OUTPUT FACT SHEET

Pilot actions (including investment, if applicable) Version 3

Project index number and acronym	CE1578 CityWaterCircles
Output number and title	O.T2.4 Pilot action demonstrating water saving via smart metering and developing a supportive mobile app.
Investment number and title (if applicable)	N/A
Responsible partner (PP name and number)	PP10, ViK-Split
Project website	https://www.interreg-central.eu/Content.Node/CWC.html
Delivery date	September 2021- March 2022

Summary description of the pilot action (including investment, if applicable) explaining its experimental nature, demonstration character and transnational added value

Before the investment, three different state-of-the-art IoT radio technologies were used for purposes of testing: Sigfox, LoRaWAN, and NB-IoT. Each of the proposed technologies have its own pros and cons, as depicted in Figure 2. As the implementation of IoT communication infrastructure in Croatia is still in its early phase, it was required to check the availability at the particular positions, moreover at underground positions where the smart water-meters were to be installed. It was important to note that given locations were harsh in terms of radio signal propagation, i.e. wireless communications, and were needed to be tested on given sight before the investment.
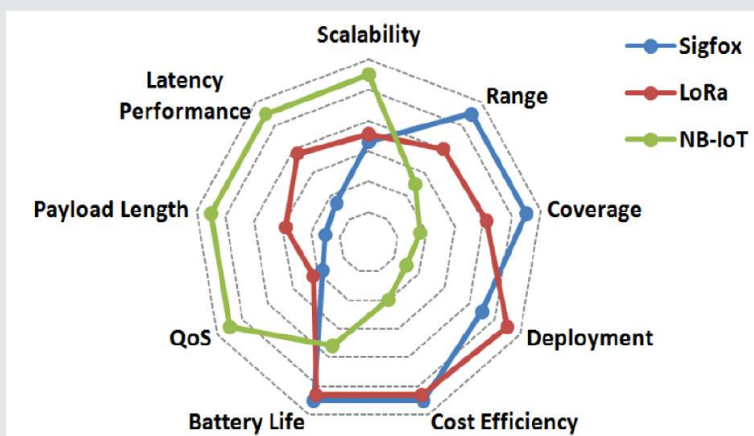

Figure 2 -Comparison between Sigfox, LoRa and NB-IoT

Exact positions of the smart water-meters are given in Figure 3. Where the numbers 1, 3, and 2 denote specific locations A, B and C, respectively.
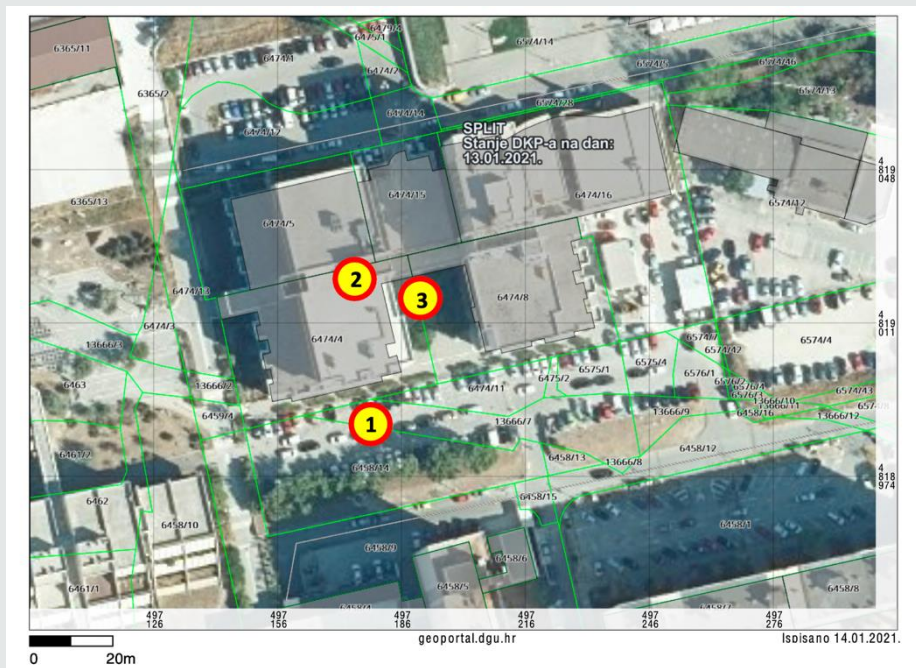

Figure 3 – Locations for smart water-meters installation

Upon smart water-meters installation, remote data preview and analysis was required by monitoring and separately analyzing different location consumption. To achieve this goal, the dashboard-like mobile/web-based application with architecture depicted in Figure 4 is used. It enables separate analysis of data received from different smart water-meters.
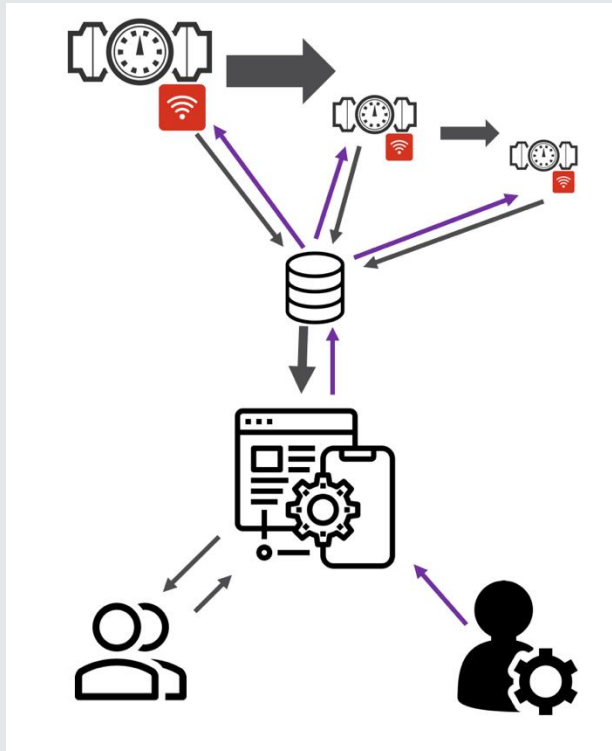

Figure 4 – Application architecture

Finally, since its development, standard app users are able to monitor data, and administrators can monitor data, add sensors and alarming users based on the rules that add considering not normal values from sensors. Given application is deployed in LCD screen in pilot location.

NUTS region(s) concerned by the pilot action (relevant NUTS level)

NUTS3 – HR035 - Adriatic Croatia

Investment costs (EUR), if applicable

3.751,25 €
Deployed 3 smart water meters based on LoRaWAN radio technologies. 2XDN40 and 1XDN50 and deployment of LCD screen to the public building entry point. It presents a dashboard like web-based system with water consumption data.

Expected impact and benefits of the pilot action for the concerned territory and target groups and leverage of additional funds (if applicable)

The most significant benefit would be both environmental and economic, based mainly on savings in drinking water and a more efficient management of water resources. ViK Split pilot describe steps needed for successful implementation of the smart water meter IoT system while providing use cases on smart water meters implementation and given data analysis. During the planning process, overall system requirements were considered to have the possibility of adding the other possible sensors to the system. This involves adding more smart water-meters to the other locations, soil sensors, air sensing (temperature, humidity, irradiation, pressure, CO_2), wind sensors, electricity metering, etc. By using the metering, the project can further evolve into smart building where parts can certainly be automated. The motivation for implementing such a system is linked with reducing the costs while enabling at the same time more efficient spending by providing users with transparent and real-time data.

Sustainability of the pilot action results and transferability to other territories and stakeholders

Sustainability of the pilot action is reassured by close cooperation with Split University, which physically hosts the water meters and the of LCD screen deploying the metering results at the public building entry point of the relevant faculty. Moreover, analysis of the data is part of the curriculum and has already been the basis of scientific research as well, and can function like this in the future as well.

Transferability is assured by the technical nature of this pilot, enabling it to be reproduced in any location in Europe, based on the technical specification of the given place. Moreover, during the peer review visit partners agreed that it is important that mechanisms must be put in place in the future to protect the drinking water sources, increase the reuse of water where it is possible and educate people on efficient water use and reuse of water.

If applicable, contribution to/ compliance with:
- relevant regulatory requirements
- sustainable development – environmental effects. In case of risk of negative effects, mitigation measures introduced
- horizontal principles such as equal opportunities and non-descrimination

The pilot is in compliance with relevant regulatory requirement, as it has been assured during the planning phase and the technical installation. The pilot contributes to sustainable development by raising attention to water consumption, and thus contributing to sensibilization towards the reduction of water consumption.

References to relevant deliverables (e.g. pilot action report, studies), investment factsheet and web-links
If applicable, additional documentation, pictures or images to be provided as annex

Relevant project deliverables:

D.T2.6.5. - Intermediate report on the implementation of the pilot action in Split

D.T2.7.1. - Final self-evaluation reports on pilot implementation with upscaling plans

Relevant information can be found: https://www.interreg-central.eu/Content.Node/Real-time-monitoring-of-water-consumption.html

Photos:

Information billboard at the LCD screen in public building – Figure 1

Water meter installed

Information billboard at the LCD screen in public building – Figure 2