

Urban water cycle and intelligent technologies: Danish experiences

Host : Innovation Centre Denmark *, Innovation Centre Denmark

Presenters

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Description

Body

WHY URBAN WATER CYCLE

The largest emerging challenges for water management are the aging water infrastructure, growing population, and rising energy costs. In addition to these challenges, climate change has increased pressure on the society and ecosystem around the urban area. To overcome these challenges and support proactive decision making for urban water managers the concept of Smart Water Management (SWM) could be applied. SWM refers to water networks that allow for simultaneous real-time analysis and self-optimisation. It allows water managers to more effectively collect, share, and analyse data to find leaks, predict failures, and optimise conditions. SWM also enables citizens to accurately know the status of the water systems and deploy resources intelligently and efficiently.

WHAT IS OUR AIM

In Denmark, conventional methods for solving various water issues are shifting to data-driven and preventative maintenance. We would like to share experiences on water cycle management and to learn from each other on SWM in urban areas during the session of Urban water cycle and intelligent technologies.

JUSTIFICATIONS

Several challenges in the water sector could be reduced through integration of water management and intelligent technologies in the entire water cycle.

Project 1. Distributed Online Monitoring of the Urban Water Cycle enables cost-efficient distributed monitoring of the hydrological and hydraulic states of the urban water cycle and provide data and knowledge about the system correlations (DONUT project, Aalborg University).

Project 2. Smart cities water solutions aims to develop software solutions for dynamic control of pumps and gates in sewer systems to minimize the risk of combined sewer overflows and flooding by storing and discharging excess water volumes in the least harmful manner possible (tbc, Water DTU, Technical University of Denmark)

Project 3. Flood risk management through an interactive map enables instant investigation of the risk factor and understanding of the effects of changing the terrain for urban planning, emergency management, climate adaptation, and watercourse. (tbc, Scalgo, Aarhus University spin-out)

EXPECTED OUTCOMES

- Develop strong international research consortium.
- Learn and share knowledge on global urban water challenges.
- Identify new project and funding opportunities.
- Follow up with similar seminars in connection to relevant platforms such as the P4G Summit (Seoul,

May 28-30 2020) and IWA 2020 World Water Congress (Copenhagen, October 19-23 2020).

ALIGNMENT WITH CONGRESS

The international consortium created during this special session will provide foundations for global water security and resilience by sharing knowledge and creating innovative ideas through discussion.