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The winners of the 2nd Edition of the Paolo Bernardi Prize have been selected

As announced, the results of the winning project of the first edition of the Paolo Bernardi Prize were presented by Simone Noto and Nicola Durighetto as part of the Hydrology Days held from 8 to 10 September at the **Politecnico di Bari**. The winners of this second edition were also announced: Francesco Alongi, from the University of Palermo, and Giulia Evangelista, from the University of Turin, for the project entitled: "PIX2PEAKS - Velocity using imagery to support run-off time estimation in unmonitored hydrographic basin".

Alongi and Evangelista's project proposes the use of innovative optical techniques to **measure the velocities of watercourses during floods and improve run-off time estimation**. Understanding this parameter precisely means **better prediction of flood onset and intensity, an important step for the hydraulic safety in unmonitored areas**.

Estimating flood hydrograms in basins without instrumentation





is a long-standing challenge for applied hydrology. One of the difficulties lies in determining the critical time-scale for the hydrological response of the basin, such as the run-off time. There are no robust, hydraulically based and commonly accepted methods to determine it. The PIX2PEAKS project aims to fill this gap by experimentally validating recently proposed scaling relationships for mean flow velocities within a small Sicilian basin, and

evaluating their potential to improve run-off time estimates. The expected result is to provide concrete guidance to both the scientific community and professionals on estimating the run-off time in small basins, based on data such as observed flow velocities, and applying an experimental technique traditionally reserved for purely hydraulic applications.

Congratulations to the winners, and good work! In **the video**, the comment of the Chairman of CAE S.p.A. Guido Bernardi. ■



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Buenos Aires, Argentina: network upgrade and training for Hydrological Institute technicians

In the last week of August, as part of the “*Modernisation of the Blue Flood Alert and Implementation of Artificial Intelligence for Risk Assessment*” project, **technicians at the Instituto de Hidrología de Llanura de Azul (IHLLA) in Buenos Aires, Argentina, took part in network upgrade and training activities.**

In 2007, the IHLLA equipped itself with **CAE hydro-meteorological stations** to monitor **rainfall and flood risk levels** and to **improve agricultural practices** (to find out more [click here](#)). Today, all SPM20 stations have been replaced by the more innovative and high-performance **CAEtech Compact data loggers**, which were easily added to the existing network, preserving all supporting infra-

structure. The **new DATALIFE Platform software platform** was also provided. It is a natural evolution of its predecessor Mercury, but is more suited to modern **IT security and reliability** requirements.

The **training** was delivered by Francesco Pastorelli, a senior analyst in CAE’s Engineering Department, and offered the following:

- information about the potential of the instrumentation provided;
- details of how the new software works;
- practice in the field.

The technical staff of the IHLLA are now also up-to-date with the latest innovations, so that they can independently continue to **successfully manage their network** and its maintenance successfully





to keep it in good working condition, as they have always done since 2007. The **skills of the local technicians** and the **efficiency of the system** were immediately put to the test. In fact, the weekend after the course saw the **Santa Rosa blizzard**, the most violent storm in South America, which strikes every year towards the end of August, and during which everything worked perfectly. ■



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Training CAE personnel to reduce intervention times Wireless Sensor Networks



As mentioned in recent interviews with Technical Director Luca Papandrea and Head of the Design Department, Ermes Fabbri, the company is working to improve the execution speed of field activities. How? We present some of the solutions identified to achieve this goal.

Two highly specialised courses were held this month for most of CAE's external technicians:

1. Working at height on ropes. This specific training serves to prepare personnel to perform tasks at height using ropes as an access and positioning system. The 32-hour course provides the knowledge and skills needed to perform these activities safely by addressing specific risks and using the correct rope access, positioning and rescue techniques. Participants learn how to ascend, de-



scend and move on ropes, and how to perform anchoring and use rebelay, on both artificial and natural structures. The technicians were also obtained the rope work supervisor certificate, a specific 8-hour training course for those who have to supervise, coordinate and monitor teams



of working at height using rope access and positioning systems, which is necessary to identify risks and ensure safety during these activities. These courses are essential for working safely at work sites, including landslides, at high altitudes, on buildings, bridges, etc.

- 2. Truck-mounted crane licence.** A 12-hour theoretical and practical course with main objective of enabling technicians to use the crane correctly in different operating situations, carry out checks to reveal any anomalies, plan lifting safely and tackle any emergency situations. This training will be particularly useful when moving and relocating hydrometric stations, which are often connected to work sites for bridge or road resurfacing.

These courses serve the dual purpose of increasing the **safety level** of workers and allowing CAE to directly follow various activities in order to **take independent action** in most work sites. This **reduces** the organisational and logistics steps and **intervention times**, particularly for “small jobs” such as moving hydrometric stations, integrating sensors on bridges, etc.



Another solution designed to speed up activities is the use of a **new modular pole**, equipped with a **pulley** system that was specially designed by CAE to be installed easily and independently, even without the use of a crane when, for example, the site is inaccessible to large vehicles. ■

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The CAE management team has been strengthened: interview with new Technical Director

Meet Luca Papandrea, an engineer who joined the CAE family in 2009 and has been the company's Technical Director for a year now, as well as Deputy General Manager and Board Member.

In his role as Technical Director, he is committed to ensuring that activities are carried out correctly and comply with the regulations. He constantly discusses critical issues in jobs with the Project Managers, and takes actions in the relevant business areas to solve them.

His appointment as Technical Director, a role formerly held by CAE's founding partner, Paolo Bernardi, is the result of the owner's desire to manage the company with a combined managerial and entrepreneurial approach.

What was your career path?

I joined CAE as a student to do an internship in preparation for my thesis, working on a project geared towards corporate reorganisation. It was 2009, and there was a generational transition in the company.

Immediately after graduation I joined CAE as an apprentice working in human resources and organisation, and after about a year I started a project to rationalise information systems that led to a major overhaul of corporate processes, which lasted a couple of years overall.

After that, I held the position of Deputy and then Director of Operations, which allowed me to get to know the company in depth, its founding values, people, habits, working methods and procedures.



What values guide the company's choices?

CAE is characterised by a strong propensity to acquire **new skills** and an ability to exploit those already established in **non-traditional areas**. We want to keep this approach alive because enables us to take on many new and exciting challenges, and allows us to continue growing.

The value that guides us is certainly the desire to **focus on the customer**, always bearing in mind the ultimate goal for both of us, so being strongly aware of the importance of what we are called upon to do. We are not just a **technology** provider, but above all a **service provider**, which is why we always work **alongside administrations**, especially when there are **critical issues**.

This is reflected in the importance of **ensuring quality at all times**, a key factor in achieving maximum **reliability** from our equipment and control systems. Quality is also reflected in terms of the **skills and expertise** required to achieve the aforementioned goals; hence the importance of the people who make up the company and those who work with it. That is why we are committed to building stable, la-

sting relationships that lead to personal and professional growth in an environment where attention to **safety at work** is also at the forefront.

What strategic aspects are you working on today?

As already mentioned, customer satisfaction must guide our choices, which is why we are trying to get to grips with some of the critical issues that have emerged from discussions with them.

For example, we want to improve the execution **speed** of field activities, while maintaining quality and attention to safety and compliance with all applicable regulations. To do this, we are working on our internal structure and organisation, suppliers, standardisation, and we are aiming to become more independent by strengthening our ability to perform certain crucial activities ourselves in order to reduce the time to complete installations.

We shouldn't forget the importance of **services**, which we are working on to further increase **quality**, including in relation to their interconnection with technology. Of course, that's not nearly all, so I invite you to continue reading our CAE Magazine to find out more. ■

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AUBAC presents the new monitoring network for lakes in Lazio



The event to present the **new AUBAC lake monitoring network of the Lazio Region**, a prevention, territorial protection and sustainable water resource management tool, was held at the Air Force Historical and Sports Centre (CSSAM) in Vigna di Valle - Bracciano (Rome) on Tuesday 24 June at 11 a.m. AUBAC is the Autorità di Bacino dell'Appennino Centrale (Central Apennines Basin Authority), the public body responsible for territorial planning for hydrogeological risk mitigation, coastal defence and sustainable land use in central Italy. The initiative is a response to the increasing critical environmental situation, in which rising temperatures and low rainfall are progressively lowering of water levels in the district's main natural lake basins. The monitoring system was designed and implemented by AUBAC, and built by CAE S.p.A., and consists of high-tech stations distributed on lakes



Bracciano, Bolsena, Vico and Albano. Each station offers real-time measurement of key parameters such as **hydrometric levels, temperatures, evaporated water quantities.**

The data collected in real time from the stations can be used to **continuously assess the condition of the lakes**, support sustainable resource mana-



gement activities, and provide strategic information to **prevent environmental emergencies** and understand the local effects of **climate change**. During the presentation, it was highlighted that all major natural lakes in the district have undergone a **significant drop in water levels compared to historical averages**. Lake Bracciano recorded -40 cm, Lake Nemi -50 cm, Lake Albano -45 cm, Lake Bolsena -7 cm, Lake Trasimeno -20 cm (with an overall reduction of about 1 metre compared to 2020, and the lowest level ever recorded in September compared to the historical average of 1991-2020). *“The AUBAC network represents a decisive step towards scientifically advanced monitoring of our lake ecosystems. It is only through continuous, precise knowledge of the water state that we can implement effective actions to protect the environment, manage resources sustainably and prevent the most serious effects of the climate crisis. This system will provide essential information, not only for historical analysis, but also to support real-time*



operational decisions by the local authorities involved” said **Marco Casini, Secretary General of AUBAC**.

The meeting was attended by technicians, institutional representatives and stakeholders in the local area, and confirmed the authority's commitment to promoting innovative tools to serve the environment and local communities.

After the press conference, the opening ceremony for the Bracciano monitoring station took place. ■

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