



Workflow for the fast evaluation of rock mass properties and stability of rock slopes along trafficways in Lower Austria

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In Lower Austria there is a total of 17.000 km of provincial and 24.000 km of communal roads, to be maintained by the province and the municipalities. In addition, there are approx. 1.500 km of railroads, and the Danube as a major waterway. A large part of this infrastructure is, or is potentially, affected by various types of instability of adjacent slopes. Due to insufficient knowledge, as well as slope design and management practice in the past, every year, especially in connection to weather extremes, slopes known to be critical become active landslides again, and unexpected new ones arise, causing damage as well as financial stress.

Engineering intervention, if possible, should be quick and effective. Geologists and engineers in public service, not having the means for detailed investigation in most cases, are using guidelines to assess the requirements to be met by slope design on traffic ways. But these guidelines don't reflect many of the newer scientific advances. Therefore, scientists at BOKU and backers in the administration want to gain more insight into causative factors, which, if successful, may render maintenance of traffic lines under critical conditions more effective and predictable.

The specific project goal is to produce new guidelines to allow quick assessment of the most likely behaviour of rock masses common in the area, especially when cut into shape along infrastructure lines, using readily available information. The scientific investigations include simple and ready tests (like Schmidt hammer), as well as photogrammetry, laserscanning, and other complex geophysical and numerical techniques, but the final product (guidelines) is expected to work without such difficult methods. It is important to note, on the other hand, that the rock mass stability classification inherent in the new guidelines must allow distinction between conclusions which are safe, and conjectures which are in need of validation by contracted experts.

It is planned to expand the project to the adjacent Slovakian provinces of Bratislava and Trnava, and to collaborate with Comenius University in Bratislava. By sharing the work on this, the compound scientific team, then, would like to become a "task force" ready to work for the stakeholders on special cases later.