



Croatia: Modernisation of a Countrywide Weather Observation Network

Providing traceable, reliable, high-quality, and timely atmospheric and oceanic data



Overview

The National Weather Observation Network in Croatia, led by the Croatian Meteorological and Hydrological Service (DHMZ), embarked on a strategic project named METMONIC. The project aimed to modernize the weather observation network throughout the country by installing more than 400 automatic surface meteorological stations, meteorological-oceanographic buoys, and remote measurement systems. This modernization initiative sought to provide accurate, reliable, and timely information on atmospheric and oceanic conditions, including the deployment of meteorological radars. Campbell Scientific, in collaboration with Delta Tech—the Campbell Scientific representative in Croatia—played a pivotal role in this project, equipping the network with their state-of-the-art products and providing expert guidance.

The Challenge

One of the key challenges DHMZ faced was finding a suitable data-logging system capable of collecting data from various sensor manufacturers while unifying the entire network. The system needed to be flexible, future-proof, and easily programmable to meet the project's specific requirements. Additionally, the remote locations presented another hurdle, requiring a robust and low-power solution to ensure reliable data collection.

The Solution

DHMZ decided on Campbell Scientific's CR1000X Measurement and Control Datalogger as the ideal choice for its flexibility, ease of programming, and simple installation. This data logger allowed for the seamless integration of different

Case Study Summary

Application

Automatic surface meteorological stations, meteorological-oceanographic buoys, and remote measurement systems

Location

Republic of Croatia

Products Used

CR1000X, SDM-SIO1A, SDM-SIO4A

Participating Organisations

Croatian Meteorological and Hydrological Service (DHMZ), Odašiljači i veze d.o.o.

Measured Parameters

Air temperature and humidity, water level, precipitation, wind speed and direction, barometric pressure, solar radiation, visibility, soil moisture and temperature, cloud base

Related Website

[Modernisation of the National Weather Observation Network in Croatia – METMONIC](#)

Participating Consultant/ Integrator

Delta Tech d.o.o.

sensors from multiple manufacturers, enabling DHMZ to create a unified and efficient network. Furthermore, the expansion modules, such as the SDM-SIO1A and SDM-SIO4A, provided the capability to connect additional sensors and accommodate future expansion. Delta Tech handled the programming and engineering of the system, while installation across the Republic of Croatia was managed by project partner Odašiljači i veze d.o.o.

The Benefits

The METMONIC project brings forth numerous benefits to the National Weather Observation Network in Croatia and its stakeholders. By modernizing the observation network and deploying advanced measurement systems, the project enables continuous monitoring of weather, climate, and climate change. This enhanced monitoring capability empowers early warning systems for hazardous weather events, supports adaptation to climate change and natural disasters, and directly contributes to sustainable development while ensuring the safety of lives and goods.

Through the modernization of all network components—including meteorological, oceanographic, and radar measurements—the project achieves full and homogeneous coverage of both land and territorial sea areas. The availability of comprehensive and calibrated data enhances climate condition analysis and facilitates the development of tailored products to meet the needs of various economic sectors and public activities. Furthermore, the project strengthens human, technical, and scientific capacities; promotes international information exchange; and provides easier access to the DHMZ observation system's archives, databases, and accompanying infrastructure.

The current and archived data collected through the METMONIC project will be made publicly available on the DHMZ website, benefiting research institutions, non-governmental organizations, and interested users. Particularly, it will support research related to climate change and its impact on vulnerable sectors. The project's success lies in its commitment to improving early warning systems, enhancing capacities, fostering sustainable development, and promoting the accessibility and usability of valuable meteorological and climatological data.





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