabling new forms of research

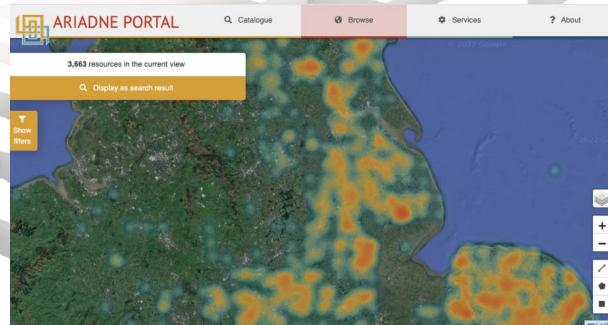
Public and professional finds together in one web search for the first time

### Known early medieval brooches (from PAS) : 519



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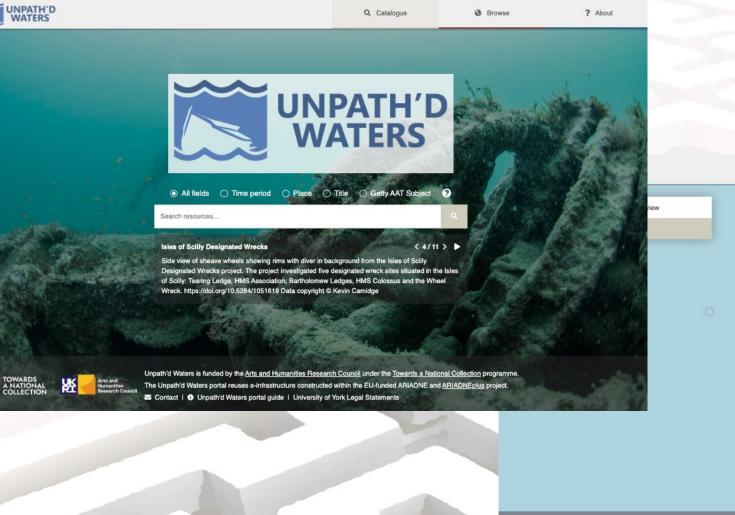
### Known early medieval cemeteries (from SMRs): 3663



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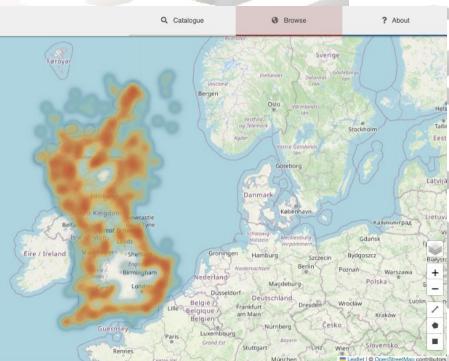


## **Extensibility of Architecture**



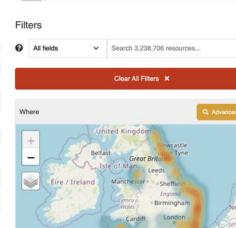
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Unpath'd Waters is funded by the <u>Arts and Humanities Research Council</u> under the <u>Towards a National Collection</u> programme The Unpath'd Waters portal reuses e-infrastructure constructed within the EU-funded ARIADNE and <u>ARIADNEplus</u> project. S Contact | ① Unpath'd Waters portal guide | University of York Legal Statements (INAL)

België aique





### Results Time: 0.22s. Total: 580. Page: 1 / 29



Order Issued Date 4 V Per page

? About

Where

+

2

When

400000

300000

200000

### Colossus Dive Trail Maintenance and Wheel Wreck Dating 2019

Q Catalogue

This project undertook maintenance of the Colossus dive trail and the collection of further dating evidence from the Wheel Wreck to aid the identification of this wreck. Both sites are protected historic wrecks and are only about six kilometres apart. The rationale behind combining these two projects was that considerable financial savings can be made by combining the fieldwork into a single event.

#### Resource type: Maritime

Place: World, europe, united kingdom, england, cornwall, scilly, isles of Publisher: Archaeology Data Service Original subject: Photogrammetric survey, Photographic survey, Scattered vessel structure, Warship, Shipwreck Getty AAT Subjects: Warships, Bottles, Ships, Sherds, Wrecks (sites)

#### TEARING LEDGE, WESTERN ROCKS

2 3 4 5 »

Designated site assessment carried out of the wreck site, probably that of 'Eagle', part of Sir Clowdisley Shovell's fleet sunk in 1707. Filters discovered in 1976, could not be dived in 2004...

Resource type: Fieldwork Place: England, isles of scilly, isles of scilly Publisher: Archaeology Data Service Original subject: Geophysical survey, Warship Getty AAT Subjects: Warships

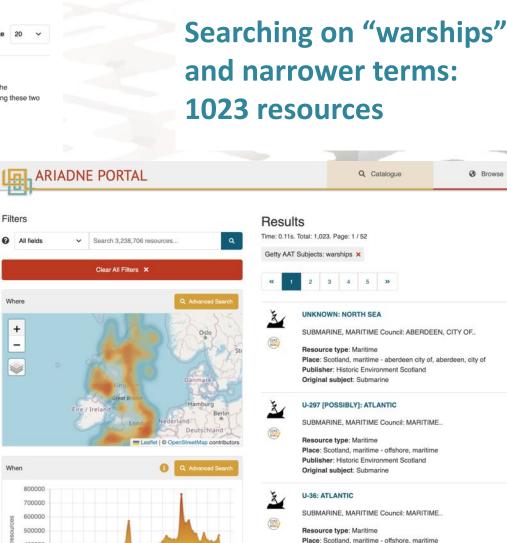
#### WARSHIP HAZARDOUS, BRACKELSHAM BAY

Assessment of the Protected Wreck Site to inform future work, this was carried out between 2008 and 2010 as a site evaluation. Infor OASIS Online Form ...

Resource type: Fieldwork

Place: England, west sussex, chichester, east wittering Publisher: Archaeology Data Service Original subject: Geophysical survey, Warship

### Searching on "warships" only: 580 resources; England only



Publisher: Historic Environment Scotland

SUBMARINE, MARITIME Council: ARGYLL AND BUTE.

Original subject: Submarine

Resource type: Maritime

UNKNOWN: NORTH CHANNEL

### 100000 dne-portal-dev.d4science.org/search?q=&derivedSubject=warships#



# Lessons learned

- Consistent use of an ontology is essential
  - CIDOC-CRM was broad enough to cover all domains involved but it is important to map to it consistently
- Vocabulary control is also essential
  - Getty AAT very powerful but needs oversight to ensure consistency in partner mappings
- Can't make everything interoperable
  - Focus on key themes
  - What, When, Where; maybe Who?
- Requirement for archaeologists to work closely with IT specialists
  - Always think about how the data will be used
- Granularity and scale are important
  - Collection level vs item level
  - Be driven by research questions







### The ARIADNEplus aggregation task force:

Alessia Bardi, Enrico Ontonello & Carlo Meghini, CNR Ceri Binding, USW Achille Felicetti, PIN Maria Theodoridou, FORTH Johan Fihn Marberg and Pablo Millett, SND Julian Richards, ADS

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