

29 June 2021 (Tuesday)

4.00pm-5.30pm (SGT) (GMT +8)

Session 1.6 – Smart Metering

Session Chair(s): Zdravka Do Quang, SUEZ (France)

The Digital Utility Journey: From Reactive To Predictive To Precise

D. Sullivan. Iota Services (Australia)

Presenter is an invited speaker. No executive summary is available

Real-time Data Analytics Of Advanced Metering Infrastructure And IoT Based Sensors To Quantify And Reduce Non-Revenue Water

B. Skeens V. Singh, R. Kadiyala. Jacobs (Singapore)

This presentation will describe real-time data analytics and machine learning algorithms that help to quantify non-revenue water (NRW) using AMI and SCADA data in two specific case studies. One used AMI data combined with SCADA data from selected time periods for offline analysis. The other is a live distribution system and used AMI along with IoT based sensors that were fed through unique machine learning and data analytics algorithms. The algorithms and corresponding data visualization components were also used to bolster water security and customer service. The presentation will include specifics covering the system architecture, source data and algorithms in play along with implementation challenges, results, lessons learned, and benefits for other utilities.

Water Metering Evolves -- Yesterday's Billing System Is Tomorrow's Sensor Network

B. Drijzen, T. Wise, D. Nicklin. Xylem (United Kingdom)

Historically the primary function of residential water meters has been for customer billing purposes. They offered the utility the opportunity to bill customers based on their individual water consumption, rather than other methods, such as property size or business type. It was left to the utility to select the accuracy they were prepared to accept, even though this often lead to mechanical meters that degraded over time and appreciable under-reporting of actual water usage. However, with the development of cost-effective solid-state meters, there has been a significant change in emphasis in which the water meter is perceived not simply as a billing device, but rather as an integral sensor in a smarter digital water network. This presentation looks at the factors, technological developments and business cases that are driving the evolutionary transition of solid-state water meters from billing-only devices to network edge sensors, and contains case studies of real-world deployments that help illustrate this trend.

Acoustic Leak Detection Using Data From Smart Meters

K. Andersen, J. Sorensen, S. Dupont. Kamstrup A|S (Denmark)

This paper addresses a novel approach to leak detection in the fight against non-revenue water. The presentation covers Kamstrup's work implementing an acoustic noise logger in a standard water meter and presents results from a field test with 1,250 meters installed at seven different utilities. From the data collected, 13 previously unknown leaks have been detected. The algorithm used in the water meters is explained and several examples of leaks and ambient noise sources seen during the field test are shown. Based on these results, it is confirmed that leak noise can successfully be distinguished from ambient noise.