

# GNSS Monitoring Ropeway Moosfluh

## Monitoring of a large-scale terrain shift with single-frequency GNSS



- 📍 Riederalp, Switzerland
- 👤 Aletsch Bahnen/PLANAX AG
- 🕒 2015 - ...

### Expertise

TEDAMOS

### Automatic Systems

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

During the construction of the new cable car from Riederalp to Moosfluh, 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 rock and earth mass moves in the direction of the glacier. Geodetic surveys, satellite data and geological field surveys made it possible to predict the changes in terrain in the area of the mountain station over the lifetime of the new lift: at the time of construction, a horizontal shift of 11 m and a settlement of 9 m were expected over the next 25 years.

The foundations of the mountain station and the uppermost tower are designed in such a way that they can migrate northwest with the sacking mass of up to 11 m. Hydraulic presses can automatically correct tilting of the top station. The intermediate station has provision for rotational realignment. This means that if the rope axis in the second section changes, the uphill side of the building can be turned to accommodate the change

Permanent GNSS measurements at the mountain station and on the uppermost tower allow permanent monitoring of the position and height of the mountain railway infrastructure.

Further information on the **TEDAMOS** solution can be found at <http://en.tedamos.ch>