

Visualization of climbing routs : Eiger North Face - Switzerland

The Eiger North Face is one of the most famous and mentioned peaks in the world. The battle to climb this face has captivated the interest of climbers and non-climbers alike since the time of the first attempt in 1934.

Using the *RIEGL* LPM-321, which offers a maximum range of 6km, it is possible to scan not only the Eiger North Face, but also the neighbouring rock-faces, from a single scan-position. Data acquisition needed approx. 7 hours. Finally the 3D-model based on approx. 600.000 measurements and 30 high resolution images can be used for visualization of the different climbing-routes.

Project Key-Facts:

RIEGL instrument	LPM-321
Object of interest	Eiger North Face - famous peak in Switzerland
Client's order	high resolution, textured 3D-model
Project management	<i>RIEGL</i> LMS, Manzetta&Menegon Partner AG

Process Key-Facts:

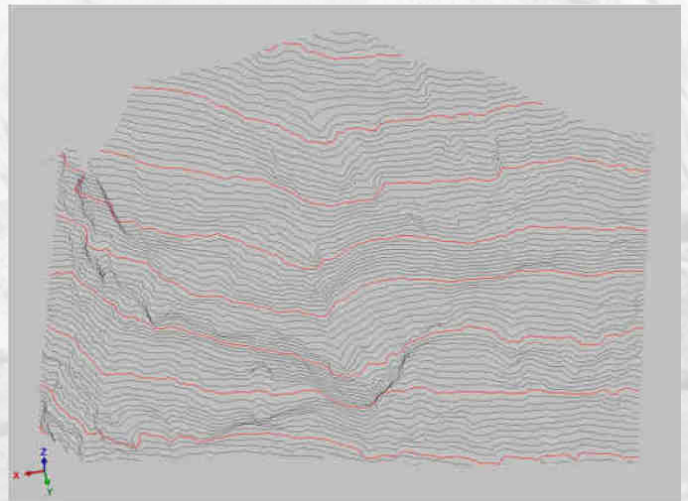
Time needed for data-acquisition	7 hours measuring time during night, image acquisition realized before sunset
Time needed for post processing	1 hour
Acquisition platform	standard surveying tripod

Scanner at work:





Due to the fact, the *RIEGL* LPM-321 enables the user to measure up to 6.000m, the instrument is ideally suited to cover extreme large fields of view from a single scan position. The Eiger-Scan measures more than 5km in horizontal and approx. 2km in vertical direction. The panorama-image (left top) was calculated from the 30 high-resolution images taken by the camera mounted on the LPM-321. These images were also used for texturing the final 3D-model (left bottom).



The contour-lines, showing 10m vertical spacing , were calculated based on the triangulated 3D-model.

The high resolution DEM of the Eiger North Face can be used for visualization-purposes, extraction of 3D-profiles from climbing-routes, or monitoring of the rockface (e.g.: calculation of snow- and ice-thickness and -coverage).

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