Demo Case Update

From TZW – DVGW-Technologiezentrum Wasser

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After work package 1 was finished, TZW is concentrating its efforts on WPs 3 and 4, especially on the French Demo Case: the drinking water supply system (production, transport and distribution) of SICASIL, a public water union, which has delegated to SUEZ Group the management of its facilities. The pilot site is located in Cannes and eight neighbouring municipalities (South of France). TZW conducted a workshop with partners involved in the Cannes Demo Case (SUEZ Smart Solutions, EGM, CNRS) to discuss and coordinate necessary future actions.

3 main actions are distinguished for the French Demo Case:

1. Install multi-parameter probes
2. Design and develop scientific models
3. Develop IT connectors

I. Install multi-parameter probes

A first work, based on experimental procedures, aims at testing the NANOSensor probe designed and developed by CNRS (see Figure 1). The NANOSensor is a multi-parameter probe that uses carbon-nanotubes to measure water parameters (hydraulic and quality). To evaluate the performance of the probe, a 12-months test period on the TZW bench has been planned. Main focus of the work was decided to be on long term performance and sensitivity of the probe. This requires various experiments simulating different water qualities, compliant with real conditions of a drinking water distribution network. These experiments will be conducted on the TZW bench (see Figure 2). After finishing the test of the NANOSensor probe, it will undergo its real live test in the drinking water distribution network of Cannes.

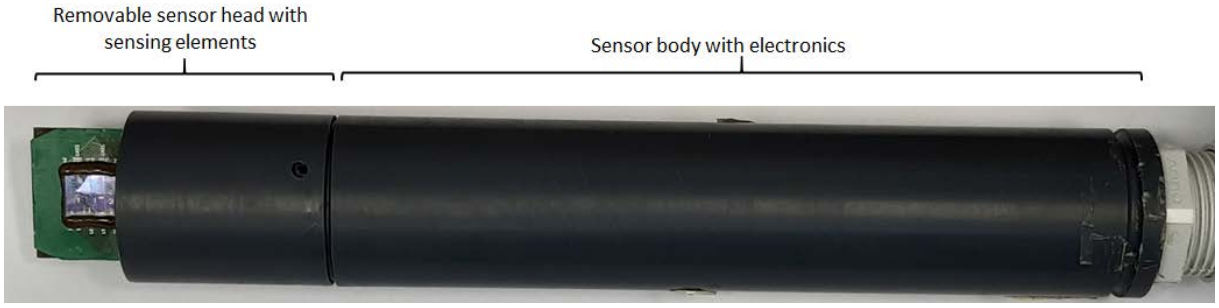

Figure 1: The NANOSensor multi-parameter probe, based on carbon nanotubes, designed and developed by CNRS

Figure 2: TZW bench on which the NANOSensor multi-parameter probe will be tested

In other respect, in addition to the existing sensors, four commercial multi-parameter probes (nano::station, manufactured by s::can) will be installed on the Cannes drinking distribution network to build historical measurements sets for models design purpose. Identification of relevant spots in the distribution network is the very first step before implementing a full and reliable communication chain from the probes measurements to AQUADVANCED® Water Networks, the SUEZ legacy system (see Figure 3).

II. Design and develop scientific models

The Fiware4Water partners are currently working on data analytics and scientific models design to address **4 business issues for the French Demo Case**, from collected historical measurements sets:

1. Forecast the water resources availability
2. Forecast the water demand
3. Detect water leaks
4. Detect abnormal water quality events

These models will be black box models based on machine learning technics. At the end of the Fiware4Water project, advanced and operational tools will be available to improve the management of drinking water distribution networks.

III. Develop IT connectors

The Figure 3 below illustrates the functional architecture of the French Demo Case. The current legacy systems of SUEZ (sensors, equipment, SCADA, AQUADVANCED® Water Networks, etc.) are represented in light grey. In dark green, these are the deployments planned in the framework of the Fiware4Water project.

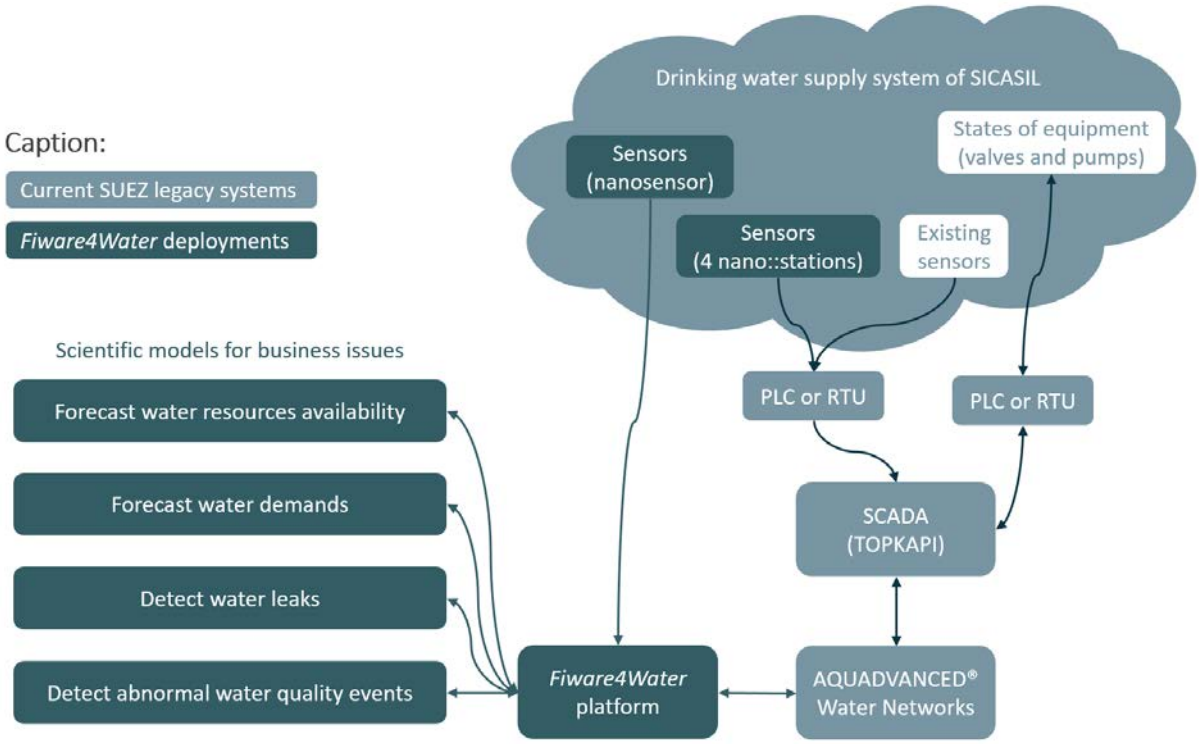

Figure 3: Description of the Cannes Demo Case and Fiware4Water deployments

IT connectors will be developed by SUEZ Smart Solutions, on one hand to exchange data between the Fiware4Water platform and AQUADVANCED® Water Networks and, on the other hand, to exchange data between the Fiware4Water platform and the developed scientific models.

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Project Consortium

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