

Updating the Italian National Agro-meteorological Network



The **Italian National Agrometeorological Network (RAN)** consists of a set of automatic monitoring stations, located in mainly agricultural areas, whose construction began in 1991 and then continued in the following years with the creation of a wider network, spread throughout the national territory.

Currently the network requires an update of 39 monitoring stations which compose the network. For this reason, a framework agreement was stipulated with CAE, which won the tender and took care of the disposal of the old stations, as well as of the supply, installation and maintenance of the new ones.

SUMMARY

Location: Italy

Conclusion: 2023

Focus: Risk from extreme weather events

Challenges:

- Updating the Italian National Agrometeorological Network (RAN) through the disposal of the old stations and the "turnkey" supply and maintenance of new latest generation ones.

CAE solutions:

- 39 agro-meteorological stations equipped with Compact Plus datalogger and meteorological sensors.
- Virtual machine software platform for data acquisition, display and management
- Services: site survey, installation and maintenance



FEATURES

CAE has won an important tender, launched by **CREA**, relating to the four-year framework agreement for the “turnkey” supply and maintenance of **39 stations of latest technology**, located throughout the Italian national territory, for the acquisition of the data necessary for the reconstruction of meteorological events (temperature, rainfall, relative humidity, etc.) and the agricultural season monitoring.

The aim of the new automatic stations is to provide information on the **climatic trend of the agricultural season** over the medium and long term and to provide forecasts and warnings to better manage and plan crops and agricultural practices according to weather conditions.

CAE will guarantee not only supply but also services: the stations will be maintained thanks to a **preventive and corrective maintenance service**, together with remote maintenance and assistance, and an **H24 availability service**.

The data collected will be acquired on an hourly basis and systematically checked as far as their **correctness, physical and weather/climate consistency**, before being archived in the CREA Cloud web platform and subsequently in the National Agro-meteorological Database of the National Agricultural Information System (SIAN).



COMPOSITION

The object of the contract concerns the “turnkey” supply and maintenance of **39 new agrometeorological stations** in two phases, which will replace the non-functioning control units of the Italian Agrometeorological Network. Furthermore, the **software platform** was implemented on a virtual machine for the acquisition, visualization and management of data coming from the network, making them available on Microsoft's **Azure IoT** platform.

The new CAE agrometeorological stations are powered by a **solar panel rechargeable battery**, equipped with **Compact datalogger** and new sensors such as: radiometer, **THS thermo-hygrometer**, leaf-wetness sensors, anemometer, **PG2R rain gauge**, barometer, thermometers for surface and soil temperatures.

The stations are equipped with a **LTE/UMTS/GPRS modem**, that will send the detected data to the CREA control unit in Rome, on a Cloud web platform, where, thanks to the new software for acquisition and display **via WEB** provided by CAE, it will be possible to perform **continuous and real-time monitoring**, as well as to allow station configuration, **alarm management and data validation**.

