

Demo Case Update

From 3S – SUEZ Smart solutions

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The **Fiware4Water** project is one of the three Horizon 2020 European projects for research and innovation in which SUEZ Smart solutions is involved. Its ambition is to **create a collaborative and open digital platform**, aimed at **promoting and simplifying the exchange of data** between the various **water stakeholders**. This project is led by a consortium made up of several European partners, experts in the field of water and digital technology.

Various sectors (Smart City, energy, agriculture, etc.) now use **the FIWARE IT platform** to develop smart applications, but this was not the case in the water sector. The main objective of the Fiware4Water project is the development of an open IT platform dedicated to the water sector. The consortium will use the European platform FIWARE and enrich it with functionalities and models dedicated to the water sector. One of the challenges is to **encourage and facilitate the development of "Smart Water" applications** and help SMEs and developers to create a new generation of Internet services in this field. Another challenge is to improve **interoperability** between systems by simplifying data exchanges between local authorities, private delegates, companies and even the general public.

Data exchanges need to be simple, standardised, secure and, above all, efficient. In this collaborative ecosystem, each member benefits by sharing and exploiting public and free of charge data, some of which can be made available by the community. For SUEZ Smart solutions, this project is very interesting because it will strengthen the link between Smart Water and Smart City, two themes in which we are already heavily invested.

Fiware4water project will showcase **4 pilot sites** as demonstrators for the European Commission. **The French pilot site** is the drinking water supply system of SICASIL (Intercommunal drinking water syndicate of the Cannes basin, France), operated by the SUEZ Côte d'Azur agency. **We focus on the system as a whole:** water resources, water production, transport and distribution. The Cannes region experiences episodes of high heat and is also a very touristic area subject to seasonal peaks in water consumption (the population triples during the Cannes Film Festival and the summer period). The concomitance of these two events can induce significant water stress. This region is therefore an ideal area for testing and validating the digital solutions that SUEZ Smart Solutions will implement to ensure the quantity and quality of drinking water distribution.

Four business issues will be considered. The approaches developed will be based on innovative machine learning techniques, one of the best known of which is artificial neural networks. **The first challenge is to predict the availability of water resources:** Each year, in late spring, operators estimate the availability of each water resource in the region for the coming summer. SUEZ Smart solution will undertake the analysis, formalization and modelling of this evaluation process, which is carried out every year by the operators of the SUEZ Côte d'Azur branch. This is an ambitious subject proposed by the agency, but it fully illustrates SUEZ's resolutely voluntary commitment to preserve the planet's water resources.

Another issue is **the forecasting of water demand**, an important subject especially in the summer period. These forecasts must be calculated automatically and in real time, which is already offered by our **AQUADVANCED® Water Networks solution**, which integrates water demand forecasting models. But Fiware4Water project gives use the opportunity to improve them and develop new ones.

Improving network performance is also an overriding objective. In practice, this means developing indicators that contribute to the detection of water leaks in the drinking water distribution system. Algorithms also exist in our **AQUADVANCED® Water Networks solution** but, again, we will be able to improve them thanks to the platform. Finally, we want to **guarantee water quality**. The challenge is to better assess water quality based on quality parameters other than chlorine (temperature, pH, conductivity, etc.) and ideally in real time. This is precisely what the multi-parameter probes, which will be installed on the SICASIL distribution network, will allow.

Several types of data could be shared on this platform. This can be very varied, first of all hydraulic or water quality measurements from the sensors but also the states of the network actuators (pump on or off, valve open or closed, etc.). A major technical challenge is to be able to easily interface this platform with the software and hardware assets of operators or local authorities. This is what this project seeks to verify. SUEZ Smart solutions will carry out the necessary IT developments to interface its **AQUADVANCED® Water Networks solution** with the **Fiware4Water** platform.

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Project Consortium



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