



WATER€RNOMICS

No. 1 - January 2015

Dear reader,

Welcome to the first Waternomics newsletter. This is the first issue of a series of newsletters that will keep you informed about our project. Waternomics is an EU funded research project to reduce water consumption of corporate and domestic users by providing water managers and consumers with timely and actionable information about water usage and water availability. WATERNOMICS will use innovative ICT tools increase awareness of water conservation and thus assure that future generations have access to sufficient safe drinking water. The three-year project started in February 2014 with nine industrial, scientific and academic partners from four different European countries. With this newsletter we want to introduce WATERNOMICS to you, share our findings with you and hope to inspire you to use and manage water resources in an even more sustainable way.

The Waternomics Team

Website: www.waternomics.eu

Newsletter: <http://eepurl.com/bctJw9>

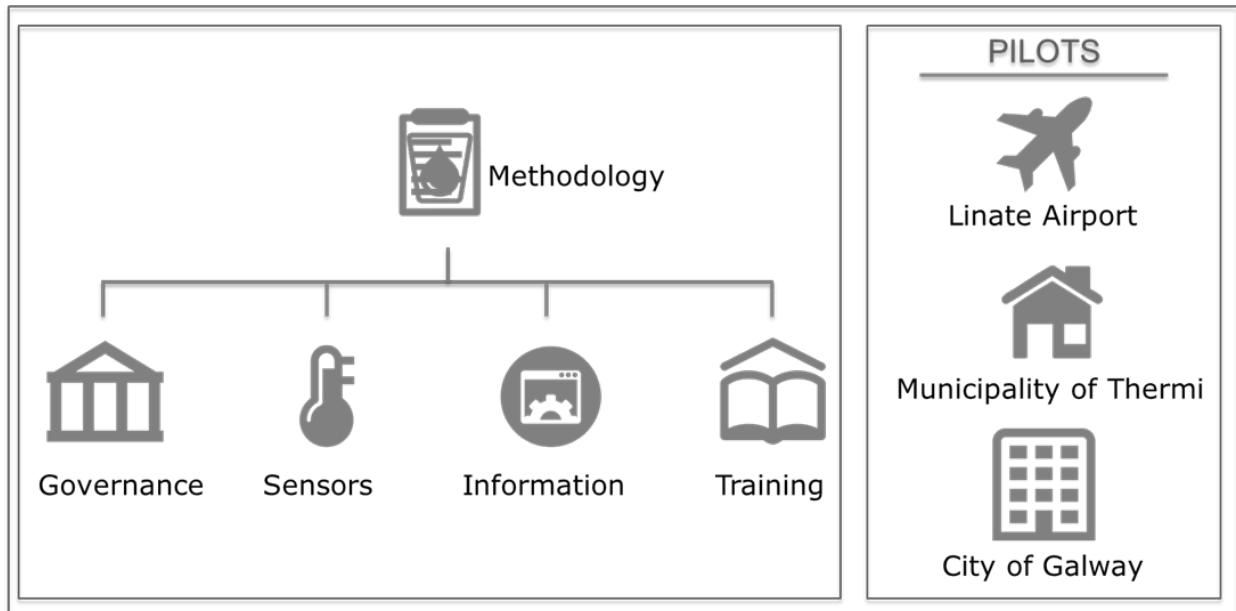
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Project Outline

Waternomics uses a holistic approach considering all the stages of water usage. On a hardware level, new sensor technology for leakage detection and measuring water flows will be combined with existing infrastructure. Collected data will be combined and made available to various applications, each targeted at a specific user group. A methodology will be developed to help water managers with the implementation of a water information system and new designed business models will ensure sustainable project results.



WATERNOMICS PILOTS

One of the ideas behind the Waternomics platform is that 80% of the required technology is generic and can be used in almost every application area. Receiving sensor- and meter-data, linking and analysing this data are all activities that need to be done for every application. Necessary context specific behaviour of the monitored system can be implemented in the applications on top of the generic layers. To validate if this idea is correct, Waternomics is preparing tests in three different real-life environments.

PILOT 1: CORPORATE USERS - LINATE AIRPORT, MILAN (ITALY)



An airport is a complex environment where security, flight schedules and services to passengers must be constantly accommodated. Passengers only reside for a short period of time at the airport and staff from various companies (with different requirements) work at the airport, making the use of different water awareness systems and feedback mechanisms necessary. Areas of the airport, and thus the water

distribution network, are constructed over discrete points in time, using different types of equipment and each system can then be further changed over time during routine maintenance, repairs and replacements. This makes it challenging to get a complete overview of the water distribution network as records of historical systems may not exist. A key challenge for Waternomics will be to provide accurate and relevant information of this complex site and also tackle key issues including analysing the financial benefits that can be expected to accrue from if Linate move from an estimation based billing for wastewater treatment to a billing system based on actual wastewater flow.

FURTHER INFORMATION: [Planning for water savings at Linate airport](#)

PILOT 2: DOMESTIC USERS – MUNICIPALITY OF THERMI (GREECE)

Located in the Thessaloniki region in the north of Greece, Thermi faced constant challenges due to long periods of droughts with short periods of extensive rainfall, leading to floods due to stormwater from nearby mountainous regions. Today, water management has improved and water is less scarce but ground water levels remain at a critically low level. This pilot will focus



on domestic households; in almost complete contrast to the Linate pilot! The households participating in the pilot don't have smart meters yet and but the households have a wide range of connected devices, smart phones, tablets, PC's etc, which can be used for providing feedback. This pilot will look at the relationship between utilities and their domestic consumers and help improve water conservation by improving data sharing and communication. It is an essential requirement of Waternomics that tools developed can be adapted to situations ranging from households to large commercial organisations.

FURTHER INFORMATION: [Preparing Waternomics pilot at Thermi](#)

PILOT 3: PUBLIC – UNIVERSITY AND SCHOOL BUILDINGS, GALWAY (IRELAND)

This pilot comprises two buildings in Galway City, Ireland (i) the Engineering Building, National University of Ireland, Galway and (ii) an Irish language secondary school "Colaiste na Coiribe".

(i) ENGINEERING BUILDING (NUI GALWAY)

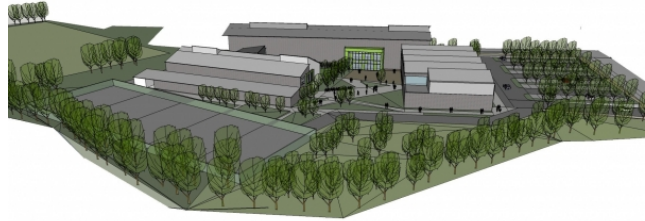


The NUIG engineering building was commissioned in 2011. During the teaching term it houses about 1,100 undergraduate and postgraduate students and about 100 staff. It is the largest engineering building in Ireland and includes lecture halls, classrooms, offices, laboratory facilities, a café, and shower and toilet facilities spread across 14,000 m² of floor

space on four storeys. Thus it has a variety of end-uses for water and significant variation in how water is used. This pilot will expose the WATERNOMICS platform to a mixed use large public building. Furthermore given its primary function as an educational and research building there are significant opportunities to engage educators, students and researchers in this project. The building offers significant challenges in terms of fault detection and an underlying need to reduce operating costs

(ii) **COLÁISTE NA COIRIBE (KNOCKNACARRA, GALWAY)**

Coláiste na Coiribe is an Irish language secondary school and currently has about 350 students and 25 teaching and administrative staff. Due to expansion, space pressures and the need for updated facilities a new 7400 m² school is currently



under construction. This new building will accommodate up to 720 students and comprise classrooms, offices, sports halls and associated toilet and shower facilities. As the school is in the early stages of construction it presents a unique opportunity for Waternomics to engage with the designers and contractors at an early stage and monitor this new building from commissioning stage..

Both “smart” buildings will be used for education of the scholars and students, teaching them about water management. While water conservation is a key objective in both buildings, they also provide a unique opportunity to engage with students of various ages and increase their awareness of water consumption. Indeed the project will engage the students in data analysis, development of platform interfaces, and feedback on proposed gamification techniques designed to improve awareness. These are, after all, the consumers, engineers, scientists, householders and business owners of the future!

FURTHER INFORMATION: [Smart water for Irish schools](#)

UPCOMING EVENTS

World Water Congress XV
25 to 29 May 2015
Edinburgh, Scotland

36th IAHR WORLD CONGRESS
28-june - 3 July 2015
Delft - The Hague, the Netherlands