



SwissMetNet : The MeteoSwiss reference monitoring network

Between 2003 and 2015, MeteoSwiss built a new measurement network – the so-called SwissMetNet – in response to the high demands of meteorological forecasting and climate observation. Prior to that, and due to the history of its development, the Federal Office has maintained several networks for specific observation purposes: for instance, the automatic network ANETZ and its complementary network ENET as well as conventional climate stations that are limited to three observations daily and include “human” observations.

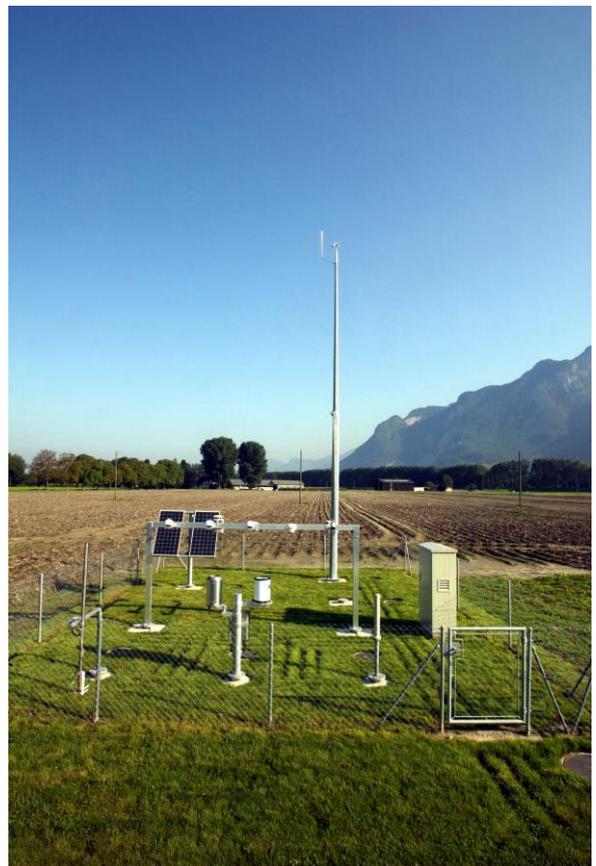
Over the years these different monitoring networks have become obsolete since they no longer correspond to requirements in their field, neither from a technical nor a scientific point of view. This is why MeteoSwiss, together with its customers and partners, has developed a new monitoring concept which encompasses the existing networks in an integrated network. This network is both state-of-the-art and standardized as well as capable of satisfying the growing demands of different user groups.

One of the great challenges SwissMetNet faces is the complex topography of Switzerland; it is especially the alpine regions with their extreme meteorological conditions that require a network with a robust and reliable system, able to withstand storms and frost, based on a modern, tried-and- tested technology and allowing continuous quality control of the monitoring process.

2003: the first SwissMetNet station in Aigle

In 2003 MeteoSwiss constructed the first SwissMetNet station in Aigle. This monitoring station is highly representative for our network, with a complete monitoring programme. It comprises:

- A 10 m high wind mast
- A monitoring bridge 2 m above the ground, fitted among others with sensors for temperature, air humidity and solar radiation measurement
- A precipitation gauge and a sensor for radioactivity
- An electronic box for data acquisition, storage and transmission modules



First SwissMetNet station in Aigle



2015: 157 SwissMetNet stations in Switzerland

The project has been terminated successfully in 2015. Since then SwissMetNet counts a total of 157 automatic stations covering all Switzerland. These stations continuously measure a large number of meteorological parameters that are automatically transmitted every 10 minutes to the MeteoSwiss central database.

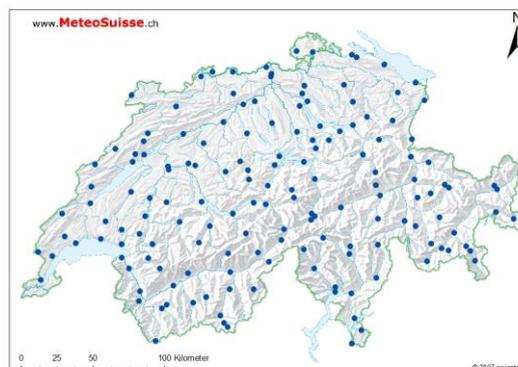
The data pass a series of quality checks, before being made available to the users.

The geographic distribution of the stations has been arranged to cover the complex topography of the entire country, ensuring that its different regional climates are properly represented. MeteoSwiss is thus able to respond optimally to the needs of its large number of customers and partners. In addition, SwissMetNet guarantees the continuity of the long observation series, a prerequisite for the understanding of our climate system and its development.

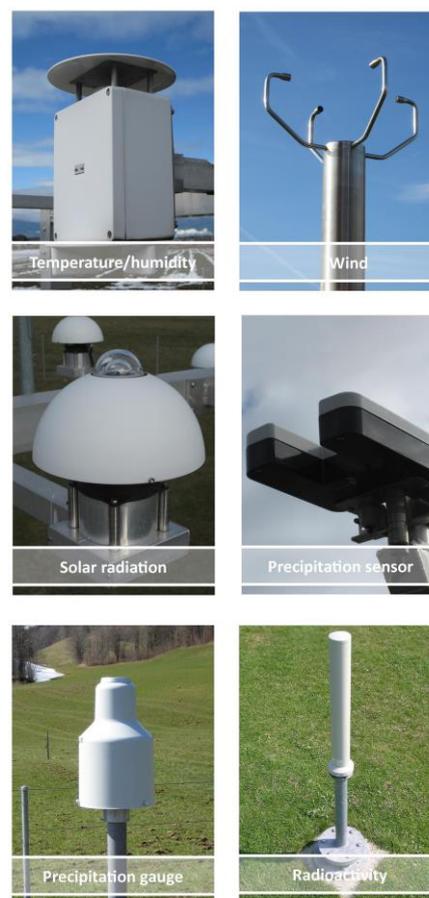
The SwissMetNet monitoring programme

A standard monitoring station of SwissMetNet continually records temperature, air humidity, pressure, solar radiation, precipitation as well as wind speed and direction. The monitoring programme and the sensors installed are adapted to the relevant station type. Some stations are specifically assigned to the observation of climate and its long-term development: they are fitted with specific instruments which can be relied upon to supply dependable data over a very long period of time.

With SwissMetNet, MeteoSwiss is optimizing its measurement systems in line with the needs of its partners and customers from fields as diverse as air traffic, hydrology, agriculture, the power industry, or road maintenance. The measurement program therefore integrates parameters such as soil temperature at different depths, the sunshine duration, visible and infrared radiation, radioactivity, visibility or even cloud cover.



The SwissMetNet network when completed in 2015



Monitoring different parameters at SwissMetNet stations requires a variety of sensors

Additional Information
www.meteoswiss.ch

