PROGRAMME

- 14.25 Start of the workshop

“Overcoming the Obstacles for Smart Water Networks”

Erick: Introduction Workshop and SW4EU

The goal of the workshop is:
To discuss the obstacles to the adoption of Smart Water Network technologies

The message to be conveyed in the workshop will incorporate the following:
- How water distribution networks works are managed at present
- The new solutions that are being implemented to create smart water networks
- How to overcome the obstacles to the adoption of Smart Water Network
- How the new solutions will change the future of water distribution networks

In Europe Utilities are hosting large water distribution networks and the management thereof causes numerous challenges:
1. The rehabilitation of future water distribution networks
2. The improvement of water quality
3. The efficient management of water resources

These have been identified as three key challenges by the European Innovation Partnership on Water (EIP Water). SmartWater4Europe is funded by the European Union’s Seventh Programme (FP7) and contributes to the EIP Water by speeding up innovations in the priorities of work that contribute to solving societal challenges, enhance Europe’s competitiveness and contribute to job creation and economic growth.

Presentation SW4EU
- Start with the introduction video
- General presentation SW4EU

What are the obstacles to the adoption of Smart Water Networks?
In principle the main technology and ICT building blocks enabling Smart Water Management have been developed. However, 5 Major hurdles on the road to application of Smart Water Management exist, i.e.:
1. Lack of integrated and open solutions: available technology is fragmented, concerns various technology fields (sensors, ict, water modelling, control) and offers partial solutions. A lack of clear user-friendly, integrated and open solutions exists;
2. Difficulty to comply with all user requirements: solutions must be integrated in existing water distribution management systems. As management systems differ strongly with respect to the aspects addressed and their level of automation, it is difficult to comply to all user requirements;
3. Lack of validated business cases for solutions: although tested at laboratory and pilot scale, many technologies have not been applied in integrated full scale solutions. Therefore business cases have not been elaborated yet based on validation in real life. Technology validation at demonstration scale and the creation of business cases is a ‘conditio sine qua non’ for further application of solutions;
4. Lack of business intelligence awareness: water utilities have been dominated by traditional operations focusing on long term investments and continuity. Historically, water utilities have separate departments doing separate jobs. Data analysis and algorithmic calculations on all data of all departments are not performed;
5. Lack of political and regulatory support: policies and measures of governmental and regulatory bodies do not actively support the application of smart solutions for water supply management.

How to overcome these obstacles?
The SW4EU consortium seeks to overcome these hurdles by developing and demonstrating integrated solutions for smart management of water distribution networks. Integrated solutions will be demonstrated at large scale in 5 themes and at 4 locations in the Netherlands, Spain, the United Kingdom and France.

The demonstration themes concern:
1. Water quality management;
2. Leakage management;
3. Energy optimization;
4. Customer interaction;
5. Smart water supply management (integrating the above mentioned themes and including response strategies at each of the 4 demonstration locations).
The themes have been selected based on the following aspects:
1. High potential of innovation;
2. Major contribution to the objectives of water companies;
3. Substantial potential for creating business opportunities;
4. High potential savings and contribution to resource efficiency.

SmartWater4Europe consists of 21 participants of which:
- 12 SMEs bringing in their sensor, data processing, modelling and ICT technologies for the solutions to be demonstrated;
- 3 Water utilities that have created their own demonstration sites;
- 3 Research organizations and universities of which 1 owns a demonstration site;
- 2 Platform organizations representing water utilities and providers and users of contactless technologies.

Based on the demonstration and validation results SW4EU will create business cases for application of the solutions and exploit and disseminate the project results.

**The scientific and technological objectives of the project are:**
To integrate and demonstrate 12 innovative solutions on water quality management, leakage management, energy optimization and customer interaction.
To demonstrate 4 integrated solutions for smart water supply management and verify that these can meet the requirements for smart water supply management.
To establish and guard integration and standardization aspects in order to optimize market uptake.
To establish business cases and establish deployment potential and market uptake routes.

**Short introduction of the speakers:**

**England:**
Ms. Catalina Pedraza
Specialist Project Manager
Thames Water Utilities Ltd

**Austria**
Mr. Andreas Weingartner
CEO of S::CAN Messtechnik GmbH
Mr. Jordi Raich
S::CAN Messtechnik GmbH

**Netherlands**
Mr. Luc Stakenborg
Quasset B.V.
Mr. Joep van den Broeke
Optiqua
Mr. Erik Driessen
Vitens
14.40 How water distribution networks works are managed at present

Catalina/Erik

Current water distribution network management:

Water supply distribution networks are not actively managed based on real-time status data.

Smart water networks will change the future of water distribution networks. It will allow a change from the traditional, reactive approach to a proactive and responsive approach.

<table>
<thead>
<tr>
<th>Water quality management</th>
<th>From traditional Water networks management...</th>
<th>...Towards Smart Water Networks</th>
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<tbody>
<tr>
<td></td>
<td>• Water quality sampling and resampling</td>
<td>• Continuous monitoring instead of sampling</td>
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<tr>
<td></td>
<td>• 1-2 day analysis time</td>
<td>• Instant quality monitoring results</td>
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<td></td>
<td>• Water quality issues are established by</td>
<td>• Support detection of a broad range of events</td>
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<tr>
<td></td>
<td>customer complaints and doctor reports</td>
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<td>on illnesses</td>
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| Leak management          | • (Small) leaks are handled hours or days      | • Quicker detection and localisation of     |
|                         |   after the event or remain undetected         |   bursts and leaks                           |
|                         | • Bursts detected/localized by customers       | • Reduced damaged cause by running water    |

| Energy optimisation      | • Pressure management is sub-optimal due to    | • Reduced carbon footprint (“green” approach); increased resource efficiency and saving of natural resources |
|                         |   limited end-to-end pressure data             | • Lower energy cost                           |
|                         |                                               | • Extending equipment lifetime by preventing unnecessary use of e.g. pumps |

| Customer interaction     | • customer interaction is mainly initiated by  | • Improve customer service by providing instant event notifications |
|                         |   the customer (signals and complaints by      | • Customer interactions can be utilised as sources of information |
|                         |   telephone; information provided via websites | • Encourage consumption sustainable water by providing insights in usage patterns |
|                         |   and apps).                                  |                                               |
|                         |                                               |                                               |
The new solutions that are being implemented to demonstrate and create Smart Water Networks:

One of the important goals of this workshop is to give the SME’s a platform to introduce their vision, ideas and products that they are demonstrating in SW4EU but also in other parts of the world.

Presentations of S::cann, Optiqua and Quasset

14.55 S::CANN
15.05 Optiqua
15:15 Quasset

15:25 How SWN will change the future of water distribution networks

Catalina/Erik

Short wrap up and conclusions by theme:

- Benefits for water consumers:
  - Timely notifications of events
  - Reduction of costs associated with bottled water
  - Reduction of health risks as a result of increased water quality
  - Less disruptions of water supply because of leakage management
  - Water produced and distributed with minimal carbon footprint

- Benefits for Water Utilities:
  - Customer health and customer satisfaction by improved water quality and improved/sustainable service level
  - Reduction of energy costs
  - Extending equipment lifetime by preventing unnecessary use of e.g. pumps
  - Improved asset management by obtaining and utilising real-time asset data
  - Reduced damages and losses by operating proactively
  - Increase reputation/image

- Benefits for the EU, industry and SME’s:
  - International competitiveness
  - Technological leader
  - Creation of a new market for smart water solutions
  - Creation of a market of €3,5 billion worldwide
  - Creation of a turnover of €75 million and 500 jobs with the participating SME’s

- Benefits for Regulators:
  - Witnessing the successful application and reliability of new methodologies
  - Increase trust to adopt modern technologies with the purpose of improving current practices

15:30 Interaction with the audience:

- Interaction with the audience
  - What is your opinion about what you have heard and seen?
  - Do you have experience or examples of smart water networks?
  - Do you agree that smart water networks will be the future for utilities?
  - What can we do to accelerate the implementation of smart water networks?

15:45 End of the work shop