

# Commission C35 - Monitoring methods and approaches in engineering geology applications

As communicated by Giorgio Lollino in the IAEG Executive Committee hosted in London in April 2016, the new president of this Commission is Dr. Daniele Giordan, that was the secretary of the Commission.

The recent technological development of monitoring systems evidenced how this commission should be oriented through the evaluation of new monitoring systems and the definition of a methodology for the use of these innovations in the field of engineering geology.

The most recent applications that have been identified and considered as innovative solutions that will be able to contribute to the improvement of engineering geology are:

- Unmanned aerial vehicles (UAV)
- Smart monitoring networks
- Optical fibers

The considered class of instruments are very different and for this reason, the Commission decided to start with a single topic and then evaluate if the new approach can reach good results. For this reason, a working group focused on the use of unmanned aerial vehicle has been set up in the last months.

The aims of the working group is the definition of a guideline that resume the principal applications of UAV in engineering geology. The report will be completed at the end of 2016 and delivered on the IAEG website.

The actual members of the working group and the in the tentative program with the considered topic are:

## **Landslides**

Description of the use of UAV for landslide mapping and monitoring

Prof. Yuichi Hayakawa, Japan

Dott. Daniele Giordan, Italy

## **Rock mass characterization**

The use of UAV for rock mass classification and structural analysis

Prof. Dwayne Tannant, Canada

Prof. Massimo Salvini, Italy

## **Debris flows**

Description of the use of UAV for debris flow analysis and mapping

Dr. Marc Adams, Austria

Dr. Veronika Lechner, Austria

### **River Dynamic**

The use of UAV for river morphological and volumetric change detection and for the support to mathematical simulations

Prof. Kuo-Jen Chang, Taiwan

Prof. Benoit Deffontaines, France

Prof. Tomasz Niezdzielski, Poland

### **Infrastructures analysis and monitoring**

The use of UAV for the identification of infrastructures damages after earthquakes and other calamities.

Prof. Donatella Dominci, Italy

The Commission also endorsed the 23<sup>th</sup> Cartographic School organized by the Department of Geoinformatics and Cartography of the University of Wrocław (Poland) that was dedicated to the use of UAV in geosciences, where Daniele Giordan was invited as keynote speaker with a presentation focused on the use of unmanned aerial vehicles for geo-hydrological processes analysis and monitoring.

Torino, July 22, 2016

Dott. Daniele Giordan