ARIADNEplus for Archaeological Sites and Built Structures

ARIADNEplus Session @ ARA Symposium, 5 May 2022

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Please take note that the timing given is in Eastern European Summer Time (EEST).

The Zoom link will be posted on the 4th of May on: http://www.simpara.ro

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Processing the Romanian Chronicle of Archaeological Research Database – challenges and outcome

Alina IANCU, Georgiana DINU, Bianca GRIGORAȘ (Institutul Naţional al Patrimoniului, Bucureşti, România)

Archaeological buildings documentation with the ARIADNE CRMba

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Implementing the ARIADNEplus ontology and vocabularies for built structures

Maria João CORREIA and António SANTOS SILVA (Laboratório Nacional de Engenharia Civil, Lisbon, Portugal

Sites and monuments from Romanian Dobruja in ARIADNEplus: a special regard to Ottoman mosques and cemeteries

Tiberiu VASILESCU, Radu-Alexandru DRAGOMAN, Iulian BÎRZESCU, Cătălin NICOLAE (Institutul de Arheologie Vasile Pârvan, Bucureşti, România)

ABSTRACTS

Guntram GESER (Salzburg Research Institute, Salzburg, Austria)

The ARIADNEplus digital infrastructure for archaeology

ARIADNEplus (https://ariadne-infrastructure.eu) is a project funded by the European Commission to provide a digital infrastructure that enables archaeological institutions and projects in the European Research Area (ERA) and beyond to more effectively share datasets that are dispersed and often difficult to discover and access. Furthermore ARIADNEplus promotes community building, supports data standardisation, and offers training in data management.

The ARIADNEplus consortium comprises of national heritage authorities, archaeological research centres and associations, data repository providers and technology partners. The 41 partners come from 23 European countries and include four international partners in Israel, Japan, Argentina and the United States. Moreover there are 11 associated institutions and projects that expand ARIADNEplus' coverage of countries and fields of research even further. ARIADNE also collaborates with major archaeological bodies and associations, notably the European Archaeological Council (EAC) and the European Association of Archaeologists (EAA).

The ARIADNEplus digital infrastructure allows the archaeological community to share, find and access data in dispersed repositories and databases for use across institutional and national as well as disciplinary boundaries. The core components of the Cloud-based infrastructure are a catalogue of indexed data records and a data search portal. The catalogue includes monuments and sites inventories, archives of surveys and excavations, artefact databases, fieldwork reports and publications – currently around 2 million records, and growing. The portal allows searching the data records according to the three facets of "when" (time), "where" (space), "what" (object) and terms drawn from controlled vocabularies. The datasets as such reside in storage facilities of the contributors who maintain and control the access according to their terms.

While the ARIADNEplus infrastructure supports data from many archaeological domains, this session will focus specifically on data management and research concerning archaeological sites and built structures. Examples from Italy, Portugal and Romania will show how data record standards and vocabularies promoted by ARIADNEplus enhance access to datasets heritage managers and researchers need for their work.

Kate FERNIE (Connecting Archaeology and Architecture in Europe, Dublin, Ireland)

ARIADNEplus for heritage managers

ARIADNEplus is funded by the European Commission to support archaeological researchers, but we believe that the infrastructure it is creating is also important and useful for heritage agencies and managers.

The ARIADNE Portal is bringing together datasets from its partners and associates. Searches on an area or region reveal content provided by organisations within the country, from researchers overseas and international initiatives. The content types range from individual finds, monuments and sites, fieldwork reports to scientific datasets such as dendrochronology, LiDAR and dating. By bringing together these datasets ARIADNEplus has the potential to offer heritage managers a more comprehensive catalogue of information about the heritage in their region.

Digitisation and open access licences (the FAIR principles) are transforming access to fieldwork reports and other datasets useful for informing decisions about heritage management. As new datasets are shared the portal becomes more and more valuable. ARIADNEplus is open and would like to encourage new organisations, including heritage agencies as well as research organisations, to share their

datasets. In this presentation we will explain how organisations can get involved and introduce the process of sharing data with the ARIADNEplus portal.

ARIADNEplus is a very lively network of people – archaeologists, researchers, professionals, managers – who are actively sharing and exchanging their results and knowledge. This includes people from different types of organisations which are developing and using systems to manage their datasets, for example geographic information systems. Joining the network offers opportunities to exchange news about projects (successes and lessons learned) and best practices.

ARIADNEplus also offers opportunities for young researchers and people who are at different stages in their careers. There are opportunities for working visits through the programme of 'transnational access' and to participate in training and webinars. In addition, the ARIADNEplus training hub is a dedicated online space which includes various training resources on topics such as managing datasets, repositories, open access principles, and so on.

Thus ARIADNEplus offers a range of interesting opportunities for heritage managers and archaeological professionals.

Bogdan ŞANDRIC, **Marius STREINU**, **Dan MATEI**, **Alina IANCU**, **Georgiana DINU**, **Bianca GRIGORAŞ**, **Oana BORLEAN**, **Marian TUARU** (Institutul Naţional al Patrimoniului, Bucureşti, România)

Preparing the National Archaeological Repertory for ARIADNEplus

This presentation concerns the documentation of 2,550 archaeological sites, representing the same number of records in the National Archaeological Repertory (RAN) database, and the preparation of the records for the ARIADNEplus data catalogue and portal. The documentation activity consisted of:

– correcting and updating existing records and creating new ones in the database with information taken from archaeological literature, unpublished archaeological research reports, and historical studies for general and zonal urban plans;

– mapping archaeological sites in a geographical information system (GIS) by determining the geographical coordinates and achieving the spatial delimitation of archaeological sites both as point and polygons vectors;

– identifying representative photographs for archaeological sites and uploading them to the National Archaeological Repertory database and recording descriptive metadata for each photograph.

Within the ARIADNEplus project we are preparing the conversion of the records from the National Archaeological Repertory (RAN) database to the ontology and data format of ARIADNEplus. First, in order to understand and visualize the ARIADNEplus data catalogue ontology (AO-Cat), a program was developed to translate the ontology from Resource Description Framework (RDF) format into a CSV visualization format. This allows the representation of the hierarchy of AO-Cat classes and properties.

Then the actual program for converting RAN records to the import format of ARIADNEplus was developed, respecting the specific ontology. The finalization of this program involved a technical dialogue with the ARIADNEplus team in Athens. This team was very helpful, especially in solving the terminological problems, i.e. establishing the procedure for mapping the RAN descriptors to concepts of the Getty Art & Architecture Thesaurus, and mapping the historical periods to the PeriodO vocabulary.

The mapping of the historical periods is currently being finalized and the delivery of the first significant set of RAN archaeological data records will follow.

Alina IANCU, Georgiana DINU, Bianca GRIGORAȘ (Institutul Național al Patrimoniului, Bucureşti, România)

Processing the Romanian Chronicle of Archaeological Research Database – challenges and outcome

The Romanian Chronicle of Archaeological Research is an annual publication edited by the National Institute of Heritage of Romania, which encompasses all the field studies carried out in the year, in the form of individual technical reports. The publication is accompanied by an open database that is maintained and updated by specialists of the Institute.

Even if the reports are not fully comprehensive regarding the excavations, they may offer important details about the sites and objects discovered and their archaeological contexts, prior to their official publication in academic papers.

This presentation will cover the process of updating the online database with information from the latest archaeological reports, as they are summarised by the members of each research team. This may include the correction of possible inaccuracies regarding the identification data of the archaeological sites, such as their individual numerical code in the *National Archaeological Repertory* database, or refinement of other information about the sites.

In addition, fieldwork reports can lead to new entries in the *Repertory* database, enriching at the same time the *Cartographic Server for National Cultural Heritage*.

Paola RONZINO (PIN Servizi Didattici e Scientifici per l'Università di Firenze, Prato, Italy)

Archaeological buildings documentation with the ARIADNE CRMba

This presentation addresses an important aspect of the built heritage documentation, which concerns encoding information about a building in a formal way, making it available for reuse by the research community. Formal ontologies allow structuring and integrating information from heterogeneous sources without loss of semantic information.

In the field of Cultural Heritage (CH), the CIDOC Conceptual Reference Model (CRM) ontology is well known and widely accepted as it provides definitions and a formal structure to describe the implicit and explicit concepts and relationships used in the CH documentation. One of its extensions, the CRMba model, has been specifically designed to document information on a built structure and its components.

The presentation will show how the CRMba model can represent the structural components of a Roman amphitheatre, describe the change of state and document its reuse. An innovative method highlights the concepts of "empty spaces" and "functional spaces", defined by form, and focuses on the relationship between form and function. The presentation will demonstrate the potential of the CRMba model, and will provide, through a series of examples supported by graphic representations, standard encoding procedures that can be reused by scholars working on similar case studies.

Maria João CORREIA & António SANTOS SILVA (Laboratório Nacional de Engenharia Civil, Lisbon, Portugal

Implementing the ARIADNEplus ontology and vocabularies for built structures

Data on built structures and comprising materials, and their evolution, is essential for performance benchmarking, for improving knowledge, and further support to the decision-making process for the conservation and restoration of built heritage.

DB-HERITAGE (http://dbheritage.lnec.pt) provides systematic recording of data on the history, properties and performance of heritage and associated building materials.

DB-HERITAGE displays a hierarchical description of the structures and their linked data, including details of their evolution in both space and time. The data management however needed an upgrade to advanced standards for interoperable datasets, from which information can be easily extracted and used. The required metadata standards, vocabularies, ontologies, and other common principles and practices, have been provided by ARIADNEplus.

Implementation of the ARIADNEplus data catalogue ontology (AO-Cat) for the first level of data of built structures, according to the DB-Heritage schema, was straightforward, i.e., easily made by mapping DB-Heritage data attributes to suitable AO-Cat classes and properties. But the detailed description of the assets, including the relations between their components and the respective evolution through space and time, is quite complex. Specific concepts and model extensions (e.g. CIDOC CRMba and CRMhs) are nevertheless required to address all the requirements for the item-level description of built structures.

The DB-Heritage vocabulary terms have been matched to the Getty Art & Architecture Thesaurus, making use of the ARIADNEplus Vocabulary Matching Tool. Portuguese terms and scope notes have also been proposed, which contribute to improving multilingual vocabularies and enable queries in Portuguese.

Participation of DB-Heritage in ARIADNEplus has provided the tools for a more comprehensive, active and informed data sharing.

Tiberiu VASILESCU, **Radu-Alexandru DRAGOMAN**, **Iulian BÎRZESCU**, **Cătălin NICOLAE** (Institutul de Arheologie Vasile Pârvan, București, România)

Sites and monuments from Romanian Dobruja in ARIADNEplus: a special regard to Ottoman mosques and cemeteries

The paper presents an overview of the research carried out by members of the Vasile Pârvan Institute of Archaeology (Romanian Academy, Bucharest) within the ARIADNEplus project regarding the material heritage in Dobrogea. The main purpose of the approach was to identify, record and register in a database categories of sites and monuments hitherto ignored, such as those from the Ottoman period or the recent past. In addition, well-known "classical" archeological sites, such as the Neolithic and Greek ones, were included. Taking as a case study the mosques and Muslim cemeteries of the Ottoman period, we will argue that the project can contribute not only to a greater visibility among the general public of these sites and monuments long overlooked, but also, or perhaps especially, to an understanding of the memories contained by the Ottoman heritage, opening up new research directions.

Contacts for the session

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