

# INNOBUYER IMPACT STORIES: OPEN CALL FOR EIC SOLVERS



## NAIAD

### sustainAble wAtEr monItoring in chAnging riverbed.

InnoBuyer onboarded duos composed of a EIC Solver (SME previously or currently funded by the EIC) and a Challenger (public institution) to co-create a solution for an unmet innovation need (the Challenge) working together over a 10-month period. Following successful pilots, challengers received support from Innobuyer and experts to design simplified ToR. Each project was backed by €65,000 in financial support—€10,000 for the challenger and €55,000 for the solver.

#### THE NEED

With drinking water consumption in the Department Pyrénées-Orientales (FR) of 23m<sup>3</sup> and over 10,000 hectares of agricultural irrigation, it is essential to have in-depth knowledge of watercourses to ensure that resources are shared, and that the environment remains in good condition. The current drought crisis has affected the region for 3 consecutive years: 5 localities under increased surveillance for drinking water supply, 12 with a total or partial water shortage (3,500 inhabitants), €10 million in losses for winegrowers and €2.5 million for livestock farmers, not to mention the economic impact on this region with its high potential for summer tourism.

The calculation of the river flows is essential to monitor these uses within the territory, however this measure is linked to the bathymetry which is nowadays unknown. The **development of an innovative solution that automatically measures the river discharge and updates the rating curve in real time**, would be disruptive in the domain. It will enable flows in the catchment area to be reconstructed in a variety of contexts and as exhaustively as possible, including during low-water periods.

#### THE SOLUTION

The solution proposed here is unique and is based on the vortex-io micro-station  $\mu$ VTX-2.1. The micro-station system is based on **a smart, compact & innovative remote sensing instrument combining a LiDAR and a camera to provide water surface height, and images of the water surface**. Also, thanks to the camera, the micro-station provides already water surface velocity estimates, a fundamental element to measure the river bathymetry. The solution we propose to co-create with the SMTBV, relies on the vortex-io V2.1 micro-station and the gauges' campaigns foreseen by the SMTBV. All generated and available data will be used to derive automatically real time measurements of the river discharge.

The high potential of the automatic actualisation of the water flow will lead to a more frequent update of the data which will optimise the modelisation. Such innovation will improve the water forecast as a whole, enabling citizens to become more resilient in the face of water management and natural disaster management issues.

## IMPACT

**Validation of the methodology** to estimate the bathymetry and the water flow automatically.

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Definition of some prerequisites to deploy the service.

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**New flow chart** released on the platform.

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**Time saved** by technical teams to work on other matters.

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OUR PARTICIPATION IN THIS PROJECT WAS MEANINGFUL AND SUPPORTED BOTH THE CHALLENGER AND THE PROVIDER IN THEIR COMMON ANSWER TO A GLOBAL NEED. WE APPRECIATED THE OPPORTUNITY TO CO-DESIGN THE SERVICE BY TESTING AN IDEA IN THE FIELD, TO TRANSFORM IT INTO A PROMISING SERVICE WITHIN 10 MONTHS ONLY. THE RESULTS OBTAINED ARE EXPLOITABLE AND SHOULD LEAD TO FURTHER DEVELOPMENTS AND COLLABORATION IN THE FUTURE.

