ESR 1

Name: Chance Coughenour

Your credentials: Master of Arts in Archaeology and Heritage

Start day: 01/06/14 **End day:** 01/06/16

Involved in WP: WP1, WP2, WP6 Hosting Institution: USTUTT

My Research Training Activity in ITN-DCH

A. Summary of the Career Development Plan:

With a background in topographic surveying and archaeology, my plan is to incorporate and further develop these subjects at in the pursuit of a PhD in Geoinformatics at the Institute for Photogrammetry at the University of Stuttgart. The steps in order to support this career development plan have already begun through both my training at my hosting institution and project secondments. The process of organizing and applying remote sensing to cultural heritage is my prinicipal pursuit. I intend to develop new ways in which tools such as photogrammetry and laser scanning can be used for the documentation of cultural heritage which will contribute not only to my career plan of working in academics in the future, specifically in computer applications to archaeology, but also in the ability to contribute to dissemination to the public in more interactive ways.

B. Core Research Training Activity:

The fundamental research training that I am carrying out is a combination of requirements for WP6: "Cloud Services in Digital Cultural Heritage" as well as developing new ways to apply remote sensing to cultural heritage while enriching this data with metadata which has only been touched on minimally in the past. Work Package 6 is directly concerned with a topic I have had much interest in previously, therefore its design and development, as an important part in the whole holistic workflow of the ITN-DCH project, is a topic I am focusing the core of my research. Semi-automated data organization and processing for photogrammetry and laser scanning in cultural heritage is a key component in how future projects will be able to succeed, not only in properly managing their data, but also to better utilize cloud computing technology in order to augment accessibility, processing, and dissemination for professionals and the public. Once the computation process is improved for cloud computing management and implementation, investigations in Digital Cultural Heritage will greatly be improved since the accessibility to proper computing resources remains a crucial component, both in cost and time. Thus, my intention is to greatly improve how remote sensing data is managed and processed more efficiently in Digital Cultural Heritage

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 608013.

C. **Secondments:**

1. KAAK: for three weeks (from 09.01.15 to 28.01.15)
   The main mission of this particular secondment was to conduct photogrammetric processing from previously acquired data from the Ancient Maya site of Copan in Honduras. I also participated in beta-testing the MayaArch3D interactive research portal and database as well as engaging in knowledge exchange with the German Archaeological Institute in Bonn, Germany.
2. CUT: for two weeks (from 02.02.2015 to 15.02.2015)
   The main mission of this secondment was a photogrammetric acquisition and processing campaign related to both Case Study 1, the Asinou church as well as at the Agios Neophytos Monastery. Acquisition was also conducted at the Byzantine Museum in Nicosia. Discussing future avenues of integration with the associated partners CyBC and eSelis were carried out as well. Guest lectures were given as well at CUT and the University of Cyprus in Nicosia.
3. 7reasons: for two weeks (from 09.03.2015 to 20.03.2015)
   The principal mission of this secondment was to work intensively with two other fellows on Case Study 1. Photogrammetric processing, data organization, modeling methods, and web integration were all performed. The result was presented at the Carnuntum Workshop and now the other fellows are integrating their data and research into this web portal.

D. Dissemination & Outreach:

- European Researcher's Night 2015 in Braunschweig, Germany in September.
- Paper presented at Arqueologica 2.0 conference in Ciudad Real, Spain in October, 2015.
- Paper presented at EuroMED 2014 conference in Limassol, Cyprus in November, 2015.
- Paper published in EuroMED 2014 Short Paper Proceedings entitled "Animating Past Places in Time: Applying Close Range Photogrammetry to 4D Stratigraphic Excavation Data"
- Founding of Project Mosul Volunteer Effort for the Digital Preservation of Cultural Heritage at Risk in Regions of Conflict (projectmosul.org)

E. <u>Added Value</u> to my Future Research Career:

This project and all it encompasses represents the largest leap forward in my career. The truly unique character of this ambitious project lies directly in my multidisciplinary background and research path. One great aspect of this project are the secondments, where I have been given the opportunity to train with professionals from different areas of DCH and witnessed firsthand the ways in which the field is developing and what is still required. This is essential for my future career prospects and how my training and experience gained will place me in a strong position for future academic research.

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