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Low-cost sensor system based on LoraWAN for monitoring water distribution systems

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In the research project lot.H2O, which is funded under the Water JPI Joint Call 2017 IC4WATER, the potential of the Internet of Things concept is investigated for monitoring and controlling water distribution systems. Smart sensors are used which send data via LoraWAN to gateways which are connected to the Internet. The aim of the project is to use low-cost sensors and open-source software.

In the presentation, a prototype on a laboratory scale will be shown. The design of the monitoring system will be explained in detail and compared to the design of standard SCADA systems. Results on a pump test rig based on a laboratory scale will be shown as well as first results of field tests in a real water distribution system in Germany.

The presentation will also detail how data gathered through the smart sensors will be integrated into software modelling and optimization of water distribution systems. Combined with the new data, such tools offer a range of applications of practical relevance, such as the identification of optimal locations of micro-turbines for energy recovery in water distribution networks and the estimation of water demand throughout the network.