

The departments of Earth Systems Analysis (ESA) and Earth Observation Science (EOS) of the Faculty of Geo-Information Science and Earth Observation (ITC)/ University of Twente in Enschede, the Netherlands, invite qualified persons to apply for the full-time position of PhD Researcher (Promovendus) m/f, to work on a recently started project entitled

“SUPPORTING POST-DISASTER SEARCH & RESCUE WITH AIR-AND SPACEBORNE REMOTE SENSING DATA, DASYMETRIC POPULATION MAPPING, AND INTEGRATED SEMANTIC ANALYSIS”

The project forms part of a large-scale integrating research project funded through the 7th Framework of the European Commission, entitled Technological and Methodological Solutions for Integrated Wide Area Situation Awareness and Survivor Localisation to Support Search and Rescue Teams (INACHUS). The project has 20 participating organisations from 13 European countries. The overall aim of INACHUS is to provide increasingly refined information to response forces following a disaster event to assist in helping to find survivors. This will start with initial situation assessment based on satellite imagery and damage simulation with synthetic models, followed by 3D data generation based on imagery from unmanned aerial vehicles (UAV) and ground-based laser scanners, and eventually robots and other suitable instruments to find survivors being deployed in the field. ITC is one of two partners focusing on the remote sensing based aspects, and the project builds on a related ongoing FP7 research project called RECONASS (www.reconass.eu). Specifically, the PhD project will address the following:

- Development of methodologies to create detailed 3D models from optical images acquired with a UAV, with the aim of real-time optimisation of image acquisition and photogrammetric processing to achieve maximum model completeness, and using initial satellite-based damage hotspot data as a priori information for UAV mapping planning;
- Dasymetric population mapping to identify damage hotspot areas of maximum casualty, and ideally survivor, presence;
- Development of procedures for accurate integration of 3D point clouds generated by the different air- and ground-based devices;
- Development of techniques to match 3D point cloud data with the results of the damage modelling based on synthetic building data (modelling to be carried out by another INACHUS partner), using extracted spatial primitives and model matching techniques;
- Use of object-oriented image analysis (OOA/OBIA) techniques for land use assessment and urban functional modelling (see www.itc.nl/ooa-group);
- Testing of the developed solutions, together with the other INACHUS results, at test locations in different European countries.

The project is shared between the ESA and EOS departments, and requires occasional work in the field, and independent participation in project meetings, conferences or teleconferences may be necessary. Contribution to project deliverables (reports, etc.) is also necessary. As promovendus some limited teaching in ITC courses may be required.

We offer an inspiring and challenging international and academic environment. The successful candidate will be employed as a University of Twente staff member for a period of 4 years, working 38 hours a week. Pending final budget approval by the European Commission, the project will likely begin in autumn of 2014. Salary and conditions will be in accordance with the Collective Labour Agreement (CAO) of the Dutch Universities. Gross monthly salary depends on experience and qualifications, and ranges from € 2083 to € 2664 exclusive of allowances, in accordance with the job profile Promovendus, under the University System for Job Classification (UJC). Costs for moving to Enschede may also be reimbursed.

Please submit your application through the form on <http://www.utwente.nl/vacatures/en/> by 31 March 2015. The project started on 1 January 2015, hence we aim at having the selected student start as soon as possible.

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