

INNOVATIVE SOLUTIONS FOR WATER METERS PRESENTED ON OCCASION OF THE FINAL CONFERENCE OF THE SMART MET RESEARCH PROJECT

On 14 December, more than 100 people attended the final conference of the Horizon2020-funded research project SMART.MET to learn more about the innovative technological solutions in the field of smart water metering that were developed and tested on the field during the 5-years project. The conference was also the opportunity to discuss more broadly the conditions for the digitalisation of the water sector together with representatives of European institutions, water regulators and other stakeholders.

THE SMART.MET PROJECT: OBJECTIVES AND RESULTS

Led by a group of seven public water utilities, the [SMART.MET](#) research project has been funded under the EU Horizon2020 programme to drive the development of innovative and better-performing solutions for smart meters, through the launch of a joint trans-national Pre-Commercial Procurement (PCP), which was jointly carried out by the 7 water utilities that constituted the 'buyers group' of the project.

On 14 December 2021, the SMART.MET consortium organised the final conference of the project to present the innovative technological solutions that have been developed and then tested in 5 different sites across Europe (Budapest, Venetian Region, Alsace, Liège, Badajoz Province) following the launch of the PCP.

Mr Eric Mino, project's coordinator on behalf of *the International Office for Water* (OiEau, France), **Mr Diego Macchiella**, Secretary-General of *Viveracqua* (water utility from Venetian region, Italy, and lead procurer in the project) recalled the reasons that led seven different water utilities to work together to overcome shared challenges in the field of smart metering in the water sector.

Mr Macchiella explained that the seven utilities identified a series of common needs that were not met by technological solutions currently available on the market. As confirmed by a 'state of the art' analysis, no product was indeed identified on the market that satisfied a series of technical requirements, and most notably: interoperability between different device systems, bi-directional communication capacity, centralised backup and synchronisation, capacity of detecting water leaks on the network side.

In order to address these un-met needs, the SMART.MET project's approach revolved around the launch of *Pre-Commercial Public Procurement* (PCP) procedure, which was expected to drive the market to conduct targeted research and development activity to respond to such needs.



Ms Sara Bedin, partner in the project and independent expert on innovation procurement and Intellectual property rights management, then further illustrated the rational, determinants and outcomes of PCP procedure. She explained how PCP can represent a valuable tool to filter out technology risks and prevent situations of technological lock-in, as well as to steer R&D to meet water utilities' needs by enhancing competition and allowing for an effective risk-sharing between the procurers and the market, while facilitating the access of innovative SMEs to the (procurement) market. Based on the definition of SMART.MET joint cross-border procurement procedure, Sara Bedin also focused on analysis of mechanisms for inter-administrative cooperation and related issues of administrative law applicable in the MS appointed to be the lead procurer.

After illustrating the concrete application of the PCP to the Smart.Met project, **Mr Bernard Michaux**, Chief Operating Officer at water utility *Compagnie Intercommunale Liégeoise des Eaux* (Belgium), then presented the preliminary outcomes of the field-testing of the innovative solutions developed by the two companies that successfully passed the different phases of the evaluation process.

According to Mr Michaux, the innovative water metering systems developed by the two selected companies succeeded overall in responding to most of the needs pinpointed by the utilities, with regard in particular to:

- **A more accurate detection of reverse flow with an automatic valve.**
- **A more accurate detection of leakage after the meter, on the users' network.**
- **A Stable NB-IOT/SIGFOX communication in real life conditions (even in rural areas or in very difficult conditions – cellar, basement garage).**
- **Very high level of performance on the data collection platform.**

Mr Michaux added that, in addition to these technological improvements, the project also helped partner utilities to improve their understanding of their own internal operational procedures, 'digital-readiness' and contextual specificities through the cooperation and exchanges among each other.

Mr Michaux concluded that, thanks to these results and achievements, water utilities will be able to increase their operational efficiency, have a better control of the water network, better and quicker detect leakage, increase safety, for the benefit of both users and the environment.

DIGITALISATION OF THE WATER SECTOR: CHALLENGES AND OPPORTUNITIES IN A EUROPEAN PERSPECTIVE

The conference was also the opportunity to discuss more broadly the challenges and the opportunities that digital solutions involve for the water sector, together with representatives from EU institutions and other stakeholders.

Ms Andrea Halmos, Policy Officer at the unit 'Technologies for Smart Communities' of the *European Commission's Directorate-General for Communications Networks, Content* set the scene by providing an overview of the initiatives launched by the European Commission to support 'the twin digital and green transitions' and focusing in particular on the "Local twins programme", that supports public



authorities – especially at local level – by helping them to develop urban data platforms that integrate in a secure way multiple sources of data for better policy-design and implementation.

Ms Daphne Voss, Senior Water Engineer at the *European Investment Bank* (EIB), presented the role of the EIB as ‘water bank’, both for the role it plays as one of the major lenders to the sector but also for its capacity to provide technical assistance to utilities in designing their investment strategy. Ms Voss argued that the decision to invest in digital solutions should not be a goal *per se*, but should be assessed against the concrete operational benefits or efficiency gains it can provide.

Ms Elena Gallo, Vice-Director of the Water Directorate at the *Italian Regulatory Authority for Energy, Networks and Environment* (ARERA) illustrated the role that a water regulator can play in driving water utilities in increasing their efficiency, including through the promotion of digital solutions where needed. She also clarified that it is not within the mandate of the regulator to orientate the sector towards a specific technological solution, but dialogue is always ongoing with the water industry to remove potential bottlenecks.

Ms Mercedes Mira Costa, Project Manager for Standardization & Digital Solutions at *CEN-CENELEC*, outlined the role of European standardisation bodies and their relationship with those operating at national and international level. She emphasised the importance that the adoption of European standards can have in the development of a specific industrial sector, then focusing on the specific standards already existing in the field of water meters and digital solutions. She concluded by exhorting project partners and sector’s stakeholders in engaging in standardisation processes at European level.

In the following panel discussion moderated by **Ms Nuria Hernández-Mora** from *Fundación Nueva Cultura del Agua* (FNCA), Mr **Panagiotis Balabanis**, Head of Sector Water at the *European Commission’s DG Research & Innovation*, further mentioned the funding opportunities for the digitalisation of the water sector under the *new Horizon Programme*, and stressed the importance of exploitation phase of research project, while synergies between different stakeholders and level of governance are key. He also argued about the need to better involve the users in the digitalisation strategies as they proved to be a powerful driver in the development of new IT approaches. The role of users was also stressed by Ms Costa and Ms Gallo, who drew attention to the issue of the ‘acceptance’ of smart metering, also for reasons related to data protection and privacy.

All speakers agreed that the SMART.MET project represents an interesting and innovative experiment to accelerate the digitalisation of the water sector, and Ms Voss said to be willing to further interact with project’s partners to consider whether and how the EIB could support multi-operators’ investments.

FROM A COMMON CHALLENGE TO A POTENTIAL SOLUTION FOR THE WATER SECTOR

The conference was followed in the afternoon by an online technological fair facilitated by **Pierre-Henri**



Bouhet, technical expert from OiEau, which also gathered over 100 participants. Water utilities and experts had the chance to explore - more in-depth and from a technical perspective - the potentialities of the new solutions by dialoguing directly with the two companies - *Telereading* (Italy) and *Hydroko* (Belgium) – that were selected for the last phase of the PCP process, involving the field-testing of innovative prototypes.

In addition to the presentations of the two prototypes from the vendors, participants had the opportunity to exchange about the potentialities of the innovative solutions directly with representatives from the water utilities who have tested the solutions on the field, namely: *Syndicat des Eaux et de l'Assainissement Alsace-Moselle* (SDEA, Alsace-Moselle, France), *VIVERACQUA* (Veneto Region, Italy), *CILE* (Liège, Belgium), *Budapest Waterworks* (Budapest, Hungary) and *PROMEDIO* (Badajoz, Spain).

As already stated by Mr Michaux in the morning session, water utilities' representatives confirmed that the tested solutions seem to outperform existing products on the market, thus bringing some significant benefits for water utilities (better planning of their infrastructure renewal and improving their customer services), for users (accurate consumption monitoring and better information on consumption patterns) and the environment (less waste).

About SMART.MET (PCP for Water Smart Metering)

SMART.MET - PCP for Water Smart Metering is a European project funded under the Horizon 2020 research programme and launched in 2017. The SMART.MET project, coordinated by Office International de l'Eau (OIEau), aims at promoting demand-driven research into the development of new innovative smart meter solutions that fully cater to the needs of water utilities.

Smart water metering presents itself as an effective solution to the challenges faced by the majority of European water utilities today, from extreme events induced by climate change to the need to replace ageing infrastructure. Indeed, providing access to accurate data in real-time can help decrease operating costs and prioritise infrastructure investments, while improving the daily management of networks and customer services.

The buyers' group is composed of **seven water utilities from five different EU countries** which came together in the SMART.MET project to guide the development of new technologies based on open technological platforms for the remote reading of water meters.

Pre-Commercial Procurement (PCP) concerns the procurement of research and development services. It is an unique instrument to foster competition for the development of high quality and alternative solutions whilst providing an adapted answer to common needs and opening new markets for companies.

Driving the development of new solutions for smart water metering data collection and management.

CONFERENCE PRESENTATIONS



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731996.

