Current developments in cyber-infrastructure in European Archaeology

Julian Richards, ADS, University of York, UK
& Franco Niccolucci, PIN, University of Florence, Italy
Outline

• The Open Data Agenda
• National Infrastructures
• European Interoperability
• ARIADNE
• E-RIHS
• Some Issues
13 June 2013 – European parliament ratifies new rules on Open Data - includes cultural heritage data
2013: G8 Open Data Charter

18 June 2013: “a new era in which people can use open data to generate insights, ideas, and services to create a better world for all.”
The Five Principles

1. Open Data by Default
2. Increase Quality and Quantity for re-use
3. Usable by All
4. Releasing Data for improved Governance
5. Releasing Data for Innovation
UK: Archaeology Data Service

- Set up in 1996
- Based within the University of York
- 15 staff
- Business model based upon charging policy
- Trusted Digital Repository: Data Seal of Approval
- Received Digital Preservation Coalition’s Decennial Award in 2012
- Feb 2016: 10Tb; 2,054,846 files; 18,505 recorded processes
Shared Data Standards

Archaeology Data Service / Digital Antiquity
Guides to Good Practice

This new and revised series of Guides to Good Practice have been produced as the result of a two-year collaborative project between the UK Archaeology Data Service and Digital Antiquity in the US. The project has encompassed important revisions of the existing six ADS Guides as well as the development of entirely new documents covering areas such as marine survey, laser scanning, close-range photogrammetry, digital audio and digital video. The project has involved previous Guides authors revising existing content alongside new authors, from both Europe and the US, also contributing to the development of the guides into new themes and areas.

The project has been undertaken in collaboration with the Digital Antiquity initiative, a US-based project with the aim of enhancing the preservation of and access to digital records of archaeological investigations. A major aim of the Guides is to provide the basis for archaeological project workflows that will create digital datasets that can be archived and shared effectively by Digital Antiquity's tDAR archive and repository in the US and by the Archaeology Data Service in the UK. The development of the guides involves close collaboration with teams in the US at both the University of Arkansas and Arizona State University.

Other ADS projects have also fed into the revision and development of the Guides. ADS involvement in the European VENUS project has formed the basis of a guide focussed on marine survey. In addition, the incorporation of findings from the ADS Big Data project, together with the revision of the existing guide on aerial photography and remote sensing data, has seen a significant contribution to the guides from English Heritage funded projects.

Previous versions of the ADS/AHDS Guides to Good Practice have been archived and are still available on the old Guides to Good Practice page.

View the full new Guides to Good Practice Table of Contents
Netherlands: eDNA

- 2004-6 pilot study – DANS & Leiden University
- 2007 eDNA
- 2 members of staff, plus DANS infrastructure
- 2016 – 25,000 reports and 4,000 excavation archives
Sweden: SND

- Swedish National Data Service, University of Gothenburg
- 2012 first archaeological archives, in collaboration with Uppsala University – GIS files, Östergötland
- Swedish Rock Art archives
• 2012 – DAI scoping project
• Initial staff of two
• 2015 – Established with Director and 3 digital archivists
• DAI central object database
• 300,000 images
• Metadata mapped to CIDOC-CRM
• Established 2000
• AIAC/ LP Archaeology
• Database of excavations for classical archaeology
• 12,000 excavation reports
Welcome to the ARENA search portal.

Please select a flag from the right to start searching in your language

The ARENA search portal allows you to search for archaeological sites and monuments from six European countries: Demark, Great Britain, Norway, Iceland, Romania and Poland.

The content of this project does not necessarily reflect the position of the European Community, nor does it involve any responsibility on the part of the European Community.

© ADS 1996- Edited by Jo Clarke, email
Cite only: http://ads.mhds.ac.uk for this page
Select a period from the list below. Your choice will be highlighted on the diagram. For more information on the time span for each period hover your mouse over the period diagram.
2009-10
Technical demonstrator
Web services architecture
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. There is now a large availability of archaeological digital datasets that, together, span different periods, domains and regions; more are continuously created as a result of the increasing use of IT. These are the accumulated outcome of the research of individuals, teams and institutions, but form a vast and fragmented corpus and their potential has been constrained by difficult access and non-homogenous perspectives.
What is ARIADNE

- ARIADNE is a EU-funded project aimed at integrating the European Research Infrastructures on archaeological datasets
- Its overall goal is to overcome the fragmentation of archaeological data repositories and to foster a culture of data sharing and re-using
- ARIADNE is managed by a partnership joining the excellence of European archaeology and technology, and is open to the collaboration of researchers, professionals and institutions from anywhere in Europe and abroad
The ARIADNE partnership

- Coordination
  - PIN
  - UoY-ADS
ARIADNE activities

- User needs survey
  - 700 respondents
- Transnational access and training schools
  - 90 trainees
- Data standards and good practice
- Linked data experiments
- ARIADNE Services
- ARIADNE portal: http://ariadne-portal.dcu.gr/
The Visual Media Service

The ARIADNE Visual Media Service provides easy publication and presentation on the web of complex visual media assets. It is an automatic service that allows to upload visual media files on an ARIADNE server and to transform them into an efficient web format, making them ready for web-based visualization.

http://visual.ariadne-infrastructure.eu

The Landscape Services

*Landscape Services* for ARIADNE are a set of responsive web services that include large terrain datasets generation, 3D landscape composing and 3D model processing, leveraging on powerful open-source frameworks and toolkits such as GDAL, OSGjs, OpenSceneGraph and ownCloud.

http://landscape.ariadne-infrastructure.eu
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
WINFRITH
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service

CHURCH OF ST NICHOLAS
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service
Two evaluation trenches were excavated in advance of proposed works, recording parts of five burials of probable 15th-16th century date.

MANOR DRIVE, WEST STAFFORD
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service
Monitoring of the erection of two cottages; negative results

LAND SOUTH WEST OF POUNDURY FARM
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service

Royal Observer Corps Monitoring Post
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service
Condition: Destroyed

Royal Observer Corps Monitoring Post
Type: Sites and monuments databases or inventories
Publisher: Archaeology Data Service
Condition: Destroyed
Number 1 Poultry (ONE 94)

Type: Fieldwork archives  Publisher: Archaeology Data Service

The site of 1 Poultry is located near the Bank of England, in the heart of the City of London. During the 1990s, one of the largest excavations in the City recovered a remarkable archaeological sequence from the 1st to the 20th century AD. This was augmented by findings from nearby sites a...
The site of 1 Poultry is located near the Bank of England, in the heart of the City of London. During the 1990s, one of the largest excavations in the City recovered a remarkable archaeological sequence from the 1st to the 20th century AD. This was augmented by findings from nearby sites at Bucklersbury, Lothbury, Lombard Street, 72-75 Cheapside, 76-80 Cheapside, 35-37 King Street and Mansion House. 1 Poultry lies immediately west of the point where the main east-west road through Roman London bridged the Walbrook stream and uncovered an unparalleled sequence of buildings, roads, and open spaces. A timber drain of AD 47 beneath the main road is the earliest, securely dated structure yet known from Londinium, and a pottery shop, destroyed in the Boudican revolt, gives a snapshot of life in AD 60/61. A 2nd-century AD writing tablet preserves the only evidence for the sale of a slave found in Britain to date, while the 3rd- and 4th-century AD buildings on the site provide a rare demonstration of the continuities and changes that occurred in Roman urban life.

Metadata

**ARIAIDNE ID** 19138479
**Original ID** 1297
**Language** English
**Resource type** Fieldwork archives
**Dating** Early Medieval
**Place** World, Europe, United Kingdom, England, Greater London, London, City of London [7011798]

**Type** Collection

**Publisher** Archaeology Data Service (Organization)

**Themedly similar**
- Maltings Lane, Witham, Essex Archaeological Excavation
- The evolution of Romes maritime facade: archaeology and geomorphology at Castelporziano
- Framework Archaeology Heathrow Terminal 5 Excavation Archive
- Mill Close, Grantham, Lincolnshire. Archaeological Watching Brief
- Mersham ARC MSH 98
- Archaeological and cultural heritage investigations on the site of the London 2012 Olympic and Paralympic Games
**Number 1 Poultry (ONE 94)**

*Museum of London Archaeology, 2013*

### Introduction

The site of 1 Poultry is located near the Bank of England, in the heart of the City of London. During the 1990s, one of the largest excavations in the City recovered a remarkable archaeological sequence from the 1st to the 20th century AD. This was augmented by findings from nearby sites at Bucklersbury, Lothbury, Lombard Street, 72-75 Cheapside, 75-80 Cheapside, 36-37 King Street and Mansion House.

1 Poultry lies immediately west of the point where the main east-west road through Roman London bridged the Walbrook stream and uncovered an unparalleled sequence of buildings, roads, and open spaces. A timber drain of AD 47 beneath the main road is the earliest, securely dated structure yet known from Londinium, and a pottery shop, destroyed in the Boudican revolt, gives a snapshot of life in AD 60/61. A 2nd-century AD writing tablet preserves the only evidence for the sale of a slave found in Britain to date, while the 3rd- and 4th-century AD buildings on the site provide a rare demonstration of the continuities and changes that occurred in Roman urban life.

Poultry occupied a prominent position at the eastern end of Cheapside, the city's principal medieval market street; integrating documentary evidence with the archaeological record has provided an outstandingly detailed account of this area. Reoccupation of the site in the later 10th century AD began with the construction of scattered sunken-floored buildings; a more regular pattern of settlement, characterised by narrow-fronted timber buildings along the roadsides, had developed by the early 11th century. Occupation became progressively denser up to the 13th century, when large stone-built houses began to be constructed in previously open areas behind the street frontages. Metalworking evidence from the excavated buildings indicates early economic activity, corresponding with later documentary evidence for smiths, ironmongers and other metalworkers in the area. The Great Conduit, the City's first piped water supply, was established in...
Number 1 Poultry (ONE 94)
Museum of London Archaeology, 2013

Introduction
Overview
Downloads
Metadata
Usage Statistics

Downloads
The downloads are split into separate sections for each site (see overview for details). Please note that each site has separate file metadata, however conventions and codes for CAD and spreadsheet files are common to all sites and are presented as overarching metadata below. The concordance document gives further details of the relationships between ONE94 and the satellite sites.

| Concordance document | PDF | 623 Kb |
| MoLA CAD layer conventions | PDF | 78 Kb |
| Spreadsheet conventions | CSV | 40 Kb |

ONE94 | BOL94 | BUC87 | CID90 | DOC87 | LOM88 | BRD88 | KNG85 | LHY88 | SON85 | MHO92 | PLY87

ONE 94 (1 Poultry)

File Metadata ONE94

Spreadsheet files

| ONE94 abonedata01 | CSV | 1.25 Mb |
| ONE94 anbntab07 | CSV | 1.29 Mb |
| ONE94 anbntab08 | CSV | 39 Kb |
| ONE94 anbntab09 | CSV | 852 Kb |
| ONE94 anbntab10 | CSV | 874 Kb |
| ONE94 biblio01 | CSV | 6 Kb |
| ONE94 bmndata01 | CSV | 213 Kb |
| ONE94 botdata01 | CSV | 49 Kb |
| ONE94 hotrepntab02 | CSV | 13 Kb |
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

[Map of Europe]

[Graph showing time periods]

PeriodO
A gazetteer of period definitions for linking and visualizing data.

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

What is this?
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.

Tell me more.
Start by looking at the guide to using PeriodO. 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 contact us and ask whatever you want!
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
The European Research Infrastructure for Heritage Science (E-RIHS) will support research on heritage interpretation, preservation, documentation and management. It will comprise: E-RIHS Headquarters and National Hubs, fixed and mobile national infrastructures of recognized excellence, physically accessible collections/archives and virtually accessible heritage data.
Some Issues

- Sustainable business models for national infrastructures
- Fragmentation and diverse data resources
- Shared data standards & Interoperability
- National rights frameworks and licensing issues
- Language; national vocabularies
- Periodisation
ARIADNE is a project funded by the European Commission under the Community’s Seventh Framework Programme, contract no. FP7-INFRASTRUCTURES-2012-1-313193. The views and opinions expressed in this presentation are the sole responsibility of the authors and do not necessarily reflect the views of the European Commission.