FIWARE-enabled smart solution for the optimal management and operation of raw-water supply hydraulic works

Panagiotis Kossieris[1], Christos Pantazis[1], Vasilis Bellos[1,2] and Christos Makropoulos[1]

[1] National Technical University of Athens, School of Civil Engineering, Department of Water Resources & Environmental Engineering, emails: pkossier@mail.ntua.gr, xpanta@outlook.com, vmpellos@mail.ntua.gr, cmakro@mail.ntua.gr

[2] Democritus University of Thrace, Department of Environmental Engineering, Greece
email: vbellos@env.duth.gr

ABSTRACT

Raw-water supply systems are characterised by high complexity and large-scale nature, since they are typically composed by a variety of interconnected hydraulic works. The optimal management and operation of such systems is undoubtedly a key priority, and at the same time, a challenge, for any water utility. In the era of digital transformation, the development of standardized and interoperable solutions that allow seamless integration of tools and models (usually developed by different providers), along with the existing network of sensors (usually installed by different vendors), is of paramount importance towards an holistic and integrated management of such complex systems. In this work, we showcase a first attempt to develop such an interoperable digital solution for the management of the external raw-water system that serves the city of Athens (Greece). Specifically, we build around FIWARE, a standardization framework supported by the European Connecting Europe Facility, to develop a FIWARE-enabled web platform that integrates a great number of flow and quality sensors, and supports system operators in decision making via innovative models and analytics.