The Archaeology Data Service, DIGILABs and ARIADNEplus

Tim Evans
tim.evans@york.ac.uk

Introduction to the ADS

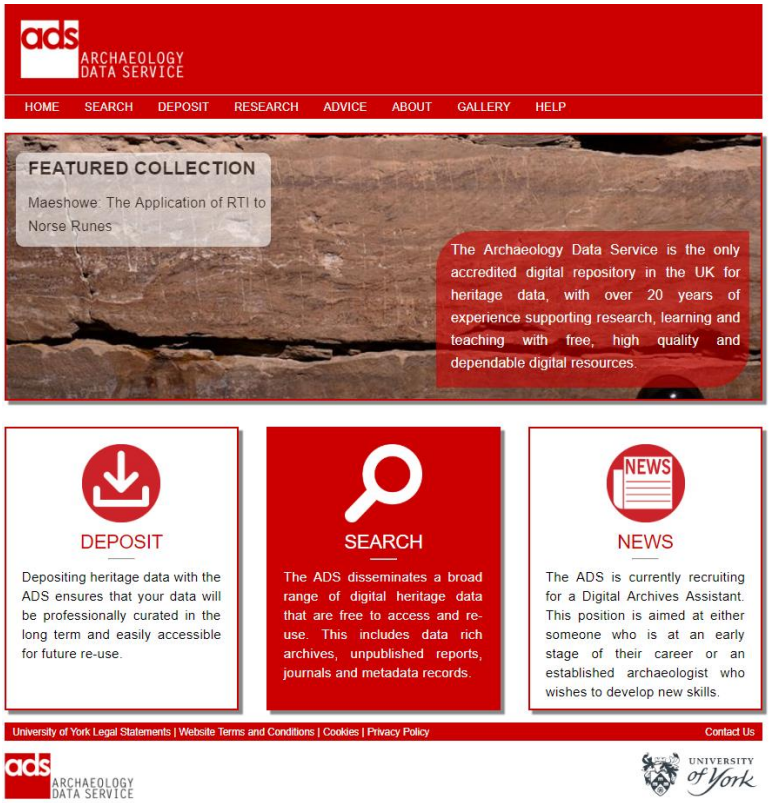
- Set up in 1996 .
- Based within the University of York.
- 12 staff.
- Business model based upon charging policy.
- Trusted Digital Repository: Data Seal of Approval (working to Core Trust Seal).
- Received Digital Preservation Coalition's Decennial Award in 2012.

Introduction to the ADS

The Archaeology Data Service:

"Supporting research, learning and teaching with free, high quality and dependable digital resources"

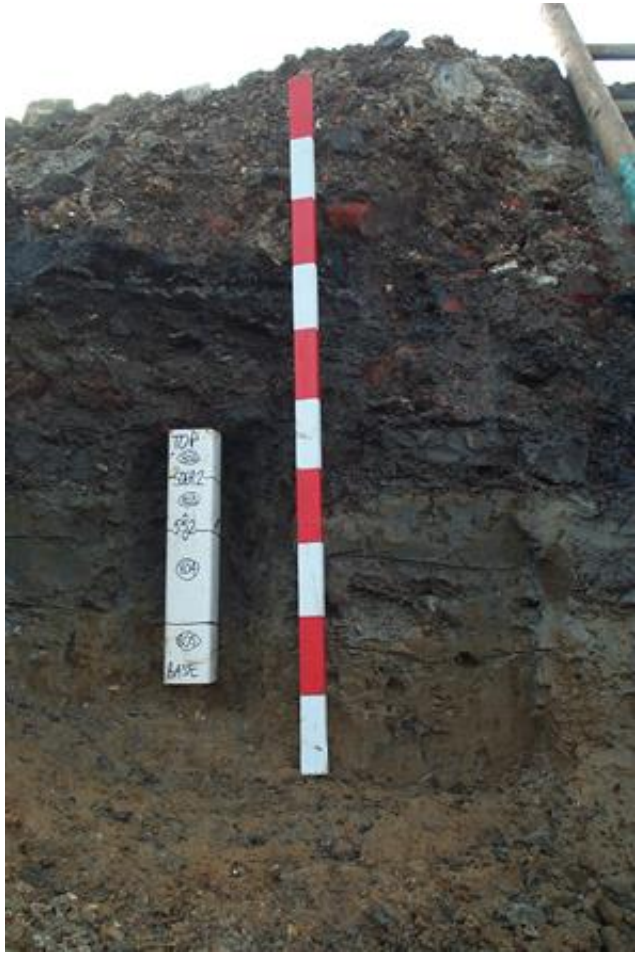
- Collects + Preserves datasets.
- Provides easy and free access to data.
- Provides guidance and support to data creators.



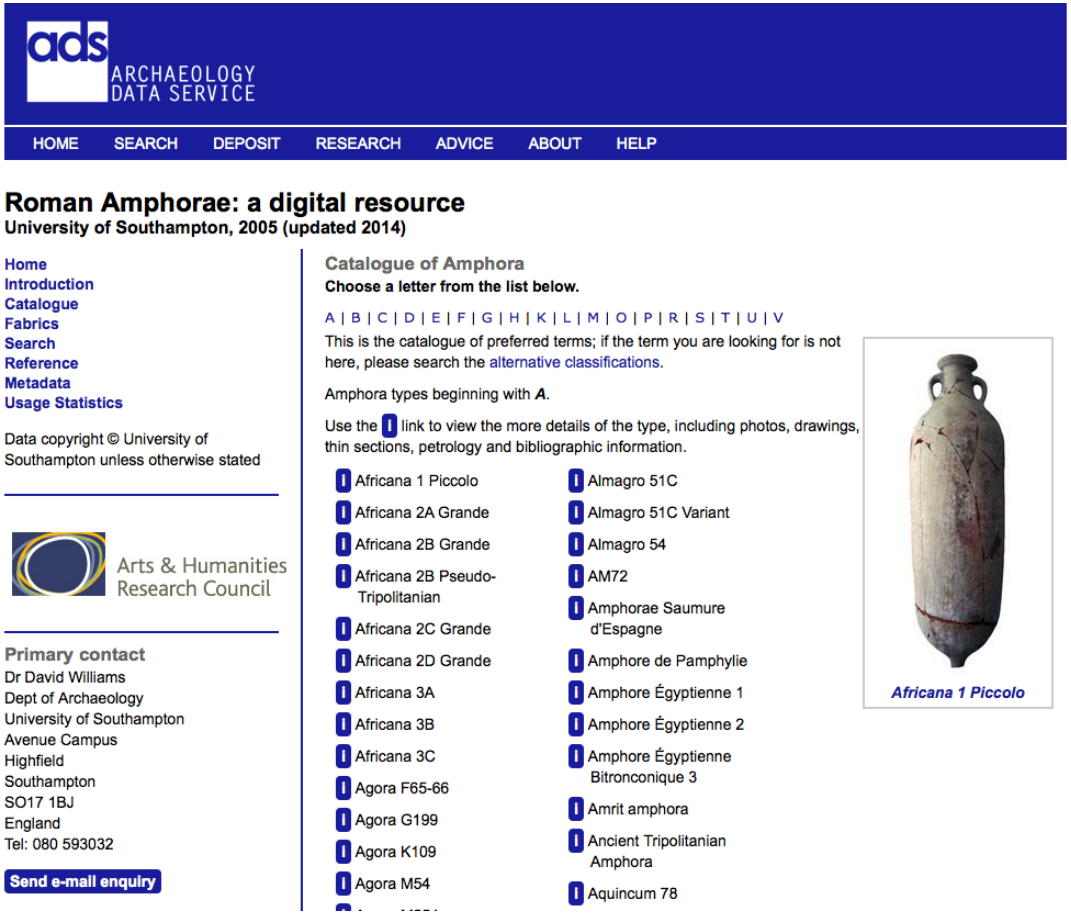
Challenges for Archaeology

Digital Data and Archaeology

- Archaeology is **destructive**
- Comprehensive records of field work are imperative
- Majority of data recorded in grey literature
- Traditionally, access to data has been problematic



ADS collections



https://doi.org/10.5284/1028192

ADS collections

ads ARCHAEOLOGY DATA SERVICE

SEARCH

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ALL | JOURNALS AND SERIES | GREY LITERATURE | PROJECT ARCHIVES | BIBLIOGRAPHIES | THESES

The Rural Settlement of Roman Britain: an online resource

Martyn Allen, Nathan Blick, Tom Brindle, Tim Evans, Michael Fulford, Neil Holbrook, Julian D Richards, Alex Smith, 2015

Introduction
Query
Map
Metadata
Usage Statistics
Feedback questionnaire

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The Leverhulme Trust

Historic England

Primary contact

Prof Michael Fulford
Professor of Archaeology
School of Archaeology, Geography and Environmental Science
University of Reading
Whiteknights
PO Box 218
Reading
RG6 6AA

Introduction

This resource brings together the excavated evidence for the rural settlement of Roman Britain with the over-arching aim to inform a comprehensive reassessment of the countryside of Roman Britain. It includes both traditionally published reports and 'grey literature' reports from developer-funded excavations since 1990.

The project arose from pilot projects undertaken by Cotswold Archaeology[1] and funded by Historic England and it began in 2012. It is funded by grants from the Leverhulme Trust to the Universities of Reading and York (ADS)[2] and from Historic England to Cotswold Archaeology.[3]

Phase 1 (April 2015) publishes the settlement evidence from Roman England. Subsequent phases will add Roman Wales (by December 2015) and the related finds, environmental and burial data (by 1st April 2017). These will be used alongside the specific site data in a series of integrative studies on rural settlement, economy, people and ritual to be published by the Society for the Promotion of Roman Studies as Britannia Monographs between 2016 and 2018.

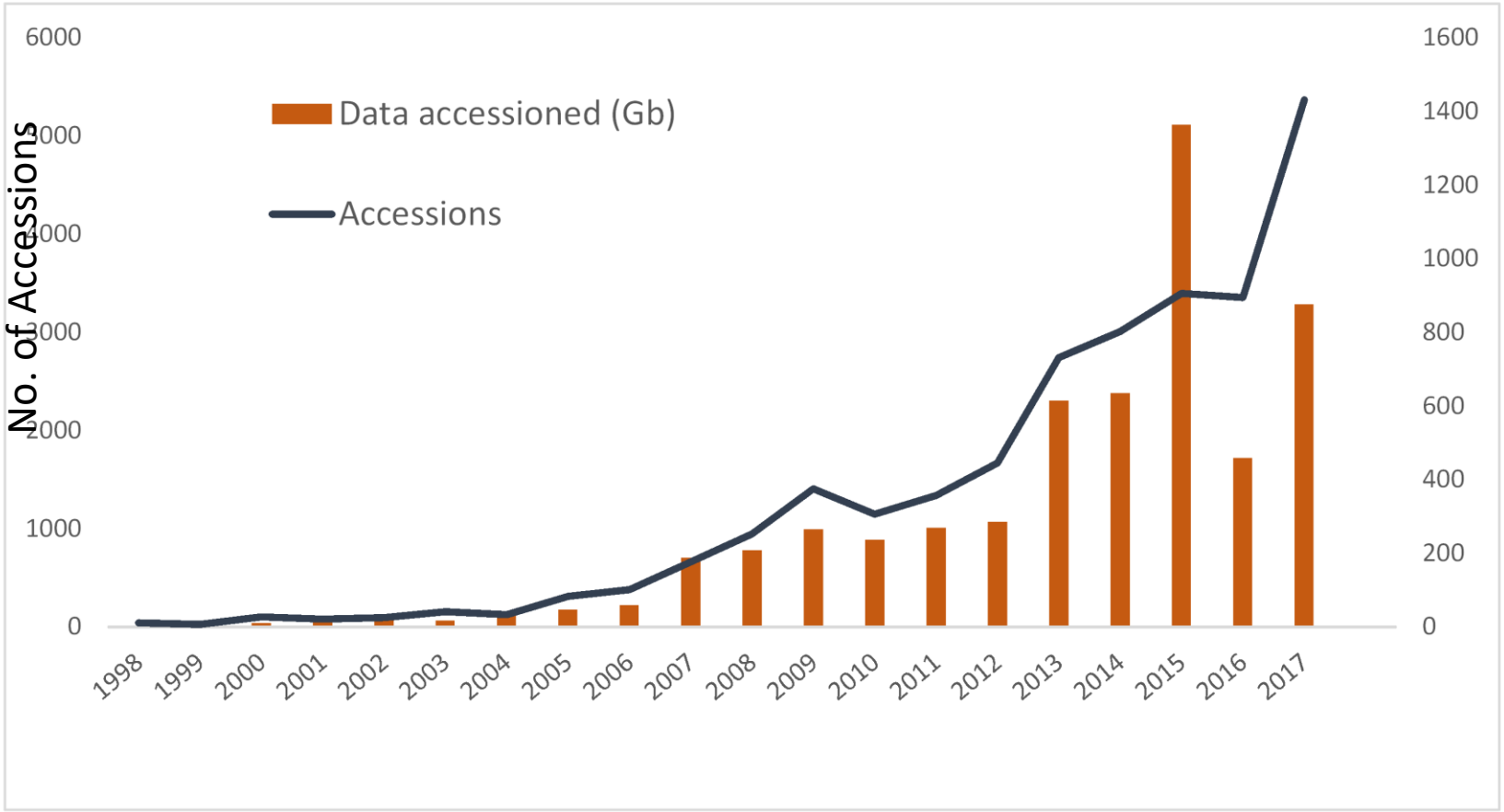
https://doi.org/10.5284/1030449

ADS collections

- Example of commercial

ADS collections

http://archaeologydataservice.ac.uk


Data accessioned (Gb)
Accessions
No. of Accessions
Size of Accessions (Gb)
6000
5000
4000
3000
2000
1000
0
1600
1400
1200
1000
800
600
400
200
0
1998
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2000
2001
2002
2003
2004
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2008
2009
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2011
2012
2013
2014
2015
2016
2017

ADS + E-RIHS UK

- Summarise our involvement – why am I reporting on this?

E-RIHS UK

E-RIHS
EUROPEAN RESEARCH INFRASTRUCTURE FOR HERITAGE SCIENCE

- The Infrastructure and Access Working Group of E-RIHS UK (the UK national hub of E-RIHS) has been tasked with developing an understanding of the needs and requirements of the UK heritage science communities.
- To explore the current provision of infrastructure services and to estimate the future need and scope of infrastructure investments.

E-RIHS UK

- Research was commissioned from Preservation Matters Ltd to understand current UK heritage science capabilities:
  - Quantitative research on current provision and future needs
  - Analysis of the current heritage science sector
  - A report outlining the current state and key opportunities for UK heritage science infrastructure development

- UK Research Infrastructure for Heritage Science (UKRIHS) Report on Heritage Science Capabilities
- Published 1st February 2019

UKRIHS survey

- The survey was designed to collect information on individual research facilities at institutions. Data collected included:
  - a general description of the facility and provider
  - categorization according to the E-RIHS four platform typology
  - a summary of potential applications
  - a technical description of equipment and techniques
  - an estimation of value and of future investment needed in the facility
  - conditions of access to the facility

UKRIHS survey

Public Sector	Higher Education
Amgueddfa Cymru – National Museum Wales	Cardiff University
English Heritage	Nottingham Trent University
Historic England	Science & Technology Facility Council
Historic Environment Scotland	UCL
Imperial War Museums	Universities of Glasgow
National Museums Scotland	University of Oxford
Natural History Museum	University of York
Tate	
The British Museum	
The National Archives	
Victoria + Albert Museum	
Heritage	**Commercial**
Historic Royal Palaces	York Archaeological Trust
National Trust for England, Wales & Northern Ireland	

UKRIHS survey

- E-RIHS uses a typology to categorise heritage science capability / facility:
  - major research equipment (or sets of instruments) (FIXLAB or MOLAB),
  - knowledge-based resources such as reference collections, archives and data (ARCHLAB)
  - e-infrastructures or virtual facilities (DIGILAB).
- Most responses from FIXLAB + MOLAB
- Overlap between ARCHLAB + DIGILAB
- ARCHALB under-reported?

UKRIHS survey: cost

- The total annual running costs from the 21 facilities that reported information comes to just over **£4 million**
- Cost of providing access
  - Difficult to provide an overall indicative cost per unit
  - Most on cost to user (such as sample analysis or scientific dating)

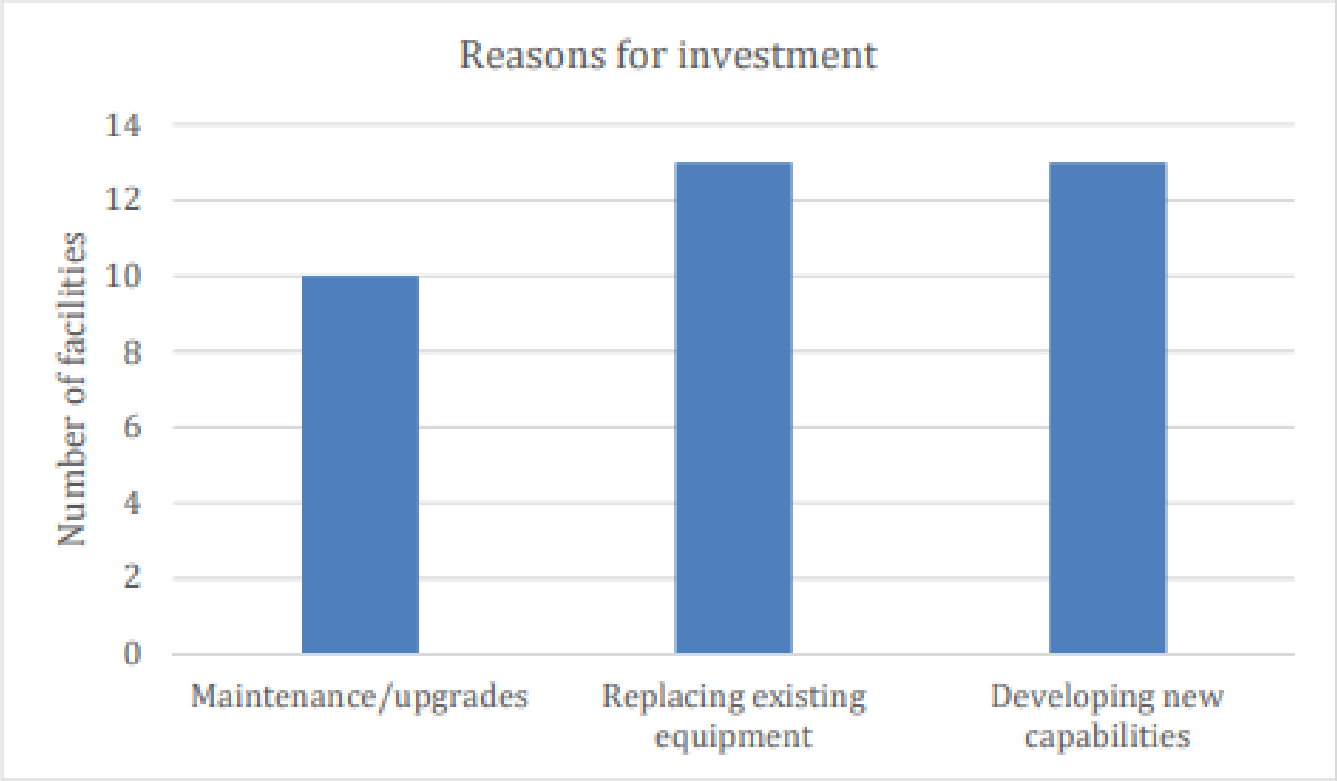
UKRIHS survey: conditions of access

- Some facilities already provide regular access to the wider research community:
  - XRD laboratory AC-NMW (FIXLAB)
  - Historic England Archive (ARCHLAB)
  - ISIS Neutron and Muon Source (FIXLAB)
  - RLAHA, University of Oxford (FIXLAB)
  - Scottish Universities Environmental Research Centre (SUERC), Radiocarbon and Stable Isotope Laboratory, Universities of Glasgow (FIXLAB)
  - UCL Mobile Heritage Lab (MOLAB)
  - **Archaeology Data Service** (ADS), University of York (DIGILAB)

UKRIHS survey: future investment

- Twenty of the 42 facilities responding to the survey provided financial estimates of future investment needed over the next five years.
- "Confidently be said that this portion of the heritage science research infrastructure has identified investment needs in excess of **£26 million** within the next five years."

UKRIHS survey: reasons for investment



UKRIHS survey: conclusions

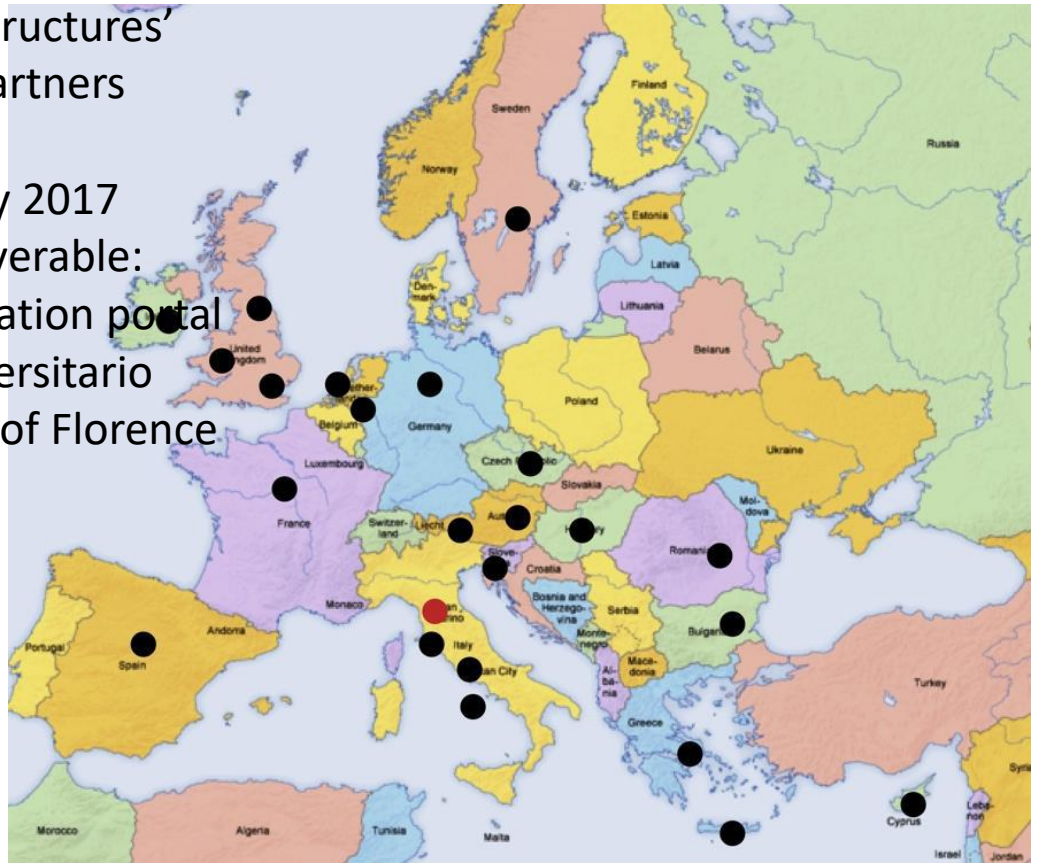
- Coordination
- Investment in Staffing
  - Critical to opening up access to FIXLAB and MOLAB facilities
- Investment to develop individual facilities but also to facilitating greater access to large national facilities
- Most important: A community need for **ARCHLAB/DIGILAB** facilities

UKRIHS survey: conclusions

- A community need for ARCHLAB/DIGILAB facilities
  - Noted as the key need – many respondents highlighted struggle to access data in the UK
  - Support increased access as a principle
  - Capability to deliver access via infrastructure.
  - Also - the need to ensure long-term preservation

ARIADNE

- EU FP7 project under the 'Infrastructures' theme, including 23 European partners across 16 countries
- Four-year project: ended January 2017
- 17 Workpackages – primary deliverable: collection level metadata aggregation portal
- Coordinator: PIN Scri - Polo Universitario "Città di Prato" at the University of Florence
- Deputy Coordinator: ADS



http://portal.ariadne-infrastructure.eu/

ARIADNE

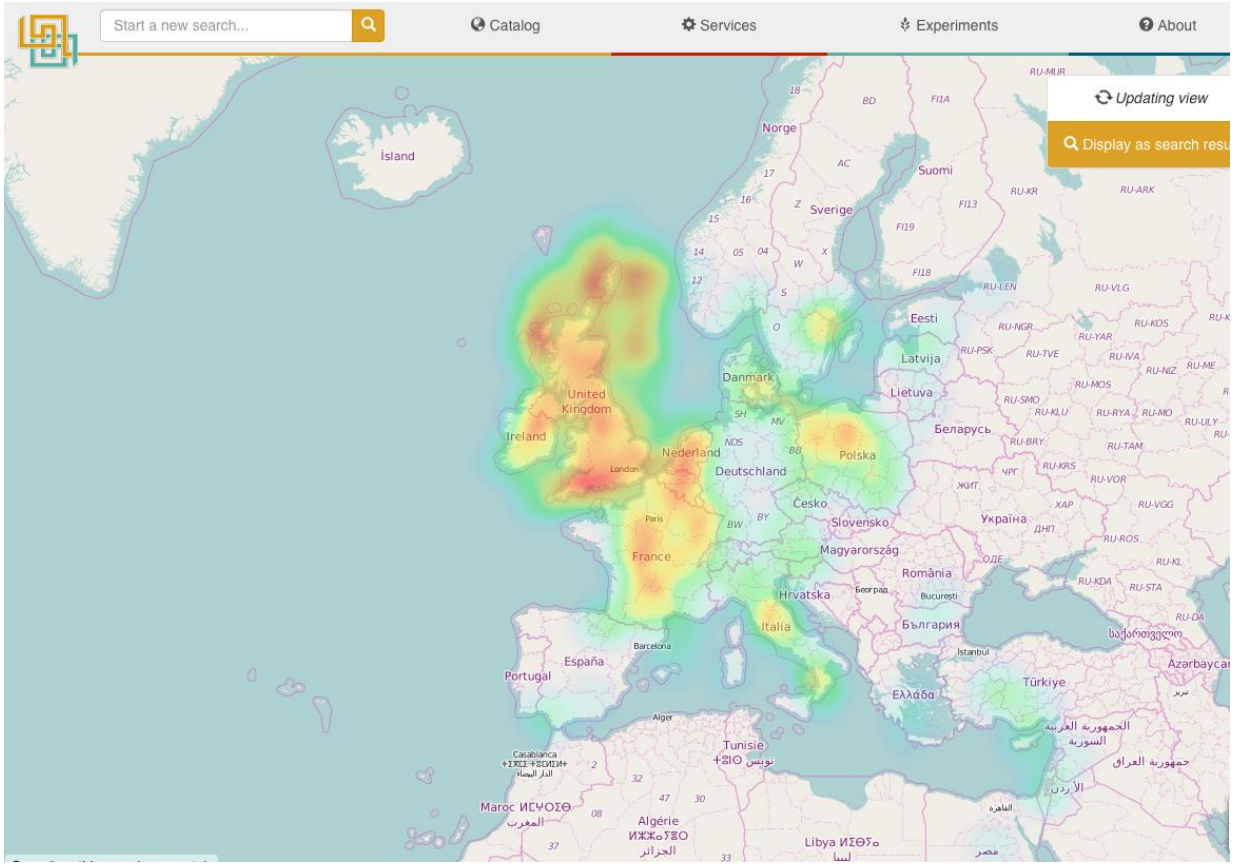
- *"…the ARIADNE network developed out of the vital need to develop infrastructures for the management and integration of archaeological data at a European level. As a digital infrastructure for archaeological research ARIADNE brings together and integrates existing archaeological research data infrastructures so that researchers can use the various distributed datasets and technologies."* ESFRI 2016 Roadmap

http://archaeologydataservice.ac.uk

ARIADNE

- ARIADNE succeeded in integrating archaeological datasets in its Registry, with more than 1.700.000 datasets recorded and managed according to the FAIR principles
- Built a community of use consisting of about 11.000 archaeologists engaged with its services

ARIADNE



http://portal.ariadne-infrastructure.eu/

ARIADNEplus

- Extending and Focusing ARIADNE
- Extending the ARIADNEplus approach to new communities, both geographically and thematically
- Consolidating the archaeological community around the ARIADNEplus approach
- Fostering the Open Science approach and data FAIRness
- Preparing the community for the ARIADNEplus Cloud within the **European Open Science Cloud** (EOSC)

ARIADNEplus is funded by the European Commission's Horizon 2020 Programme

ARIADNEplus

ARIADNE:

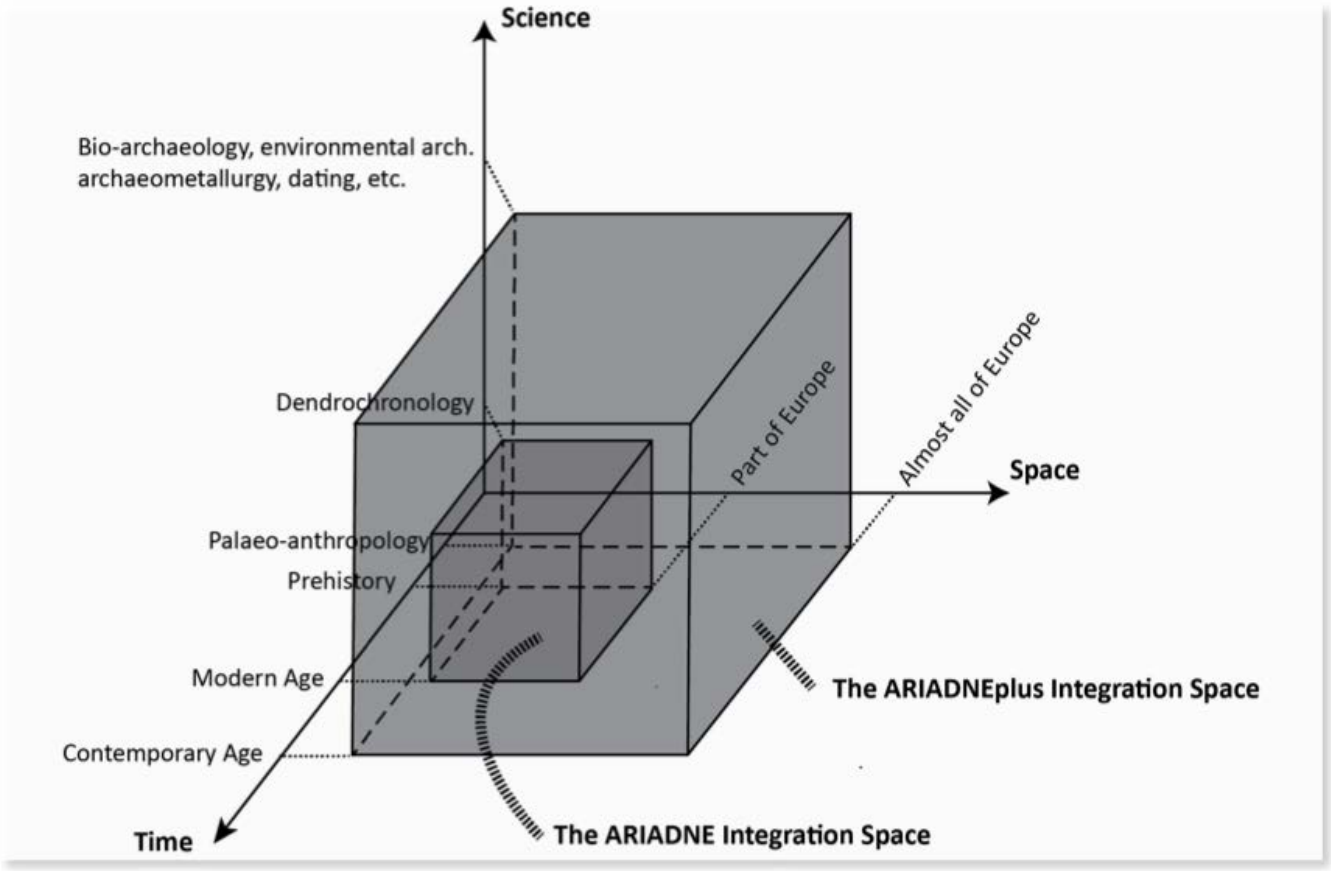
24 partners; 18 countries

ARIADNEplus:

41 partners; 27 countries

Plus: Argentina, Japan & USA

ARIADNEplus



ARIADNEplus

- Thematic extension of the ARIADNE data infrastructure
  - Include capacity for item-based searches, for example:
  - Human Palaeo-biology and Palaeo-environments
    - Palaeoanthropology
    - Bio-archaeology and Ancient DNA
    - Environmental Archaeology
  - Analytical Investigations
    - Inorganic Materials Study
    - Dating, including Dendrochronology

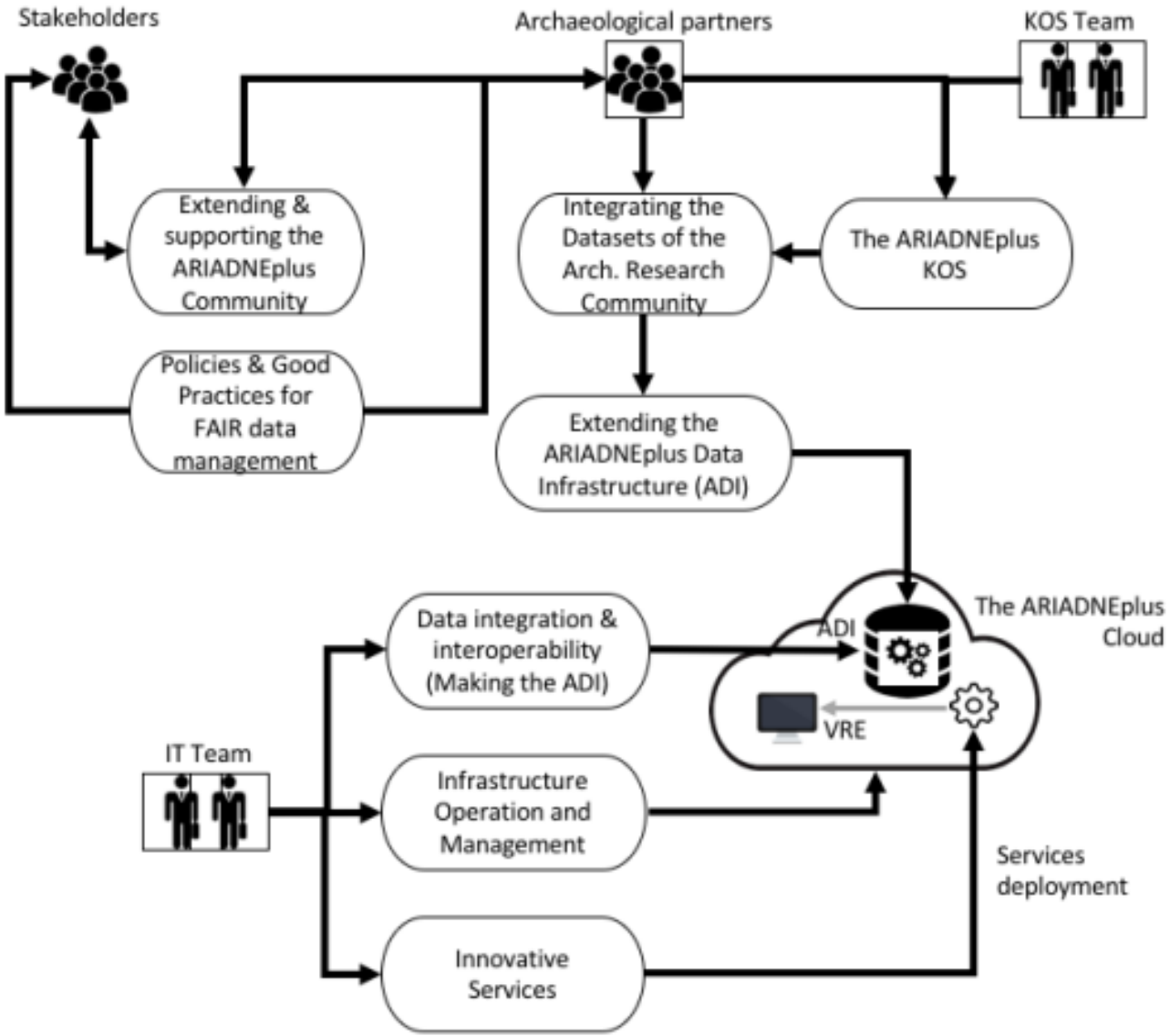
ARIADNEplus

- Data Infrastructure
  - Hardware layer (dynamic pool of virtual machines supporting computation and storage)
  - Services layer: e-infrastructure middleware and end user services

http://archaeologydataservice.ac.uk

ARIADNEplus

- Data Infrastructure
  - Hardware layer (dynamic pool of virtual machines supporting computation and storage)
  - Services layer: e-infrastructure middleware and end user services
    - Visual services
    - Text annotation
    - Text mining
    - Space-time services


Stakeholders
Archaeological partners
KOS Team
Extending & supporting the ARIADNEplus Community
Integrating the Datasets of the Arch. Research Community
The ARIADNEplus KOS
Policies & Good Practices for FAIR data management
Extending the ARIADNEplus Data Infrastructure (ADI)
The ARIADNEplus Cloud
ADI
VRE
Data integration & interoperability (Making the ADI)
IT Team
Infrastructure Operation and Management
Services deployment
Innovative Services

tim.evans@York.ac.uk

Further Information

http://archaeologydataservice.ac.uk

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