



The ARIADNE project

Advanced Research Infrastructure for
Archaeological Data Networking in Europe

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The mission of ARIADNE

If no science may obtain substantial advances without the continuous cooperation of many individuals, ... this holds true above all for archaeology, where ... the efforts of one person alone may never succeed without the continuous and mutual assistance of many others who mutually share their discoveries and knowledge, keeping the most active communication among them.

F.W.E. Gerhard, Annali dell' Instituto di Corrispondenza Archeologica, **1829**, no. 1, page 3



What is ARIADNE

- ARIADNE is a Research Infrastructure project aiming at the integration of archaeological datasets in Europe
- Four years' duration
- Starting 1st February 2013
- 23 partners from 15 countries
- Coordinated by PIN-U. of Florence (IT)



The ARIADNE Partnership

- Coordinator
- Partner
- Associate



Why ARIADNE

- Huge number of archaeological data available in digital format
- Large number of non-communicating archaeological datasets – the “information silos”
- Increasing interest of the research community for data sharing, both passive (“access”) and active (“provide”)
- Social pressure for opening data vaults



Project Goals

- Share, access, use and re-use archaeological data
- Overcome fragmentation
- Foster dataset interoperability
- Establish accepted standards and common protocols (e.g. for the quality of digital replicas)
- Enable resource discovery and faceted searches
- Explore new methods
- Create useful tools for searching and browsing

Connect, not assemble

Make data discoverable, accessible, understandable, usable



Project Activities

- Networking: establishing collaboration among archaeologists to overcome fragmentation
- Collecting, recording and providing information on
 - What is available → The Project Registry
 - What is going on → Liaisons and Cooperation
 - What needs to be done → The Project Innovation Plan
- Training on innovation
- Joint Research on
 - Standardization of metadata and reference works (thesauri, gazetteers, authority lists)
 - Tools for data access and services
 - Data lifecycle: acquisition, management, long-term preservation
 - New methodological tools



Project activities

- Networking activities
 - Community building: involving additional institutions sharing data and establishing together guidelines
 - Standardization and good practices
- Trans-National Access to shared datasets and training in their creation, as well as to on-line repositories
 - Support for digitization and data organization
- Research activities
 - Knowledge organization
 - Data management
 - New or improved tools to extract information
 - Advances in methodology



Progress in the initial 12 months

Networking

- Users' dataset and services survey
- Special Interest Groups work
- Established cooperation agreements with institutions not belonging to the partnership
- In publication: report on users' expectations and perceived needs – providing the foundations for the design of project services

TNA

- Training program for 2014
 - 3 summer schools, first one starting in May
 - Individual visits



Progress in the initial six months

Joint Research

- Started the design of integration
 - Mapping metadata schemas to CIDOC-CRM
- Working on an extension of CIDOC-CRM suitable for archaeological documentation
 - Draft proposal for excavation data
- Creation of the ACDM (ARIADNE Catalogue Data Model) and of the Registry



The ACDM

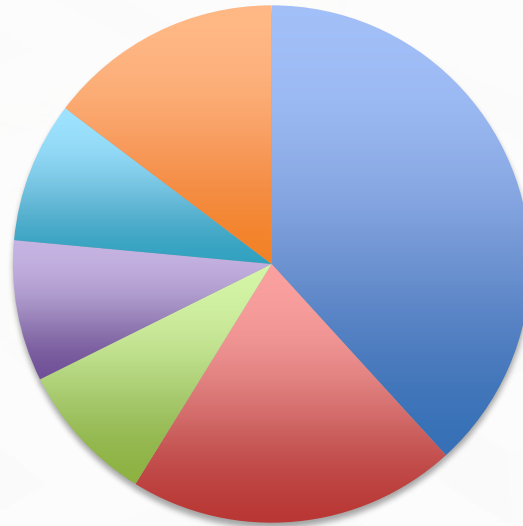
- The ARIADNE Catalog Data Model (ACDM) aims at describing datasets, services, and resources in the archaeological domain
 - So far it addresses databases, collections, thesauri, with plans for covering all relevant resource types
- Based on DCAT (W3C recomm.) and other widespread ontologies
- Data collected into a registry, using a data acquisition tool
- To be used internally to support integration design
- Conceived to become a publicly available service and to be extended to other domains
- A joint effort by ATHENA & CNR with support from PIN and others



Overview of Partners' Datasets

- 20 countries
- 14 languages
- 1,500,000+ database records
- 40,000+ grey literature files

38% DBMS
20% Structured data (datasets)
9% Collections
9% Multimedia
9% Sparse files
15% GIS



- 1 DBMS
- 2 Structured data
- 3 Collections
- 4 MM
- 5 Sparse files
- 6 GIS



Metadata Schemas

There is great disorder under heaven, the situation is excellent

Eight partners (SND, KNAW-DANS, DISCOVERY, MiBAC-ICCU, INRAP, ADS, CYI-STARC) have adopted formal metadata standards for their datasets. The metadata standards reported are:

- BDI, DataCite, MARC/UNIMARC, TriDAS, Dublin Core application profiles, INSPIRE, ISO 11915, CARARE, LIDO, CIDOC-CRM.

Ten partners (ZRC SAZU, MiBAC-ICCU, ADS, AIAC, MNM-NOK, CYI-STARC, ARUP-CAS, ATHENA RC, NIAM-BAS) have developed **proprietary metadata schemas** for some of their datasets. However, all these can be mapped onto CIDOC-CRM.

Four partners (DISCOVERY, INRAP, ARHEO, OAEW) reported some datasets for which a **metadata definition is not currently available** but could be derived from the database structure.



Improving archaeological data

- Re-thinking CIDOC-CRM for archaeological use
- Extending the ontology to improve the management of archeological fieldwork
- Extending the ontology to improve the management and use of digital replicas of archaeological objects
- A joint effort of FORTH and PIN supported by other partners, both technical and content providers



Archaeological e-Research

- Experimenting new methods for archaeology incorporating digital and traditional methods
- Managing scientific data
- Widely using digital replicas of artifacts, monuments and sites
- Using advanced visualization technology
- A minor part of the project but with a very strong potential in the future



The Greek contribution

ATHENA + FORTH

- The ontological foundations of archaeological data organization are the main challenge of ARIADNE
- Greek partners are key in the task of supporting data curation and organization
- Hopefully, content will also come soon



The Cypriot contribution

STARC

- Archives rich in digital replicas integrated with archaeological data
- Experiments integrating digital and traditional archaeological methodology
- *Experience in education with the PhD in Digital Cultural Heritage, which is unique in its kind*





ARIADNE

When you want to build a ship, don't start collecting wood, cut logs and distribute work, but wake up in the hearts of men the yearning for vast and endless sea.



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