

**Abstract Information for IWRA Online Conference**  
**“One Water, One Health: Water, Food and Public Health in a Changing World”**  
**7-9 June 2021**

\* All fields in the online abstract submission process must be completed.

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| <p align="center">(*)<br/>Presentation Type</p>                                | <p><b>Online Oral Presentation</b></p>  |
| <p align="center">(*)<br/>Selected Theme</p>                                   | <p>Theme 1: How can we better Manage Water for Food and Public Health in a Changing World?</p>  |
| <p align="center">(*)<br/>Abstract Title</p>                                   | <p>digital-water.city: leveraging the potential of data and digital solutions for urban water management</p>  |
| <p align="center">(*)<br/>Body<br/><b>(1 paragraph of up to 400 words)</b></p> | <p>Europe’s waters are under mounting pressure. Agricultural and industrial activities as well as increased urbanisation trigger pollution, over-abstraction and modification of water bodies. Digital technologies such as mobile devices, sensor networks, real-time monitoring, cloud computing, machine learning, and modelling tools are acknowledged as key enabler to improve the management of water infrastructures while at the same time considering interoperability, cybersecurity and governance aspects.</p> <p>The Horizon2020 project digital-water.city (DWC) brings to the market a series of innovations for water monitoring. New sensors enable the surveillance of key business operations such as illicit connections in stormwater networks, sewer maintenance efficiency, CSO emissions, irrigation efficiency and microbial river impacts. DWC also creates new modelling capacities for a range of uses e.g. the simulation of sewer flow, real-time assessment of water reuse risks, prediction of bathing water quality and advanced asset management strategies. Decision support systems are brought to a new level with enhanced control capacities of wastewater reuse for irrigation or integrated management of sewer networks and wastewater treatment plants. 15 digital solutions are being co-developed with the utilities of five major European urban and peri-urban areas: Paris, Berlin, Copenhagen, Milan and Sofia.</p> <p>An example of connecting water management to food safety is ensuring hygienic quality of treated wastewater for reuse in agricultural irrigation. DWC implements digital solutions in Milan to monitor microbial indicators in treated wastewater in near-real time. Drones are used to determine irrigation needs and a matchmaking platform brings together farmers, operators of wastewater treatment and health authorities aiming at the implementation of a sanitation safety plan and a serious game informing about the water-food-energy nexus. The same near real-time monitoring device is used in Paris and Berlin to monitor bathing water quality in surface water. In connection with low-cost temperature sensors for the detection of combined sewer overflows (CSO), overall surface water quality is improved from releasing retention capacities in sewers. The latter is also targeted by implementing improved flow forecasts from weather and radar data into hydraulic sewer models and wastewater treatment plant management as shown for Copenhagen. In Sofia, sewer infrastructure performance is improved by combining sewer inspection with sewer cleaning, plus, improving understanding of sewer hydraulics and optimization of the operational work of the utility, is aimed at with low-cost temperature sensors. With these and the other examples of digital solutions, DWC is linking utilities from major European cities and the digital and physical world.</p> |
| <p align="center">(*)<br/>Keywords</p>   | <p>Urban water management, water infrastructure, asset management, CSO, digital solutions</p>   |

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