



## D9.1: Quantity of access offered

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## Executive Summary

This deliverable describes the transnational access (TNA) activities carried out in the framework of the ARIADNE project as part of the activities of Work Package 9 (WP9). WP9 was under the coordination of the Cultural and Educational Technology Institute (CETI), one of the institute of the Research Center ATHENA, in Xanthi, Greece. The TNA activity planned by ARIADNE to take place at the Xanthi branch of ATHENA RC has received only one requests for participation (2015), which was rejected because it was considered out of the scope of the TNA program offered.

The deliverable discusses the reasons identified to be the possible cause for the unsuccessful result of the TNA offered by CETI, and describes the corrective actions undertaken by the Project Coordinator, together with the Project Management Team (PMT), the members of the Steering Committee (SC) and the partner responsible for the activities of WP9 to prevent the failure of the TNA program. One of these actions consisted in PIN extending its original programme to deliver a TNA on scientific data in Prato, trying to remove any resistance to travel to a less known venue. The corrective actions and the reason why the course was not successful are described in more details in section 2 of this deliverable.

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# 1 Introduction and Objectives

This document presents the transnational access activities under the coordination of the Cultural and Educational Technology Institute (CETI), Xanthi, Greece, related to the activities of the WP9 of the ARIADNE project.

The activities under WP9 had the aim to offer undergraduate and postgraduate students, archaeologists and data managers, the opportunity to access the ARIADNE research infrastructure, including tools and services developed within the project, by visiting the research centers that offered the TNA, either as individual or group visits.

CETI is a multidisciplinary research organization offering its services on applied innovative technologies for culture and education. In the framework of the ARIADNE TNA, the Archaeometry Department proposed to offer experts' advice and assistance to archaeological teams and individual researchers to help them selecting the appropriate scientific approach to their research questions and plan the laboratory work needed to support their investigation.

Unfortunately, in 2015 the course organized by CETI has received only some interest in the programme and one application, which was rejected because it was considered out of the scope of the programme offered.

The deliverable is structured as follows:

- Section 2 describes the reasons identified to explain the failure of the course, and the corrective actions undertaken
- Section 3 reports some conclusions
- The appendix reports the TNA summary reports, completed by the TNA participants that enrolled after the corrective actions were put in place.

## 2 Evaluation and results

In 2015, the first year this TNA was offered, the call for participation was advertised by ARIADNE along with the TNA being offered by PIN, CNR-ISTI and the Digital Curation Unit of the Athena Research Centre. However, there was limited advertising by CETI to the specialists working with scientific datasets during the initial call. In the second call CETI was more active in advertising the TNA to specialists, examples of possible TNA activities were presented at events. The TNA programme was adapted to offer flexibility, and to accommodate different needs and interests and wishes. The venue was better presented.

This limitation together with the little known destination (Xanthi in northern Greece) and the generic program of the training offered were considered to be the reasons for the lack of submissions to the course. One application was received but was rejected as the project was of marginal relevance to the TNA on offer.

The Project Coordinator, Steering Committee members and the partner responsible for WP9 activities, undertook a number of steps to understand in the requirement and to promote the TNA to the scientific community. Two workshops were organized. One titled “Integrating archaeological datasets”, took place in October 2015 in Lecce, Italy, and included a session on archaeological science. Another one, a joint workshop with the ERC project FLAME on ancient metallurgy took place in Oxford, UK in December 2015. Other informal contacts were undertaken with the IPERION CH project, which deals with similar topics - heritage science - but from the perspective of conservation. A few publications and discussions in the CRM SIG have raised the issue of the lack of an appropriate standard model for scientific data in archaeology and cultural heritage.

All these activities put the project in contact with a substantial number of experts in heritage science research and led us to the conclusions reported below.

First of all, there is in general little awareness among researchers dealing with archaeological science about the importance of storing, curating and preserving the digital outcomes of their work. They focus more on the technologies used and the conclusions achieved. Protocols are incomplete. Re-use of data is practically unknown. Notable exceptions are dendrochronology, where there is an initiative for standardization and making data available through ARIADNE; and C14 dating, where data are published as common practice, but with delay and little or no reuse.

Moreover, the diffidence in publishing the raw data prevents any further reuse or the perception of a need to correctly design the related datasets.

Apart from the two exceptions mentioned above, there is no standard for acquiring and storing scientific data. However, the researcher’s concern is mainly on the interpretation and the conclusions rather than on the process leading to them.

Although there is a widespread concept of a Research Infrastructures for scientific methods, digital data do not seem to belong to it. For example, several years of conservation science projects (EU-

ARTEC, CHARISMA, and now IPERION CH) never led to a satisfactory data organization perspective. The idea of a digital laboratory (DIGILAB) to store and retrieve scientific data has been accepted only in the most recent developments of the above-mentioned concept, for example in the E-RIHS ESFRI project recently included in the Roadmap update.

Based on the considerations described above, PIN took over to deliver TNA in Prato (to remove any resistance to travel to a less known venue), extending to scientific data PIN's planned activity on legacy datasets. Meanwhile, a standard, CRM compliant data model is being developed, to guarantee interoperability with other archaeological data.

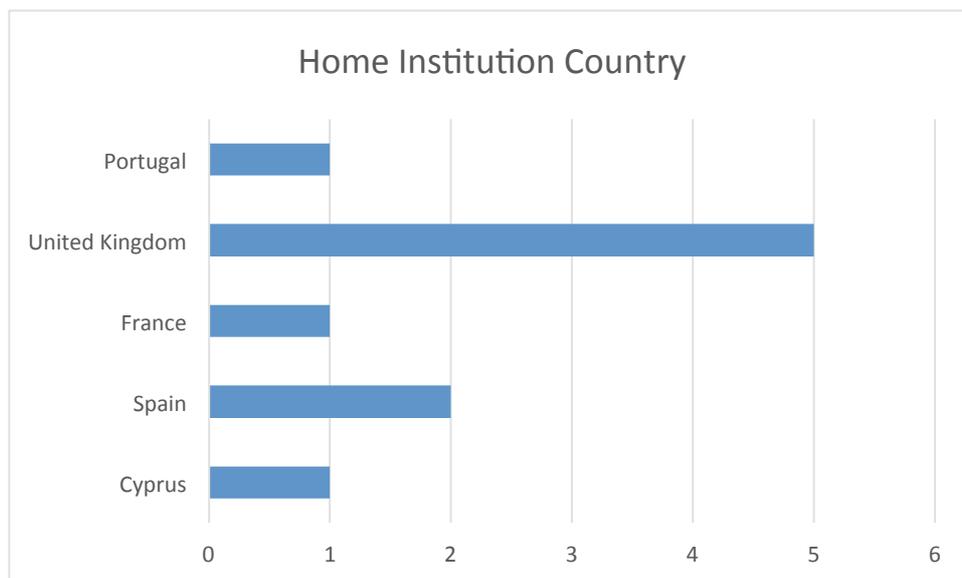
The direct contacts established with teams more aware of data issues had a positive effect, and a few researchers have finally requested assistance through TNA to develop their databases of scientific data.

Ten researchers participated to the TNA on scientific archaeological dataset offered by PIN, either as group and individual visit. All of them received a scholarships provided by ARIADNE to cover travel and subsistence. Their names, nationalities, affiliations, positions and participation period are reported in the following table (also reported in D6.1 Quantity of access offered):

<b>Name</b>	<b>Nationality</b>	<b>Institution</b>	<b>Position</b>	<b>Period</b>
Aybüke Öztürk	Turkish	Lumière University Lyon 2	Post graduate	21-25/09/2015
Giusy Sorrentino	Italian	The Cyprus Institute	Post graduate	18-22/01/2016
Laura Perucchetti	Italian	Oxford University	Post-doc researcher	09-13/05/2016
Sarah Mallet	French	Oxford University	Post graduate	09-13/05/2016
Laura Perucchetti	Italian	Oxford University	Post-doc researcher	26-30/09/2016
Vanessa Cheel	British	Oxford University	Experienced researcher	26-30/09/2016
Peter Bray	British	School of Archaeology, University of Oxford	Post-doc researcher	26-30/09/2016
Ivona Posedi	Croatian	University of Lincoln, UK	Post graduate	17-21/10/2016

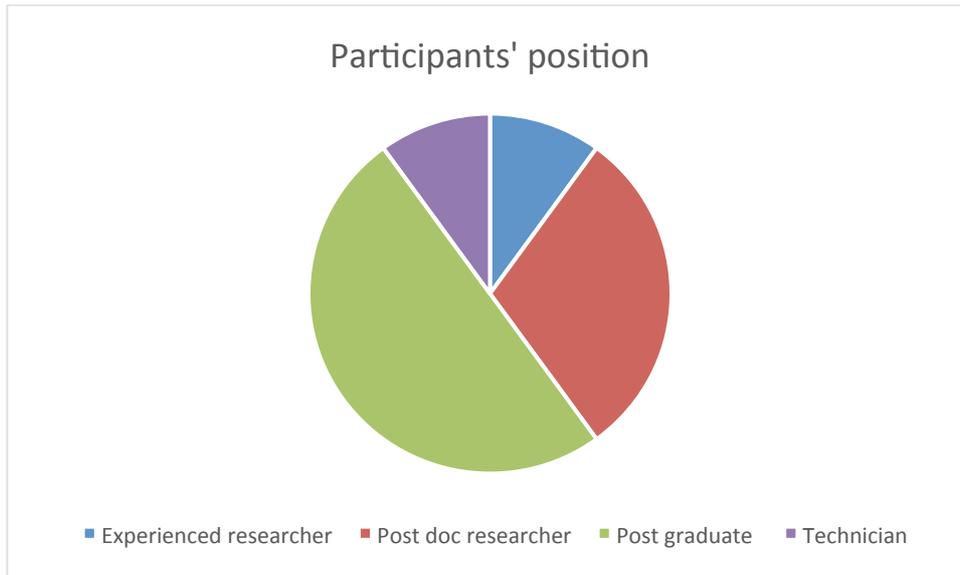
Name	Nationality	Institution	Position	Period
María José de Miguel del Barrio	Spanish	CENIEH	Post graduate	12-16/12/2016
Javier Valladolid Aguinaga	Spanish	CENIEH	Technician	12-16/12/2016

The TNA fellows came from five different countries, as shown in the figure below:



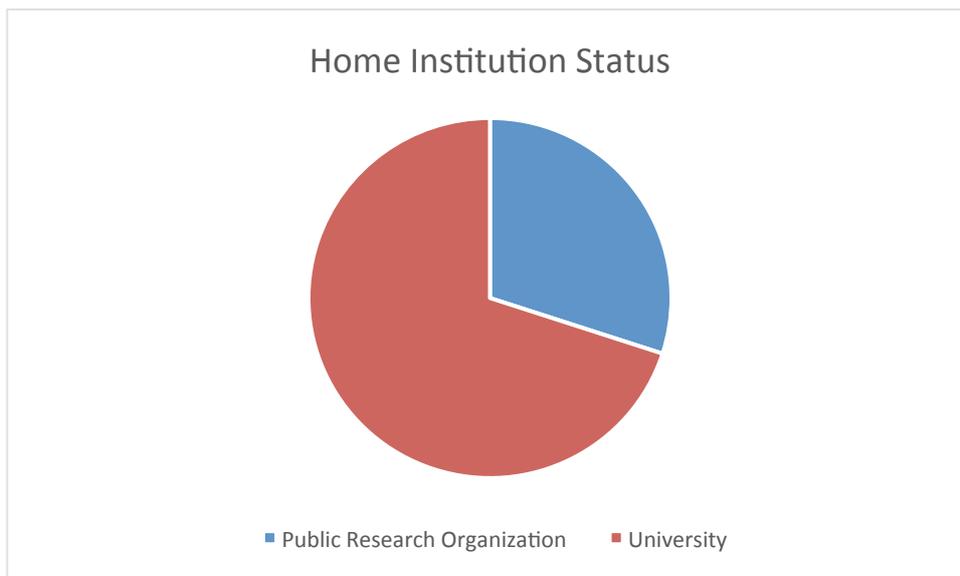
*Fig. 1: Distribution of the participants' home institution country*

The majority of the attendees were post graduate students; only one technician and one experienced researcher attended the course.



*Fig. 2: Distribution of the participants' position in their home institution*

Only three participants came from a non Public Research Organization, while the majority were affiliated with a University.



*Fig. 3: Distribution of the home institutions status*

### 3 Conclusions

After an apparent failure of the TNA opportunities expected to be carried out under the activities of WP9, coordinated by the Cultural and Educational Technology Institute (CETI), Xanthi, Greece, we can conclude by stating that WP9 was able to fulfill its objective.

The corrective actions undertaken by the Project Coordinator in agreement with the WP9 leader and the Steering Committee members brought to a revival of the TNA on scientific archaeological datasets, despite the difficulties encountered in the first year of the TNA by the partner responsible for WP9.

The stronger advertisement of the course, and the availability of PIN to offer the expertise of its team to candidates with a research project on scientific archaeological datasets made possible the achievement of the expected results. Indeed, in 2016 attendance was stronger than the previous year and feedback received by the fellows were good and very good.

Interesting discussions came out during the course and good collaboration with other centres were established.

Some of the research project proposed by the fellows contributed to the advancement of the research on ontologies and their practical implementation, fostering the use of CIDOC CRM in IT scenarios and its applications to already existing layers of interoperability between archaeology and science (in particular archaeometry) and the development of integrated systems.

The background of some attendees strongly oriented to information technology allowed us to deeply test the CIDOC CRM classes and properties “on the field”, and in particular on the application of semantics to the typical challenges of information retrieval, data analysis and visualisation, creation of tools for the automatic extraction of information from the Web.

The scientific approach proposed by one attendee to the study of archaeological issues using experimental technologies and scientific techniques (XRF, X-Ray and LIBS above all) constituted an optimal testing bed to stress the capabilities of the CIDOC CRM.

In another case, the adoption of the CIDOC CRM to encode different aspects of the research related to scientific investigation of archaeological objects, was a good test for validating the model and its extensions, and in particular the scientific (CRMsci) and the archaeological (CRMarchaeo) ones.

The TNA activities benefitted from the opportunity to test the applicability and usability of the conceptual tools provided by CIDOC CRM and its extensions, especially with regards to the events related to the use, processing and reusing of metals in prehistoric societies, and to answer the specific scientific questions proposed as a main objective of the project itself. A valuable experience for researchers engaged in the integration of scientific and archaeological data.