

Digital Infrastructures for Archaeology: Past, Present and Future directions

CAA2019, Krakow
24 April 2019



@ARIADNEplus #KraKCAA #s22

Infrastructures: Past

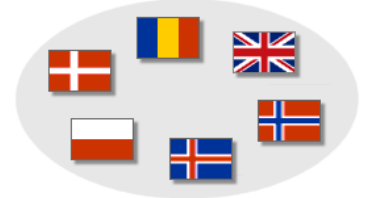


Archaeological Records of Europe - Networked Access

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: Denmark, 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.



Education and Culture

Culture 2000



© ADS 1996- Edited by [Jo Clarke, email](#)

Cite only: <http://ads.ahds.ac.uk> for this page



Life before ARIADNE...

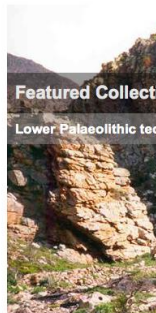


SEARCH

[HOME](#)
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[DISCOVER](#)
[DEPOSIT](#)

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



December 2016: The Rural Settlement (Updated)
 This resource brings together the

Welcome to the new ADS website. There are a number of new features of the website that will make it easier and more enjoyable to use. Please read the 'About' this site section for more details. This site works best with the Firefox, Chrome and Safari browsers. Why not register as a myADS user to take full advantage of the additional features. On registration these personal myADS features become available.

Workbook
 Using the tools at the bottom of each page save your favourite resources and regular searches in the myADS Workbook.

History
 Your recent exploration of the site and the archives is automatically saved in your myADS History.

Additional services
 Registered ADS users can take advantage of a number of additional myADS services, such as tailored email alerts and download of configurable results sets.

Data Archiving and Networked Services
DANS

You are here: [Home](#) > [About DANS](#) > [Services](#) > [Archiving and reusing data](#) > [EASY](#) > [E-deposit Dutch archaeology \(EDNA\)](#)

Services
 Archiving and reusing data
 DataverseNL
 EASY
 NARCIS
 Training and consultancy
 Organisation and policy
 Research and Innovation

Language

FASTIONLINE

EXCAVATION

ARCHAEOLOGICAL CONSERVATION

SURVEY

FOLD&R

(Fast On Line Documents & Research)

ARIADNE

tDAR

THE DIGITAL ARCHAEOLOGICAL RECORD

E-deposit Dutch archaeology (EDNA)

The e-deposit for Dutch Archaeology (EDNA) was established by DANS and the Cultural Heritage Agency of the Netherlands. It is a sustainable manner and it then remain accessible and usable in the long term. Since 2007, archaeologists in the Netherlands are obliged to deposit their data via DANS, according to the Quality Standard for Digital Archaeology (QSDA). The archived reports and datasets can be found in the EDNA, the online archiving system of DANS, and are used mainly by archaeologists and people interested in culture.

Archaeological collection

EDNA contains data of archaeological research (GIS data, field drawings, data tables, reports on this research. This concerns research in the broadest sense: from field surveys, specialist research to dissertation. The archived reports and datasets can be found in the EDNA, the online archiving system of DANS, and are used mainly by archaeologists and people interested in culture.

International collaboration

By participating in European portals such as Europeana and ARIADNE, DANS provides archaeological data in EASY.

Contact: [Hella Hollander](#) (project leader Archaeology) and [Valentijn Gilissen](#) (data management)

[Read more about depositing data](#) or [go to EASY directly](#)

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 More

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Comprehensive Database of Archaeological Site Reports in Japan

Full-text search is available!

You can read Japanese excavation reports on the Web

Comprehensive Database of Archaeological Site Reports in Japan

全国遺跡報告総覧

Search

Translate Free Word

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Search

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List

New Arrival List

Prefecture List

Report Type List

Hot Reports

Others

Keywords

Search on the map of Japan

chamed rice grains Sueki pottery banwa bronze coins Jomon period backed blade Paleolithic period polished stone axe microlith clay slate sarcophagus radiocarbon date tumulus brush-mark finishing grain impression lithic Jomon pottery keyhole tomb fortress Yayoi period dōgu metalurgy pollen analysis garden site stone wall tiles agricultural tools dendrochronology

ABOUT SEARCH USING tDAR UPLOAD NEWS MY ACCOUNT

What can you dig up?

The Digital Archaeological Record (tDAR) is your online archive for archaeological information.

Find archaeological data...


Access & Use

Broadening the access to archaeological data through simple search and browse functionality.

[LEARN MORE](#)


Upload Resources

Contribute documents, datasets, images, and other critical archaeological materials.

[LEARN MORE](#)


Preservation

Dedicated to ensuring long-term preservation of digital archaeological data.

[LEARN MORE](#)


Who Uses tDAR

Researchers like you. Uncover knowledge of the past, and preserve and protect resources.

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Project basics

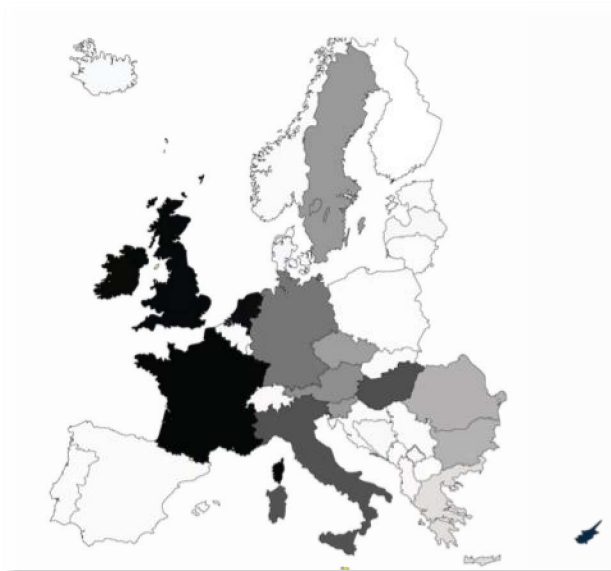
- ARIADNE:
 - 4 year project
 - 02/2013 - 02/2017
 - 6.5m euros
 - 23 partners; 18 countries
- ARIADNEplus:
 - 4 year project
 - 02/2019 – 02/2023
 - 6.6m euros
 - 41 partners; 27 countries



Extending geographically

ARIADNE:

23 partners; **18** countries



ARIADNEplus:

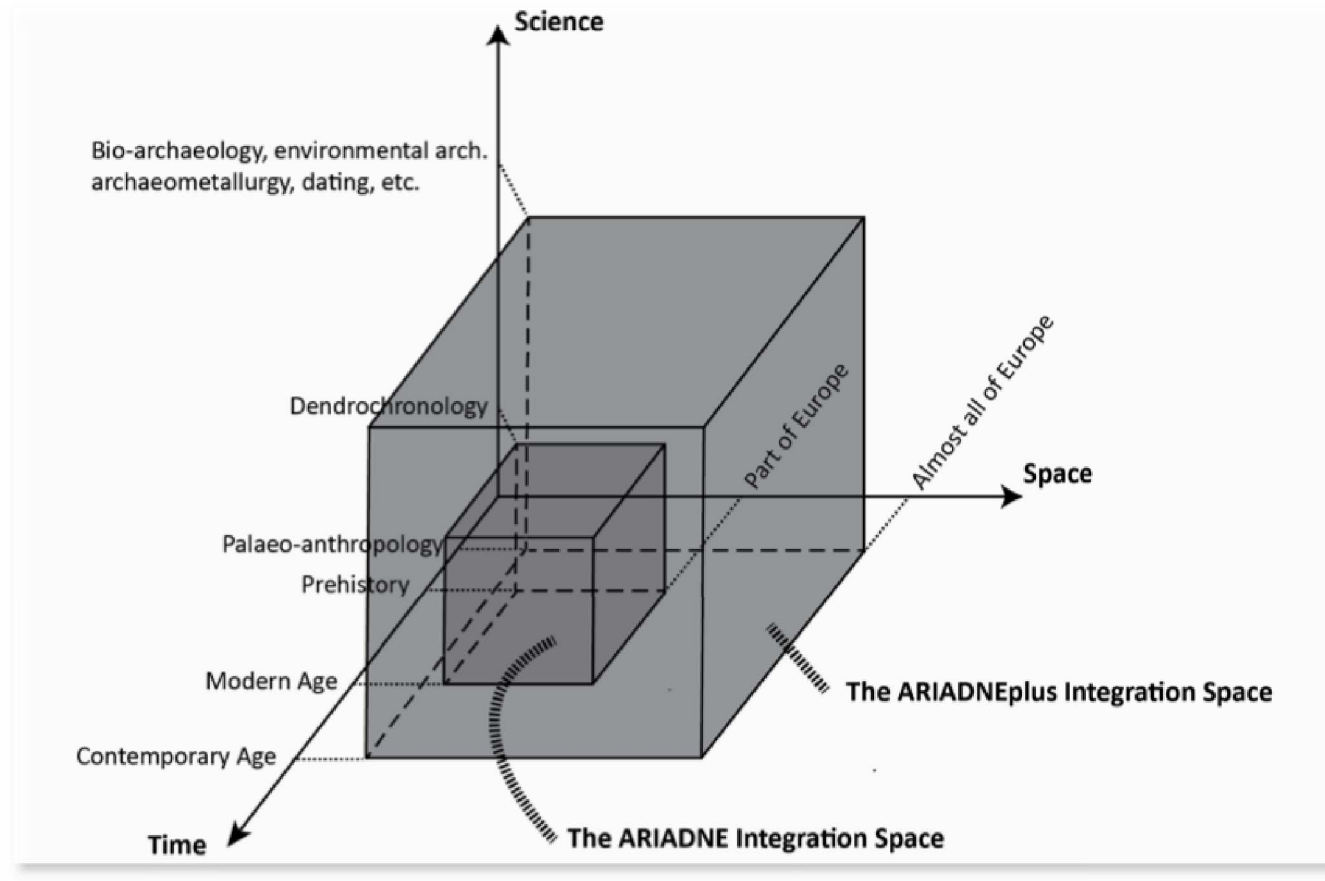
41 partners; **27** countries



Plus: Argentina, Japan & USA



Extending thematically



ARIADNEplus special interest groups

Sites and monuments record and event records

Remote Sensing

Paleo-anthropology

Standing Structures

Bio-archaeology and Ancient DNA

Spatio-temporal data

Archaeological finds made by general public

Maritime and underwater archaeology

Environmental Archaeology

Archaeological fieldwork

Inorganic Materials Study

Inscriptions

Field Survey

Dating

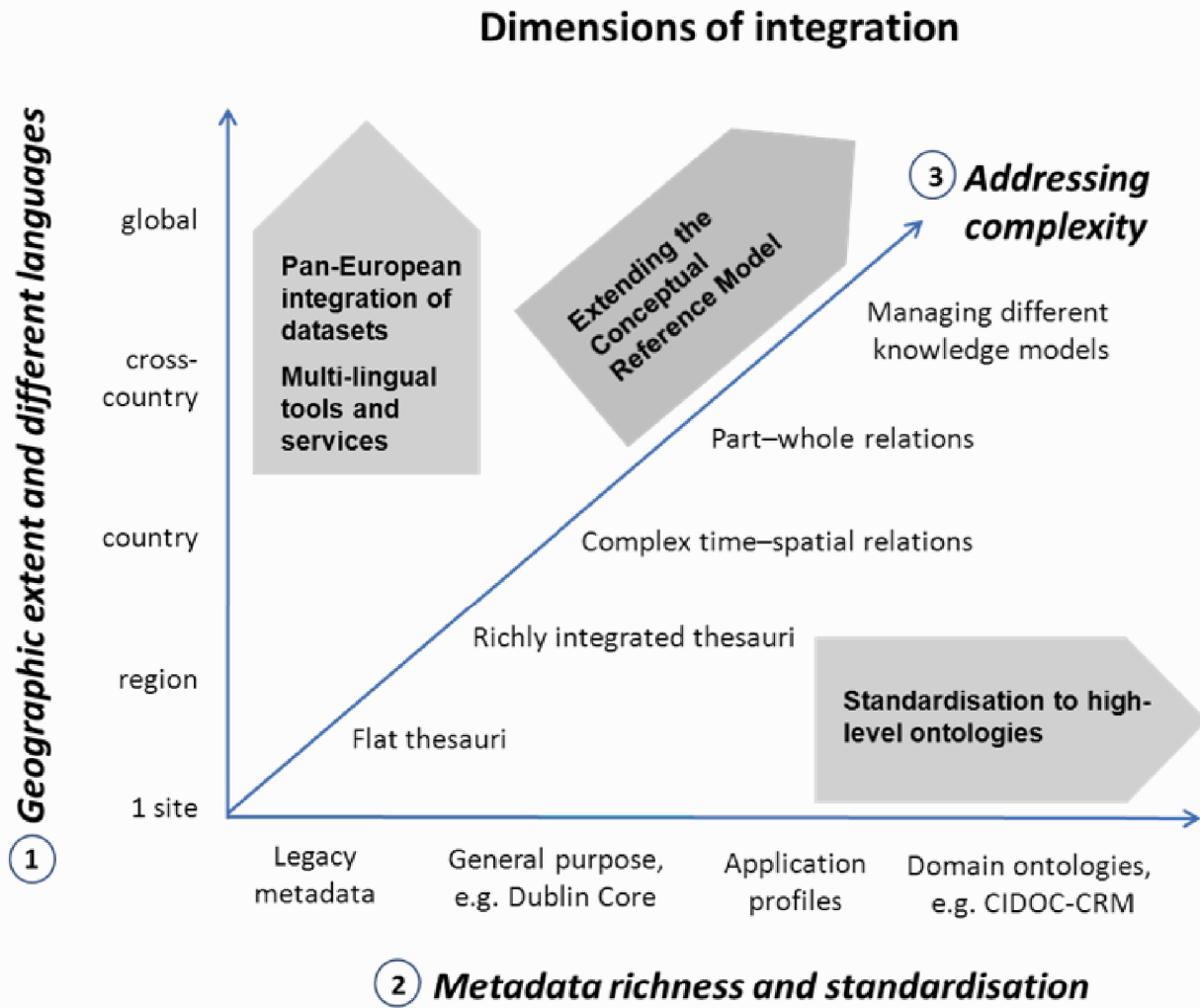


User Needs Research

- 94% of researchers agreed that it is important that datasets are available online in an uncomplicated way.
- 87% of researchers agreed that they often do not know what research data is available because it is stored in so many different places and databases.
- 74% of researchers consider it important to have easy access to international datasets.
- The perceived lack of professional recognition and reward for sharing data is a barrier to data sharing for 72% of researchers.
- A lack of institutional or international repositories for archaeological data sets was a barrier to data sharing for 60% of researchers.

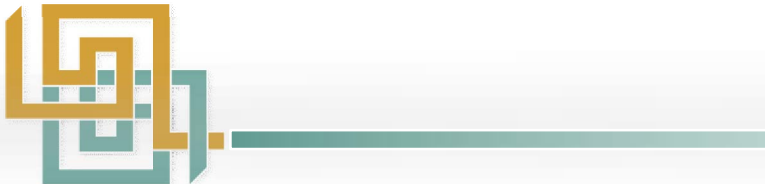
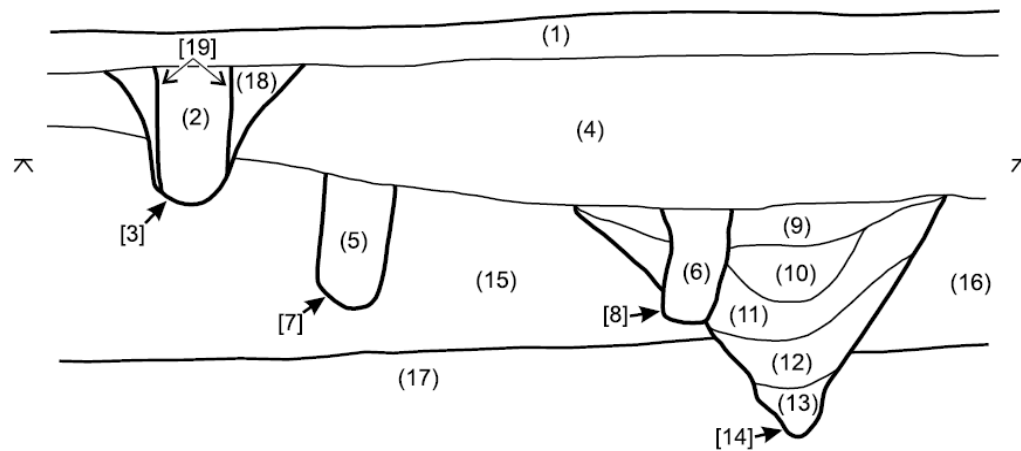


The ARIADNE roadmap

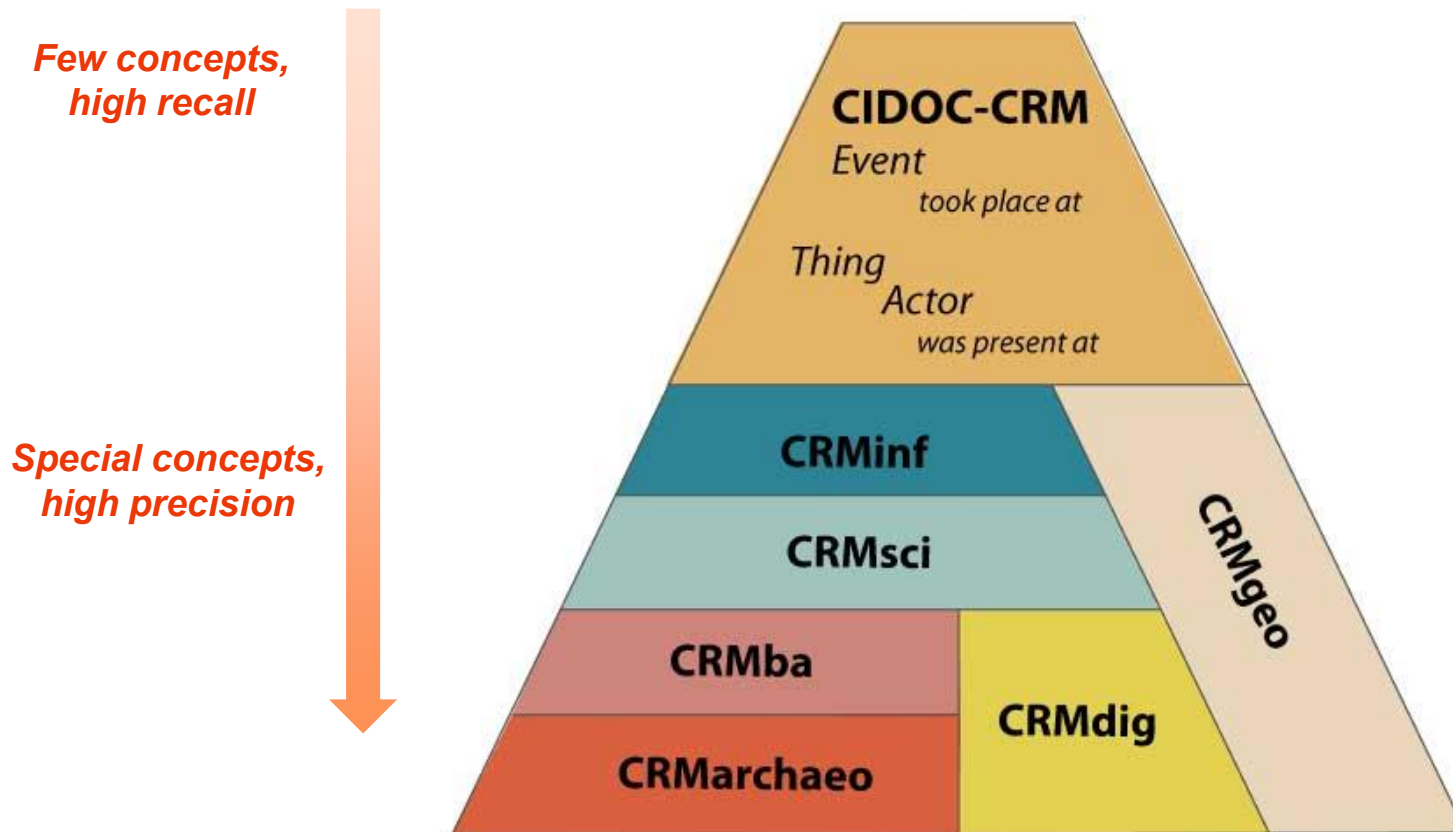


Achieving interoperability

- We have datasets in many languages and complying with many different standards
- ARIADNE uses the CIDOC CRM with extensions for archaeology to achieve integration
 - Existing datasets are mapped to the ARIADNE data model
 - Subject concepts are mapped to the Getty A&AT
 - Periods are defined in Perio.Do

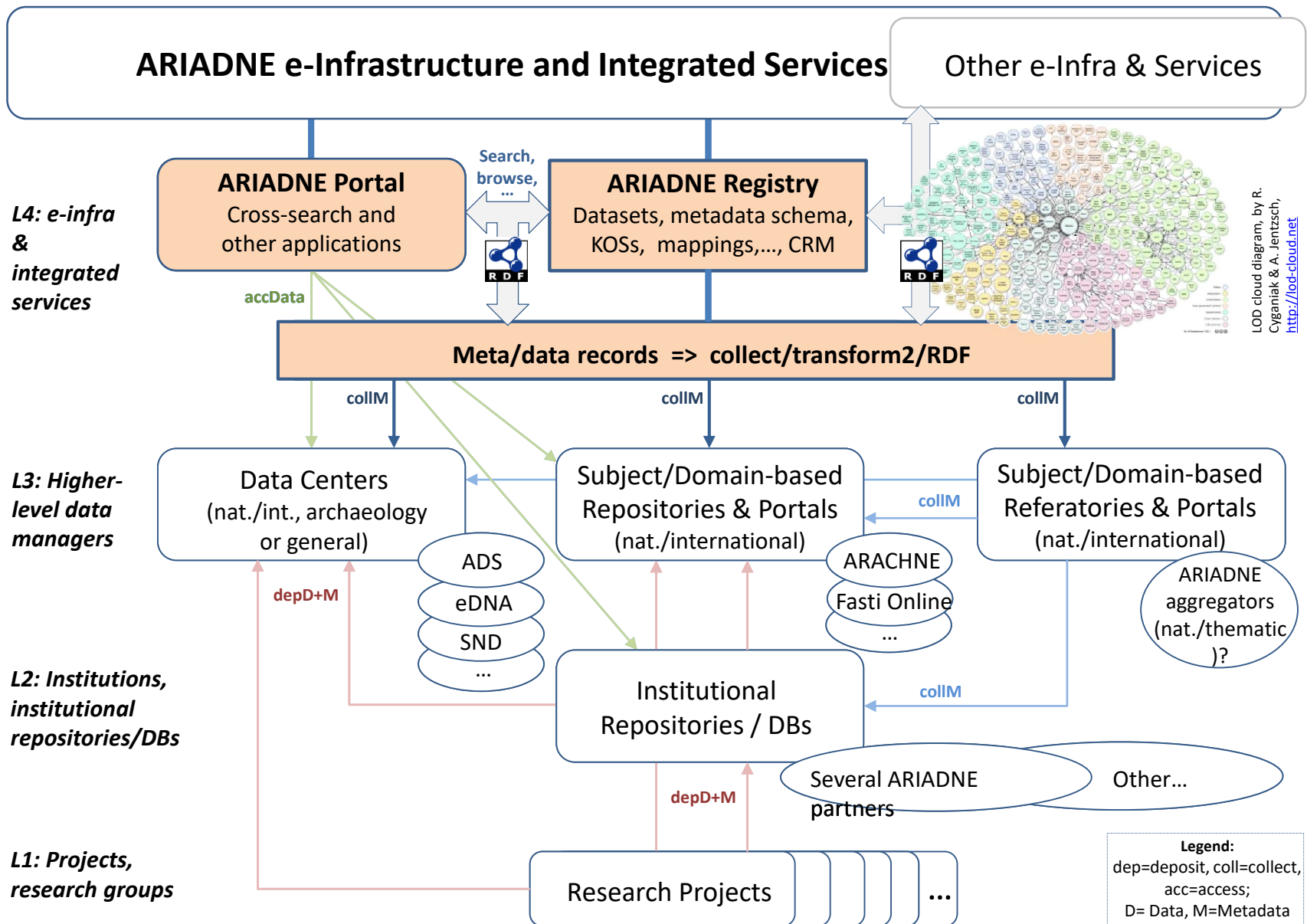


ARIADNE Reference Model




Interoperability Framework

ARIADNE Users Framework



The ARIADNE Portal

[Catalog](#) [Services](#) [About](#)



ARIADNE

All fields ▾


Q

Welcome

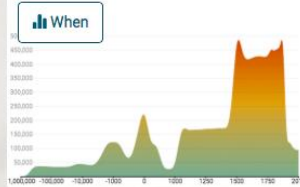
ARIADNE brings together and integrates existing archaeological research data infrastructures so that researchers can use the various distributed datasets and new and powerful technologies as an integral component of the archaeological research methodology.

Browse the Catalog

Where



When



What

pits (earthworks)

churches (buildings)

lime kilns

ditches

kilns

barns

houses

forts

drains

farms

farmhouses

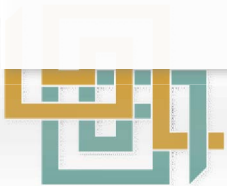
unidentified



Transnational Activity

Training events

- 2D/3D documentation for archaeology
- Legacy data and dataset design
- Mapping existing datasets to CIDOC CRM
- Data curation



ARIADNE services

Ariadne media service Browse Upload Help Contacts

ARIADNE visual media service

Create your online showcase for 3d models, images and RTI.

Upload »

Browse »

3D models

3D representations produced with 3D scanners or photogrammetry are extremely high-resolution and hard to visualize at interactive rate. This service produces a web page that supports interactive visualization of your data, after converting it into an efficient multiresolution encoding.

View details »

Demo

RTI images

Relightable images (called Reflection Transformation Images, RTI, or Polynomial Texture Maps, PTM) are becoming an [increasingly used media](#). This service closes a current gap, giving support for easy publication on the web and interactive visualization of RTI images.

View details »

Demo

High-resolution images

High-resolution images are a commodity resource in archaeology. Unfortunately, they are most often disseminated and published on the web by using low-resolution versions (a single 40Mpixel images is 120MB in uncompressed format and around 10MB when lossy compressed).

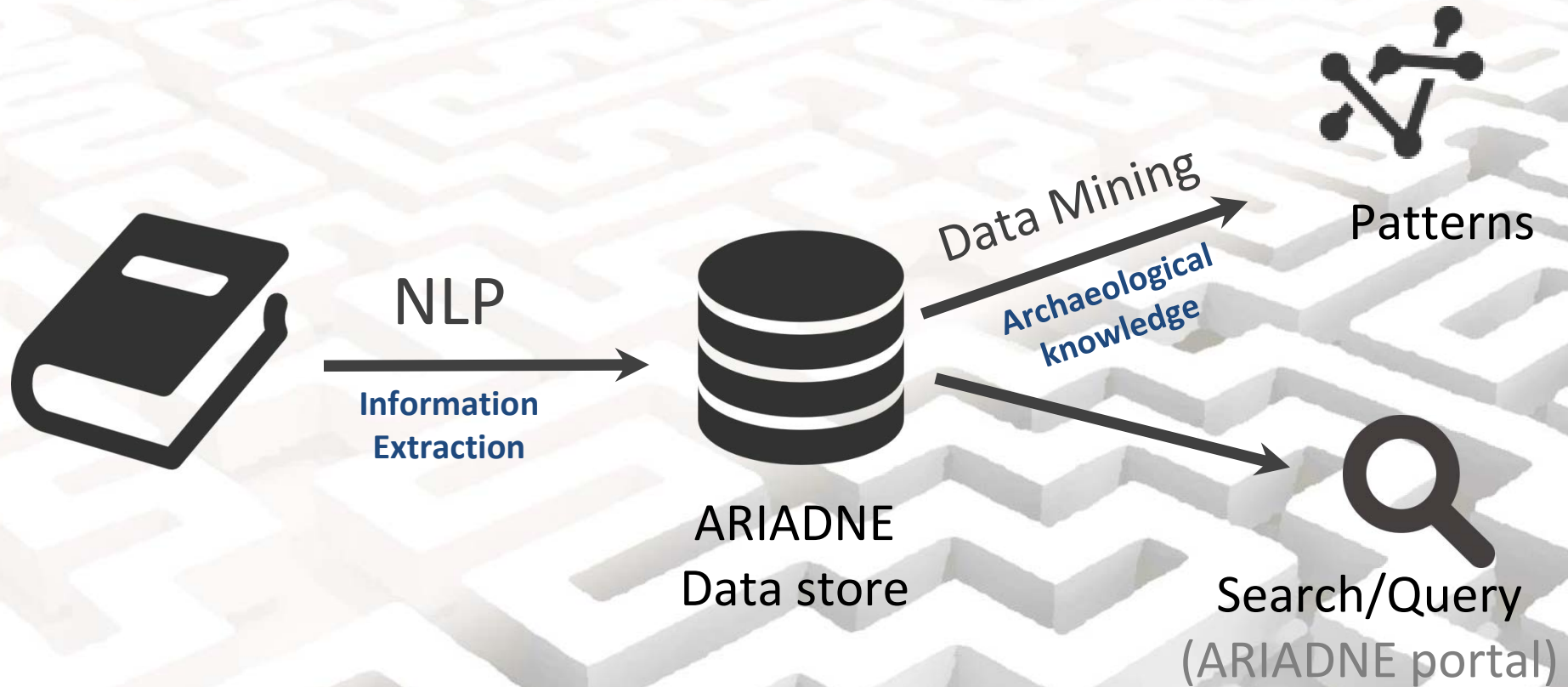
View details »

Demo



<http://visual.ariadne-infrastructure.eu/>

NLP and Data Mining



ARIADNEplus and FAIR data

“One of the grand challenges of data-intensive science is to facilitate knowledge discovery by assisting humans and machines in their discovery of, access to, integration and analysis of scientific data.”



- **Findable**
 - Data are described with good metadata
 - Metadata are indexed in a searchable resource
 - Data are assigned a Permanent identifier
- **Accessible**
 - Data should be open and online
- **Interoperable**
 - Use a formal, open, shared language for knowledge representation
- **Re-usable**
 - Data should have clear data licenses
 - Metadata should meet domain-relevant standards



Standards: Guides to Good Practice



Archaeology Data Service / Digital Antiquity Guides to Good Practice

Log in

Dendrochronological Data in Archaeology: A Guide to Good Practice

Peter Brewer, Laboratory of Tree-Ring Research, University of Arizona, USA

Esther Jansma, Cultural Heritage Agency and Utrecht University, The Netherlands

VERSION 1.1 - JUNE 2016

Section 1. Aims and Objectives

- 1.1 Background to the Guide
- 1.2 Scope of the Guide
- 1.3 Data and Metadata

Section 2. Creating Dendrochronological Data

- 2.1 Project Planning and Requirements
- 2.2 Sources of Data
- 2.3 File Types (whilst creating, working with, and processing data)
- 2.4 File Naming Convention
- 2.5 Documenting Data Creation and Processing

Section 3. Archiving Dendrochronological Data

- 3.1 Deciding What to Archive
- 3.2 Deciding How to Archive
- 3.3 Archiving File Types
- 3.4 Converting Data Formats
- 3.5 Archiving Strategies
- 3.6 Metadata and Documentation

Section 4. Copyright

- 4.1 Copyright for Dendrochronology



3D Models in Archaeology: A Guide to Good Practice

Martina Trognitz, IANUS, Deutsches Archäologisches Institut (DAI).
Kieron Niven, Archaeology Data Service.
Valentijn Gilissen, Data Archiving and Networked Services (DANS).

With additional contributions from Ruth Beusing (DAI), Bruno Fanini (CNR), Kate Fernie (2Culture Associates), Roberto Scopigno (CNR), Seta Stuhec (OEAW), and Benjamin Štular (ZRC-SAZU)

2016

Section 1. Aims and Objectives

- 1.1 3D Models in Archaeology
- 1.2 Scope of this Guide
- 1.3 Issues and Concerns

Section 2. Creating 3D Data

- 2.1 Project Planning and Requirements
- 2.2 Sources and Types of 3D Data
- 2.3 File Formats

Section 3. Archiving 3D data

- 3.1 Significant Properties
- 3.2 File types for Archiving and Dissemination
- 3.3 Documentation and Metadata



Data Archiving and Networked Services



DEUTSCHES
ARCHÄOLOGISCHES INSTITUT



Links to other e-infrastructures



Links to COST Actions: SEADDA



cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

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CA18128 - Saving European Archaeology from the Digital Dark Age

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Description Parties Management Committee

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10.20 – 10.40

Introduction

10.40 – 11.00

Where is the data?

Ulf Jakobsson

11.00 – 11.20

My data manager is a robot!

Valentijn Gilissen, Hella Hollander

11.20 – 11.40

The ARIADNE project at INRAP: inception, implementation and future,

Kai Salas Rossenbach, Amala Marx,

11.40 – 12.00

OpenArchaeo: an application to query archaeological data via CIDOC CRM,

Olivier Marlet, Xavier Rodier, Thomas Francart, Béatrice Markhoff

12.00 – 12.20

Czech archaeology in the Digital Environment – Digitizing Archaeological Agenda in Theory and Practice,

Jan Hasil, David Novák

12.20 – 12.40

ZBIVA web application,

Benjamin Stular

LUNCH BREAK



14.00 – 14.20

Archaeological Map of Bulgaria in ARIADNE and ARIADNEplus,
Georgi Nekhrizov, Nadezhda Kecheva

14.20 – 14.40

‘A puzzle in 4D’: using semantic technologies for the integration
of resources from a long-term excavation project,
Edeltraud Aspoeck, Gerald Hiebel

14.40 – 15.00

The Swedish Digital Archaeological Workflow in Action,
Marcus J. Smith

15.00 – 15.20

The ADED project - a Norwegian infrastructure for excavation data,
Christian Emil Smith Ore, Espen Uleberg, Jakob Kile-Vesik

15.20 – 15.40

Ísleif: a network-based approach to site survey,
Adolf Fridriksson, Gisli Palsson

COFFEE BREAK

16.00 – 16.20

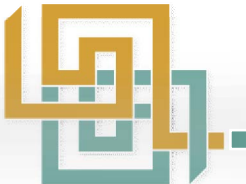
ARIADNEplus for public/community archaeology,
Andres Dobat

16.20 – 16.40

CENIEH: A relevant source of digital paleoanthropological datasets for ARIADNEplus,
Mohamed Sahnouni, Maria Isabel Sarro Moreno, Cecilia Calvo Simal

16.40 – 17.00

Prospects and Potential for the National Digital Repository of Archaeological Site Reports,
Yuichi Takata, Akihiro Kaneda, Miyu Konuma, Sadakatsu Kunitake



THANK YOU!



ARIADNEplus is a project funded by the European Commission under the H2020 Programme, contract no. H2020-INFRAIA-2018-1-823914. The views and opinions expressed in this presentation are the sole responsibility of the author and do not necessarily reflect the views of the European Commission.



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