

Demo Case Update

From NTUA – National Technical University of Athens

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After the completion of WP1, the National Technical University of Athens (NTUA) has focused on the development of applications and tools for the Athens Demo Case, as part of WP3 and WP4 activities. These applications aim to support EYDAP S.A. in the real-time management and operation of the external raw-water supply system that serves the city of Athens, Greece (5.000.000 inhabitants). To accomplish this, two FIWARE-compliant applications are now being developed to provide operational decision support in water quantity and quality management.

Having identified and documented all the legacy components of the conveyance system under study and with the key functionalities and requirements for the two applications at hand (part of WP1 activities), NTUA, during the last months, has concentrated its efforts in the configuration and implementation of the core back-end system of the two applications, that is the “Nessie” system.

Nessie is a modern system, developed within NTUA, able to acquire, store, process and visualize high-resolution data from sensors in a scalable, simple and fast way. Its main engine is composed of back-end code (written exclusively in Python v2.7) and a database schema (using PostgreSQL v9.2), able to manipulate data in a way that supports the quick and straightforward access by any web-based application. Nessie was developed originally for the iWIDGET FP7 project, and then upgraded as part of national and international collaborations projects. The very first implementation of the system concerned a web-based application able to collect and analyse high resolution demand data from smart water meters and provide customised suggestions to end-users.

Currently, NTUA is working on the customisation and adjustment of the Nessie system, on the one hand, to meet the specific requirements of the quantity and quality application, and on the other hand, to become compatible with the FIWARE Context Broker. The latter activity concerns the development of connectors that will allow to Nessie to exchange information and data with the Orion-LD Generic Enabler, which will be deployed in Athens Demo Case. Regarding the former activity, the Nessie system is customised to support the data from the open channel flowmeters, water level meters and water quality meters already installed in the conveyance system of EYDAP. This also includes the design and development of a brand new modern, fully responsive and fast dashboard tailored to the specific needs of the operators of the conveyance system. An early prototype of the Nessie system for the water quality application has already been implemented, and its user interface is presented in Figure 1.

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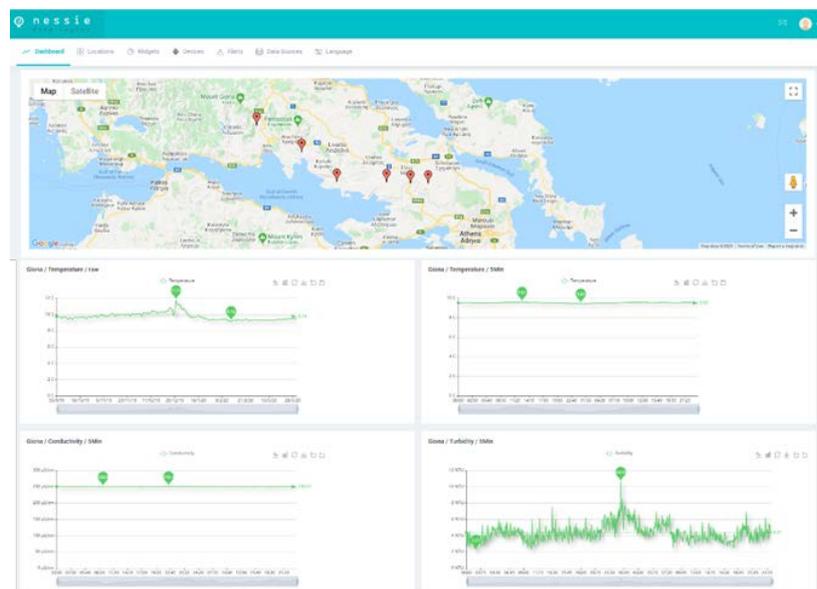


Figure 1: Dashboard of the Nessie system for the water quality application - monitoring of quality parameters (turbidity, conductivity, temperature) at the 6 points of measurements in the raw-water conveyance system of EYDAP

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Project Consortium



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