

Proposal of JCUD Working Group on Large Research Infrastructures in Urban Drainage

Introduction

Research and innovation development in Urban Drainage Systems are closely linked to studying and testing new solutions and methods that water utilities, regulators, and practitioners can easily and extensively implement in urban systems.

However, **water utilities are traditionally cautious innovation adopters**, often requiring full or near-full scale testing of novel solutions prior to adopting widespread implementation. This makes it difficult to transfer new knowledge and technologies from research to the end-user community around the world. It is key, in this regard, to consistently improve the engagement and participation of companies, local regulators, and SMEs alongside researchers and practitioners. **Interconnecting large-scale urban Research Infrastructure (RI) facilities** while also actively creating multi-sectorial teams will make **novel technology more efficient, faster, and safer**.

Innovative technologies and the ‘**hybrid grey-and-green infrastructure**’ are “Key Components for a Water Smart Society” in the Strategic Innovation and Research Agenda (SIRA) of the Water Europe platform.¹ So far, however, these **have been tested primarily at a pilot and/or small scale**. The JCUD Working Group on Large Research Infrastructures would strategically help to transition between pilot and/or small scale to large-scale facilities implementation in urban drainage systems, making this process available to a larger and more diverse group of users within the urban drainage community.

Objectives and Scope

The UDRAIN Working Group aims to establish the first worldwide network of large Research Infrastructures (RI) of urban drainage systems. Interest in cooperation, technical collaboration, and joint initiatives – such as transnational access programmes, training activities, and knowledge exchange – has been rapidly growing for the past few years. The experience of the H2020-INFRAIA Co-UDlabs² with 17 facilities pooled together by seven partners in seven different European countries, is proof of the growing demand for such frameworks.

To date, however, the ESFRI European Roadmap for research infrastructures³ does not include any facilities designed for urban drainage research,³ and large infrastructure networks are only minimally included in EU-funded research. Countries such as the USA and UK have research infrastructure programs to encourage the development of national research infrastructure to support collaborative, leading edge research^{4,5}. Collaborative infrastructures could benefit from enhanced international coordination worldwide to address challenges such as (i) common data collection and storage procedures, (ii) increase the operational sustainability and improvement of the catalogue of available services, and (iii) make the installations more consistent with the actual needs and objectives of their users.

¹ Available online at: <https://watereurope.eu/wp-content/uploads/2019/07/Water-Europe-SIRA.pdf>.

² The project website is available online at: <https://co-udlabs.eu/>. A summary of the project’s details and output is available on CORDIS: <https://cordis.europa.eu/project/id/101008626/es>.

³ The Roadmap is available online: <https://www.esfri.eu/esfri-roadmap>.

⁴ <https://new.nsf.gov/funding/opportunities/mid-scale-research-infrastructure-2-mid-scale-ri-2/announcements>

⁵ <https://www.ukcric.com/how-we-can-help/facilities/>

In close collaboration with other well-established JCUD Working Groups – such as the International Working Group on Data and Models (IWGDM) or the Urban Drainage Asset Management (UDAM) working group – the UDRAIN working group wants to develop an improved cooperation roadmap, including research infrastructures worldwide. It aims to improve available services, especially by retrofitting existing infrastructure, and thus expand the range of possible uses, advanced training, and support to innovative research. The group, finally, would also seek viable options to consolidate such a network in more formal and institutional ways.

Proposal of activities

The working group would coordinate to:

- Organise regular working group meetings
- Prepare an inventory of large-scale Research Infrastructures (RI) on urban drainage
- Propose an atlas of large-scale RI to enhance their visibility and facilitate contact among them and with potential users
- Disseminate its own members' activities through IWA Connect and other community services
- Organise webinars and other training and dissemination activities
- Coordinate initiatives to expand the network to new members and RIs, while also developing joint proposals for new funding opportunities
- Build a community of large RI owners to enhance and uniform practices
- Build a community of large RI actual and potential)users to share studies and results

Establishment process and next steps

- Call for expression of interest for existing groups and installations to join the group
- Initial internal survey for an inventory of available facilities (field and lab facilities) to be filled up by the people interested in join the group before 17 May 2024 thorough this [link](#)
- Official launch of the group at the ICUD congress. Meeting dates to be confirmed.

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