

## Implementation of the Citizen's observatory of water



CAE, in Joint-Venture with its partners, won a tender launched by the Eastern Alps Hydrographic District, Brenta-Bacchiglione Basin, for the **supply of a hydro-thermo-pluviometric monitoring network**, the relevant maintenance services and the development of a **web and mobile platform**.

Particularly, CAE was responsible of the creation of the hydro-thermo-pluviometric monitoring network providing the data to be published on the platform.

### SUMMARY

**Location:** Basin of the Brenta-Bacchiglione river

**Conclusion:** 2022

**Focus:** Hydraulic and hydrological risk

**Challenges:**

- Develop the citizens' observatory of water applied to the Brenta-Bacchiglione pilot basin in order to increase databases and communication channels during flood events, also through the use of resilience models

**CAE solutions:**

- Automatic hydro-thermal-pluviometric monitoring network
- Web and mobile IT platform for decision support
- Modeling system in Cloud environment

## FEATURES

The creation of the network and the platform will allow the implementation and management of the **Citizen's observatory of water** on the Brenta-Bacchiglione UOM (Unit of Management).

The Citizen's Observatory will have a modular structure and will allow to acquire data from different sources and to homogenize them to make them available to all the modules of the project that will allow their management, processing, validation and publication.

The platform will also integrate **criticality reports** from citizens and Authorities; information related to the management of volunteers and registered users's data will be stored in special sections.

The Administrator will have the ability to configure the system, by integrating external services and regulating access to individual features and sections, as well as by restricting them to particular groups of users.

Mainly, the platform will allow to **coordinate the activities of volunteers and rescuers** and will provide support to citizens and Authorities in managing decisions during **the alert or emergency phases**.



## COMPOSITION

**20 monitoring stations with Mhaster datalogger** were provided. The stations are able to implement **local alert measures** and **send notifications** when preconfigured alert conditions occur.

Particularly, **12 hydrometric stations** equipped with LPR radar sensors and **8 thermo-pluviometric stations** equipped with **THS thermo-hygrometer** and **PG2R heated rain gauges** were implemented. PG2R, despite the heaters, it does not **require mains electric power**, as it is able to operate with the only aid of battery and solar panel.

Moreover, **64 sites** were provided with **hydrometric and nivometric staff gauges**. Numbered cornerstones were provided for each of them. For their positioning, **1" static and differential GPS surveys** were performed and the relative monographs were provided.

The supply of this system has been followed by the **maintenance service**, both in the field and remotely, in order to keep guaranteeing the maximum efficiency of the individual components and of the whole network over time.

The system was completed with **control centre** which will have the task of acquiring and centralizing all the data collected and to allow experts to take appropriate measures in case of emergencies, through the use of special platforms developed by the JV.

