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CAE in the world

This issue is dedicated to talking about the role that **CAE** plays at an international level. A 100% **Italian** company that for **45 years** has invested in **innovation** to create a safer world, always focusing on **quality**, an essential element to provide **robust and reliable systems**, able to cope with extreme events guaranteeing **percentages of data even in emergencies greater than 99%**.

CAE has also been working abroad for years, offering both turn-key systems and product supplies, all designed to meet the needs of opening and interoperability. There are 27 countries that have chosen CAE technology and in the last 3 years more than 600 stations have been sold abroad. The main area remains **hydrometeorological** monitoring, but **agrometeorological** systems for the monitoring of **landslides, water quality, dams, solar parks** or those for the breeding of mussels at sea, etc. will also definitely be discussed.

For years, CAE has been working successfully in **Vietnam**, its second market, where to date it has installed a total of 345 automatic monitoring stations and numerous updates are underway with the latest technological innovations. Also with regard to systems, a number of important projects carried out concern the hydrometeorological networks of: **Serbia**, with approximately 90 stations, the **Maldives**, 30, and South America, 32 stations.

Instead with regard to product supply, there are many countries that have decided to focus on the quality of CAE products and solutions. Thanks to a dense network of international partners, CAE is able to guarantee customer satisfaction, whether it's **small supplies**, such as those in Sierra Leone and Mozambique related to the production of solar energy and the agrometeorological world, **or large numbers** such as the 244 stations in Pakistan (to find out more [click here](#)).

The agrometeo theme that is evident from the case in **Sier-**



ra Leone - explored in the CAE Magazine no. 24 (for details [click here](#)) - also returns talking about **Kyrgyzstan**, where innovation goes beyond the standard formats regulated by the WMO. After the first 23 automatic weather stations (**AWS**), another 4 were installed for the Hydrometeorological Agency ([Kyrgyzhydromet](#)) for the extension of the Agrometeorological Observation Network in the Batken Region.

We conclude by underlining the importance of knowing how to work to ensure the correct functioning of the products even at sites subjected to **extreme weather conditions**, at **high altitudes**,

with very cold or instead very high temperatures, at **sites** often **impervious and logistically complex** to reach such as peaks, viaducts, offshore platforms, landslide slopes etc. In this regard it is necessary to mention **Tajikistan** with the early warning system for Lake Sarez, at 3260 m above sea level, reachable only by helicopter and at certain times of the year (to learn more [click here](#)) and of course the installations on **K2**, the wild mountain, at almost 5,000 m above sea level, which we will definitely be talking about in this issue.

Enjoy the read! ■

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CAE technology returns to K2

K2, short for **Karakorum 2**, is the second highest peak on Earth after Everest, at 8,611 metres above sea level. It is the hardest to climb eight thousand metre mountain and for this reason is known as “wild mountain”, as well as “the mountain of the Italians” who were the first to reach the summit.

It was 2014 when **CAE technology** was first installed on **K2**. “Assembled and working”. These are the words that, starting from the base camp, at almost **5,000 meters above sea level**, and bouncing from one satellite to another until reaching Italy, ended up at the CAE headquarters proclaiming the news of the installation of the automatic weather stations (AWS) designed and built by the Bologna-based company precisely for expeditions on the “wild mountain”.

8 years later **Ev-K2-CNR** is again using **CAE technology to upgrade 3 automatic weather stations (AWS) located in the Karakorum region**.

Ev-K2-CNR is a body with twenty-five years of experience in the implementation of scientific and technological research projects at high altitudes, distinguishing itself for the specificity and excellence of the results achieved in the international scientific investigation landscape. Its activity is aimed at promoting the sustainable development of mountain areas and at safeguarding fragile high altitude ecosystems.

Each station will be equipped with a **CAEtech Compact Plus** datalogger and will monitor the **main meteorological parameters**: air temperature, relative humidity, wind speed and direction, solar irradiation, net irradiation, atmospheric pressure, snow level, amount of precipitation and intensity of the same, primary data for the study of the natural phenomenon in such a harsh environment. The sensors used include: **THS thermo-hygrometer**, **PG2R rain gauge**, **ULM30/N snow depth sensor** and **DV20-VV20 anemometer**. ■



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Vietnam: technological modernisation of networks underway

Starting in **2008**, CAE began working in **Vietnam**, a country experiencing high growth, with a configuration similar to those of Italy, comparable in size and for the most part surrounded by the sea, subject to extreme natural phenomena due to the country's monsoon tropical climate. Given the high population density and the trend that climate change highlights for the near future, the country is engaged in numerous projects for the mitigation of **hydrogeological and flood risk**.

The various interventions underway include those aimed at improving the **real-time monitoring and forecasting capabilities of rain events** and of the consequent river **floods**, essential information to be able to intervene promptly and to safeguard hu-

man lives in the event of an emergency. The Vietnamese authorities are aware of this, which is why they have been investing in technology for years to mitigate damage resulting from extreme events, installing automatic real-time monitoring networks. In recent years there have been several important projects that together have led to the installation of **over 345 automatic monitoring stations (meteorological, rainfall, hydrometric, oceanographic...)** based on CAE technology and 37 data centres equipped with the software suite and the related radio communication systems. Below is a summary of some of the main projects carried out in Vietnam financed by the World Bank and by the Italian Development Cooperation:





- THE HYDRO-METEOROLOGICAL MONITORING NETWORK OF THE CENTRAL PROVINCES;
- THE HYDRO-METEOROLOGICAL MONITORING NETWORK IN THE MEKONG RIVER DELTA;
- REAL-TIME FLOW MEASUREMENTS AND NEW MONITORING STATIONS TO PREDICT AND MANAGE FLOODS IN THE CENTRAL HIGHLANDS;
- FLOOD EARLY WARNING AND FORECASTING SYSTEM IN THE CENTRAL AND SOUTHERN PROVINCES OF VIETNAM.

To date, as part of the annual maintenance service of the Southern Regional Hydro Meteorological Centre (Ho Chi Minh) and of the Mid Central Hydro-Meteorological Centre (Da Nang), several



technological update projects are underway which will allow replacement of the SPM20 stations, the CAE's flagship model up to ten years ago, with the most **innovative and high-performance CAEtech Compact dataloggers**: programmable, user-friendly and powerful thanks also to the opening of the software used and to the use of standard protocols that guarantee **full and native compatibility with the existing system**. These new technologies can be easily integrated into the existing network, **preserving all existing support infrastructures**.

The well-established Vietnamese networks will continue to monitor the territory relentlessly, using the latest technologies available on the market. ■



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Africa: the quality of "Made in Italy" for the energy and agrometeorological world

Today the issue of energy is hotter than ever, the **quality of solar radiation** data is fundamental in the field of **energy** and errors of a few percentage points can have a significant impact on the return on investment.

Africa, with its temperatures and its particular geographical location, is one of the most suitable continents for the **production of solar energy** and it is precisely for this reason that it is equipped with several **photovoltaic systems**, including that of **Balama**, in Mozambique, which will soon be equipped with **2 CAE automatic weather stations (AWS)**, chosen by one of our local partners to be able to guarantee a very high quality of the data.

The stations provided by CAE will include instruments for the measurement of **solar radiation**

and will be useful for monitoring the quality of production, to monitor the efficiency of the systems installed and to predict what the energy supplies by the system may be in the context of different weather conditions and therefore sky cover.

The one in Mozambique is not the only recent African supply, in fact an **agrometeorological station** and a **PG4i**, the innovative CAEtech stand-alone rain gauge, have recently been successfully installed in **Sierra Leone**. A product that lends itself well to providing **quality precipitation data**, with a limited investment. CAE technology was chosen by WAGTECH to participate in a project funded by **Action Against Hunger**, an association whose main objective is to create a better way of tackling hunger, so they are constantly seeking more effective



solutions for a change in the long term.

The supply is part of a **food safety programme** and addresses the root causes of hunger starting from the problems of production, access and income and is part of a wide range of activities aimed at supporting and **strengthening agricultural production** and at improving access to sustainable food sources. The data provided will therefore be useful for the development of local agriculture

and in a country where 63% of people experience food problems, this can only be an important step forward.

As an African saying goes: if you want to go fast run alone, if you want to go far run together with someone else. CAE will continue to work alongside those like us who believe in the importance of quality, to reach every part of the world or in this case Africa. ■



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Kyrgyzstan: agrometeorological network and standard WMO formats



Let's talk about Kyrgyzstan again, after having won the project for the "Supply of hydrological monitoring networks, glaciers, roads and large cities with automatic weather stations (AWS)" of the Hydro-meteorological Agency of the Ministry of Emergencies of the Republic of Kyrgyzstan ([Kyrgyzhydromet](#)), which involved the supply of **23 stations** (for the complete project [click here](#)), CAE is returning to work in Kyrgyzstan for the [Kyrgyzhydromet](#), but this time for the agro-meteorological network. Now let's look at the supply of 4 CAE automatic weather stations (AWS) for the extension of the Agrometeorological Observation Network in the Batken Region. The supply is part of the project "Strengthening the climate resilience of the Batken province in the Kyrgyz Republic through the introduction of smart irrigation measures for the clima-

te and protection from sludge flows".

In particular, the order involves:

- the supply of system components, accompanied by all the relevant documentation;
- inspections at the installation sites and implementation of the related projects;
- installation;
- transfer and integration of data into the customer's central database;
- testing and commissioning;
- warranty and technical support.

The stations, depending on the thresholds defined by the customer, work in different operating modes including "**storm**" which involves the sending of **alert messages** related to the state of the station, both in relation to weather parameters, such as **wind speed**, and to diagnostics. Upon the acti-

vation of an alarm scenario, the **Compact** line data-loggers can send messages with any technology, including through the use of the standard MeteoXML format, regulated by the WMO, to the designated FTP server.

It's a privilege to return to work in Kyrgyzstan, fol-

lowing the previous contract relating to the Hydro-meteorological Modernisation Project of Central Asia (for details [click here](#)) and to be part of these important international projects where technological innovation and skills lead to the creation of the highest quality, open and standard systems ■.



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CAE wants to meet you at the Natural Disasters Expo Asia

On 7th & 8th December, we'll be at the Singapore EXPO to exhibit at this year's edition of the incredible Natural Disaster Expo Asia!

We'll be on stand n.643, come to see and get the first hands-on experience of our latest measurement and analysis technologies for **multi-hazard monitoring and early warning**, among them:

- **COMPACT** datalogger: CAE's latest datalogger characterized by an embedded **Linux** operating system and an interactive **web server** on board. Launched in 2019, the dataloggers of the Compact line has already achieved **great success** not only in Italy but also around the world (Peru, Kyrgyzstan,...);
- **PG4i** stand-alone rain gauge: a "Made in Italy" solution appreciated all over the world. PG4i combines an accurate measurement of rain totals and intensity with integrated datalogger and mobile modem. It is a professional all-in-one rain measurement system;
- **AEGIS** new web-based platform by CAE: a powerful decision making support tool for emergencies, developed on an open-source architecture, which combines in real time the updated data from field sensors in a geo-spatial display.

That's only some of our latest developments. We will be at your complete disposal for the length of the show to provide information, dedicated meetings, specific studies, solutions and proposals, always in the name of innovation for the protection of the environment and, especially, of human lives.



Register for your free ticket and you'll then receive your show guide in the post prior to the show. That way, you can find us before you even arrive and save loads of time on the day! The show guide will also give you details on this year's outstanding lineup of 100 speakers, masterclasses, 300 exhibitors, full show highlights and even another free industry-leading show running directly alongside. Follow [this link](#) and grab your ticket now: we look forward to seeing you at **stand n. 643!**

Alberto Bertocco, CAE International Account Manager, will be among the speakers, presenting the most advanced solutions available on the market, Made in Italy technology appreciated all over the world.

In order to better organize the event and avoid crowded gatherings, schedule a meeting with us by sending an email to alberto.bertocco@cae.it. For each appointment, we will be happy to offer you a special gift!

For any information drop us an email at sales@cae.it ■

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