

SOFTWARE MODULE FOR THE ENERGETIC ASSESSMENT OF HYDRAULIC GENERATORS OPERATION IN AQUATIM'S DRINKING WATER SYSTEM

Goal of the project

The goal of the project was to create a simple to use software system validated by experimental results for the quick assessment and monitoring of the efficiency of hydraulic generators deployed in Aquatim's Drinking Water System.

Short description of the project

The project contained three phases:

Phase 1 27.03.2018 – 30.06.2018, for the development of the algorithms for constant-speed pump efficiency assessment and variable-speed pump efficiency assessment.

Phase 2 01.07.2018 – 30.09.2018, for the validation and testing of the software module against laboratory experimental data from a variable-speed pump.

Phase 3 01.10.2018 – 27.12.2018, for the development of the graphical user interface for the central desktop system and for the mobile, smartphone application.

Main activities

- The development of a software module for the energetic assessment of hydraulic generators operation in Aquatim's Drinking Water System in two parts: the desktop application and the smartphone application.
- All software results have been validated with in situ and laboratory experiments for constant-speed pumps and for variable-speed pumps.



Results

An interdisciplinary expert software solution for the energetic assessment of hydraulic generators operation in Aquatim's Drinking Water System in two parts: two desktop applications and the smartphone application.

The desktop applications generate QR code stickers for each hydraulic generator configuration for constant-speed pumps and for variable-speed pumps.

The QR codes are scanned by the mobile application which works both for constant-speed pumps and variable-speed pumps. The hydraulic route is encoded in the QR codes in addition to polynomial curve fitting coefficients, in order to allow the correct assessment of the efficiency for each pump configuration.

Applicability and transferability of the results

- The results are tailored for the energetic assessment of hydraulic generators operation in Aquatim's drinking water system.



Implementation period

23.02.2018-22.02.2019

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Research Centre

Research Center in Computer and Information Technology (CCCTI)

Research team

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