Moosfluh Cable Car, Riederalp

Monitoring a large-scale terrain shift with TEDAMOS GNSS

When the new cable car from Riederalp to Moosfluh was built, the construction method had to be adapted to the geologically unstable terrain in the area of the mountain station.

Due to the retreat of the Aletsch glacier, a 150 million cubic metre mass of rock and earth is moving towards the glacier. Geodetic measurements, satellite data and geological field recordings made it possible to predict the terrain shifts in the area of the mountain station over the lifespan of the new cable car: at the time of construction, a horizontal shift of 11 metres and a subsidence of 9 metres were expected in the next 25 years.

The foundations of the mountain station and the last support are designed to allow the subsidence mass to move up to 11 metres in a north-westerly direction. Hydraulic presses can be used to automatically correct any tilting of the mountain station.

GNSS measurements at the mountain station and on the last support allow the position and height of the mountain railway infrastructure to be monitored continuously.

Riederalp, Switzerland
Aletsch Bahnen/PLANAX AG
2015 - ...

Services

- Delivery, installation and commissioning of 3 TEDAMOS GNSS sensors with local partner PLANAX AG
- Automatic monitoring of the mountain station and 1 support in relation to the reference station at the middle station every 4 hours
- Online access to current measurement data on a web-based customer portal.

Technologies

- 3 TEDAMOS GNSS sensors (data communication via LAN or GSM mobile radio)
- TEDAMOS Web, password-protected customer portal with 24/7 access