

PARTHENOS

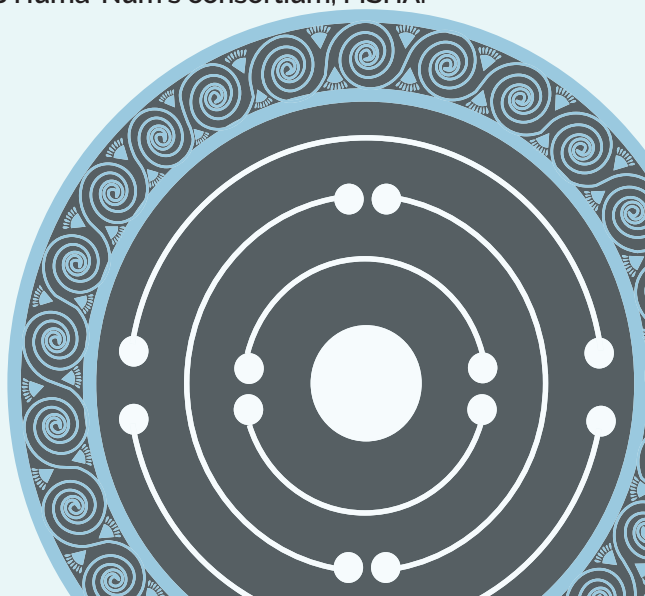
Pooling Activities, Resources and Tools
for Heritage E-research Networking,
Optimization and Synergies

“Digital 3D objects in Art and Humanities: challenges of creation, interoperability and preservation”

ORGANISATION : CNR, CNRS/Huma-Num, INRIA

Nov. 30th - Dec. 2nd 2016, Bordeaux, FRANCE
MSHA, Room Jean Bordes

Host: ARCHEOVISION Lab, 3D SHS Huma-Num's consortium, MSHA.



Practical information

Postal Address of Archéovision
Maison des Sciences de l'Homme d'Aquitaine
Archéopôle d'Aquitaine
10, Esplanade des Antilles
33607 PESSAC CEDEX



Transport

From the Airport

Walk along René Cassin avenue about 40 meters.

At bus stop Mérignac Airport, take the bus "Liane 1" in the direction of Quinconces Munich.

Get off at Vigneau stop.

Take the bus "Corol 34 in the direction of Rives d'Arcins.

Get off at UNITEC stop.

Walk along the Allée Maine de Biran 280m & arrive at MSHA, 10 esplanade des Antilles.

From the train station Bordeaux Saint-Jean

Take the Line B of the tramway in direction of Pessac Center (you can board at several stops : Quinconces, Grand Théâtre, Gambetta, Hôtel de Ville, Musée d'Aquitaine, Victoire).

Get off at UNITEC stop.

Walk along the Allée Maine de Biran 280m & arrive at MSHA, 10 esplanade des Antilles.

From the city center

Line C of the tramway direction Les Aubiers. Get off at Quinconces stop.

Line B of the tramway direction Pessac Center. Get off at UNITEC stop.

Walk along the Allée Maine de Biran 280m & arrive at MSHA, 10 esplanade des Antilles.

Organizers' contact

CNRS/Huma-Num :

- Adeline JOFFRES, adeline.joffres@huma-num.fr, 0033(0)685854979
- Nicolas LARROUSSE, nicolas.larrousse@huma-num.fr

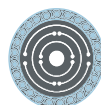
INRIA

- Marie PUREN, marie.puren@inria.fr
- Charles RIONDET, charles.riondet@inria.fr

CNR

- Roberto SCOPIGNO, roberto.scopigno@isti.cnr.it

A workshop organised on behalf of EC "PARTHENOS" project



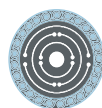
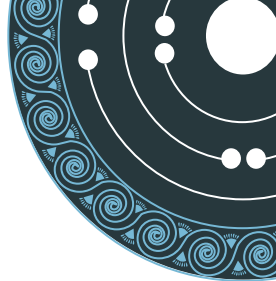
OBJECTIVES

Today, the digital model has become essential for scientific documentation and analysis. However, with the rapid development and spread of 3D technology, there is an urgent need to integrate the tools and support new users within the Arts and Humanities research communities as the number of models produced increases exponentially.

This workshop is organized by CNR, CNRS and INRIA within in the scope of Work Package 4 on standardization on behalf of the PARTHENOS research infrastructure with support from the technical partners. It aims to enrich technical knowledge about 3D models and tools, address the common issues and epistemological questions related to the creation, use, reuse and preservation of 3D models. The workshop is supported by the work of Huma-Num's 3D-SHS consortium.

More precisely, the objectives are:

- Identify best practices and standards to ensure interoperability and sustainability;
- Expand knowledge for scholars and researchers to support 3D projects in arts, social science and humanities;
- Bridge the gap between technical people and humanities scholars (contributing to a better understanding of technologies potential and user needs)
- Share general and targeted knowledge on 3D objects issues in Art and Humanities;
- Contribute to best practices in the digitization domain for archeologists (include 3D preservation: models, viewers, etc).

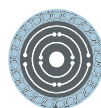
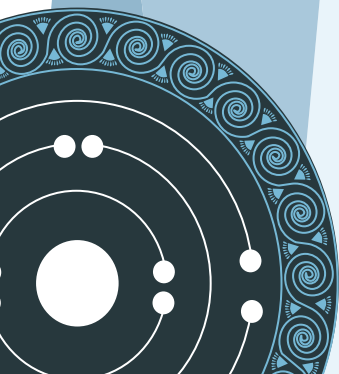


We have selected four main topics, corresponding to the life cycle and the various uses of 3D objects in the Humanities: production and processing, visualization and analysis, description and preservation, bridges between Cultural Heritage and Museology. For each, a number of sub-topics and issues will be discussed by domain specialists in brief presentations followed by a free discussion.

In this, we intend to provide a framework for the current status of technologies, the needs and perception of DH scholars/users, and a glimpse of the near future (how can we consolidate and extend technologies by the use of standardised practices? How could we use them in an innovative manner to solve DH problems?).

The workshop will be attended by selected PARTHENOS partners as well as some external experts, selected from both the technological and humanities domains. The goal is to assess the needs and potentialities beyond the PARTHENOS community and to ensure that the results of the discussion will not be biased by the background of the project participants. While the reference domain is digital humanities and archaeology, we aim at including all related domains, such as museology, or cultural heritage at large.

This Workshop will produce a white paper based on contributions from all the participants, reporting the main conclusions of the discussion. Such a framework may be further enriched by other experts of the field who will take advantage of the event's video recording (short videos will be recorded, edited and distributed, including on the PARTHENOS web platform).



PROGRAM

Day 1, 30th November 2016

9:00 – 9:30 Coffee/Tea time

9:30 – 10:00 Welcome & presentation

- Jean-François Bernard (Scientific coordinator of Huma-Num's 3D-SHS Consortium and Director of Archeovision Lab ; host of the event).
- Franco Niccolucci (Scientific Director of PIN, PARTHENOS project 's Coordinator)
- Jean-François Bernard (Scientific coordinator of Huma-Num's 3D-SHS Consortium and Director of Archeovision Lab) : "3D in the context of French social sciences and Humanities : the 3D-SHS consortium experience"

10:00 – 12:30 1st Session: Production and Processing of 3D Objects

Moderator : Pierre Alliez, INRIA, France.

Subtheme 1:Production of 3D models for Humanities: a critical state of the art.

3D digitization for the humanities: an overview, Gabriele Guidi, Politecnico Milano, Italy.

A short review on issues and trends in the field of photogrammetric acquisition and processing, Anthony Pamart, MAP, France.

Digital Pompei: Where computer vision meets archaeology, Jean Ponce, INRIA, France.

Subtheme 2:Annotation over 3D models: is it a major missing feature?

Aioli: reality-based 3D annotation cloud service, Adeline Manuel, MAP, Marseille, France.

Subtheme 3:Checking consistency of 3D file formats from syntactic toward semantic check?

The french scientific national project ReSeed : Semantic reverse-engineering of digital heritage objects, Florent Laroche, Ecole Centrale de Nantes, France.

Data Provenance in Photogrammetry Through Documentation Protocols, Nicola Carboni, MAP, Marseille, France.

12:30 – 14:00 Lunch time





14:00 – 16:30 2nd Session: Visualization and Analysis Issues

Moderator : Roberto Scopigno, CNR, Italy.

Subtheme 1:Commercial and open source viewers online for 3D objects

Online 3D viewers: state of the art, Bruno Dutailly and Mehdi Chayani, Archéovision Lab. Bordeaux, France.

Live presentation of Culture 3D Cloud (C3DC) platform, Pierre Alliez, INRIA Nice, France.

Subtheme 2:Interlinking 3D objects to other media (RGB images, RTI, multi-spectral images, 3D models, video, sound, etc.)

3D as an instrument to interpret and reconstruct ancient theatres, Cristina Manzetti, FORTH, Greece.

Open discussion on multimodality (ongoing experimentations), Anthony Pamart, CNRS, MAP lab, France ; Matteo Dellepiane, CNR-ISTI, Italy.

Subtheme 3:Search and retrieval over DBs of 3D shapes (shape-based)

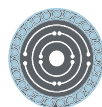
Morphological Analysis of Shape Semantics, Anthony Pamart, CNRS, MAP Lab., Marseille, France

The use of 3D models in support of archaeological practice: interpreting the past using four dimensions, Nicolo Dell' Unto, Univ. Lund, Sweden.

Subtheme 4:Representing time in 3D modelisation

The Usines 3D industrial history program and the virtual modeling of past working activities, Alain P. Michel, UEVE-IDHES, UMR 8533, France.

16:30 – 17:00 Wrap up and conclusions



Day 2, 1st December 2016

9:00 – 9:30 Coffee/Tea time

9:30 – 10:00 Welcome (agenda + round of introduction)

10:00 – 12:30 3rd Session: 3D Objects' Description and Long Term Preservation

Moderator : Gabriele Guidi, Politecnico, Italy.

Subtheme 1: Metadata formats for 3D objects.

Metadata formats for 3D objects and long term preservation : The Archeovision model, Sarah Tournon-Valiente, Archéovision, France.

Subtheme 2: Quality and characterisation of metadata for 3D objects.

Uses and limits of photogrammetry and 3D for architects, George Bruseker, FORTH, Greece.

Interpreting, modeling and destroying: the creation of 3D libraries in support of archaeological investigation, Nicolo Dell'Unto, univ. Lund, Sweden.

Documenting Argumentation supporting 3D reconstructions, Anaïs Guillem, freelance researcher, France

Subtheme 3: Conversion, preservation and verification tools

Managing old and new datas by using new tools/platform and verification Tools, Laurent Bergerot, MAP-CNRS, France.

Subtheme 4: Description of linked data and “historical metadata” in 3D modellings

(open discussion)

Nicola Carboni, CNRS, MAP lab, France & George Bruseker, FORTH, Greece.

12:30 – 14:00 Lunch time



14:00 – 16:30 4th session: 3D, Cultural heritage and museology

Moderator : Alain Michel, Univ. of Evry, France.

Subtheme 1: Use and reuse of 3D objects in restauration, conservation and exhibition : museology as a part of 3D objects life cycle?

Conservation of art works with 3D technologies, Clotilde Boust, C2RMF, France.
Toward virtual life of museological artefact: the use of 3D and heritage knowledge, Florent Laroche, Ecole Centrale, Nantes, France.

Subtheme 2: Enhancing 3D models repositories

Sustainability and Future features for 3D web publishing solutions, Matteo Dellepiane, CNR-ISTI, Italy.

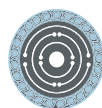
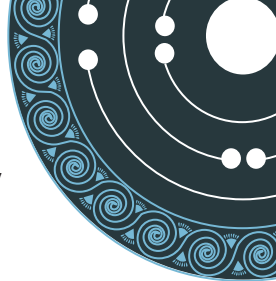
Subtheme 3: Searching functionalities: tag-based / metadata-based / shape-based search? Current status and CH requirements for museums

Challenges for Searching and Browsing 3D Museums' Collections, Karina Rodriguez, Univ. Brighton, UK.

Subtheme 4: Ethics and IPR at European level for 3D objects

3D heritage and scientific ethics, Sylvain Laubé, UBO, Centre F. Viète, France

16:30 – 17:00 Wrap up and conclusions



Day 3, 2nd December 2016: Conclusions and social event

9:30 – 12:00 Wrap up session

Chairman: Laurent Romary, INRIA, France.

The audience will first split in 4 groups, each one resuming and advancing the work done in previous days on each major topic; and a final common session where the preliminary results will be presented.

General wrap up for the definition of the topics which will be included in a white paper in order to formalise the conclusions and recommendations of each workshop session. We will finalize an agreement on the structure of this white paper and will subdivide the work among the ones willing to contribute.

One guideline could be the way for researchers and engineers to share 3D models in an interoperable way at European level.

From this white paper, different kind of output can be considered: a standard publication, recommendations for WP4 on 3D standards and for WP6 on tools around 3D objects.

12:00 – 12:15 Closing words

Stéphane Pouyllau, TGIR Huma-Num (Technical deputy-director)

12:15 – 13:15 Lunch time

14:00 – 16:00 Social event

<http://www.laciteduvin.com/fr>



BRIEF BIO OF PARTICIPANTS



Pierre ALLIEZ

INRIA, Sophia-Antipolis, France

Senior Researcher, Inria Team leader, TITANE; ERC grantee. Computer scientist, International expert on geometry processing (geometry compression, surface approximation, mesh parameterization, surface remeshing, mesh generation and surface reconstruction) and 3D digitization.

Laurent BERGEROT

After studying computer engineering at the University of Burgundy, Laurent Bergerot has specialized in virtual reality at the "Institut Image ENSAM of Chalon-sur-Saône". He was recruited by the CNRS in 2004 as an Engineer for the UMR 5022 CNRS/University of Burgundy LEAD, a Cognitive Psychology Laboratory in Dijon. In 2013 he joined the UMR 3495 CNRS/MCC MAP laboratory in Marseille as a 3D web engineer in order to manage 2D and 3D data and metadata for web platforms. He collaborated at the organization of the International Congress Digital Heritage 2013 and the Europeana 3D Icons Project. Currently he's working on the Memoria project which purpose is to manage and memorize activities related to a cultural project led by Iwona Dudek. He is also involved in other scientific partnerships and actions (Aioli/Consortium3D CNRS) about definition and management of 3D contents.





Jean-François BERNARD

Architect DPLG (Paris University)

PhD in History and classical studies (Bordeaux University)

Director of Archeovision, UMS 3657

Jean-François Bernard is specialized in Greek and Roman architecture. He has been working in the archeological department of the IFEA (French institute of turkish studies, Istanbul) and has been responsible of the archeological department of the Ecole française de Rome, before coming back in Bordeaux, in 2014. He is actually conducting research about the place of new technologies in the story of archeological design and studies.

Clotilde BOUST

After physic and computer science studies, Clotilde Boust went to the photography school Louis Lumière. She then passed a PhD in Paris 6 University on perceptual color image treatment and has been Assistant Professor in information sciences since 2005. She is now head of the imaging group of the Center of research and restoration for French museums.



George BRUSEKER



Researcher, Centre for Cultural Informatics in the Information and Computer Sciences laboratory, Foundation for Research and Technology Hellas - FORTH in Heraklion, Greece.

George works in the domain of semantic representation of cultural heritage data using formal ontologies, particularly, CIDOC CRM. He was an Experienced Researcher in the Marie Curie project ITN Digital Cultural Heritage, where he worked on the issues of semantic representation of 3 and 4 dimensional models. In collaboration with other fellows, he produced a number of publications on the issue of documenting data provenance for digital models from the digitization process through to virtual reconstructions. Presently, George works in the Parthenos project on conceptualizing the semantic framework for a cross disciplinary research infrastructure.





Nicola CARBONI

Nicola Carboni is a Marie Curie Early Stage Researcher fellow in the CNRS MAP and part of the ITN-DCH Marie Curie Project, where he is responsible for developing a semantic structure for correlating visual items with contextual information. He received his Bachelor degree in Cultural Heritage from the University of Pisa, and an international Master degree in Digital Library Learning from the joint consortium of the Tallinn University, Oslo and Akershus College of Applied Science and the University of Parma in 2013. He worked with the CVCE to develop a semantic schema able to enrich biographical information, and afterwards he joined, as data curator & modeler, the Trentino Open Data project, where he collaborated with a multidisciplinary team for opening and describing the public administration data. His research interests are Data Management, Semantic Web, Cultural Heritage and Digital Preservation.

Mehdi CHAYANI

Chayani Mehdi is an engineer in the labs Archeovision (UMS3657, CNRS/Université Bordeaux/Université Bordeaux-Montaigne). He is responsible to coordinate the work of the 3D consortium labeled by Huma-Num (TGIR), which gather 10 french labs that already have a practical production of 3D models in the scientific context of social and human science and with the aim to create deliverables for the SHS community. He has also several experiments in 3D data acquisition (photogrammetry) and object reconstruction.





Bruno DUTAILLY

Bruno Dutailly is a Computer Science Engineer in software development, specialized in 3D and Imagery. He works in two labs: PACEA (UMR5199, CNRS/Université Bordeaux/Ministère de la Culture) especially in CT (computed tomography) imagery and mesh extraction, and in Archeovision (UMS3657, CNRS/Université Bordeaux/Université Bordeaux-Montaigne) in point cloud and meshes tools, and stereovision. He is the author of TIVMI®, a software designed for precise measurements on CT scans and meshes.



Matteo DELLEPIANE

CNR-ISTI, Pisa, Italy.

Engineer, PhD, researcher at CNR-ISTI. He has a vast experience with digitization technologies, interactive visualization, web-based tools and application to CH. Participated to more than 10 EC projects.



Nicolo DELL'UNTO

Univ. Lund, Sweden.

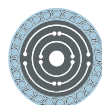
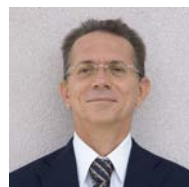
An archaeologist, with a very solid experience with ICT technologies, GIS and 3D digitization. Participated to several scanning campaigns, including extensive work at Pompei as part of the Swedish Pompei Project.



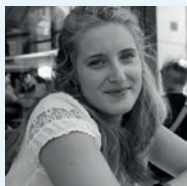
Gabriele GUIDI

Politecnico Milano, Italy

Engineer, PhD, expert in 3D digitization technologies, partner of EC "3DICONs" project and of the Indiana University digitization project in the Uffizi Museum, Florence.



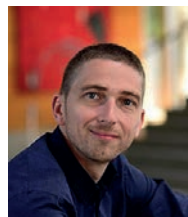
Anaïs GUILLEM



Both architect and archaeologist, Anaïs Guillem was previously involved in ITN-DCH project as Marie-Curie fellow. Her research work focuses on the digital documentation and modeling to document Built Cultural Heritage: from the different techniques and tools for surveying, to the processing, the modeling, and the analysing that lead to the interpretation the data.

Florent LAROCHE

Florent Laroche is a "doctor-engineer" working as an assistant professor at Ecole Centrale de Nantes (France) and as a researcher in the laboratory IRCCyN (Research Institute for Communication and Cybernetics of Nantes, France - UMR CNRS 6597). He works on the translation of knowledge of the past in contemporary knowledge, readable and understandable in the present socio-technical system. His research topics are KM, PLM, information system modeling, interoperability, enterprise modeling, virtual engineering, reverse engineering. He is expert for Museums and ICOMOS. For more information: <http://www.florentlaroche.net>



Sylvain LAUBÉ



Sylvain Laubé has a PhD in plasma physics (University Paris XI, 1992). He worked as associate professor in the laboratory PALMS, University of Rennes 1 concerning experimental physics in astrochemistry and interstellar clouds (1993-2003) and as director of the research team PaHST (Patrimoine, Histoire des Sciences et des techniques) at the University of Western Brittany (2008-2012). Since 2012, he is assistant director of the Centre F. Viète (EA 1161), University of Western Brittany. His research topics are History of science and technology in the ports and digital humanities (semantic web and 3D) in the framework of the PAM 3D Lab (Patrimoine, Artefacts, Médiations 3D).





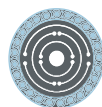
Maria Cristina MANZETTI

Institute for Mediterranean Studies – Foundation for Research and Technologies, Hellas, in Rethymno, Crete (Greece). 2015-2016 Technical University of Crete, in Chania (Greece).

She is graduated in Archaeology at University of Rome Tor Vergata, with a specialization in Roman archaeology. As a fellow of Leonardo Da Vinci project, she spent three months at IMS-FORTH lab of Rethymno (Greece), working on the 3D reconstruction of the Neolithic village of Szeghalom, Hungary. As V-Must project's fellow she worked with geophysical data and 3D models of the medieval abbey of Ennemy (Belgium), at Visual Dimension (Belgium). She is currently a Ph.D. candidate in Digital Media and Cultural Heritage at Technical University of Crete (Greece) and collaborates with IMS-FORTH lab in Rethymno. Her specialties are Roman archaeology, Virtual Archaeology, 3D modeling, 3D visualization, 3D visibility analysis and virtual acoustics.

Adeline MANUEL

Adeline MANUEL is researcher at CNRS in the MAP (Models and simulations for architecture and cultural heritage) laboratory. After a master pursued in Information and System Science at the MAP laboratory in 2012, she received her PhD at the Arts et Métiers ParisTech in 2016. Her research activities focuses on specific problems of information visualization, spatialization of information, 2D/3D linking, automatic propagation of annotations and 2D/3D analysis tools. She currently develops Aiolis, an application for describing, analyzing and documenting cultural heritage based on these research topics.



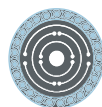


Alain P. MICHEL

Lecturer in Contemporary History at the University of Evry-Val d'Essonne and researcher at the research laboratory Institutions et Dynamiques Historiques de l'Économie et de la Société (IDHE.S, UMR 8533). Both historian industrial production techniques, expert in visual sources and expert in the use of 3D modeling tools for historical interpretation.

Franco NICCOLUCCI

Franco Niccolucci received a degree in Mathematics from the University of Florence in 1970. After being Assistant Professor at the University of Pisa, he became Professor at the Faculty of Architecture of the University of Florence in 1974, where he taught until 2007. He was also the Director of the STARC - Science and Technology in the Archaeology Center of the Cyprus Institute (CY). He is an expert in Informatics and Multimedia applied to the valorization and preservation of Cultural Heritage and founder of VAST-LAB, a research lab located at PIN in Prato, Italy. With this lab he coordinated several EU-funded projects, the latest being the ARIADNE and PARTHENOS projects. He has authored several books and over 100 papers on digital heritage, and has chaired a number of international conferences on the subject. He was the chair of CAA2004 and founder of the VAST conference series in which he co-chaired the 2000, 2003, 2004, 2011 and 2012 editions.





Anthony PAMART

is graduated in architecture (ULB, Belgium) with a specialization in 3D digitization (AllCe Lab, Bruxelles). He was in 2014, a Center for Khmer Studies (CKS, Cambodia) fellow hosted at the research institute of the École Française d'Extrême-Orient (EFEO) in Siem Reap to develop practices of close-range photogrammetry in Angkor archeological park. In 2015, he joined the MAP laboratory in Marseille (UMR 3495 CNRS/MCC) as a European Leonardo fellow to work on shape analysis and he's currently studies engineer in charge of the acquisition, the processing and the analysis of 3D data. He's also involved in other scientific partnerships and actions (COST-COSCH/Consortium3D CNRS) about multimodality and dissemination of 3D contents

Jean PONCE

Professor, director of Computing department at Ecole Normale Supérieure (UMR 8548), Head of project-team WILLOW (ENS, INRIA and CNRS).

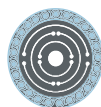
Research topics :

3D object and scene modeling, analysis, and retrieval

Human activity capture and classification

Category-level object and scene recognition

Machine learning





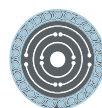
Stéphane POUYLLAU

Stéphane Pouyllau is a research engineer at CNRS and technical deputy-director of the French Research infrastructure for humanities Huma-Num (<http://www.huma-num.fr>). He has specialized since 1999 in digital humanities, in scientific and technical information and computerization of the research data. He co-directs since 2009 the development of Isidore, the French search engine of human and social sciences.

Karina RODRIGUEZ ECHAVARRIA

Univ. Brighton, UK

Karina is a Senior Lecturer at the University of Brighton. She obtained her PhD at the University of Wolverhampton in the area of knowledge-based engineering in 2005 and an MA in Histories and Cultures at the University of Brighton in 2008. Karina has worked in several European projects researching in the areas of digital collections and 3D technologies for cultural heritage organisations producing research outputs in interdisciplinary areas. She led the UK-EPSRC funded project on semantic technologies for 3D digital repositories from 2014-2016. Her research interests include the documentation and visualisation of heritage collections as well as their exploitation for creative purposes (e.g. visual arts and crafts). Other research interests include information and knowledge management of 3D artefacts, semantic technologies, digital fabrication, and the practical aspects of deployment in the heritage sector. She contributes in various international committees in these areas, and is currently Information Director for the ACM Journal in Computing and Cultural Heritage.





Laurent ROMARY

Senior Research at Inria, France and director general of DARIAH. He carries out research on the modeling of semi-structured documents, with a specific emphasis on texts and linguistic resources. He has also been active in standardization activities within the TEI consortium and ISO and is now chairing ISO committee TC 37 on terminology and language resources. He is also contributing to the definition of the scientific information policy of Inria.

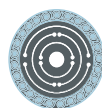
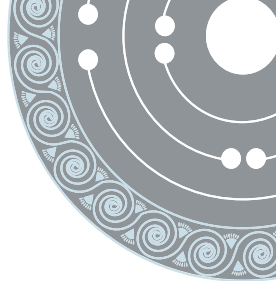
Roberto SCOPIGNO

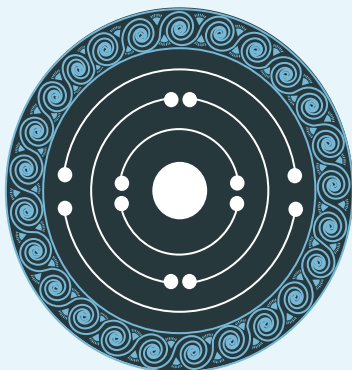
Roberto Scopigno is Research Director at CNR-ISTI with 30 years of experience on 3D graphics (3D digitization, visualization, geometry processing) and its application to the Cultural Heritage domain. He is author of more than 200 international papers, with Google Scholar h-index 45 and more than 9500 citations. He participated with several EU and national research projects concerned with ICT and Cultural Heritage. Roberto served in the Eurographics Association (served as General Chair 2009-2010), was Chief Editors of international Journals (Computer Graphics Forum and ACM Journal of Computing and Cultural Heritage) and was the organizer of several international events (Eurographics'99, Eurographics2008, Digital Heritage2015, CAA2015).

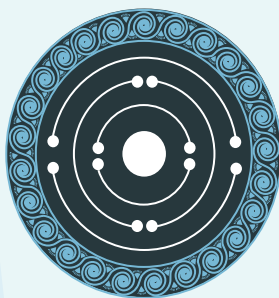


Sarah TOURNON-VALIENTE

Software Engineer, Archeovision UMS3657, CNRS. Formerly specialized in databases administration and migration for private telecom firms. Now acting in research databases, specialized in database management, software development and interoperability.







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