



The University of Luxembourg is a multilingual, international research University.
The University of Luxembourg is looking for its Faculty of Science, Technology and
Communication (FSTC) for a

Doctoral candidate (PhD-Student) in Geospatial/Civil Engineering (M/F)

Project
Eco-Construction for Sustainable Development (ECON4SD)
Sub-project
**The Application of Modern 3D Capturing Technologies within
Eco-Construction and Building Information Modelling**

- Ref : R-AGR-3265-10-C
- Fixed-term 14 months initial contract, extendable up to 45 months in total
- Full-time (40 hours/week)
- Starting 1st March 2018 (or as soon as filled) Student AND Employee status

The successful applicant will work on the EU funded project **Eco-Construction for Sustainable Development (ECON4SD)** as part of a group consisting of six doctoral students and one PostDoc that are all involved in this project. A professor of the FSTC will supervise the advancement of the doctoral studies. The doctoral student will be a member of the Doctoral School for Science and Engineering (DSSE) offering a doctoral Program in Civil Engineering Sciences aiming to provide interdisciplinary and internationally competitive research training.

Your role

Investigate the application of modern 3D capturing technologies (terrestrial and airborne laser scanning as well as digital photogrammetry from various platforms) for the use in BIM data acquisition within the optimized and highly sustainable construction environment.

Description

Owing to the increasing demand for high flexibility, re-usability, and resource efficient construction, the research of this work-package investigates the application of modern 3D capturing technologies employed during data acquisitions for Building Information Modelling (BIM) in order to optimize the related construction processes and improve overall sustainability.

In recent years, technologies such as laser scanning and digital photogrammetry from terrestrial or airborne platforms, in static or mobile environments have gained enormous interest by researchers and companies. Some very recent developments include crane cameras taking images during crane operations on a construction site from which 3D data for building information modelling (BIM) is derived.

At the same time have developments of BIM revolutionized construction and maintenance processes, especially in the Anglo-American industries. The use of RFIDs is also being considered by industries to tag construction components and attach attributes to them.

Through a critical review of related literature, the candidate will gain an in-depth overview of the technological developments and methods in place and envisaged. A particular

focus will be the fusion of the data sets from these acquisitions and their critical analysis in terms of error budget. In collaboration with potential industry leaders benchmark data sets will be collected and evaluated. Close collaboration with other ECON4SD projects is envisaged.

Mission

- Research of 3D capturing technology and BIM within an optimized and highly sustainable construction environment
- Disseminate results through scientific publications and talks at conferences
- Obtain a PhD in engineering science
- Limited teaching activity of 1h per week

Your Profile

- Master-degree in Geospatial Engineering (Surveying, Photogrammetry, etc) or a related subject such as Civil Engineering.
- Fundamental knowledge of 3D capturing technologies and/or BIM (industry experience is welcome)
- Practical knowledge of a programming or scripting language (C, Fortran, Python, Matlab, etc)
- Language: High Level of English
- Willingness to inscribe as PhD-student at the University of Luxembourg

Further information

Applications (Motivation letter including CV, PDF of MSc graduation project, copies of diplomas including full list of marks) must be sent by ordinary mail or e-mail to the following address:

Prof. Felix Norman Teferle
FSTC, Institute of Civil Engineering and Environment
Université du Luxembourg – Campus Kirchberg
6, rue R. Coudenhove-Kalergi
L-1359 Luxembourg
Luxembourg
Tel: +352 46 44 66 5790
Email: norman.teferle@uni.lu

Applications are to be received no later than **end of January 2018**. Only complete applications will be considered. The University of Luxembourg is an equal opportunity employer. All applications will be treated in the strictest confidence.

For more information please contact Professor N Teferle (Tel: +352 46 66 44 5790, norman.teferle@uni.lu) or check the website: URL: <http://www.uni.lu>