Semester grant and grant for short-term stays of the "Aktion" Austria-Czech Republic

SCHOLARSHIP REPORT

Name: **Radek Barvíř**

Home university: **Palacký University Olomouc**

Host university: **Kärnten University of Applied Sciences**

Host department: **Geoinformation and Environment**

Period of stay: **summer term 2019 (2 months)**

During the period of 1 April to 31 May, I've been hosted at the Carinthia University of Applied Sciences (CUAS) fulfilling my project focusing on map complexity research related to my dissertation thesis. My local supervisor was Dipl.-lng. Dr. techn. Adrijana Car, professor of Geoinformatics at CUAS.

At the beginning of the period, I reviewed the literature sources available in scientific journals and at CUAS library. I used those sources to enrich my collection of map complexity measurement possibilities. Several consultations with Prof Car and other professors helped me to structure my research steps and produced innovative ideas of map complexity measurements possibilities. Discussion with students helped me also to understand their perception of map complexity.

Using Matlab software available at CUAS, I updated several scripts and used them to evaluate the sample collection of maps using few metrics known from the literature. The results from this experiment were then compared with a user testing of perceived map complexity, which had been done before my exchange internship. Moreover, own metrics based on edge detection processing in image map format were updated to provide more exact values. Mentioned activities offer me a source for a chapter in my dissertation thesis and were also used in an upcoming journal article. During my stay at CUAS, I also gave two lectures - one focusing on Map Complexity, its importance for modern cartography and map production, types and definitions etc. The second lecture was the "Preparing geodata for a 3D- plot" workshop describing the possibilities of how complex geospatial data can be processed into a simple 3D model ready to be 3D-printed in local 3D printing laboratory. I also participated in fieldwork during the terrain practice and took part in other university activities taking place during my stay in Villach. My research internship gave me a better understanding of map complexity in geospatial visualization and enriched me with necessary overview of the topic.