innovation for a safer world.

CAE MAGAZINE
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INDEX

Event postponed!

It is with great disappointment that we announce that the 2021 staging of **Meteorological Technology World Expo** is being put back due to the pandemic and limitations on international travel. See you in **Paris in 2022**.

BACK TO INDEX

Wildfire monitoring technology

Fires are one of the most important causes of environmental alteration and deterioration of the territory; they have serious consequences for the natural balance and require long periods of time for the recovery of the forest and environmental ecosystem. Fires also increase the phenomena of slope instability, causing the sliding and removal of the superficial soil layer in the event of intense rains. For this reason, CAE suggests the use of a **wildfire monitoring and early warning system**. This system aims at supporting the decision-making process used by the various bodies operating in the field of **Civil Defense**. In particular, it is instrumental to protect the population and can guarantee a timely and effective intervention by the authorities responsible for extinguishing the fires.

The infrastructure is based on the MHAS (**Multi-Hazard System**) platform, a complete and advanced multi-hazard tool. This system is able to:

- **prevent fires** by **calculating the risk indices of fire ignition;**
- **spot fires** through **continuous visual monitoring** of the area and the use of high zoom cameras that can also be controlled remotely;
- **early detect the ignition of a fire outbreak;**
- **manage fire extinguishing operations in an emergency situation,** integrating **forecasting**

models that allow to represent the possible spread of fire on the territory on geo-referenced maps.

The **wildfire monitoring and early warning systems** are composed of **automatic lookout stations** with integrated **sensors** for measuring the main **meteorological parameters**, as well as a combination of **thermal imaging cameras**, **video cameras** and **software tools** to be used in a **control** and supervision **centre**.

The operating room stations allow the operator to be aware of dangerous situations and detect the presence of a fire in the area. The system, which is based on **Fi.De.Sys 2 web-based software**, analyses the images of the **lookout stations**, detects fire events and alerts the users. Thanks to advanced image processing techniques, the system can detect false alarms induced by environmental disturbances and by possible sources originating from prefigured human settlements.

The **wildfire monitoring and early warning system** collects and provides useful information to decide on the methods of intervention, combining the management actions taken during emergency situations that provide for the deployment of vehicles and personnel in the territory or, in case of high risk, implementing preventive interventions aimed at reducing the risk itself.

For further information: ARIF, Puglia Region ■

BACK TO INDEX

Huge success for the Compact datalogger line

After being disclosed in preview in spring 2019, during the "The National Alert System" event (summarized in CAE Magazine n.10), the **Compact datalogger line** has been installed in the field for the first time in the first half of 2020, during the pandemics. To this day, after a year, **over 800 pieces among different configurations** have been sold in Italy and around the world (Peru, Region of Lazio, Region of Umbria, Kyrgyzstan, Region of Piedmont...).

To optimize production work, speeding it up and increasing product reliability by reducing the risk of errors, CAE has invested in innovative equipment for testing the electronic boards of the new dataloggers.

This new facility is very important for the correct testing of the CompactPlus model, which is characterized by over 50 inputs/outputs, thus allowing a **saving of about 70% of the testing and calibration time** compared to the previous CAE datalogger models.

Why choose the Compact datalogger line? Because they are technologically advanced, **scalable** and compact products that guarantee the high standards of quality and reliability typical of **CAEtech** products.

Compact, **CompactPlus** and **Plus** lines are designed to be **easy to use**, as well as easily integrated into existing systems thanks to their standard interfaces and their small size. These features, together with particularly low energy **consumption**, allow a

high **flexibility** even from an installation point of view.

The **Linux embedded** operating system guarantees high flexibility and allows the use of extremely advanced open source programming languages. For example, the **Python** scripting language helps the user customizing the dataloggers, according its different needs. Furthermore, they are equipped with a powerful on-board **web server** that allows maximum interoperability.

Despite the global crisis of semiconductors, which is not expected to be resolved in the short term, CAE is ready to deal with all the orders in its portfolio and to face any challenge that may arise.

To learn more about the product specifications click here.

BACK TO INDEX

Tajikistan – Sarez Lake: project presented to the authorities and green light to the civil work

A **delegation of CAE representatives** has recently visited **Tajikistan** within the framework of the **SAREZ LAKE MONITORING and EARLY WARNING SYSTEMS** project, previously introduced on this magazine. As the contract is under full implementation, the CAE delegates and its local partner have carried out a series of technical and operating meetings with the Tajik Committee of Emergency Situations and Civil Defense, the beneficiary authority responsible for the project execution, to fine tune logistics, installations and training procedures.

On July 2nd, the project has been illustrated to local and international authorities and to the press during an official presentation at the headquarters of theCommittee of Emergency Situations in Dushanbe. Representatives of renowned institutions such as the **Asian Development Bank** (main financer of the project), the **United Nations Development Program**, the **World Bank**, the **European Union** and the **Swiss Cooperation Office** attended the event which witnessed contributions from:

- Mr. Rustam Nazarzoda, Head of the Committee of Emergency Situations;
- Mrs. Shanny Campbell, ADB Country Director for Tajikistan;
- Mrs. Firuza Tursunzoda, Project Manager, Na-

tional Disaster Risk Management Project;

- Mr. Federico Pasquini, CAE Director of International Sales.

Mr. Pasquini presentation illustrated the composition and purpose of the system, walking the audience through the different components and instruments.

The following week the delegation, led by CAE project manager Simone Colonnelli, transferred to the lake to conduct surveys of the sites where

the instrumentation will be installed and oversee the start of civil works. Sarez Lake, which is located on the altitude of **3260 m** above the sea level among the mountains in Bartang valley, Pamir, can only be reached by helicopter or by an 8-hour trekking through the valley.

The outcome of the recon has allowed to define the exact location and composition of the different monitoring sites, adjusting it to the challenging environment of Sarez lake, which for **the most part of the year features extremely low temperatures and few hours of daylight, while being not covered by any communication network other than satellite.**

The completion of the project, which is considered of strategic importance for the country of Tajikistan, is expected over the course of the summer. ■


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BACK TO INDEX

"Industry 4.0" investments and reliability tests in extreme conditions

The climatic chamber, or chamber for simulated environmental tests, is a tool used to create and simulate the desired environments in different temperature and humidity conditions. The use of this tool is essential for CAE to carry out accelerated testing on the ruggedness of its sensors and control units, in order to study their performance both in extreme conditions and in case of rapid changes in temperature or humidity.

CAE has purchased a new climatic chamber to update its facility for trials, tests and calibrations on its products. The new equipment, as with the ones previously in use, is produced by Angelantoni Test Technologies, a world-leader in this sector since 1952 and a reliable supplier of our company for over 30 years.

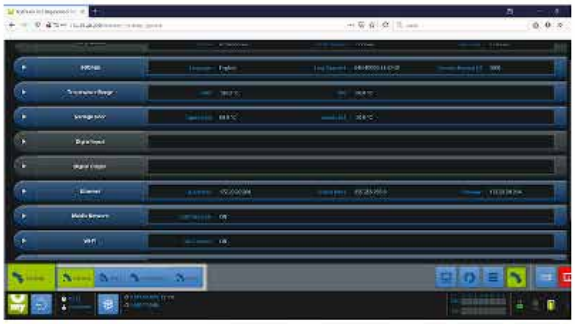
The model chosen is the ACS branded Discovery DM 1200 C ES chamber. With 1200 litres of internal capacity it is among the largest chambers on the market and allows CAE to test its sensors and instrumentation in their entirety. The volume of this new climatic chamber is equivalent to two of the chambers previously used by CAE; therefore, their replacement also allows energy savings and, consequently, a positive impact on environment.

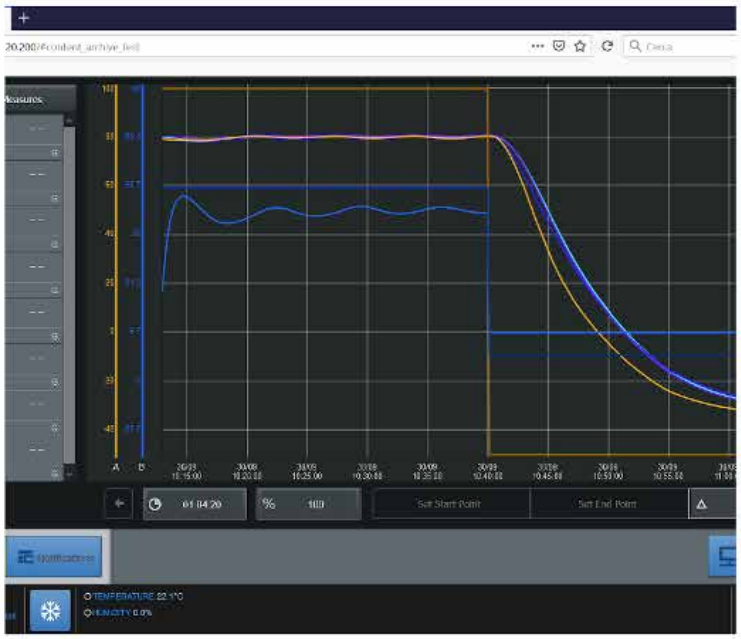
The "ES" series of Discovery chambers allows for higher performance than its basic version, while maintaining the same overall dimensions and volumes. Other **excellences** of this facility are the **temperature range extended** to -75°C/+180°C

and the humidity range extended to 10% / 98% between 10°C and 95°C, as well as its **high temperature stability** (between ±0.1°C and ±0.3°C) and relative humidity (between ±1% and ±3%). Another distinguishing feature is its cooling and heating **speed**, which is 5°C per minute in the descending phase and 6°C per minute in the ascending phase, therefore being extremely **fast**.

This essential aspect allows the equipment to conduct tests on elements where high reliability is required over time, in addition to all the tests on which CAE has developed ZBT - Zero Breakdown Technology, a distinguishing feature of all CAE Tech products.

The climatic chamber is also accessible and fully controllable remotely thanks to an integrated management system, also via web browser, via dedicated wireless network, via LAN and via cellular network. Moreover, the chamber is equipped with a PLC managing all the functions and safety blocks, allowing CAE to carry out trials and tests without the need for the physical presence of the operator, a not insignificant factor especially in this delicate period. And thanks to these characteristics, the investment was made within the framework of the National Plan for Industry 4.0.■





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