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## Editorial:

*We start 2017 with the third issue of the international version of CAE Magazine.*

*First of all, this issue will tell about the 35 CAE rain gauges traveling to Argentina, towards the Buenos Aires province, where they will be featured into a new monitoring network for drought and for flood alert.*

*A considerable space will be then dedicated to technology, an everlasting element of pride for our company which since 1977 has been proposing innovative solutions ahead of its time. In particular, this issue will present the features of the new ULM30, available as hydrometer and as ultrasonic snow gauge, and further consideration will be given to the detail of the direct access function from the browser of Mhaster, the datalogger that for the past three years has allowed CAE to distinguish itself from all competitors.*

*Finally, it should be recalled that from 7 to 13 December the 15th session of the WMO's Commission for Hydrology (CHy) took place in Rome, and simultaneously, in the same premises, CAE took part on the ongoing HydroExpoRome exhibition.*

*Enjoy your read.*



## Traveling to Buenos Aires

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35 rain gauges manufactured by CAE are currently on the way to Buenos Aires. These sensors will be implemented into the new hydro-meteorological monitoring network for flood early warning and drought monitoring.

The site is the South Creeks sub-basin of the Salado River basin, which consists in an area of 39.324 km<sup>2</sup> located in the Chaco-Pampean plains of Buenos Aires province. This basin contributes with 29% of the Gross Domestic Product of the province, where agriculture and cattle production are the main economic activities. The basin is characterized by creeks coming down the hills and transitioning through the plain, which is therefore subject to waterlogging during

prolonged periods of time, with a negative impact on the agriculture production.

For this reason a main network with a set of sub-networks has been designed with a dual purpose: early flood warning to nearby settlements and monitoring of drought events, while helping to improve water management.

Design and development of this network are the result of the financing coming from the National Agency for Research and Technological Development and a strategic partnership between the Water Resources Management Center and a local company which has developed some of the components itself and integrated some others. Every design

choice and realization principle has been oriented to making a monitoring network able to withstand extreme environmental conditions, using sensors which comply with the WMO requirements.

The network features stations which are modular and adaptive to the site's monitoring requirements; in particular, regarding the hydrometeorological stations, the company has chosen CAE's rain gauge PMB25 with a 1000 cm<sup>2</sup> collecting area, it being a reliable, robust and precise tool.

Due to its accuracy and speed in determining the extent of correct rain intensity, recorded and transmitted to the minute, this sensor is particularly suitable for measuring sudden and

intense events. Basically, the PMB25 is the recommended sensor for situations where you fear flash-floods.

CAE is pleased to be able to support with its products the creation of a network with the above purposes, for a customer who recognizes quality as the essential element to ensure the safety of the population. ■

## Photogallery



### ULM30: CAEtech's new ultrasonic level sensor

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ULM30 is an ultrasonic level sensor, equipped with its own electronics, with microprocessor and storage memory, available in snow gauge version and in hydrometer version.

The level measurement is done by issuing a series of ultrasonic pulses followed by an analysis of the received

echo. The sensor provides the distance from the target surface, offsetting the data based on the air temperature, provided by the built-in thermometer. The quality of the measurement of the latter parameter is guaranteed by the design of the containment structure, already tested with the THS, designed to prevent

solar radiation, direct or indirect, or other external phenomena from influencing the measurement of the air temperature.

The sensor has a real time clock and a permanent storage memory and communicates with other modules via: Caenet bus, SDI-12 standard protocol on

RS485 and 4-20 mA analogue output.

ULM30 has the duty and the honor of being one of the first CAEtech products, and for this reason is:

- able to interface with all common data logger on the market;
- extremely robust,

thanks to the compact design, the absence of contact with the target surface and the absence of moving mechanical parts;

- characterised by low consumption: the sensor is normally in Stand-by mode, from which it exits only when strictly necessary;

- characterised by high

reliability thanks to implementation of Zero Breakdown Technology (ZBT) which, in this particular case, corresponds to the presence of various internal diagnostic elements for verification:

- of battery voltage,

- of internal temperature conditions,

- of the correct inclination,

- of the quality of the measurement acquired.

Moreover:

- the sampling intervals for level and temperature measurement can be programmed by the user:

- possibility of remote control via a wireless module, such as ACTI-Link, thus eliminating all problems due to cable connection;

- the sensor software is reprogrammable, also remotely, without the need to replace any components. ■

## Photogallery





## Direct access to the automatic station via Internet browser: easiness of use and openness for every operator

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Only Linux stands between the sensor and the operator that manages the automatic station from his office, his computer or his mobile device. Direct access via any Internet browser to the web server running on the station on the field, published on the web through a simple GPRS device or any other standard IP communication medium. This is one of the many possibilities offered by the Mhaster station thanks to his Open heart, the module in which Linux OS operates.

This new direct access

from browser feature is designed for the operators who - wanting to equip themselves with fewer automatic stations and having no need to continuously feed a database with real-time data - want to be able to access and manage their monitoring equipment by remote without the IT software and hardware investments needed for the efficient management of bigger systems.

By logging in with a username and password to the website published by the Mhaster automatic station,

the operator can access data detected by the sensor in the last few days, check the diagnostic and manage all the main settings. It is also possible to make some simple and immediate processing of the data and download it in standard formats (eg. CSV, also compatible with Excel), so as to study them at will on anyone's own computer.

This feature, which can be also used on a daily basis, does not affect the energy balance of the Mhaster station, which continues to be fully and safely sup-

plied through solar panels and batteries.

Always for the purpose of maintaining safety and reliability in data collection, this feature is also compatible with the insertion of the Mhaster station in radio broadcasting networks, thus becoming a useful and practical redundancy for real-time data displays during emergencies, working at the service of the Civil Protection authorities. ■



## 15th session of the WMO's Commission for Hydrology & HydroExpoRome 2016

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The 15th session of the Commission for Hydrology (CHy) of WMO (World Meteorological Organization) took place in Rome from 7 to 13 December 2016. The Commission addresses basic hydrological observation networks, water resources assessment, flood forecasting and warning, flood and drought management, adaptability to climate variability and change and promotes the exchange of technology and capacity building. The outcomes of CHy deliberations provide guidance

to WMO Member countries and WMO Secretariat for the implementation of the Hydrology and Water Resources Programme.

The event, which reunited the international meteorological and hydrological community in Rome, was a valuable opportunity to highlight the role and peculiarities of Italy in this field. Italy's strength lies in technological progress and in the close collaboration between the meteorological and hydrological services and the Civil Protection

authorities, but also the presence in Italy of industrial flagships in the field.

During the general meeting of the Committee it was held the election of its governing bodies. Among the excellent results obtained by Italy there is the appointment of Eng. Silvano Pecora, current Head of Hydrography and Hydrology Area at ARPAE Emilia Romagna. Eng. Pecora will serve as Vice President of the Commission itself, in support of confirmed President Harry Lins (US).

[Click here](#) to see all the videos from the session.

At the same time, and in the same premises as the CHy meeting, took place HydroExpoRome, an exhibition of instruments and equipment for meteorology and hydrology to which CAE has taken part, considering it an important showcase given the audience of field experts who were in attendance. ■

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