



# DELIVERABLE

**Project Acronym:** CARARE  
**Grant Agreement number:** 250445  
**Project Title:** *Connecting ARchaeology and ARchitecture in Europeana*

---

## D6.4: CARARE International conference workshop

**Revision:** final

---

**Authors:**

**Daniel Pletinckx (Visual Dimension bvba)**

Project co-funded by the European Commission within the ICT Policy Support Programme		
Dissemination Level		
PU	Public	X
CO	Confidential, only for members of the consortium and the Commission Services	

## Revision History

Revision	Date	Author	Organisation	Description
v. 1	30/01/11	DP	VisDim	draft
	07/02/11	KF, SB, MP		review by Kate Fernie, Sheena Bassett, Metaxia Tsipopoulou
v. 2	11/02/11	DP	VisDim	Final version

### Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.



## **Contents**

<b>1. EXECUTIVE SUMMARY</b>	<b>4</b>
<b>2. ORGANISED ACTIVITIES</b>	<b>4</b>
<b>3. SEMINAR 'HERITAGE AND DIGITAL INNOVATION' - LLEIDA</b>	<b>5</b>
<b>4. VAST2010 - PARIS</b>	<b>7</b>
<b>5. 3D WORKING GROUP MEETING - BRUSSELS</b>	<b>8</b>
<b>6. OTHER CONFERENCES</b>	<b>9</b>
<b>7. CONCLUSIONS</b>	<b>9</b>
<b>8. APPENDIX: VAST2010 WORKSHOP</b>	<b>11</b>

## 1. Executive Summary

CARARE organised three successful international activities, which consisted of the planned workshop plus a seminar and a 3D Working Group meeting. These were held in Spain, France and Belgium to communicate and promote the goals and concepts of CARARE and create interest by other cultural heritage organisations in joining the project. These activities successfully reached different target groups and supplied important feedback and information to the CARARE partners that are designing the new functionalities for Europeana. Several cultural heritage organisations have expressed their interest to join CARARE and provide content.

## 2. Organised activities

Instead of one workshop, three activities were organised to communicate, test and promote the concepts that have been developed within CARARE, with focus on 3D as a major development within Europeana. In this way, a significantly larger number of interested people and organisations were able to participate.

At the beginning of the CARARE project, Visual Dimension got the opportunity to cooperate with the Fundacion Carlos de Amberes<sup>1</sup> (Madrid, Spain) and the Department of Culture of the Regional Government of Catalonia<sup>2</sup> to organise a seminar on 'Heritage and Digital Innovation'<sup>3</sup>, taking place at the Mon San Benet<sup>4</sup> convention centre and in the city of Lleida<sup>5</sup> from 13 to 15 May 2010. Three CARARE partners presented the goals and different aspects of the CARARE project, in conjunction with several other speakers.



*The seminar took place in the Chapter Room of the Seu Vella Monastery and Cathedral in Lleida, Spain*

<sup>1</sup> Fundacion Carlos de Amberes (<http://www.fcamberes.org/>)

<sup>2</sup> Dept. of Culture of Catalonia (<http://www.gencat.cat/temes/eng/cultura.htm>)

<sup>3</sup> Seminar 'Heritage and Digital Innovation' (<http://www.heritagetechnologies.org/lleida2010/>)

<sup>4</sup> Mon San Benet (<http://www.monstbenet.com/en/>)

<sup>5</sup> City of Lleida (<http://www.paeria.es/ang/>)

At the VAST conference, which was held in Paris from 21 to 24 September 2010, a CARARE workshop was organised about ‘Metadata for 3D’<sup>6</sup>. This workshop focused on the more technical aspects of metadata for 3D and gathered several world specialists in metadata for 3D with several CARARE partners. As the VSMM conference<sup>7</sup> in 2010 was organised in Korea, CARARE did not participate because the visibility to European partners and organisations was considered to be low; Participation in 2011 (Egypt) or 2012 will be assessed in due time.

The third activity was a meeting of the CARARE 3D Working Group meeting in Brussels on 2 and 3 December 2010 to which several external cultural heritage experts were invited to verify our concepts and proposals about 3D in Europeana with specialists outside CARARE. In this way, we also tried to create interest from other potential partners to join CARARE.

Participation in a series of other international events is described in section 6 of this report.

### 3. Seminar ‘Heritage and Digital Innovation’ - Lleida

The seminar started in the conference centre of the restored monastery Mon San Benet, that is also a visitor centre using a large range of ICT and VR techniques to tell the history of this medieval monastery. There were more than 120 participants, most of them from Catalonia and Spain but also from the rest of Europe. Simultaneous translation between Spanish, Catalan and English was provided throughout the seminar.



*The Mon San Benet monastery and conference centre (left) hosted the first day of the seminar (right)*

Most of this seminar took place in the magnificent settings of the medieval Chapter Room of the Seu Vella monastery and cathedral<sup>8</sup> of Lleida. In this seminar, three CARARE partners had the opportunity to present different aspects of the CARARE project. Kate Fernie, as technical coordinator of CARARE, presented the overall goals of the project and highlighted the innovations, such as 3D and geo-referencing, that CARARE will introduce in Europeana. Daniel Pletinckx, as 3D coordinator, explained the issues that go with the introduction of 3D in Europeana and outlined the strategy to overcome these issues and turn 3D into a successful extension of the functionality of Europeana. Arturo Ruiz and Ana Martinez of CAAI, the Spanish 3D content provider, presented the CATA project, which created a 3D archaeological reference collection for Iberian pottery. This CATA input will be the largest 3D collection in Europeana, containing 1300 3D models.

<sup>6</sup> VAST2010 workshop (<http://www.carare.eu/gre/News/Register-now-for-CARARE-workshop-on-3D-metadata>)

<sup>7</sup> VSMM2010 (<http://www.vsmm2010.or.kr/>)

<sup>8</sup> Turo de la Seu Vella (<http://www.turoseuvella.cat/>)

The other local and international speakers presented related projects that deal with digitisation of cultural heritage assets, the use of 3D and the creation, organisation and exploitation of digital libraries.



*Kate Fernie presenting the CARARE project and vision in Lleida*



*Daniel Pletinckx presenting the 3D goals and methodology of CARARE*



*Arturo Ruiz and Ana Marinez presenting the CATA project*

The presentations were put online<sup>9</sup> during the seminar, and the full seminar is also covered on Flickr. The CARARE newsletter nr 1, issued in May 2010, also covered the seminar.

The cultural heritage department of the Regional Government of Catalonia, co-organiser of the seminar, showed a profound interest in joining CARARE, this is being followed up.

#### **4. VAST2010 - Paris**

Visual Dimension organised a CARARE workshop at the VAST conference in Paris. This conference, which focuses on the use of ICT in cultural heritage, is considered as one of the major yearly conferences in this field. The workshop about metadata for 3D brought together several CARARE members and several 3D and metadata specialists, to give their latest views on metadata for 3D cultural heritage assets (see Appendix).

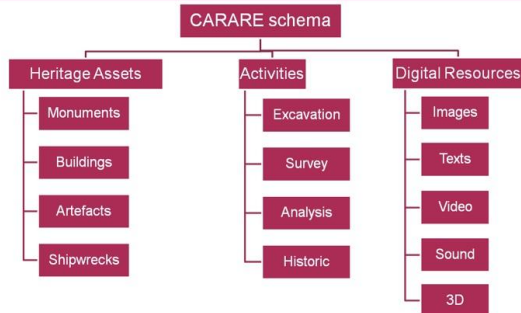
Speakers at the workshop were CARARE partners Jeffrey Stuart (ADS), Anestis Koutsoudis (CETI – DCU) and Kate Fernie (MDR) – organiser Daniel Pletinckx (Visual Dimension) could not be present because of illness – and 3D metadata specialists Martin Doerr (FORTH, Greece) and Sebastian Peña Serna (Fraunhofer IGD, Germany), both active in the FP7 European Integrated Project 3D-COFORM<sup>10</sup>. All planned presentations at the workshop could take place.

The presentations at the workshop focused on good practice for archiving and accessing 3D data, for defining 3D metadata in the context of the CIDOC-CRM framework, for annotating 3D digitised artifacts and virtual reconstructions and for creating metadata for archaeology and architecture within the context of the Europeana Data Model.

<sup>9</sup> Presentations of 'Heritage and Digital Innovation' (<http://www.youtube.com/watch?v=k1Nc0QIY6SM>)

<sup>10</sup> 3D-COFORM project (<http://www.3d-coform.eu/>)

## Relations



• Relations can be between heritage assets, activities or digital resources and each other

- Types of relation:
- Is Next In Sequence
  - Is Representation Of
  - Is Successor Of
  - Realizes
  - hasMonument
  - hasEvent
  - ...



*Two slides from the presentation of Kate Fernie at the VAST 2010 workshop*

The input from this workshop has been taken into account in the process of defining the CARARE metadata scheme, but will be further tested and fine-tuned in the creation of metadata for 3D examples that are being prepared in 2011 in close cooperation with the 3D providers, in preparation of the aggregation phase.

At the meeting, there was further contact with the Ministry of Culture of France, which has an interest in CARARE's activities.

## 5. 3D Working Group meeting - Brussels

At the second 3D Working Group meeting in Brussels, several external specialists from the cultural heritage domain were attending to learn about CARARE and give feedback on the proposed 3D approach and workflow:

- Chris Vastenhou, Royal Museum for Art and History, Brussels, Belgium
- Chris Deloof, Royal Museum for Art and History, Brussels, Belgium
- Wim Hupperetz, Allard Pierson Museum, Amsterdam, Netherlands
- Jef Malliet, PCCE, Hasselt, Belgium
- Rony Visser, PACKED (Flemish expertise centre on digitisation of cultural heritage), Brussels
- Inge Roosens, VIOE (Flemish Heritage Institute), Brussels, Belgium

Most of the CARARE 3D content providers (KUAS, HM, DCU-CETI, EN, KOBIDZ, MRBC, CAAI), and some other CARARE partners (EDLF, MDR, VisDim, N303, VUFC) were present. Separate visits were paid afterwards to 3D content providers SNS and STARC as they could not participate to the meeting.

The meeting was able to discuss many of the implementation and conceptual issues of 3D for Europeana (which has been recorded in the D5.1 deliverable about functional specifications of 3D/VR) and endorsed the proposal to work with 3D PDF as a file format that has a widespread use, support on all major platforms and the functionality to package the 3D files for easy access by the general public.

At the meeting, two representatives of the Belgian Royal Museum for Art and History were present, as this museum has a firm interest in joining CARARE. Follow up meetings were planned in December 2010 and February 2011.



## 6. Other conferences

Visual Dimension participated in other conferences to further disseminate and test the proposed approach for 3D in Europeana. At the Conference on Cultural Heritage and New Technology in Vienna<sup>11</sup> from 15 to 17 November 2010, the 3D PDF approach was shown to archaeologists using ICT technologies and was very well received. About 200 people attended the conference. A paper will be submitted for electronic publishing in PDF format in February 2011. This means that the paper will contain 3D models, demonstrating immediately the concept.

At the ArcheoVirtual exhibition in Paestum<sup>12</sup> (Italy) from 18 to 21 November 2010, the CARARE 3D approach was shown by Visual Dimension to tourism experts to prepare for the use of 3D PDF in this domain. The discussions with many experts were very useful to define an approach for tourism, which is seen as one of the key target domains for CARARE and Europeana.

Kate Fernie and Henrik Jarl Hansen presented a paper entitled “CARARE: Connecting Archaeology and Architecture in Europeana” at the EuroMed 2010<sup>13</sup> conference in Limassol, Cyprus on 11<sup>th</sup> November 2010. EuroMed had a focus on 3D and was well attended by researchers and practitioners in this field, and the presentation resulted in interest in the project from a number of institutions.



*Kate Fernie presenting the CARARE project at EuroMed 2010*

## 7. Conclusions

By delivering a series of international activities in addition to the workshop planned in the project workplan, several goals have been met. Participation in the seminar in Lleida and the conferences in Vienna, Paestum and Limassol, the goal of disseminating the planned activities and innovations of CARARE was met. By organising the metadata workshop in Paris and liaising with the metadata specialists in 3D-COFORM, advancements were made in the field of metadata for 3D. By involving external cultural heritage specialists in the CARARE 3D Working Group, it was possible to obtain a validation of CARARE proposals on the methodology for including 3D content in Europeana.

---

<sup>11</sup> Conference on Cultural Heritage and New Technologies (<http://www.stadtarchaeologie.at/>)

<sup>12</sup> ArcheoVirtual exhibition (<http://www.vhlab.itabc.cnr.it/archeovirtual/>)

<sup>13</sup> EuroMed 2010 conference (<http://www.euromed2010.eu/>)



As a result of these activities a large number of cultural heritage specialists were able to learn about the way CARARE is implementing its goals and to get in contact with CARARE partners and representatives. Interest in the project was generated and several institutions expressed their interest to join CARARE network as content providers and are following up their interest in the project through our social network channels on LinkedIn, Facebook and Twitter.



## 8. Appendix: VAST2010 Workshop

### Metadata for 3D: towards a practical approach

CARARE is a European Best Practice Network funded by the European Commission's CIP-PSP programme that is bringing archaeological and architectural monuments to Europeana. The project also focuses on the technical, organisational and practical aspects of adding georeferenced and 3D objects to Europeana.

This workshop deals with the definition of metadata for 3D and VR in cultural heritage, focused on the use within Europeana. We target results from 3D digitisation processes as well as 3D virtual reconstructions and VR representations of 3D worlds. During its project lifetime, CARARE will add 3D and VR objects to Europeana and define the methodology, workflows and standards for this class of objects within Europeana.

The workshop starts with some presentations from experts in the domain of 3D and digitisation. In a second part, participants will discuss the proposed metadata description in specific focus groups and have the opportunity to fine tune and validate it.

#### Archiving and Accessing 3D Data: creating good practice

*Stuart Jeffrey, Archaeology Data Service, UK*

The ADS has been involved in the creation of a highly successful series of guides to good practice regarding the sustainability of digital archaeological data ranging from geophysics to CAD to VR. With support from English Heritage and the Mellon Foundation, the ADS Guide to Good Practice on VR, which was originally published in 2003, is undergoing a significant reworking to reflect changes in practice and format in the last few years. The new guide, to be created and presented via a wiki, is a collaborative project and will draw from a number of experts in the field as well as using case-studies to illustrate its main themes. The creation of this guide is also timely with regard to the growing acknowledgement in the 3D/VR communities that there needs to be some consensus regarding metadata to facilitate both the sustainable archiving of this material and its discovery and access through search mechanisms such as Europeana. This presentation will discuss progress so far towards the updated guide, our experiences with the new format and our experience with regards to the description and discovery of 3D resources.'

#### Metadata for 3D within CIDOC-CRM

*Martin Doerr, FORTH, Greece*

In the context of CASPAR and 3D-COFORM projects we have developed a digital provenance model as an extension of CIDOC-CRM. It generally aims at monitoring all relevant metadata describing digital provenance of a dataset resulting from a digital measurement process. It is further specialized to the digitization of objects and the reconstruction of 3D-Models from these data. It assumes a form of workflow of discrete steps, where a physical object is digitized via an acquisition



process which will produce digital output (e.g. images or laser point clouds). The digital output of the acquisition process(es) will be used by an appropriate sequence of automatic or interactive 3D-model production processes in order to produce 3D representations of different forms and quality. In this presentation we will elaborate on our modelling approach and discuss the implementation of a semantic repository to store all individual metadata information about each measurement or processing step, related things and contexts. The particular characteristic of our approach is the ability to connect the metadata of all steps into one coherent semantic network, and to project out the complete provenance history of any intermediate or final product picked up from the integrated directed derivation graph in the repository. The repository is searchable by SPARQL and content retrieval query mechanisms, and enables useful and complex inferences to support the 3D Model production management, including control of device performances, garbages collection and definition of archival packages for export to clients or for longterm preservation. The inference mechanisms are still under development, and will probably employ a market reasoning component. Metadata are further integrated with detailed descriptions of the digitized objects and scholarly and scientific annotations interpreting models and objects.

### **Semantic annotations of digitised 3D artifacts**

*Karina Rodriguez, Cultural Informatics Research Group, University of Brighton, UK*

*Sebastian Peña Serna, Fraunhofer IGD, Germany*

Artifacts in museums and heritage sites collections can be associated to a vast amount of metadata existent in different types of multi-media databases. In order to support the Cultural Heritage sector's requirements in the digitisation of these 3D artifacts, the 3D-COFORM project aims to develop tools and approaches to enable the semantic documentation and enhancement of 3D artifacts as well as their communication for professionals and public alike. Some of these tools and approaches for semantic annotations and communication will be discussed during this presentation, which will describe project's efforts/contributions in the area and show some practical examples.

### **Metadata for documenting the virtual reconstruction process**

*Daniel Pletinckx, Visual Dimension bvba, Belgium*

*Anestis Koutsoudis, Cultural and Educational Technology Institute, Greece*

The London Charter states the general guidelines on how to document the process of virtual reconstruction of manmade structures and landscapes. The InMan methodology, implemented in the context of the EPOCH Network of Excellence, provides a practical implementation of these guidelines. This presentation proposes an implementation of this InMan methodology onto the CIDOC Conceptual Reference Model, and provides a comprehensive definition of metadata for 3D virtual reconstructions.



## **Metadata for archaeology and architecture within the EDM (Europeana Data Model)**

*Kate Fernie, MDR Partners, UK*

The CARARE project will establish a harvesting and aggregation service to enable heritage organisations, archaeological museums, research institutions and specialist digital archives to make digital content for archaeological monuments and historic sites interoperable with Europeana. To support the domain's semantically rich metadata CARARE is establishing an implementation of the CIDOC Conceptual Reference Model as a harvesting schema for 2D and 3D heritage data, which by mapping to the Europeana Data Model will provide the methodology for surfacing archaeology and architecture within the Europeana service. This presentation will focus on those aspects of descriptive information that enable the discovery of heritage objects in search services and their delivery to users.

## **Discussion in small focus groups and conclusions**