

ARIADNE (**A**dvanced **R**esearch **I**nfrastructure for **A**rchaeological **D**ataset **N**etworking in **E**urope) 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 all together span different periods, domains and regions; more are continuously created as a result of the increasing use of IT. They 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.

ARIADNE will enable trans-national access of researchers to data centres, tools and guidance, and the creation of new Web-based services based on common interfaces to data repositories, availability of reference datasets and usage of innovative technologies. It will stimulate new research avenues in the field of archaeology, relying on the comparison, re-use and integration into current research of the outcomes of past and on-going field and laboratory activity. Such data are scattered amongst diverse collections, datasets, unpublished fieldwork reports (grey literature), and in publications. The latter still being the main source of knowledge sharing. ARIADNE will contribute to the creation of a new community of researchers ready to exploit the contribution of Information Technology and to incorporate it in the body of established archaeological research methodology.

To achieve this result the project will use a number of integrating technologies that build on common features of the currently available datasets, and on integrating actions that will build a vibrant community of use.

## Why ARIADNE?



### Need of integration

- Go beyond academic or administrative borders
- Integrate datasets overlapping in scope
- Access unpublished information



### Data Deluge

- Growth in archaeological projects
- Growth in size of project datasets



### Willingness to share, use and re-use

- 400,000 downloads from ADS grey literature repository over 6 years

## Joint Research Activities - Developing Advanced Integrated Services

### Innovative Tools & Services



The existence of the Integrated Infrastructure will stimulate the creation of new datasets and services, based on the innovative tools, services and methodologies. The integration of existing datasets, the creation of new ones and the production of synthetic work will generate a continuous and structured stream of data for archaeological research.

### Linked Data

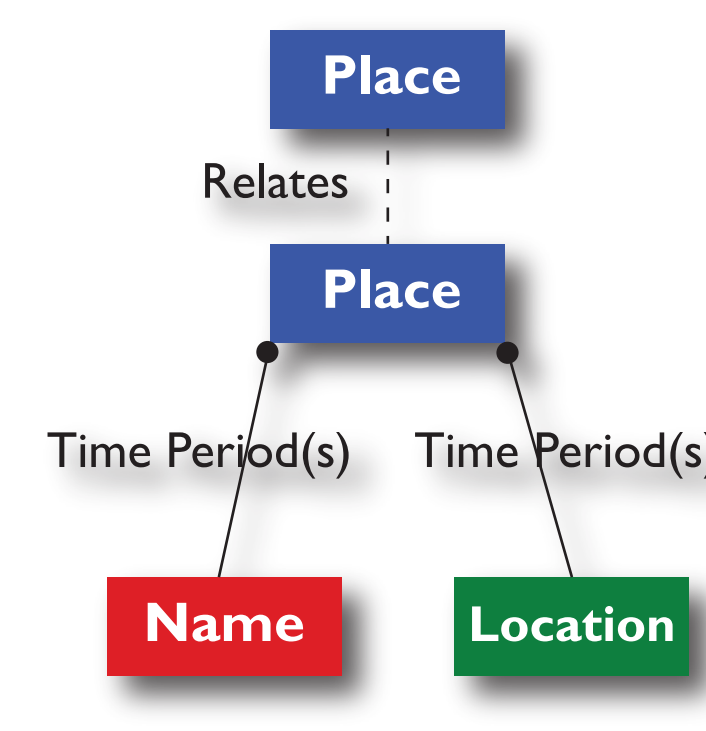


Develop and provide semantic tools for annotating, linking and browsing datasets across ARIADNE

Develop semantic services enabling the creation of mash-ups according to individual research needs

Advise and support ARIADNE data providers in the creation and publishing of Linked Data of their datasets

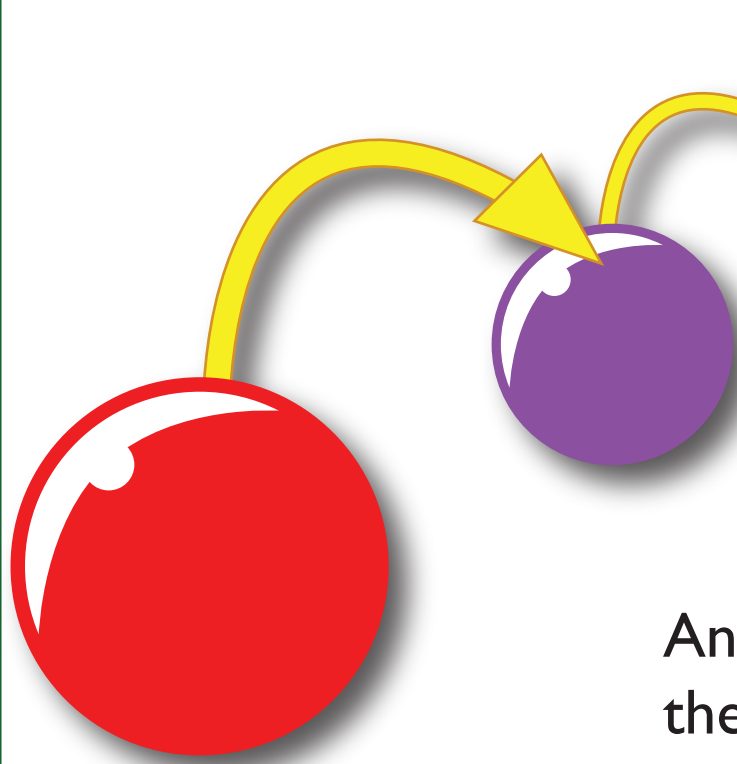
### Addressing Complexity



Develop extensions to CIDOC-CRM for specific archaeological subdomains, allowing for enrichment of their documentation

Interrogate complex entities and relations enabling more accurate documentation of complex situations and innovative reasoning on archaeological datasets

### Interoperability



Adapt and integrate existing infrastructure into ARIADNE

Establish a range of solutions to enable interoperability & integration: crosswalks, mappings, APIs and external (human) interfaces

Analyse, select, design and deploy services within the integrated infrastructure to enable the provision of online services to researchers

### Data Mining



Detecting patterns of relevance and establishing links between related archaeological data and beyond

Content linking based upon usage pattern analysis

Relate and link research literature with thematically relevant ARIADNE datasets (OpenAIRE)

### Natural Language Processing



Establish the achievements of natural language processing-based services and tools for archaeological repositories.

Develop automated procedures for indexing and adding semantic descriptions to large numbers of text (e.g. grey literature).

Design and implement summarisation services, producing natural language descriptive summaries from aggregations of linked data

## Transnational Access

### Availability, Usable, Useful

Designated expert facilities within the project consortium will enable the next generation of researchers to develop the skills by and expertise within several key areas of archaeological data collection, management and integration

- Enable users to co-work with experts in critical phases of their research
- Allow effective use of the research infrastructure
- Support innovative investigations

### Legacy Data & Dataset Design



### Scientific Datasets



### 3D Documentation



### Online Access

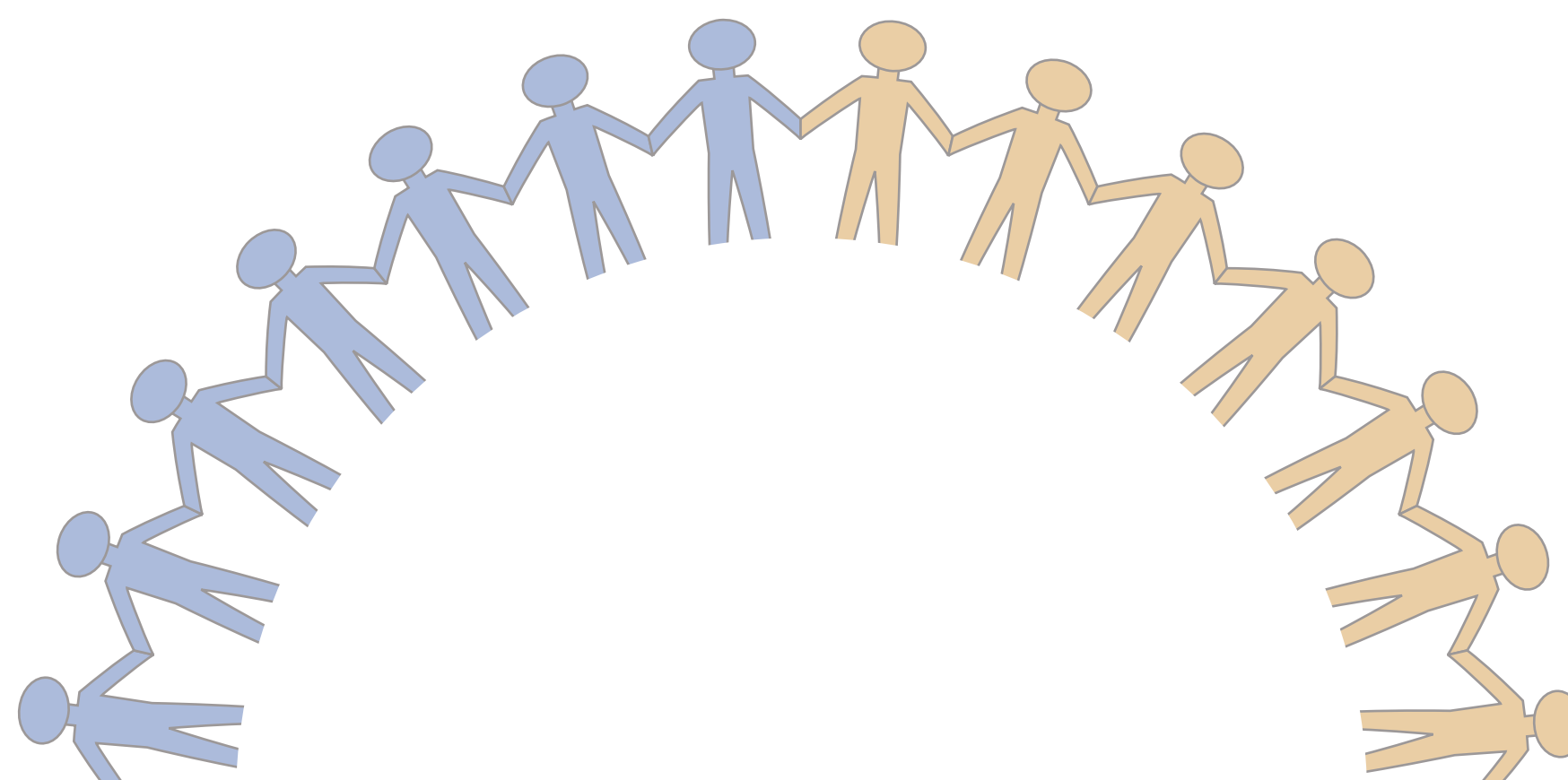


## Community Building

### Involve, Stimulate, Collaboration

Human resource is a substantial component of Research Infrastructures. ARIADNE will create a community of use fostering the creation, sharing, use and reuse of digital data

- Liaise with National & International initiatives
- Identify current and future stakeholder needs and requirements to enhance services
- Raise awareness of RIs
- Promoting good practices in data sharing
- Training in data issues and benefits of RI availability
- Reinforce the sense of community and collaboration



## Developing eArchaeology

### Innovate, Explore, Experiment

ARIADNE will enable archaeological and related research communities to be at the forefront of data intensive research, working on research questions that could not be addressed before, drawing on volumes of resources they had not been formally available, and allowing for collaborations between previously fragmented research initiatives across Europe and beyond. In particular, a new generation of researchers will be fostered that are ready to exploit in the best way the digital datasets and services for ICT-enhanced archaeological research (e-archaeology) made available by ARIADNE

Develop innovative frameworks to exploit integrated datasets and technology applications to advance the research process

Carry out pilot eArchaeology experiments utilising the ARIADNE RI



## Project Partners

PIN Scl - Polo Universitario "Città di Prato" - Italy  
Archaeology Data Service (ADS) - UK  
Data Archiving and Networked Services (DANS) - Netherlands  
Deutsches Archäologisches Institut (DAI) - Germany  
MDR Partners (Consulting Ltd) - United Kingdom  
Athena Research Center - Greece  
Consiglio Nazionale delle Ricerche (CNR) - IT  
Salzburg Research (SRFG) - Austria  
The Discovery Programme - Ireland  
Swedish National Data Service (SND) - Sweden

Consejo Superior de Investigaciones Científicas, Instituto de Ciencias del Patrimonio (CSIC INCIPT) - Spain  
Scientific Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU) - Slovenia  
The University of Glamorgan (UoG) - UK  
Hungarian National Museum - NOK - Hungary  
The Cyprus Institute Limited, STARC - Cyprus  
Foundation for Research and Technology Hellas (FORTH) - Greece  
Archaeology AS CR - Czech Republic

Österreichische Akademie der Wissenschaften - Austria  
Associazione Internazionale di Archeologia Classica (AIAC) - Italy  
National Institute of Archaeology and Museum, Bulgarian Academy of Sciences - Bulgaria  
Istituto Centrale per il Catalogo Unico delle biblioteche italiane e per le informazioni bibliografiche (ICCU) - Italy  
Asociatia Arheo Vest Arheo - Romania  
Institut National De Recherches Archeologiques Preventives (Inrap) - France  
Universiteit Leiden - Netherlands

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