



OTT Hydromet Notes / Success Stories

Precipitation Measurement in High Mountain Area in East Tyrolia

Synergie with OTT and ADCON



Background

The Deferegggen Valley is the middle one of three East Tyrolian high mountain valleys with east-west direction. The neighbouring valleys running parallel are the Puster Valley and the Virgen Valley.

As in this region there is practically no or only very poor network coverage by telephone providers, it had been not possible to install an official measurement station in the Deferegggen Valley so far. From the hydrographical point of view the valley therefore was a "white spot" on the map.

In order to cope in the long term with extreme weather conditions like snow heights up to 3 meters during the winter months and frequent heavy rainfalls during the rest of the year, the location requires the use of only maximum quality materials and technology. Also, solar power supply for the complete system was a basic prerequisite because of the lack of infrastructure.

Today, precipitation data, air temperature, humidity and snow height are monitored and radio transmitted to the Tyrolian regional government in Innsbruck/Austria.

Monitoring Solution

The customer, the hydrography department of the Tyrolian regional government decided to install a combined solution of OTT and Adcon products. Proven OTT quality products like Pluvio2 and the data logger OTT netDL which the customer has been using successfully for many years are now combined with a radio and GPRS solution by Adcon.



Technology at the measurement station

The first step was an on-site visit to find the best possible mounting place for the measurement station and the solar powered relays. Only two days later the data monitoring station including radio transmission and solar power supply was in place and working.

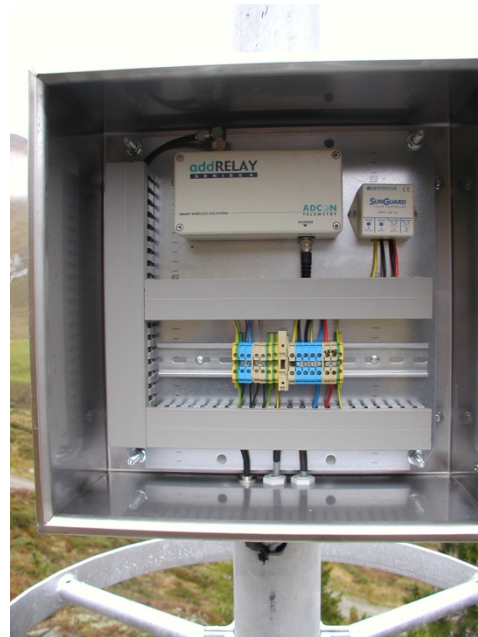
Now the following parameters are measured: precipitation (every minute), air temperature, humidity and snow height (every 15 minutes). A water level sensor will be added in the near future.



Relais station

The data path is as follows:

Sensor (Deferegggen valley/Jagdhausalm) – Data logger (NetDL)/radio (addWave) – Relais (addRelay) – radio/GPRS (RA440) – Base station (Adcon-Klosterneuburg) – AdvantagePro – Export csv –software of customer (Innsbruck)



Technology at the relais station



Measurement data from the station



Control data of the measurement station

Advantages

- Distance that can be bridged without GPRS ~ 10 km, total distance from measurement station to customer's base is 100 km
- Thanks to the relais option of the Adcon radio transmission solution the customer can set up even more measurement stations in the valley
- OTT quality measurement stations can be used even without infrastructure and telephone provider and are able to provide measurement data timely and reliably
- 100% solar powered

Outlook

After the successful completion of the test phase a further expansion of this solution is planned. Similar systems and/or redundant solutions could be decided. If there was a larger number of measuring stations the customer considers to operate his own base station to enable and guarantee complete independence from network providers.

More information on OTT solutions and products: www.ott.com