OMAN WATER WEEK
Oman`s leading water event

Strategic Partner: نماء nama لخدمات المياه WATER SERVICES

Supported by: هيئة تنظيم الخدمات العامة Authority for Public Services Regulation

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Workshop Two

Efficient Water Management

Presented by: ABB

24 January 2024
09:00 am - 12:00 pm

Speakers

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Worshop topics

Part One
Analysis of the main steps suggested to effectively implement a smart digital solution for managing a water distribution network, in terms of having (at the end of the journey) a complete decision support system that will allow the Water Utility to effectively optimize the performances of their assets.

In this first session we will analyze which are the main steps suggested to effectively implement a smart digital solution for managing a water distribution network, in terms of having (at the end of the journey) a complete decision support system that will allow the Water Utility to effectively optimize the performances of their assets. A progressive approach is suggested here as a key aspect to consider also taking into account the pre-existing automation or monitoring systems like e.g., a SCADA or a DCS to integrate as data sources for implementing an intelligent data lake. The steps explained will be:

- Discovery: analysis of which are the available (and reliable) data needed to perform a critical analysis, in order to determine if a temporary monitoring campaign is needed (e.g., if few permanent instruments are available or calibration for flows, pressures, or water quality is needed).
- Implementation: define and execute the implementation tasks according to the outcomes of previous step. The pieces of information collected during the Discovery workshops will be used to decide which are the SW modules needed by the Customer.
- Expansion: evaluate (after previous steps' outcomes and related Utility's feedback) how to furtherly evolve the decision support system scope, according to particular scenarios (both in terms of architecture and in terms of scalability).

Part Two
Analysis of Best Practices suggested both in terms of Solutions (data harmonization, holistic interface, automated KPIs, and dynamic hydraulic modelling) and in terms of Technologies (open and modular architectures, APIs integrations, and interoperability of legacy and new systems).

In this second session we will analyze the Best Practices suggested in terms of:

- Solutions: how to leverage the maximum efficiency from the digital systems implemented. A Water Utility aiming to have a real decision support system should consider to implement a smart layer able to unify all the data into an intelligent data lake, presenting to the Operator and easy to use interface (ideally web based and accessible from mobile devices) and automatically calculating all the main KPIs of the water distribution network (based on the IWA standard and methodology). The hydraulic modelling part will be the "advanced" layer, that thanks to these kind of smart water solutions will become "dynamic" and able to automatically run simulations and what if analysis based on the real time data collected into the data lake.
- Technologies: how to implement a smart digital layer preserving the investment. A key aspect here is the interoperability of interfaces, APIs and the core of the hydraulic modelling technologies adopted. Moreover, it is fundamental to implement an architecture that is modular and easy to be expanded and/or integrated with pre-existing or new assets, like e.g. smart meters etc.

Part Three
Analysis of lessons learned (based also on standardization bodies recommendations) and of real examples / use cases (from problems and gaps before implementation to concrete results after the complete decision support system finalized).

In this third session we will analyze both lessons learned and also some real uses cases:

- From lessons learned perspective, we will present what is suggested from the main standardization bodies and international associations, considering also some peculiar aspects like the migration from legacy / pre-existing systems.
- From use cases perspective, we will present examples of Utilities that needed to fill a concrete gap in terms of efficiency in water networks management, explaining the advantages they reached after having adopted the decision support system implementation using the progressive approach explained in the first session.