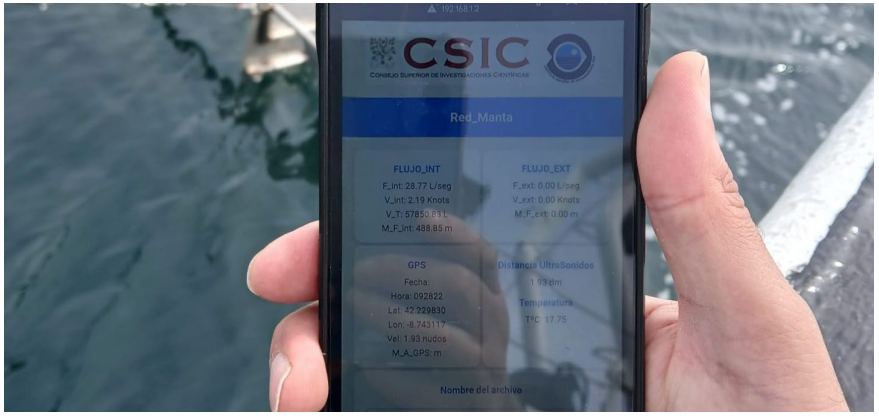
Technology Offer CSIC/CJ/023

Smart modular system for the measurement and control of aquatic flows



Modular system that quantifies in real time the filtered water volume and the effective sampling depth, providing accuracy, traceability and efficiency to aquatic monitoring programmes.

Intellectual Property

Priority patent application filed

Stage of development

Functional prototype validated in a marine environment (TRL 6).

Intended Collaboration

Licensing and/or co-development

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Market need

Sustainable management of water resources and effective pollution control require precise data on surface flows and, in particular, on the actual volume of water sampled. This variable is essential to ensure the representativeness of analyses and the reliability of conclusions. However, traditional measurement systems present technical limitations that reduce result accuracy, especially in dynamic environments such as seas, rivers or estuaries. The lack of versatile, portable instruments capable of providing real-time data hampers environmental monitoring, impact assessment and decision-making in fields such as oceanography and hydraulic engineering.

Proposed solution

The smart modular system developed enables precise measurement and monitoring of flow rate and sampled water volume at the surface, in both marine and continental environments. It combines distance sensors and high-sensitivity flowmeters with a wireless transmission system, providing real-time data directly on board or at remote stations. Its compact, robust and adaptable design makes it a unique tool for researchers, environmental managers and companies requiring reliable measurements in any operational setting. It facilitates more efficient, standardised and sustainable monitoring of aquatic environments.

Competitive advantages

- Accuracy and traceability in flow rate and filtered volume measurements.
- Real-time visualisation and wireless remote control.
- Compatible with different nets and sampling configurations.
- Improves data quality for environmental and scientific reporting.
- Modular, lightweight design easily integrated into existing systems.
- Quick installation, low maintenance and high durability.