

FAST RADIO CONNECTION OVER GREAT DISTANCES



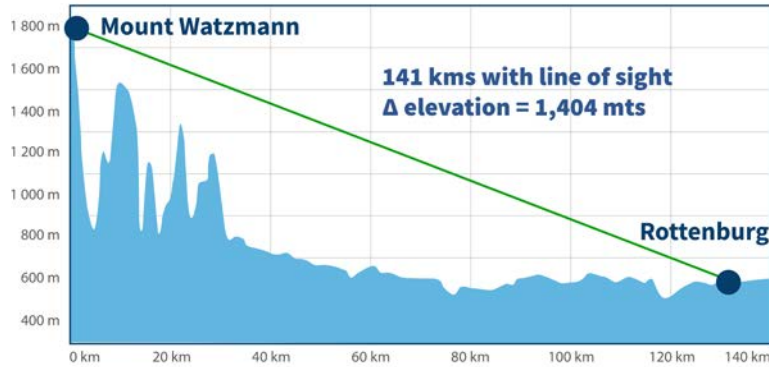
SmartRadioNet
GmbH

SmartRadioNet GmbH has radio network of five main radio stations that serve Southern and Central Bavaria. They use SATEL XPRS Solution (IP radio routers with 150 kHz bandwidth and 4FSK modulation in use) and the connection is excellent: over a distance of 141 kilometres.

Currently SmartRadioNet is operating five independent radio communication networks. In a typical setting, there is no clear line of sight between stations. The maximum distance between network stations is 141 kilometres and the delta of elevation is 1400 metres. The radio networks cover alpine regions and hilly parts of the Bavarian Uplands. FSK is the choice for technology, because this type of modulation helps achieve the needed connectivity.

Mount Watzmann

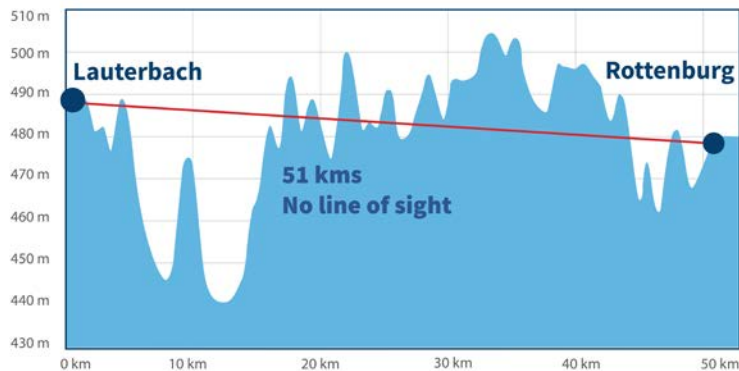
SmartRadioNet's central radio hub is located in alpine setting in Watzmann House in the Bavarian Alps. The coverage of the radio network is superb: Southern and Central Bavaria as well as parts of Austria. The distance between the stations is 141 kilometres. The connection is faultless and it is not affected by weather conditions – what a great achievement!



Radio connection between Watzmann House (1900 meters above sea level) and SmartRadioNet's central radio tower in Rottenburg (500 meters above sea level)

- Remote desktop connection
- VNC connection
- Remote maintenance of all hardware at stations
- Direct voice streaming between stations
- Fuel cell performance readings
- Web cam live video streaming
- Fuel tank levels

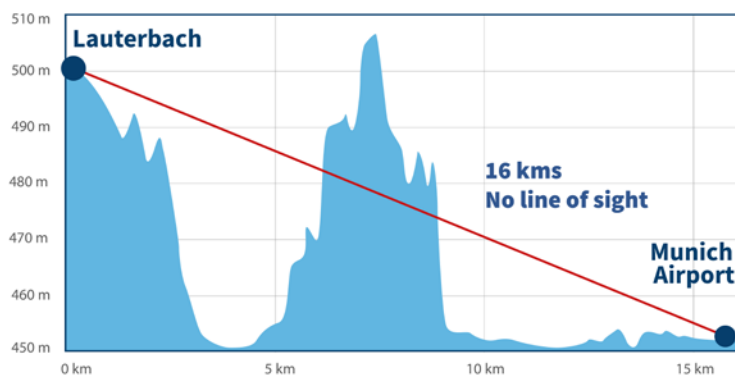
Lauterbach



Radio connection between Water tower in Lauterbach (540 meters above sea level) and SmartRadioNet's central radio tower in Rottenburg (500 meters above sea level). The distance is more than 50 kilometres, and there is no clear line of sight between the stations.

- Flow rate and leakage detection of aircraft refuelling systems
- Water tower levels
- Gas sensors
- Remote desktop connection
- VNC connection
- Remote maintenance of all hardware at stations
- Direct voice streaming between stations

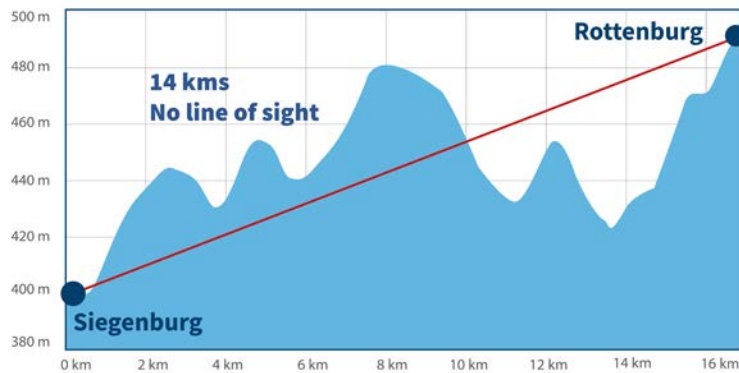
Munich Airport



Radio connection between aircraft refuelling systems at Munich Airport (460 meters above sea level) and water tower in Lauterbach (540 meters above sea level). The distance between the stations is 16 kilometres with no clear line of sight.

- Flow rate and leakage detection of aircraft refuelling systems
- Gas sensors
- Direct voice streaming between stations
- Remote desktop connection
- VNC connection
- Remote maintenance of all hardware at stations

Siegenburg



Radio connection between SmartRadioNet's technical laboratory in Siegenburg (400 meters above sea level) and the central radio tower in Rottenburg (500 meters above sea level). The distance is 14 kilometres with no clear line of sight.

- Flow rate and leakage detection of aircraft refuelling systems
- Gas sensors
- Direct voice streaming between stations
- Remote desktop connection
- VNC connection
- Remote maintenance of all hardware at stations

Robust and reliable

SATEL develops and manufactures radio technology for mission-critical data transfer applications for all circumstances. Technical Director **Gerd Widmann** from SmartRadioNet praises the radio connection to be smooth, robust and totally reliable.

SATEL

Mission-Critical Connectivity