ITN-DCH
Newsletter

August 2015

ITN-DCH: PROJECTING OUR PAST TO THE FUTURE

IN THIS ISSUE

ITN-DCH @ SEAHA, London

by Rossella Suma, ESR 16

The 1st International Conference on Science and Engineering in Arts, Heritage and Archaeology took place on the 14th and 15th of July and was hosted by UCL. The ITN-DCH project was one of the co-organisers. A delegation of the fellows attended the conference contributing with posters and a keynote presentation.

The conference aim was to provide a platform for scientists, researchers, engineers, professionals, practitioners, entrepreneurs, and policy-makers, to engage and discuss emerging trends in the field.

Heritage discipline is a cross-disciplinary field connecting science and the humanities, as Dr Maya Cassar (Director, UCL Institute for Sustainable Heritage) excellently expressed, and we need to promote dialogue amongst heritage scientists and to create partnerships between research institutions and the most advanced and forward thinking industries.

The ESR 7, Matevž Domajnko, was invited as a keynote speaker to present the CultLab3D digitization pipeline. The keynote was a moment to show the results obtained working on artefacts belonging to the

Museum of Natural History in Berlin. Also a moment to reflect and evaluate the opportunities and challenges of photogrammetric 3D mass digitization.

All the other fellows present, had the chance to show the collaboration and the holistic approach adopted within this project with their poster and the work done up until now within the ITN-DCH and in particular around our first case study: the Asinou Church.

ESR 15, Manolis Alexakis presented his diagnostic survey regarding materials decay on Architectural Surfaces (Frescoes) and Historic Structures (Masonries, Arches etc.) and an assessment for incompatible materials and conservation interventions.

ESR 1, Chance Coughenour presented his poster on best practices and future challenges faced by the application of remote sensing in Digital Cultural Heritage.

ESR 4, Ellie Stathopoulou presented her work in collaboration with ESR 5, Gina Stavropoulou. A review of the state-of-the-art 2D feature extraction algorithms. In particular, some of the tests were executed

CIPA Summer School, Paestum

ITN-DCH Summer School, Rhodes

Figure 1: From left to right top to bottom: ESR1 Chance, ESR 11 Matthew, round table discussion during the conference, ESR 15 Manolis, ESR 14 Nikoletta, ESR 9 Marleen, ESR 4 Ellie and ESR 7 Matevz, ESR 16 Rossella

focusing on byzantine mural paintings belonging to the Church of Asinou.

ESR 14, Nikoletta Skordaki presented her long-term environmental impact analysis on our case study.

ESR 11, Matthew Vincent presented his work on the digitisation process of two of the icons from the monument of Asinou, the enrichment of those scans, and publication of those data in repositories as an example workflow for heritage professionals today.

ESR 9, Marleen De Kramer had the chance to show her augmented reality interactive application for integrating and disseminating cultural heritage research.

I presented a poster demonstrating the creation of a Virtual Reality application with the 3D digital reconstruction of the Asinou church and the adoption of the authentic environment maps taken in situ during our acquisition last October.

The conference, as always happens in this kind of event, is a moment of socialisation, an occasion for strengthening the relationships within our network and creating new connections with other cultural heritage specialists. Our team had the chance also for a quick visit to the British Museum, an unmissable visit when in London.

CIPA Summer School, Paestum, Italy

by Nicola Carboni, ESR 8

Figure 2: UAV ortho photo at CIPA SummerSchool in Paestum

On the 12th of July ESR8 Nicola Carboni and ESR2 Magda Ramos travelled to Paestum, in the south of Italy, to participate at the CIPA Summer School, organized by the 3DOM Lab of Fondazione Bruno Kessler – FBK in collaboration with CIPA – The International Committee for Documentation of Cultural Heritage.

Together with a team of international students, they followed six days of in-depth theoretical and practical immersion in the field of surveying, data acquisition and data processing.

The summer school started with the coverage of the fundamental principles behind direct and indirect measuring techniques, including

photography, photogrammetry, topography, remote sensing and process documentation.

Such a thorough overview gave the students the necessary preparation to go rapidly in the field, and begin to test the theories and formulas previously analysed.

In order to counterbalance the competences of the students, as well as enhance their participation in the set of planned activities, 5 groups of 3-4 persons, composed of people with different skills and background, were created.

A set of different testing environment was also planned, including:

CIPA Heritage Documentation is a dynamic international organization that has twin responsibilities: keeping up with technology and ensuring its usefulness for cultural heritage conservation, education and dissemination. This dual role is exhibited in his parent organizations - ICOMOS - International Council of Monuments and Sites and ISPRS - International Society of Photogrammetry and Remote Sensing. Science and Culture.
Visit http://cipa.icomos.org

- Indoor photogrammetric acquisition of a museum artefact
- Outdoor laser scanning acquisition of a side of a building
- Topographic measurement of a set of natural and artificial points
- Indoor laser scanning acquisition of a museum artefact
- Outdoor photogrammetric acquisition of a side of a building

In rotation, each group, guided by two supervisors, worked in every one of the above settings, in order to increase their knowledge of every instrument and methodology analysed.

The lessons, together with the field activities engaged the students for the first 3 days, while afterwards the focus changed tow ards processing/post-processing methodologies, concentrating on the use of two applications: Photoscan for SfM and Geomagic for 3D Computer-Aided Design.

An introductory tutorial was given for both software, in order to allow the students to independently work with their data, as well as start their own processing pipeline, in order to be ready for the last day.

A presentation was in fact scheduled for Saturday afternoon, where the groups presented their work and results, as well as issues and lesson learnt, in order to comply with the general well-organized knowledge transfer strategy. The presentations were 20 minutes long, and allowed each of the students to outline the main strategies and the obtained results.

The overall work exhibited a great concern for testing and researching new methodologies and applications. Several groups used both Photoscan, as tutored in the summer school, and MicMac, an open source software from IGN, the French National Institute of Geographic and Forest Information.

Moreover, different people tested other applications, for example Cloud Compare for aligning two point clouds, or they tried to find diverse solutions to face some famous issue in data acquisition (putting themselves to test with reflective object for example).

One of the main outcomes of such a diverse series of work was the clear discovery of how the different backgrounds changed the challenges, strategies and final results obtained by each group.

Following the final presentation, a dinner, together with an award ceremony, was organized, rewarding three groups with a bottle of a local *delicatessen* called Limoncello. The latter was then shared with all the participants that joyfully decided to celebrate the end of the summer school with some pieces of cakes and some dives in the swimming pool of the hotel.

One week from its beginning all the participants started to return to their respective home, carrying a big luggage, made out of technical skills, cheerful evenings with fellow students & advisors, swimming practice, and last but not least, a better expertise in the Italian cuisine.

2nd ITN-DCH Summer School, Medieval City Of Rhodes

by Manolis Alexakis, ESR 15

Figure 5: Fellow visit to the Panayia tou Kastrou Church

Figure 6: Team work effort to apply markers on the Rhodes city walls during the geometric acquisition activities.

Figure 7:ESR 5 performing data acquisition with ground penetrating radar: fortification surface with alveolation decay.

The Initial Training Network for Digital Cultural Heritage (ITN-DCH) 2nd Summer School took place, during the first week of June (1-7/06/2015) in Rhodes, Greece. Within this week, the ITN-DCH Mid-Term Review and 2nd Annual (project-related) meetings were also took place in the same island.

The events were mainly organised and coordinated by the Scientific Coordinator Head Antonia Moropoulou and the Marie Curie Fellow and Early Stage Researcher 15, Manolis Alexakis, both from the Laboratory of Material Sciences and Engineering from the School of Chemical Engineering of the National Technical University of Athens.

The participants in the three events were: the ITN-DCH actors (Partners, Fellows etc.), the ITN-DCH Project Officer, an External Reviewer, Scientists and Professors coming from around the globe to give lectures, local authorities representatives and Engineers from the local department of the Technical Chamber of Greece in order to gain training and knowledge from the Summer School activities. The spirit of the Summer School was mainly orientated to give the opportunity to the participants to get involved into "Hands on Monuments" activities and acquire the needed training for an integrated documentation on geometry and materials.

The methods and the techniques of the Laboratories of Photogrammetry and the Material Sciences and Engineering, National Technical University of Athens (NTUA), were implemented on the case study of the Medieval City of Rhodes (Medieval Walls and Individual Monuments). The first part of the Summer School concerned organized guided visits in local museums (Archaeological, Grand Master Palace) and on-site guided visits on monuments restoration workshops (Light House of Saint Nicholas, Saint Catherine Hospice, Muslim School etc.). This was done in order to introduce them to participants in the History of the Monuments, explain the reasons why society has to protect them and how this will be eventually put on practice (Figure 5).

The training part of the Summer School included a daily introductory lecture concerning the forthcoming activities performed in-situ at the moat and the Fortifications of the Medieval City of Rhodes. Few square meters of fortification surfaces had been selected; each with a characteristic type of material decay (Figure 6 and 7).The purpose of the activities was to integrate in-situ acquired measurements made by the portable Non Destructive Techniques instruments with a digital geometric documentation of the structure. To this end, a Holistic Documentation approach was adopted, giving the opportunity to the participants not only to actually interact with the monument (hands on monuments), but also to be trained in data acquisition by making real measurements with the Non Destructive Testing instruments (Figure 7).

The theoretical part of the Summer School consisted of lecture sessions within which a variety of issues related to the monuments Documentation and Protection were thoroughly elaborated.

To mention some of the lectures and the lecturers (Figures8.b and 8.f) : 1) Methodology of decay diagnosis and strategical planning of materials and conservation interventions (Professor Antonia Moropoulou); 2) Risk Management of Cultural Heritage (Professor Jean Pierre Massue); 3) Earthquake response of historic structures (Professor Mustafa Erdik); 4) Identity Card of Cultural Heritage as a tool for decision making (Professor Roko Zarnic) and 5) Analysis and the Planning of the Asinou Church Documentation (Dr. Andreas Nikolaides).
Last but not least, within the Summer School program there had been scheduled Social Dinners where the participants had the opportunity to talk and broad their network with local and international experts in the Field of Cultural Heritage Protection and Preservation. Cultural Events were also organized in order to bring the participants closer to the modern Culture of Greece.

Additionally, a memorandum of Understanding between the ITN-DCH project ("ITN-DCH–Initial Training Network for Digital Cultural Heritage: Projecting our Past to the Future"), represented by Marinos Ioannides from the Cyprus University

Figure 8:
a.ESR 7 during on hands on activity; b Lecture debate with Prof Antonia Moropoulou and Prof Roko Žarnić; c. Fellows with Prof. Prof. Andreas Georgopoulos during the geometric documentation of the walls; d. On site lecture on non destructive techniques by NTUA lecturer and ESR 15 Manolis; e. Fellows attending the lectures; f. City of Rhodes.

of Technology and the THALES COMASUCH Project ("*Sustainability and Compatibility of Advanced Materials and Technologies for the Protection of Cultural Heritage Monuments: Development of Investigation Criteria and Methodologies*"), represented by Antonia Moropoulou, Professor in the National Technical University of Athens, Coordinator, was signed. This document will give a common line of actions towards reinforcement of ICT international collaboration in the field of Cultural Heritage.

To close with, all of the Summer School activities went public through daily press releases, in the local Dodecanese Media (Television, Radio etc.). The successful organization of the ITN-DCH events and activities would not be feasible without the contribution of the co-organizers: The Region of South Aegean, The Municipality of Rhodes, The Ephorate of Antiquities of the Dodecanese and The Technical Chamber of Greece and its Regional Section of Dodecanese.

Secondment @ NTUA, Athens

by Magda Ramos Calles, ESR 2

Last February I stayed at NTUA for my first secondment. The reason this University was chosen, apart from being my PhD institution, was its focus on photogrammetry and computer vision research and, therefore, the possibility to increase my knowledge in these fields.

I also was very lucky to share part of my secondment with Anaïs Guillem (ESR6),

together with the local fellows: Ellie Stathopoulou (ESR4) and Manolis Alexakis (ESR15). An added value of the secondments is, without any doubt the chance given us to deep in the knowledge of the other fellows, spending time discussing about common points or discover how our work/research can be complementary to each other.

Figure 9: Anaïs Guillem (ESR6), Magda Ramos (ESR2) and Sevasti Tapinaki wearing 3D glasses, while analysing the Monument of Zalogon documentation.

NTUA, National Technical University of Athens is among the oldest and most prestigious higher education institutions of Greece.
Visit http://www.ntua.gr/

In order to provide us the opportunity to discuss about current and past projects NTUA as led, prof. Andreas Georgopoulos took care of organizing several meetings with local researchers, PhD students and professors. Although all of them were interesting, I will mention the meeting with Sevasti Tapinaki, who showed us the whole documentation

project of Zalogon Monument done with the combination of a variety of data acquisition technologies: images, laser-scanner and topographical data. The upper parts of the monument were nearly destroyed, so the main goal of the project was to be able to restore them. In order to do that, a 3D model was obtained from the existing data, a virtual restoration was done and the resulting 3D model printed in plaster. This theoretical restoration model was then scanned again and compared with the original one in order to derive possible restoration inconsistencies before interacting with the real object. This project is worth to mentioning, as it is a very good example of how 3D modelling of CH artefacts can help to analyse and perform a previous restoration to assure the veracity of the following physical restoration process.

During my secondment, I was invited to give "Fusion State-of-the-Art & Case studies", which is my current work at my home institution (FBK). The lecture itself was very stimulating as I was able to present my current research topic, and also to receive some suggestions from colleagues of the NTUA department. At the beginning, I had also the opportunity to present the ITN-DCH project to the audience.

Secondment @ KAAK, Bonn, Germany

by Gina Stavropoulou, ESR 5

During my 3 weeks in the Commission for Archaeology of Non-European Cultures (KAAK) in Bonn, I had the chance to see how an archaeological institute can apply several technologies so as to improve and facilitate the processing of archaeological data. Even though my secondment there was short, I believe it was a very useful experience, not only for my progress in the ITN-DCH project, but also for my overall professional career in the field of digital cultural heritage.

The most important advantage of my secondment was the hands-on experience on the MayaArc3D system and, more generally, on the 3D GI systems for cultural heritage. The MayaArch3D is a project focused on the development of a web-based virtual research environment in 3D combined with an archaeological database, which allows the storage, retrieval and processing of complex archaeological data. It was developed based

on data from many Mayan archaeological sites in Central America but special focus is given to the ancient Maya city of Copan in Honduras. The system is successful in integrating several forms of archaeological data and linking them to 3D representations and, thus, it forms a very useful online tool for archaeologist that have to manage large amounts of information.

Similarly, with the case of the ancient Maya city of Copan, archaeologists and cultural heritage specialists are currently facing the problems of managing efficiently large amounts of data. Most times, these data involve a spatial component and, therefore, the utilization of a GI system for their storage and visualisation has become one of the most efficient solutions to this problem. However, the development of such systems is still a challenging task, as every data collection has different characteristics and difficulties that

The **MayaArch3D** Project has built a virtual research environment for the documentation and analysis of complex archaeological sites.
Visit http://www.mayaarch3d.org/

Figure 10: Gina Stavropoulou (ESR 5), giving a presentation during her secondment.@KAAK .

Another interesting aspect of my secondment was the process of extracting information from its analogue form. From my experience with the data input in the system, I gained a deeper insight into the problems of digitising old archaeological archives. Of course, the digitization of analogue datasets requires a lot of manual work, which is often tedious and time consuming, but it is a necessary process in order to generate historical datasets. Especially when it comes to a 4D GIS that incorporates the time component, historical datasets are integral in order to demonstrate different states of a monument/object and store information about past interventions.

cannot be addressed with one global method. The MayaArc3D system forms a good example of such challenges.

Secondment @ ArcTron3D, Altenthann, Germany

by Matevž Domajnko, ESR 7

Between 15th of June – 10th of July, a secondment was organised by the ITN-DCH industry partner ArcTron3D. Eight ESR fellows from academia, research and industry institutions participated various training activities. Along with the training of the researchers and knowledge exchange between the fellows and the hosting institution. The secondment main objective was to acquire high quality data for the two cases studies (Donaustauf castle and Ilmendorf archaeological block), not only to document the assets, but also to have adequate data that facilitate the research investigations of the project in the following months. Apart from that, one important goal of the secondment was to promote collaborative work among the fellows and implement for the first time the idea of a common pipeline for digital heritage.

To keep the standards high, during the first week a huge effort was put into the train activities for the fellows on ArcTron3D's fields of expertise. More particularly an overview of the available equipment (GPS surveying, laser scanning, structure-light scanning and photogrammetry) was given, as well as an introduction to aSPECT3D software, developed by ArcTron3D. Along with that, academia and industry partners of ArcTron3D held lectures and demonstrations. TU Graz demonstrated 3DPitoti scanner, a patented

Figure 11:Oliver Reuss, Ellie, Diego and Marleen during the GPS data acquisition at Donaustauf Castle.

photogrammetric system developed within another EU project. Industrial partners such as RIEGL and Cadmic presented their state-of- the-art laser scanners and UAS equipment respectively.

aSPECT3D is ArcTron3D's software to generate 3D point clouds, texture, georeference or scale your 3D model, create an HD video and managing data in the SQL database.

Visit http://aspect3d.arctron.de/en/

Figure 12:Activities during the secondments @ ArcTron 3D. a.Demonstration of Photogrammetry with double polarization.b. Fellows attending the secondment's lesson. d.Matevz and Diego during the castle acquisition respectively doing SfM and total station data. d. Rossella during HDR panorama acquisition. e. Matevz, Magda and Marleen discussing about the results of the laser scanner acquisition.f. Anais documenting the SfM acquisition at the Regensburg Archaeological museum. g. Diego, Magda and ArcTron 3D collaborator using the Pitoti scanner at Regensburg Archaeological museum. h. Fellows during Mr. Boss lesson on the Donaustauf Castle.

The success of this secondment was based on its excellent organisation that combined theoretical and practical activities. All time slots were used efficiently, taking advantage of the fellows' expertise and enthusiasm. Lectures given by ArcTron3D members or partners gave an overview of state-of-the-art techniques on data acquisition. Processing plans and data acquisition, as well as the implementation of the common workflow were a great chance for brainstorming and working together in a supportive environment to solve exciting real-world problems.

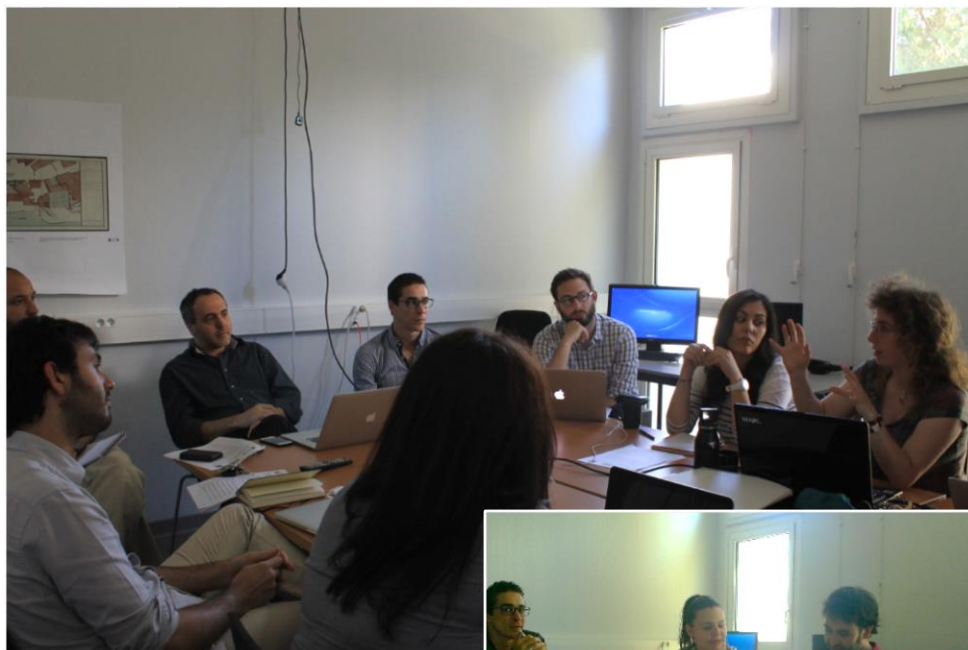# Secondment @ CNRS, Marseille, France

by Nikoletta Skordaki, ESR 14

Figure 13: Debate among Livio De Luca (director of CNRS – MAP) and the fellows on secondment @ CNRS

Figure 14: Nikoletta and Nicola attending a presentation during the secondment.

Groupe de recherche pour l'Application des Méthodes Scientifiques à l'Architecture et à l'Urbanisme.

Combining architects, engineers, historians, computer scientists as part of a multidisciplinary approach and considering architecture as as practice and object of knowledge, the laboratory's work focuses on the development of models and simulation tools in architecture, these being considered in its heritage and projectual dimensions.

Visit http://www.map.archi.fr/

In May, ESR5 Gina Stavropoulou (KUL), ESR9 Marleen de Kramer (7Reasons), ESR11 Matthiew L. Vincent (UMU), ESR14 Nikoletta Skordaki (UL FGG) and ER1 George Bruseker (FORTH) did their secondment at CNRS – MAP, Marseille, France. The content of the secondment included lectures, presentations and tutorials regarding data acquisition, storage and visualization of immovable Cultural Heritage.

Dr. Livio de Luca, director of CNRS – MAP and ESR8 Nicola Carboni, organized a series of presentations, which were help by MAP team as well as presentation from guest lecturers. The lectures, presentations and tutorials contributed to the better understanding of the geometric documentation and annotation of the cultural assets, whereas the presentation regarding materials and conservation state were very useful to broaden fellows' knowledge and the comprehension of different approaches of the field of decays' study and diagnosis, conservation and the study of materials.

Figure 15: Marleen giving her presentation @CNRS

One of the main objective of the secondment was also the link and annotation of semantically enriched data of immovable Cultural Heritage, with Asinou Church being the case study to test this approach (spatial annotation of heterogeneous data around the Asinou's church (architecture, history and conservation state).

Secondment @ UMU, Murcia, Spain

by Nikoletta Skordaki, ESR 14

On the 18th of July, ESR14 Nikoletta Skordaki (UL FGG) started her secondmemt in the University of Murcia in Spain. Mariano Flores Gutierez, Victor M. Lopez-Menchero along with ESR11 Matthiew L. Vincent organized the secondment in two parts.

The first part of the secondment was focused on the excavations, which were carried out at Villa Paturro in Portmán, outside Murcia. Villa Paturro is a Roman villa, dated from 1st century BCE, with 300-400 of use. The fellow participated in the last two weeks of the excavations in one room of the Villa. Nikoletta deepened her knowledge regarding the consolidation of the painting wall fragments and the procedure of their transfer to the museum, whilst she witnessed how the in situ documentation and the daily photogrammetric acquisition is performed on an archaeological site. Learning the variety of techniques used in archaeology is very important in order to understand the documentation process.

The remainder of the secondment was carried out in the Museo Municipal of Alcazar de San Juan. The main focus was the photogrammetric acquisition of Roman mosaics from local excavations for their digitization by the application of innovative documentation techniques for the holistic and novel study and analysis of the mosaics.

Figure 16: Nikoletta participating to the excavation of Villa Paturro, near Murcia.

The **Mediterranean Centre for Digital Innovation in Cultural Heritage (digitalMED)** at Universidad de Murcia is an interdisciplinary centre and includes the participation of professors from the faculties of Fine Arts, Computers, Literature and Education of the Murcia educational institution.

Visit http://www.um.es/web/digitalmed/

Figure 17: Nikoletta skordaki, ESR14, learning some of the different instruments used in field archaeology, such as the traditional transit pictured here.

Secondment @ CUT, Cyprus

by Simon Senegal, ESR 13 and Louis Cuel ER4

The first goal of our secondments was to add some intangible heritage assets in our interactive 3D online viewer who was previously made during the Secondment of Simon at the Partner 7Reasons GmbH in Vienna, Austria. In this application, a first integration of various tangible resources (3D models, texts...) has already been made.

Our main goal was to enhance this content with more detail information and data related to the special monument's liturgy (Intangible documentation of the monument). Therefore, the Priest of the ASINOU Monument has been chosen to be actively involved.

In order to create an immersive 3D environment, we plan to add a restitution of the face and the costume of the priest. The acquisition of pictures of the face and costumes will be processed to achieve a realistic avatar.

Figure 18: Asinou Priest miming the liturgy gestures while wearing markers for the motion capture.

The data Acquisition and data pre-processing has been done under the Supervision of Dr Andreas Aristidou in Cyprus. The goal of this particular documentation was to create the Virtual persons/avatar and all related needed multimedia data. The software functionality MotionBuilder is very useful for our current and future research training activities.

Figure 19: Simon and Louis preparing the room for the motion capture procedure.

Figure 20:From left to right Louis, Dr Marinos Ioannides (ITN-DCH Project coordinator), Simon and Dr Andreas Aristidou

Forthcoming events & meetings

25th International CIPA Symposium, 31 Aug – 5 Sept. 2015, Taipei, Taiwan

The International Committee for Documentation of Cultural Heritage (CIPA) will hold its next symposium in Taiwan, heading back to Asia after the 2009 event in Japan. The congress director is Dr. Alex Ya-Ning Yen from the China University of Technology (CUTe). Four organizations will support and work with CUTe to prepare this important event; they are, namely, Taiwan Heritage Society, Taiwan Geographic Information Society, Chinese Society of Photogrammetry and Remote Sensing and Architectural Institute of Taiwan.

The **ITN-DCH** is **actively participating** with one workshop (see webpage of the event) and with 8 fellows' contributions/papers.

http://www.cipa2015.org

55th Photogrammetric 7-11 September 2015, Stuttgart, Germany

This regular event was initiated by Carl Pulfrich as a "vacation course in photogrammetry" in 1909; since 1973 it has been held at the University of Stuttgart. Today, the Photogrammetric Week enjoys international recognition as an upgrading seminar and a platform for the exchange of experience.

Since 1992 this event has continuously been further developed and driven to excellence under the auspices of **Professor Dieter Fritsch**. As he will retire by the end of September 2015 this will be his „Farewell PhoWo". The lectures by experts from Germany and abroad will be focused on the following topics:

- Remotely Sensed Data Acquisition – An Update
- Advanced Modelling in Photogrammetry, Computer Vision and Computer Graphics
- Excellence in Geoinformatics

http://www.ifp.uni-stuttgart.de/phowo/infos.en.html

Int. Conference Digital Heritage 2015, 28 Sep - 2 Oct 2015, Granada, Spain

The second international forum for the dissemination and exchange of cutting-edge scientific knowledge on theoretical, generic and applied areas of digital heritage.

A "federated" world congress of the leading international societies, organizations, and events around IT for heritage, Digital Heritage 2015 will bring **together** for the second time, **VSMM**, **Eurographics GCH**, **Arqueologica 2.0**, **Archaeovirtual**, and **special events** from **CAA**, **CIPA**, **Space2Place**, **ICOMOS**, **ICIP**, and more, all in one venue with a prestigious joint publication. A groundbreaking public display of cutting edge digital heritage projects will also grace the conference venue at Granada's Alhambra and Sciences Park museum.

Several **ITN-DCH Fellows** are working in the **organization** of this event.

http://www.digitalheritage2015.org

Be a researcher for a day, 19-20 September 2015, Milan, Italy @ 56 Naviglio Grande

Who hasn't dreamt as a child of being Indiana Jones and uncovering ancient treasures buried in the sand? Or wished to become a scientist like in the movies, capable of analysing DNA? Or working on solutions to cure deadly diseases like Malaria?
It is not too late to make these dreams come true! On join us, and make some experiments with real researchers! Here is your chance to get an answer to scientific questions you may have!

For two days, 14 Researchers will bring science closer to the public.
Those researchers have all benefited at some point in their career of
the Marie Skłodowska-Curie actions, the EU funding scheme for researchers.

The ITN-DCH Fellows **ESR 16** and **ESR8** will present two interactive activities.

EUROPEAN RESEARCHERS' NIGHT, Friday 25 September 2015

Exploring science through fun learning

This is a mega event, which takes place every year simultaneously in several hundred cities all over Europe and beyond.

Whether with family, friends, your school, or on your own, you will find yourself exploring science in engaging ways.

All the **ITN-DCH project** will be actively involved in the activities in different locations bringing to the attention of a large public digital archaeology, Cultural Heritage preservation and documentation techniques:

ESR 16 Rossella Suma & **ESR4** Magda Ramos Calles will be at FBK, in **Trento, Italy** presenting an interactive application for virtual archaeology.

ESR4 Ellie Stathopoulou will participate in the German Researchers' Night in **Braunschweig** (**Deutschland**) as part of her secondment training in USTUTT with her hosting fellow **ESR1**, Chance Coughenour .

ESR3, Diego Bellido Castaneda will be at **Braunschweig** (**Deutschland**), as well, presenting the ITN-DCH project with data from the secondment and the case studies 3 and 4, SFM techniques and 3D models, 3D printings and some information about PITOTI project.

ESR5, Gina Stavropoulou & **ESR11**, Matthew Vincent will attend the 10th Anniversary of the European Researchers' Night event in **Brussels** and they will present currently used technologies for the collection of cultural heritage data (including the Minidome of VISICS).

ESR10, Margarita Papaefthymiou will be at FORTH in **Heraklion** presenting a Digital Heritage application running on modern mobile devices. This is a markerless augmented reality application featuring life-size virtual characters rendering and animation.

Visit http://ec.europa.eu/research/researchersnight/index_en.htm

ITN-DCH
Newsletter

The "**Initial Training Network for Digital Cultural Heritage: Projecting our Past to the Future**" (ITN-DCH) is a **Marie Curie fellowship projects** in the area of the e-documentation / e-preservation and CH protection funded by the European Union under the FP7 PEOPLE research framework. The Project started on the 1st of October 2013, its consortium comprises **14 full partners and 9 associate members** covering the entire spectrum of European CH actors, ranging from academia, research institutions, industry, museums, archives and libraries. The project aims to train **20 fellows** in the area of CH digital documentation, preservation and protection in order to create them a strong academic profile and market-oriented skills which will significantly contribute to their career prospects. ITN-DCH targets **all aspects of CH** ranging from tangible (e.g. books, newspapers, images, drawings, manuscripts, uniforms, maps, artefacts, archaeological sites, monuments) to intangible content (e.g., music, performing arts, folklore, theatrical performances) and their inter-relationships.

Visit:

http://www.itn-dch.eu/

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Acknowledgments: