



**Date and Time:**

Thu 19 January 2017  
09:30 – 18:30

**Location:**

Cardiff University Main building  
Cardiff, United Kingdom

**Contact:**

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WISDOM project is part of the ICT4Water cluster of 10 EU projects working on the application of ICT for Water management

<http://ict4water.eu/>

**WISDOM Final Event**

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## WISDOM Final Event Agenda:

- 09:00 – Registration Opens and Refreshments  
 09:30 – Welcome – Dr Tom Beach (Cardiff University)  
 09:45 – Keynote Speech – The Direction of Water Research – Water Research Council  
 10:30 – Introduction to the WISDOM Project – Daniela Belziti(CSTB)  
 10:45 – WISDOM – A System of Systems:  
 What is WISDOM? – Keith Ellis (Intel Labs)  
 Enabling Smart Water Using Semantics – Shaun Howell (Cardiff University)  
 11:30 – Refreshments and Interactive Displays  
 12:00 – WISDOM Research Highlights:  
 Machine Learning and Optimisation in Water Network Operation- Dr Wanqing Zhao (Cardiff University)  
 Disaggregating Water Usage in the home – Dr Davide Carboni (Intel Labs)  
 Edge Processing in a water network. – Prof Julie McCann (Imperial College London)  
 13:00 – Lunch and Interactive Displays  
 14:00 – Panel Discussion  
 What is the opportunity for IoT / ICT in the Water Industry?  
 Adaptive Pricing – an achievable goal?  
 Water Networks of the Future- what will they look like and what role will they play in the development of future cities?  
 15:00 – Refreshments and Interactive Displays  
 16:00 – The Wider Smart Water Field – The ICT4Water Cluster  
 WaterINN- Dr Lluís Pesquer Mayos  
 ISS-EWATUS – Dr Lili Yang  
 ICEWater – Dr Antonio Candelieri  
 17:00 – Concluding Remarks  
 17:30 – Event Closes

## Interactive Displays

- The following interactive displays of the technologies developed in WISDOM will be available during breaks and at lunch:
- The WISDOM User interfaces for household water consumers and water network operators.
  - Demonstration of the sensing and data collection technologies deployed on the water network and in homes.
  - Internet of Things for Water Networks

## About Cardiff:

Over the past 20 years Cardiff has transformed itself into a thriving and vibrant city with some of the best cultural and recreational infrastructure of all the UK's cities. Following significant investment in Cardiff, including the redevelopment of Cardiff Bay, the city centre and the Wales Millennium Centre, the city has grown as a destination for leisure, culture and retail, hosting the Rugby World Cup, FA Cup Finals and Ashes test matches, with close to 20 million people now visiting the city.

## WISDOM Project:

The WISDOM project has developed and tested an intelligent ICT system that enables “just in time” actuation and monitoring of the water value chain from water abstraction to discharge, in order to optimise the management of water resources.

The goals of the project were to (a) increase user awareness and modify behaviours concerning the use of water, (b) achieve quantifiable and significant reduction of water consumption, (c) achieve peak-period reduction of water and energy distribution loads and (d) improved resource efficiency and business operations of water utilities due to ICT

In order to validate & demonstrate the WISDOM approach a series of pilots were conducted:

**Wales:** In Wales there are a number of pilots addressing a variety of scenarios:

- Firstly, we have studied WISDOM's applicability to the problem of optimizing clean water networks by attempting to optimize, in real time, pumping schedules and service reservoir levels so as to reduce energy consumption.
- Secondly, we have examined how WISDOM can enable the application of data driven modelling techniques to water network data, specific focus in our trial was predicting the occurrence of combined sewer overflows (CSOs) in waste water networks.
- Finally, along with conducting the largest roll out of smart meters in Wales we are also researching consumer behaviour, and developing a range of innovative feedback mechanisms designed to improve on the six monthly feedback UK water users currently receive. This will enable us to determine how water consumers in the UK respond to feedback regarding their water usage and how feedback can be used to motivate them to achieve water savings.

**Italy:** In Italy pilots have focused on how the WISDOM system can enable both localisation of leakage within a water network and the detection of contamination during the process of water abstraction.

**France:** In France we are piloting the usage of energy recovery devices in the AQUASIM simulator. We aim to understand the impact that recovering energy from waste water can have in a domestic setting. We will present the performance of the energy recovery devices that have been trailed and the results of our analysis of the applicability of energy recover devices for widespread deployment in consumer properties.

In addition to the results from our pilots the following key results from the WISDOM project will also be presented:

- Results of lab based trials from our innovate leakage localisation approach utilising vibration sensing.
- Results of a study into the implementation of adaptive pricing in the UK.
- Demonstration of a detailed semantic model of the water value chain, including instantiations of this model for our pilot sites

