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## 24-26 May: CAE in Geneva

From **22 May to 2 June 2023** at the International **Conference Centre of Geneva (CICG)** 17, rue de Varembé, Geneva, Switzerland, will be held the **Nineteenth World Meteorological Congress (Cg-19)**, the supreme body of the World Meteorological Organization (**WMO**). The World Meteorological Congress is the general assembly of delegates representing all Members (States and Territories) that meets in ordinary sessions once every four years. More information on the meeting venue, CICG, can be found under the section **CICG** of this website.

During this very important Congress, from 24 to 26 May, there will be an **exclusive Exhibition by 28 HMEI (Association of Hydro-Meteorological Equipment Industry) Members**, including CAE.

We are looking forward to introducing you the state-of-the-art **technologies for EWS at booth no 19!** ■



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## Kyrgyzstan: 8 more agro-meteorological stations

The monitoring network of Kyrgyz HydroMet expands its capabilities by adding 8 new agro-meteorological monitoring stations. The Hydro-Meteorological service of Kyrgyzstan continues to invest in the reliable technology provided by CAE, that with this project is expanding the local monitoring network up to 36 weather stations in real time.

Again, the challenge is to provide very reliable and complex stations in a very harsh environment, where the power consumption is high due to the number of sensors and heaters and the backup power system must be properly dimensioned.

Each station will be equipped with **CAE Compact Plus datalogger**, precipitation sensor, air temperature and humidity sensors, pressure sensor ground surface temperature sensor, visibility and current weather sensor, snow depth sensor soil temperature profile sensors, web-camera.

Despite the meteorological sensors, electrical cabinets, power supply and communication system, CAE will provide several ancillary services like survey of places of work, site preparation, installation, connection to electricity, integration to calibration laboratory of Kyrgyzhydromet, registration of equipment in the Kyrgyz State Register,



integration to Data Center of Kyrgyzhydromet and User Training in Russian.

With this last order, there are three supplies to the Central Asian Country in the last three years. To

find out more about the two previous projects relating to hydro-meteorological modernization and the agro-meteorological network, [click here](#). ■





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## 18 new stations for the National Agrometeorological Network (RAN)

CAE, winner of the tender launched by CREA, relating to the four-year framework agreement for the turnkey supply and maintenance of **39 stations**, spread throughout the national territory, for the acquisition of data necessary for the reconstruction of **meteorological events** (temperature, precipitation, relative humidity, etc.) of the **National Agrometeorological Network (RAN)**, signed the second executive contract at the end of December 2022.

The object of this contract concerns the **turnkey supply and maintenance of an additional 18 weather stations**, which will replace as many control units, currently not working, of the National Agrometeorological Network and which will go alongside the 12 provided for by the first executive contract stipulated at the beginning of 2022 (to learn more [click here](#)) of which more than half are already active and functional. In addition, the provision of the **software platform** on a virtual machine for

the **acquisition, viewing and managing of the data** from the network has already been completed, making this data also available on Microsoft's **Azure IoT** platform.

We want to dedicate a few lines to the first station to have been updated under the first contract, as recognised by the **WMO (World Meteorological Organization)** as a **centuries-old station**, located at **Collegio Romano**, headquarters of the Ministry for Cultural Heritage and Activities. It is a very impressive site, in the heart of Rome, located on **Torre Calandrelli**, built by Giuseppe Calandrelli, priest of the Secular Order, astronomer and mathematician, for observations. The station records **data from 1787**, providing one of the oldest meteorological series in the world. From here, declares Stefano Vaccari, Director General of CREA, in the nineteenth century, the first weather forecasts were made, intended as a systematic service of forecasting and warning of



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storms, by the Jesuit Angelo Secchi.

The monitoring network, located throughout the country, will be populated by the brand new CAE stations powered by a **solar panel** rechargeable **battery**, equipped with a **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 will be equipped with a **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**. 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 **agro-meteorological quantities** measured by the **RAN** stations will be used for the **reconstruction of meteorological events** (temperature, rainfall, relative humidity, etc.), as well as for the **monitoring of the agricultural season**. 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). ■





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## 2 new systems for underpasses at risk of flooding are under construction

CAE, as subcontractor of the company Calcestruzzi Corradini S.p.A., is responsible for the construction of two new **early warning systems for underpasses at risk of flooding** for the Province of Reggio Emilia; in particular, one was installed a few days ago for a railway underpass, located in via Europa, in **S. Ilario d'Enza** and the second one, located in via Rinaldi, in **Reggio Emilia**, will be installed soon. The two systems have the same structure and operating characteristics: they are fully automatic systems, which have the objective of constantly monitoring the underpasses to instantly detect the possible presence and accumulation of water in the subway. Each system consists of a station with **CompactPlus datalogger**, to which **three piezometric level sensors** will be connected, to

be located inside the underpass, to measure if a critical threshold of water on the road surface has been exceeded. The presence of these three sensors will activate the alert state **when the level threshold set for at least two of them is exceeded**, in order to **minimise the risk of false alarms**. Each system will also be equipped with **two traffic lights**, which are activated when the thresholds are exceeded, with **underpass flood danger warning panels** and with a **high-definition camera** to visually monitor the situation of the underpass by taking and sending photos to the operating centre. In "peacetime", sending is scheduled, but the frequency of the changes increases in the face of changes of scenario; therefore, in critical moments, operators will be able to remotely keep an eye



on the alert situation. In addition, depending on the status of the system at a given time, **alarm/pre-alarm/attention signals may be generated and sent via SMS**, to people in charge of managing emergencies including, for example, the Mu-

nicipality, Fire Brigade, Civil Protection, Road junction management bodies.

The acquisition and visualisation software provided by CAE can already be configured appropriately to also manage **data on the operation of water lifting systems (electric pumps)** that can be connected to the **CompactPlus dataloggers**.

In order to access station data, it will be sufficient for operators to access the datalogger from PC or mobile devices through any browser.

The Province of Reggio Emilia, which is not at its first experience with installations of this type, is confirmed as an institution that is very attentive to the issue of prevention and that invests in the safety of its population. ■





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## Sardinia: existing microwave backbone used to expand regional hydrometric network

The Regional Agency for the Protection of the Environment of Sardinia has launched interventions for the re-engineering and strengthening of the **monitoring of hydro-pluviometric parameters** throughout the regional territory in order to have advanced, evolved and widespread tools, for the effective support to the **forecasting, prevention and management** of particularly **intense weather events** and with often catastrophic consequences.

CAE has been awarded the tender for the **expansion of the hydrometric detection network of some watercourses in the Sardinia Region**, which involves the installation of **29 new stations** for hydrometric remote sensing, of which 3 in dams and 26 in the riverbed and the construction of a **data transmission system** up to the planned acquisition centres.

The aim of the design is the evolutionary expansion of the regional hydrometric detection system of the Sardinia Region. A very important role in

this context is covered by the “Regional Radio Network” RRR, a **high-speed microwave backbone**, built over the years by the Forestry Corps and the Civil Protection, currently managed by the latter which will also be exploited for this project where the use of the **DMR digital standard system** is foreseen. The network thus designed will allow to implement all the integrations or updates that will be necessary for future needs in terms of hydro-meteorological monitoring.

CAE has already successfully implemented **environmental monitoring networks for civil protection purposes** based on **DMR radio equipment**. In this case, unlike those already described, the frequencies in the VHF band will be used. The experience gained with this technology is an important guarantee of reliability and sustainability of the project, at the end of which there are also substantial training sessions for the technical and operational staff of the client. ■





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Managing Editor: Guido Bernardi

Editor-in-Chief: Enrico Paolini

Editorial Staff: Alberto Bertocco, Laura Ruffilli, Virginia Samorini

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