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## Real time data quality control applied on an IOT sensor water quality network

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In recent years, extend periods of drought have been affecting the water quality and availability in the Flanders region in Belgium. Especially the coastal region experienced an increased salinization of ground and surface water. The Flemish government therefore decided to invest in a dense IoT water quality monitoring network aiming to deploy 2500 water quality sensors primarily in surface water but also in ground water and sewers. The goal of this "Internet of Water" project is to establish an operational state of the art monitoring and prediction system in support of future water policy in Flanders.

Since Flanders is a relatively small region (13,522 km<sup>2</sup>), placing this many sensors will result in one of the most dense surface water quality sensor networks in the world. Each sensor will continuously measure several indicators of water quality and transmit the data wirelessly. This allows us to continuously monitor the water quality and build a big enough data set to be able to use a more data driven approach to predicting changes in water quality. However, as with any sensor system, the quality of the data can vary in time due to problems with the sensors, incorrect calibration or unforeseen issues. Real-time data quality control is crucial to prevent unsound decisions due to faulty data.

This contribution will give a general overview of the network and it's specifications, but mainly focus on the implementation of the data stream as well as methods that are implemented to guarantee good data quality. More specifically the architecture and setup of a real-time data quality control system is described. Which will add quality control flags to measurements. This system is integrated with the NGSI API introduced by FIWARE, which forces us to make specific design decisions to accommodate to the NGSI API.