Rockslide Vals/Tyrol - DTM, Drone Survey and 3-D Modelling

Client:
Torrent and Avalanche Control Authority

Country:
Austria

Duration:
March-August 2018

Services:
Airborne DTM modelling, 3-D volumetric model, Geological and geotechnical analysis of discontinuities, Modelling of failure scenarios

Project objectives
On Christmas Eve 2017, a huge rockslide with an estimated volume of 117.000 m³ occurred in the valley of Vals in Tyrol/Austria, burying the L 230 provincial road and stopping just in front of several occupied buildings.
IC was assigned to generate a DTM based on UAV airborne surveying data and to build a 3-D model including main discontinuities as a basis to define possible future failure scenarios.

Project description
In order to design proper protection measures and to establish a warning and monitoring system, a digital terrain model (DTM) from airborne photogrammetric data had to be generated and put into a volumetric 3-D model. In the next step, a geological structural analysis was carried out to understand the failure mode of the slope and to estimate the volume of the remaining, potentially instable rock mass.

Project data
Estimated volume of rockslide: 117.000 m³
Area of interest: rd. 0,25 km²
Height of slope: approx. 400 m

Project specifics
The village of Vals is located in an high alpine valley at an altitude of more than 1000 m a.s.l., approximately 40 km south of Innsbruck.

Services

- Photogrammetric aerial photo via UAV
- Digital terrain model from aerial data
- 3-D modelling of sliding area
- Structural geological analysis and modelling
- Definition and quantification of future failure szenarios
- 3-D print of the model including future failure scenarios