



Co-UDlabs

**BUILDING COLLABORATIVE URBAN
DRAINAGE RESEARCH LABS COMMUNITIES**

D4.2. Plan for exploitation and dissemination of the project results

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BACKGROUND: ABOUT THE CO-UDLABS PROJECT

Co-UDlabs is an EU-funded project aiming to integrate research and innovation activities in the field of Urban Drainage Systems (UDS) to address pressing public health, flood risks and environmental challenges.

Bringing together 17 unique research facilities, Co-UDlabs offers training and free access to a wide range of high-level scientific instruments, smart monitoring technologies and digital water analysis tools for advancing knowledge and innovation in Urban drainage systems.

Co-UDlabs aims to create a urban drainage large-scale facilities network to provide opportunities for monitoring water quality, UDS performance and smart and open data approaches.

The main aim of the project is to provide a transnational multidisciplinary collaborative research infrastructure that will allow stakeholders, academic researchers, and innovators in the urban drainage water sector to come together, share ideas, co-produce project concepts and then benefit from access to top-class research infrastructures to develop, improve and demonstrate those concepts, thereby building a collaborative European Urban Drainage innovation community.

The initiative will facilitate the uptake of innovation in traditional buried pipe systems and newer green-blue infrastructure, with a focus on increasing the understanding of asset deterioration and improving system resilience.

TABLE OF CONTENT

EXECUTIVE SUMMARY	7
DISSEMINATION AND COMMUNICATION STRATEGY	8
1.1. PHASES OF THE DISSEMINATION STRATEGY	8
1.2. DEFINITION OF THE CO-UDLABS TARGET AUDIENCE	9
1.3. THE CO-UDLABS MESSAGES	13
1.4. DISSEMINATION RULES AND PROCEDURES	14
1.4.1. <i>Communication within the Co-UDlabs consortium</i>	14
1.4.2. <i>Open access to scientific publications</i>	14
1.4.3. <i>Open access to scientific data</i>	15
1.4.4. <i>Use of graphic identity and EU visibility</i>	15
1.5. DISSEMINATION AND COMMUNICATION ACTIVITIES AND TOOLS	15
1.5.1. <i>Visual identity</i>	16
1.5.2. <i>Communication materials</i>	17
1.5.2.1. <i>Flyer and brochure</i>	18
1.5.2.2. <i>Poster and roll-up banner</i>	19
1.5.2.3. <i>Press releases and articles</i>	20
1.5.2.4. <i>Newsletter</i>	20
1.5.2.5. <i>Videos and other communication materials</i>	20
1.5.3. <i>Co-UDlabs website</i>	21
1.5.4. <i>Social networks and online presence</i>	23
1.5.5. <i>Press relations</i>	24
1.5.6. <i>Scientific and technical publications</i>	26
1.5.7. <i>Events</i>	29
1.5.7.1. <i>Events planned to be organised by the project</i>	29
1.5.7.2. <i>Participation in external events</i>	31
1.6. IMPACT ASSESSMENT	33
1.7. TRACKING AND MONITORING OF THE ACTIONS	34
EXPLOITATION STRATEGY	35
2.1. LIST OF RESULTS WITH POTENTIAL FOR EXPLOITATION	36
2.2. ACTIONS PLANNED TO ACHIEVE THE EXPLOITATION OF RESULTS AND IMPACTS OF THE PROJECT	38
2.3. PROTECTION OF RESULTS AND IP	40
2.4. THE INTERNATIONAL ADVISORY BOARD	41
WP4 DELIVERABLES	41

ANNEX 1 – LIST OF EVENTS TO TARGET	42
ANNEX 2 – KPI REPORT (AT M36)	43

INDEX OF TABLES

Table 1: Dissemination strategy planning	8
Table 2: Summary of target groups, objectives and content for Co-UDlabs dissemination	9
Table 3: Co-UDlabs partners' network	10
Table 4: List of European projects and initiatives on a similar domain	12
Table 5: Main elements of the dissemination strategy	16
Table 6: Press articles published about Co-UDlabs	25
Table 7: Overview of the online form tracking partners' communication and dissemination actions	35
Table 8: Preliminary list of results with potential for exploitation	36
Table 9: Updated list of Co-UDlabs Key Exploitable Results (KERs)	37
Table 10: Actions planned to achieve the exploitation of results	38

INDEX OF FIGURES

Figure 1: Co-UDlabs templates: PowerPoint presentation, deliverable, agenda and minutes	17
Figure 2: Co-UDlabs flyer	18
Figure 3: Co-UDlabs brochure on TA access	18
Figure 4: Co-UDlabs poster and roll-up banner	19
Figure 5: Co-UDlabs poster and roll-up banner	19
Figure 6: Screenshot of the Co-UDlabs motion design video produced at M20	20
Figure 7: Co-UDlabs YouTube channel	21
Figure 8: Co-UDlabs website landing page	21
Figure 9: Overview of the Co-UDlabs website page views over time	22
Figure 10: Co-UDlabs website visitors by country	23
Figure 11: Mostly visited pages of the Co-UDlabs website	23
Figure 12: Co-UDlabs LinkedIn page and Twitter account	24
Figure 13: Co-UDlabs LinkedIn users' profiles	24
Figure 14: Interview of Jose Anta Alvarez (UDC) in the Spanish O Sil regional newspaper	26

LIST OF ACRONYMS

Acronym / Abbreviation	Meaning / Full text
CA	Consortium Agreement
GA	Grant Agreement
IAB	Innovation Advisory Board
IP	Intellectual Property
JRA	Joint Research Activity
KER	Key Exploitable Result
KPI	Key Performance Indicator
PEDR	Plan for Exploitation and dissemination of Results
RI	Research Infrastructure
TA	Transnational Access
UDS	Urban Drainage System
WP	Work Package

EXECUTIVE SUMMARY

This document is a deliverable of the Co-UDlabs project, funded under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008626.

This document is a revised version of the Plan for Dissemination and Exploitation of Results (PEDR) produced at M6 as part of the Work Package 4 on communication, dissemination and exploitation of results.

The aim of the PEDR is to provide the Co-UDlabs partners with guidelines on the different communication and dissemination activities that are planned and their schedule, who are the partners responsible for each activity and what tools and channels are available for dissemination. A section on exploitation defines the actions planned to achieve the exploitation of the results and impact of the project.

More specifically, in terms of dissemination and communication the PEDR:

- Proposes a communication and dissemination policy, and defines the objectives of the actions;
- Identifies the target audience for each objective or main result;
- Lists the communication and dissemination channels to be used for project promotion;
- Presents a schedule of the communication and dissemination actions throughout the project duration;
- Defines and monitors a series of Key Performance Indicators (KPIs) to assess the success of the implementation (e.g. number of publications, size of the audience reached, number of visits on the website, feedback received from audiences at conferences, etc.) and updates the plan according to the evolution of the project.

In terms of exploitation of results, the PEDR will contain the following information, if applicable and when relevant, especially within the final exploitation plan to be submitted at the end of the project:

- The identification of exploitable main outputs of the project;
- The identification of the factors influencing exploitation and wide deployment of the project's results
- The identification of new and existing measures for the project sustainability.

The document is drafted by Euronovia, which is leader of this Work Package, with inputs from all partners.

While Euronovia is the leading partner in charge of WP4, all partners have the responsibility to participate in the communication activities and dissemination of the results of the project. According to the Grant Agreement and unless it goes against their legitimate interests, each beneficiary must, as soon as possible, disseminate its results by disclosing them to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications.

The PEDR is an evolving document which has been updated at the end of the first reporting period (M18), at the end of the second reporting period (M36) and which will be updated again at the end of the project (M48 - April 2025).

DISSEMINATION AND COMMUNICATION STRATEGY

Co-UDlabs will integrate along the project many activities to enhance the dissemination and exploitation strategy, maximize the expected impact and boost the project sustainability for the continuation of the project after the EU-funding. The considerable geographic coverage of the project provides a strong foundation for a much broader engagement, and ultimately for the basis upon which to work towards long term sustainability for the UDS community. In the framework of the dissemination and communication strategy, we have three main objectives:

- **Dissemination for Awareness:** to ensure the project is known to relevant stakeholders in the field of urban drainage, municipalities and public authorities' planners, and the public in general.
- **Dissemination for Understanding:** to encourage a better understanding of the project results leading to greater engagement of external stakeholders and a better future uptake of the project outcomes. To do so, we will not only disseminate project results but also success stories related to the technological development within the project and the use of RIs by external groups in the framework of the Transnational access.
- **Dissemination for Action:** to make the scientific community, stakeholders and decision makers aware of the potential uses of the technologies developed in the project and to ensure adoption of technologies, processes and services being developed by the project partners.

1.1. PHASES OF THE DISSEMINATION STRATEGY

The planning and execution of the project activities require a good scheduling closely aligned with key project deliverables and milestones. At this scope, below are the phases planned in the GA for the dissemination of project results over the 4 years of the project, each with specific tasks.

Table 1: Dissemination strategy planning

Main Tasks	Task description	Year 1	2	3	4
Dissemination and exploitation strategy definition	During the first months of the project, the dissemination and exploitation strategies have been defined, focusing on the planned project outcomes and targeted stakeholders and access users. This will be updated after annual monitoring of the implementation of the dissemination activities.				
Creation and clustering with stakeholders' network group	Co-UDlabs will develop an end-user network group consisting of end-users, associated partners and other external actors in the field, that will be consulted in the project and targeted as users of the research infrastructures. This has been used at the start of the project to define the end-user requirements. This will also be used in later stages to assess and validate the project outcomes.				
Events participation/workshop organisation	Organise workshops and participate in special events (stakeholder workshops and national level events, hackathons) for co-creating ideas for potential TA projects and foster innovation by multisectoral teams.				
Publications in scientific journals, conferences and specific magazines	Actively publish in both scientific (for academics) and technical (for practitioners) journals and trade magazines to widely disseminate the project outcomes and support its results.				
Exploitation	Implement a robust exploitation strategy focusing on the adoption of project outcomes and directing further development of results beyond the project, including the organisation of an exploitation workshop during beginning of year 3, providing information to TA User group on potential routes of EU and national				

	funding and investment. Organization of direct contact with potential licensees and commercialisation companies.																		
Impact Assessment	Assess the impact of project outcomes through direct feedback from different stakeholders																		

1.2. DEFINITION OF THE CO-UDLABS TARGET AUDIENCE

In the first months of the project we identified several **target groups** that have an interest or are going to be affected by the Co-UDlabs project. These groups are being targeted by different communication and dissemination actions and networking/clustering activities, as detailed in the table below.

Table 2: Summary of target groups, objectives and content for Co-UDlabs dissemination

Target and user groups	Description of the target groups and dissemination objectives	Objectives	Dissemination content and channels
Academic and research community	This group includes all research communities interested in the project's developments, results and innovation, which can be beneficiary for their own research activities.	Transfer of knowledge, raise awareness	Project website, press releases, social media, mailing lists, videos and webinars, public deliverables, scientific publications, conferences and other scientific events
Industrial sector, water utilities and practitioners	An important objective of Co-UDlabs is to address and trigger the active involvement of the industrial sector. The project is of relevance for organizations in various sectors such as providers of smart solutions for UD monitoring, asset evaluation techniques, manufactures of new solutions for sustainable urban drainage, and related professional associations.	Demonstrate the business potential, push towards early adoption of products and services developed by Co-UDlabs, collect feedback on their expectations and requirement to adjust commercial exploitation plans and RI development	Project website, press releases, mailing lists, innovation events (hackathons), dedicated training workshops, public deliverables (including free software tools and datasets), technical publications, dissemination at national level events. Multi-language documents are of key importance.
Government bodies and policy makers	This is a wide group encompassing innovation driven local, regional authorities, policy-makers at different levels, representatives and associations, Ministries, parliaments and Public Administrations at national and international level.	Demonstrate the benefits of the Co-UDlabs RIs and tools to improve urban drainage, raise awareness about proposed regulatory evolution	Final recommendations in deliverables, policy roadmaps, press kit, general dissemination, participation to policy events. Multi-language documents are of key importance.
European and international technology networks	This group refers to activities addressing external task forces. Relevant European technology clusters have been identified, such as Water Europe or Euroau (member of Co-UDlabs IAB)	Use as dissemination relays towards their members	Public deliverables, press kit, articles, press releases, communication package.
National technology networks	This group refers to activities addressing external task forces at national level. Relevant National level clusters have been identified	Use as dissemination relays towards their members	Presentation of Co-UDlabs at national level events. Multi-language communication package.
EU projects working in similar domain	The participation of project partners in other relevant projects offers the opportunity to establish quick links through joint actions.	Coordinate dissemination activities in order to maximize their impact, exchange on R&D results to improve robustness of project results	Dissemination events, presentation at conferences, participation in workshops from other projects.
The general public / advocacy groups	General audience and other actors not identified such as environmental NGO as direct targeted groups by the project, though this group might not have strong interest in the project.	Raise awareness on the importance of R&D in urban drainage in general, inform about the benefits	Project website, brochure, press releases, social media, project outreach events for the general public. Multi-language documents are of key importance.

		of the project towards a sustainable system	
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These target groups are being refined throughout the lifetime of the project in relation to the results and deliverables. To reach out to the largest possible audience, each Co-UDlabs partner uses its own **network of contacts** at the local, national and European level (see Table 3 below).

Table 3: Co-UDlabs partners' network

Co-UDlabs partner	Local and national networks	European networks
UNIVERSIDADE DA CORUNA	<ul style="list-style-type: none"> - Agrupación CITEEC (A-CITEEC): about 300 organizations in the field of Civil Engineering follow their LinkedIn group and newsletter - Asociación Española de Abastecimiento y Saneamiento (AEAS). Spanish water supply and wastewater operators. The IV Commission of Urban Drainage has about 80 members (operators, industry) - www.aeas.es 	<ul style="list-style-type: none"> - Young Water Professionals. IWA - Young Professional Network. IAHR - Research member of European Water Association. EWA
THE UNIVERSITY OF SHEFFIELD	<ul style="list-style-type: none"> -Sheffield Water Centre mailing list – mainly academic, but contains end users that have worked with UFSD researchers before. -CIWEM Urban Drainage Group – group focussed on modelling practice in UK Water Sector -SWIG – Sensors for Water Interest Group 	<ul style="list-style-type: none"> - Research member of Water Europe - IWA/IAHR Sewer Processes and Networks Working Group - IWA/IAHR Working Group on Data and Models
DELTARES	<ul style="list-style-type: none"> - RIONED Foundation (Dutch interest group for urban drainage concerns) - Foundation for Applied Water Research (STOWA) - NWO (Dutch National Research Funding organisation) 	<ul style="list-style-type: none"> - IWA/IAHR working group on Urban Drainage Asset Management
EAWAG	<ul style="list-style-type: none"> - Wasser-Agenda 21 (FORUM UND NETZWERK DER AKTEURE DER SCHWEIZER WASSERWIRTSCHAFT, https://wa21.ch/) - VSA-competence center of urban drainage (CC-SE) 	<ul style="list-style-type: none"> - IWA Specialists group on International Working Group on Data and Models (https://sites.google.com/view/iwgdm/) - Hochschulgruppe Simulation (HSG), Network of German-speaking Universities regarding simulation of Wastewater systems <p>International Group on Urban Rainfall Working Group of the IWA/IAHR Joint Committee on Urban Drainage https://igur.org/</p>
IKT	<ul style="list-style-type: none"> - IKT-Association of Network Operators (members: 130 Network asset owners - from Germany and a few from Europe) - www.ikt-online.org/about-us/ikt-association-of-network-operators/ - IKT-Association of Industry and Services (75 members - from Germany and some of them international) - www.ikt-online.org/about-us/ikt-association-of-industry-and-service/ - Kommunales Netzwerk Abwasser (Municipal Network Wastewater: 60 Municipals from Germany) - www.komnetabwasser.de - Johannes-Rau-Forschungsgemeinschaft (Joahannes-Rau-Research Association) (15 research institutes from North Rhine-Westfalia) - www.jrf.nrw - DWA - Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (IKT is participating in working groups) - https://en.dwa.de/en/ - BWK - Bund der Ingenieure für Wasserwirtschaft, Abfallwirtschaft und Kulturbau e.V. (Association of Engineers 	<ul style="list-style-type: none"> - ComNet Wastewater (International network for the exchange of experience between Network asset Owners, organized by IKT) - European Water Association (EWA) - research member

	for Water Management, Waste Management and Cultural Engineering) - IKT is participating as partner association - IWA Specialist group on Urban Drainage	
INSA Lyon	- ASTEE Commission Assainissement (Sewerage Group) - ASTEE Research Committee - OTHU (www.othu.org) - H2O Lyon (https://h2olyon.universite-lyon.fr/h2o-anglais-105390.kjsp?RH=3020308959015886)	- IWA / IAHR Specialists group on Urban Drainage (http://www.jcud.org/)
AALBORG UNIVERSITY	- DWPC - Danish Water Pollution Committee - IWA Danish National Committee	- ITN Limnoplast - Microplastics in Europe's freshwater ecosystems: From sources to solutions https://www.limnoplast-itn.eu/ - International group on urban rainfall (IGUR) under Joint committee on urban drainage (JCUD) - Nordic Framework for Climate Services (NCFS) - Sewer Systems and Processes Working Group (SS&PWG) under the IWA/IAHR Joint Committee on Urban Drainage
GRAIE	- GRAIE network (350 members: urban district, private engineering and scientists; 2500 contacts) - GRAIE and Adopta - 143 members - national network of "stormwater" facilitators as part of a ministerial roadmap for stormwater management - URBIS - 450-500 scientists and practitioners (http://www.graie.org/urbis-soere/spip/spip.php?rubrique4) - 3 regional observatories: - OPUR "Observatoire d'hydrologie urbaine", Paris - OTHU "Observatoire de Terrain en Hydrologie Urbaine", Lyon - ONEVU "Observatoire Nantais des Environnements Urbains", Nantes. - OTHU - 115 scientists and doctoral students - 50 practitioners and partners http://www.othu.org - ASTEE - 4000 members (urban district, private engineering, industry...) https://www.astee.org/membres/ - AMORCE - 92 urban district for the "water and wastewater" thematic https://amorce.asso.fr/nos-adherents - VAD - 360 members (urban district, landscape designer, town planner...) https://www.ville-amenagement-durable.org/QSN	

A **contact form** was also developed on LimeSurvey by GRAIE (in the framework of WP1) in collaboration with UDC and Euronovia to constitute a project's stakeholders' database. People subscribing to this form are asked to provide their field of activity and to select the topics they are most interested in. Subscribers can ask to receive the project newsletter and targeted communication related to upcoming project activities, events and results. The link to the form (<http://www.graie.org/survey2/index.php/787823?lang=en>) is available on the project website and has also been widely distributed by each partner to their respective networks. The form is available in English, French and Spanish. At the end of RP2 (M36), 169 stakeholders have filled out GRAIE's contact form to join the project community and 481 people have subscribed to the Newsletter mailing list.

In addition, within WP1, the project partners have worked to make an inventory of existing users of the Co-UDlabs RIs and related stakeholders, map the potential future users of the RIs (which are also reached out to disseminating project activities and results) and other new stakeholders from the community. We identified users and potential users for our first stage of work and investigation (we listed around thirty, but only received 12 responses) who have been regularly kept informed of our activities. This list will be further developed in the last year of the project. In the end, the consortium will be able, within WP1, to perform a stakeholders' analysis to identify the different

categories of the project end-user community. We also plan to elaborate a dissemination impact analysis where we will evaluate the responses gained from the different target groups and their interest in using our RIs. This will bring important information for further exploitation of the RIs by end users after the end of the project.

Parallely, we have identified a **list of EU projects** working on a similar domain (Table 4 below). Collaboration with some of these projects is planned to create synergies and maximize our impact. This list has been updated at M36 and will be kept up to date during the whole duration of the project.

Table 4: List of European projects and initiatives on a similar domain

Project	Objective	Website
Ponderful (2020-2024)	Develop improved methods for maximising the use of ponds and pondscares to mitigate and adapt to climate change, protect biodiversity and the delivery of ecosystem services.	https://ponderful.eu/
AquaSPICE (2020-2025)	Materialize circular water use in European Process Industries, foster awareness in resource-efficiency and deliver compact solutions for industrial applications.	https://aquaspice.eu
LabPlas (2021-2025)	Improve microplastic detection and monitoring procedures, quantify microplastics pollution in two large European river basins and look for new modelling approaches to determine microplastic contribution to seas.	https://cordis.europa.eu/project/id/101003954
WATERUN (2022-2026)	Develop of an innovative methodology to contribute to the implementation of urban water runoff management plans in cities. Specifically, it will provide preventive and mitigation solutions and best management practices adopting a holistic perspective for diffuse water pollution control in urban catchments	https://cordis.europa.eu/project/id/101060922
MultiSource (2021-2025)	Demonstrate a variety of about Enhanced Natural Treatment Solutions (ENTS) treating a wide range of urban waters and to develop innovative tools, methods, and business models that support citywide planning and long-term operations and maintenance of nature-based solutions for water treatment, storage, and reuse in urban areas worldwide.	https://cordis.europa.eu/project/id/101003527
Smart Cities EU	The Smart Cities Marketplace was created by merging the two former Commission projects “Marketplace of the European Innovation Partnership on Smart Cities and Communities” (EIP-SCC) and the “Smart Cities Information System” (SCIS) into one single platform. It is a major market-changing undertaking that aims to bring cities, industries, SMEs, investors, researchers and other smart city actors together.	https://smart-cities-marketplace.ec.europa.eu/
OPENSense (2021-2025)	Opportunistic precipitation sensing network. OPENSENSE brings together scientists investigating different opportunistic sensors, experts from national weather services, owners of sensor networks, and end-users of rainfall products to build a worldwide reference opportunistic sensing community	https://www.cost.eu/actions/CA20136/
Water4All (2022-2029)	The Water4All Partnership -Water Security for the Planet- is a funding programme for scientific research in freshwater. It aims to tackle water challenges to face climate change, help to achieve the United Nations’ Sustainable Development Goals and boost the EU’s competitiveness and growth. It is co-funded by the European Union within the frame of the Horizon Europe programme.	https://www.water4all-partnership.eu/

Some of the projects previously identified has now ended and have been removed from the list (MonPlas, SCOREWater, URBAN GreenUp, NAIADES, Hydrousa, Aqua3s, nextGen). We are interacting with some additional EU-funded projects on Twitter and LinkedIn, for example by sharing content or reposting interesting information and activities (e.g. B-WaterSmart, FutureDiverCities, REGILIENCE, MOSBRI, etc.).

Below is a list of the synergies that we put in place with other EU projects and initiatives:

- Co-UDlabs co-hosted the “Long-term sustainability of small and mid-scale distributed RI projects” hybrid side event of the International Conference on Research Infrastructures – ICRI 2022 Conference with the VITALISE project. Co-UDlabs was also present with a virtual booth.
- Participation in the LifeDRAIN closing events, where Co-UDlabs and other projects (Life greensewers, Nice NBS) were presented.
- Keynote to the 3rd IAHR Young Water Professionals Conference 2022 on 'Managing ageing urban drainage systems, challenges and opportunities' where Co-UDlabs and other similar projects (QUICS and CENTAUR) were presented by USFD.
- Participation of UDC to the hackathon organized by the BARCOVE project on September 14, 2023. The ‘Building an Applied Research Facility Into CoVE’ (BARCoVE) Erasmus+ project is about conducting applied research in VET on Urban Greening.
- Participation in the Water4All Partnership workshop on Research Infrastructures (April 8-10, 2024 – Orleans, France) where GRAIE started discussions on possible collaboration with Co-UDlabs on mapping of Research Infrastructure and the harmonization of data and protocols.

1.3. THE CO-UDLABS MESSAGES

For each different audience, a distinct strategy using targeted messages, means and language will be used. In particular, for each audience we will try to answer the following questions and adapt the message we are delivering:

- Why do they need to know?
- What makes the issue urgent?
- What are the consequences if no action is taken?
- What solutions are we offering?
- How does our work relate to everyday life?
- Does it link to any broader societal issue?

Rather than focusing only on the provision of factual information, we will try as much as possible to position our research topic within a broader socio-economic and policy context, so that it will be easier to explain the results and their relevance to both policymakers and citizens.

Here are some messages that we are planning to deliver through the dissemination activities:

- Remind the importance of Urban Drainage Systems (UDS) in providing flood risk reduction and safe sanitation and raise awareness of the need to develop a more sustainable and smart urban drainage system;
- Promote the role of the Co-UDlabs facilities in studying, at pilot and full-scale level, many of the solutions and technologies potentially capable of transforming UDS. These facilities can support studies into novel approaches to deal with new sensors, emerging contaminants, low energy technologies, resource recovery, and data analytics technologies;
- Promote the research infrastructure access within Co-UDlabs to enable breakthrough research and innovation opportunities to research teams and water utilities and their supply chain partners to develop a variety of sustainable technologies;

- Recall the importance of improving the visibility of existing problems in the urban drainage systems enhancing the role of RIs to solve UDS challenges. In fact, the urban drainage sector is a sector often forgotten by society that only appears in the media or in political decisions after the occurrence of extreme or critical events that generate risks to the population or ecosystems, such as urban flooding or pollution episodes in receiving surface waters.
- Recall the importance of involving key users and public authorities at local, regional and national levels in the project in order to guarantee the back-up of the project by stakeholders.

1.4. DISSEMINATION RULES AND PROCEDURES

1.4.1. Communication within the Co-UDlabs consortium

Communication among partners is crucial to exchange up-to-date knowledge and data and to enhance and optimise collaborations and inter-linkages between the WPs. This is also needed to define the best valorisation and external dissemination strategies.

Internal communication will be ensured through regular exchange of information via email and during bi-monthly meetings, when all partners gather together to discuss achievements, upcoming activities, deadlines and issues arising within the different work packages. WP leaders are also presenting main research advances during each Co-UDlabs plenary meetings or whenever needed.

Euronovia (the WP4 leader) and UDC (the project coordinator), are working together to update social media accounts and the project website with information about the upcoming activities and events of the project. They are also regularly encouraging the other members of the consortium to participate in communication and dissemination activities, namely:

- Communicating their activities and disseminating their results to their respective networks, in social media and through news on the project website,
- Contributing to the content of the biannual newsletter (articles, interviews),
- Informing the other partners of interesting initiatives and events in the urban drainage sector,
- Keeping track of their participation in external events by filling-in a dedicated reporting table,
- Disseminating results and publications in open access.

1.4.2. Open access to scientific publications

The access policy implemented by the project gives priority to the Green model with the requirement to fix the embargo to 6 months after the first date of publication, as required by the EC. However, when not applicable, the publication policy of the consortium is to pay the fees to make the scientific publications free of access. The costs related to paying the “Gold” open access for a number of publications is integrated into the budget of the project.

Further to this and whenever necessary, the addendum to publication agreement provided by the European Commission will be used. This is an instrument that, if accepted by the editor, modifies the publisher’s agreement and allows the researcher to keep key rights to your articles. The coordinator is in charge of supporting the researchers for these administrative issues related to the communication with the publishers.

In addition, the consortium will consider submitting papers to the Open Research Europe, the new open access publishing platform for the publication of research stemming from Horizon 2020 funding. This will be discussed by the project partners on a case-by-case basis.

All publications are being stored in the Co-UDlabs project community that has been created on Zenodo (<https://zenodo.org/communities/coudlabs/>).

1.4.3. Open access to scientific data

The project collects relevant research data, that are managed according to the Data Management Plan (D4.1) respecting the principle that open scientific research data should be easily discoverable, accessible, useable, and wherever possible interoperable to specific quality standards. In accordance with the rules of the Open Research Data Pilot, for each research dataset, the Co-UDlabs partners will carefully study the possibility and pertinence to make them findable, accessible, interoperable and reusable. Data will be shared in accordance with recognized standards used in the research field, to maximize the opportunities for data linkage and interoperability. Sufficient metadata will be provided to enable the datasets to be used by others. Generally, the data being produced will be shared and made accessible for verification and re-use, according to the provisions foreseen in the CA. Access to specific data may be restricted under limited circumstances (e.g. for national security, to protect personal data and where the relevant new know-how acquired in the project is protected in order not to endanger the exploitation of the project's results).

A first version of the Co-UDlabs Data Management Plan (DMP) was prepared and submitted as a deliverable (D4.1) at M6 and it was updated at M20. The aim of the DMP is to outline how partners will collect data, will catalogue it and, when appropriate, how they will make it available on an open access basis during and after the project. The plan also describes the mechanisms the consortium will use to ensure that as much of the data collected during the project is made available as soon as is practicable.

At M16, UDC developed a “Guide on how to upload JRA and TA datasets on Zenodo”, together with a “Data storage report template” to be filled in and attached to the repository alongside the datasets by each JRA and TA team.

At the end of RP2, **10 datasets** have been uploaded to Zenodo, deriving from JRAs or TA projects. All are available in open access: <https://zenodo.org/communities/coudlabs/>.

1.4.4. Use of graphic identity and EU visibility

A common graphic identity has been defined to allow for better visibility and recognition as well as branding of the Co-UDlabs project. Therefore, partners were informed that all dissemination tools and activities must refer to or include:

- The name of the project: Co-UDlabs
- The project's website URL (<https://www.co-udlabs.eu>)
- The Co-UDlabs project logo (different versions to be used depending on the background color)
- Information on EU funding (as defined in the article 29.4 of the GA):
 - Unless the Agency requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must: (a) display the EU emblem and (b) include the following text: “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101008626”.
 - When displayed together with another logo, the EU emblem must have appropriate prominence.

1.5. DISSEMINATION AND COMMUNICATION ACTIVITIES AND TOOLS

The communication activities that are part of the dissemination plan described in WP4 are tailored to ensure that important messages are widespread to the adequate targeted audience and that the public at large gets connected with Co-UDlabs RI. Such activities complement the dissemination as they “translate” the sometimes-complex results

into easy-to-understand resources focusing more on the impacts and added value for the end-users of Co-UDlabs and the society in general.

The main purposes of the communication activities of the project have been defined as follow:

- To show how European collaboration has achieved more than would have otherwise been possible, notably in achieving scientific excellence, contributing to competitiveness and solving societal challenges.
- To show how the outcomes are relevant to people’s everyday lives, by creating jobs, introducing novel technologies, or enhancing the quality of life of EU citizens and better protecting the environment, making people’s lives more comfortable in other ways.
- To better use of the results, by making sure they are taken up by decision-makers to influence policy-making and by industry and the scientific community to ensure a follow-up of the development of technology.

To do so, we have been creating and using different tools and activities, as detailed in the table below.

Table 5: Main elements of the dissemination strategy

Visual Identity	The project branding helps all partners communicate about the project in a uniform, consistent, and professional manner. The project branding includes project logo, visual identity, written identity including tagline and key messages and templates for Word and PowerPoint.
Communication materials	- A communication package containing the main elements of the project and gathered in a PPT presentation, a poster, a project banner and a word document (one-page project description, objectives, impacts). Some of the elements of this communication package are translated to French, Spanish and German to achieve a broader audience with water operators, utilities and other stakeholders. - 1 flyer, 1 brochure, 8 newsletters (1 every 6 months), 2 press releases and 2 articles in specialized magazines, 1 timeline infography, 1 motion design video to be promoted through the EU audiovisual channels and YouTube.
Website	The public website contains information targeted for the general public, the UD scientific community and SMEs in the water sector and commercial bodies in other sectors (description of the project, the WPs, the partners, basic information on the technology) as well as specific information targeted towards the different type of stakeholders linked to the project (training materials, scientific papers, environmental impact, ...) and a section dedicated to TA access.
Social networks and online presence	Social web-based media (creation of 1 LinkedIn page and Twitter account), which serve to target the general audience as well as more technology related stakeholders. Interviews to each of the partners were recorded and disseminated online. Webinars are organized to communicate on the project and attract new users, and YouTube videos including webinar recordings, trainings and interviews are done by the partners.
Press relations	- media press kit to be done at the end of the project and disseminated to the press, to show project and TA programme results. - Public relations and media coverage (national/international press, communication to citizens and authorities).
Publications	Scientific and technical publications in both journals and trade magazines to widely disseminate the project outcomes and support its results.
Events	- Organisation of several events: webinars, doctoral schools, summer schools, industrial training courses, workshops, seminars, exhibitions in science popularization events and in specific fairs and one final infoday. - Participation in external events and scientific conferences to present the project activities and outcomes.

1.5.1. Visual identity

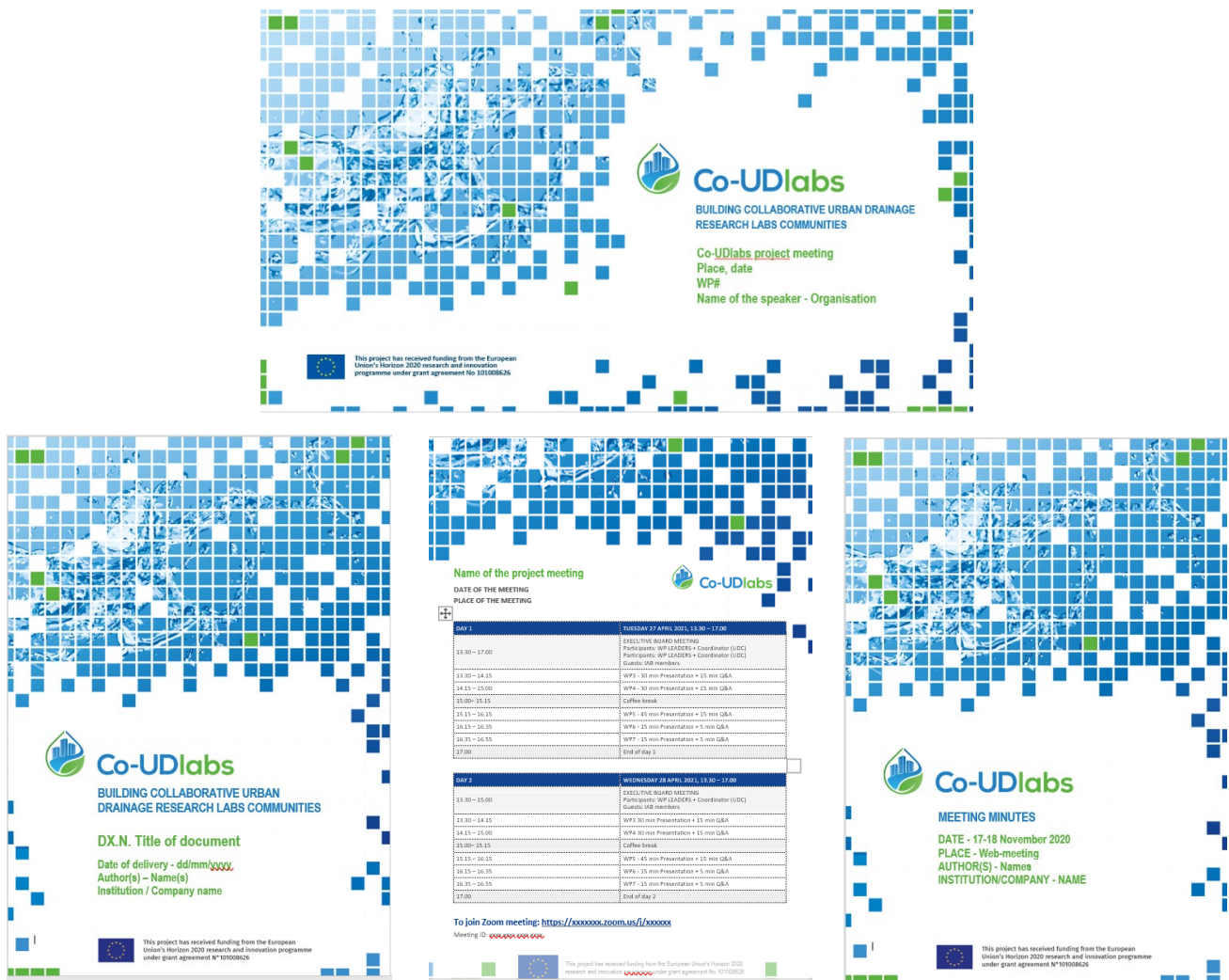
The project branding will help all partners to communicate about the project in a uniform, consistent, and professional manner: it includes the project logo, project identity and style guide, templates for Word and PowerPoint documents.



The pictograph of the logo is a stylistic representation of a urban background (three buildings) and an element representing the green infrastructures (a leaf). The logo will be used for all communication materials, with or without the baseline “Collaborative Urban Drainage Research Lab Communities”. The project’s graphical identity includes fonts, colors and texts directly derived from the project logotype. Such visual identity is defined by the project logo and it will be used in all dissemination tools and printed materials.

Templates for the project deliverables, meeting agenda and minutes have also been produced during the first months of the project, together with a PowerPoint template to be used by the partners for all presentations on Co-UDlabs both in internal and external events.

Figure 1: Co-UDlabs templates: PowerPoint presentation, deliverable, agenda and minutes



1.5.2. Communication materials

The following communication materials have been prepared and distributed to the project partners in order to ensure effective communication and increase public awareness of the project.

1.5.2.1. Flyer and brochure

A project **flyer** with general information on the project and the research infrastructures available in the framework of the transnational access was created in October 2021. The flyer has been distributed to partners who print it and distribute it when organizing or attending external events. The flyer is available in English, Spanish and French.

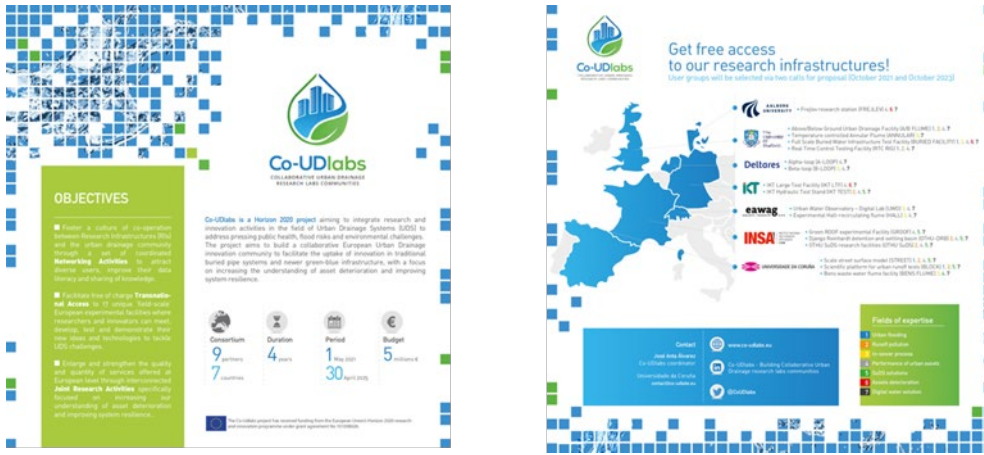


Figure 2: Co-UDlabs flyer

A **16-pages brochure** focused on Transnational Access, with information useful to launch the second TA call (July 2023), a description of the RIs available within Co-UDlabs, modalities of access, and a short summary of projects selected during the first TA call, was prepared in May 2023. It was made available online on the Co-UDlabs website and printed for distribution at national and international conferences with the aim of reaching potential users of our research infrastructures (academia, industry, and water operators) and encourage them to apply for the second call for transnational access, which was launched in July 2023 at a Co-UDlabs workshop within the Novatech 2023 conference, taking place in Lyon (France). The brochure was finalised and presented to the consortium for communication use by M24.



Figure 3: Co-UDlabs brochure on TA access

In addition, a **factsheet** focused on the first Co-UDlabs Transnational Access call was prepared at M25, featuring the description of 7 out of the 13 projects selected during the 1st Co-UDlabs TA campaign, with pictures and testimonials from RI users. The factsheet was made available online on the project website (https://co-udlabs.eu/wp-content/uploads/2023/07/TA_call_factsheet_testimonials.pdf) and printed for distribution at the Novatech 2023



Figure 4: Co-UDlabs poster and roll-up banner

1.5.2.2. Poster and roll-up banner

A project poster and a roll-up banner were created in the first months of the project to be printed and used during external conferences and events attended by the consortium to promote and present the results arising from the project. The roll-up banner is also available in Spanish and French.



Figure 5: Co-UDlabs poster and roll-up banner

1.5.2.3. Press releases and articles

A **press release** was drafted in July 2021 to summarize the most important information related to the project (scope, objectives, messages) to help the consortium to communicate the right information about the project. This press release was translated into French and Spanish and distributed by the project partners to their contact networks. It is available for download in the project website: https://co-udlabs.eu/wp-content/uploads/2021/09/CO-UDLABS_press-release-website.pdf.

Another press release is planned at the end of the project.

In addition, **2 articles in specialized magazines** are also planned to be published before the end of the project.

1.5.2.4. Newsletter

Another essential tool to keep in touch with the stakeholders is the edition of a **project newsletter**. 8 Co-UDlabs newsletters (twice a year) are planned to be sent out to the newsletter subscribers and will also be made available on the project website. The newsletter is also sent by e-mail to relevant networks of project partners.

The first 4 issues of the newsletter have been created in November 2021, May 2022, March 2023 and December 2023 and were sent out to the project mailing list (growing to 481 contacts in the last year) and disseminated through social media and the contact networks of the project partners to maximize its dissemination. Newsletters are available for download at <https://co-udlabs.eu/dissemination/newsletter/>.

Some additional mailing campaigns were sent out before the launch of each TA call to specifically promote the events preceding the calls (hackathon, webinar) and the calls itself.

In addition, 2 articles about Co-UDlabs were published in the newsletter of the IAHR/IWA joint committee on urban drainage (JCUD) - in March 2023 (<https://iahr.oss-accelerate.aliyuncs.com/upload/file/20240124/1706067576157206.pdf>) and in March 2024 (<https://iahr.oss-accelerate.aliyuncs.com/upload/file/20240402/1712023100505828.pdf>).

1.5.2.5. Videos and other communication materials

A **motion design video** was created at M20 (December 2022) to present Co-UDlabs objectives, activities and expected impacts in an attractive and dynamic way. The video is available on the Co-UDlabs website as well as in the project **YouTube channel** (<https://www.youtube.com/watch?v=KjgBKppROVk>) created at M12 to gather all project videos.

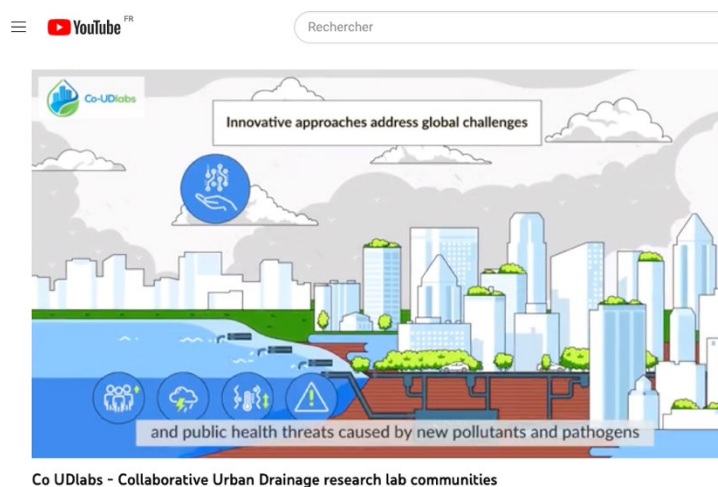


Figure 6: Screenshot of the Co-UDlabs motion design video produced at M20

At M36, this YouTube channel contains 21 videos (recordings of the project webinars, of Deltares courses, the motion design video presenting Co-UDlabs and partner interviews) obtaining 1235 views. The YouTube channel will be fed with additional videos throughout the project lifetime.

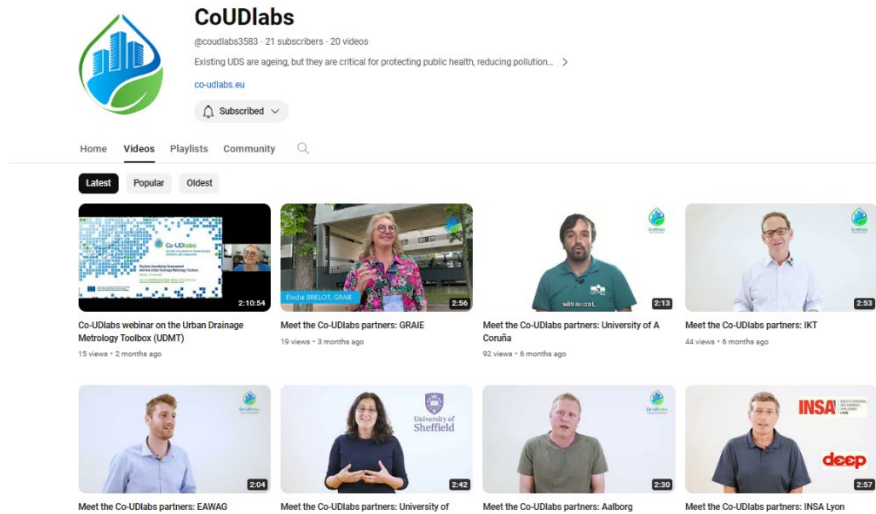


Figure 7: Co-UDlabs YouTube channel

In addition, an interview of Elodie Brelot from GRAIE has been recorded and uploaded in the French Actu Environnement YouTube channel (« Le but est de sortir les résultats de recherche des cartons pour améliorer la gestion de l'eau » - YouTube) registering 390 views.

1.5.3. Co-UDlabs website

The project website (<https://www.co-udlabs.eu/>) is of crucial importance in order to enhance the visibility of Co-UDlabs as it serves as the main communication tool for the wide dissemination of project activities, deliverables and outcomes. This is the central place where we want to build the Co-UDlabs community together with water operators, companies, students, policy makers and advocacy groups interested in urban drainage.

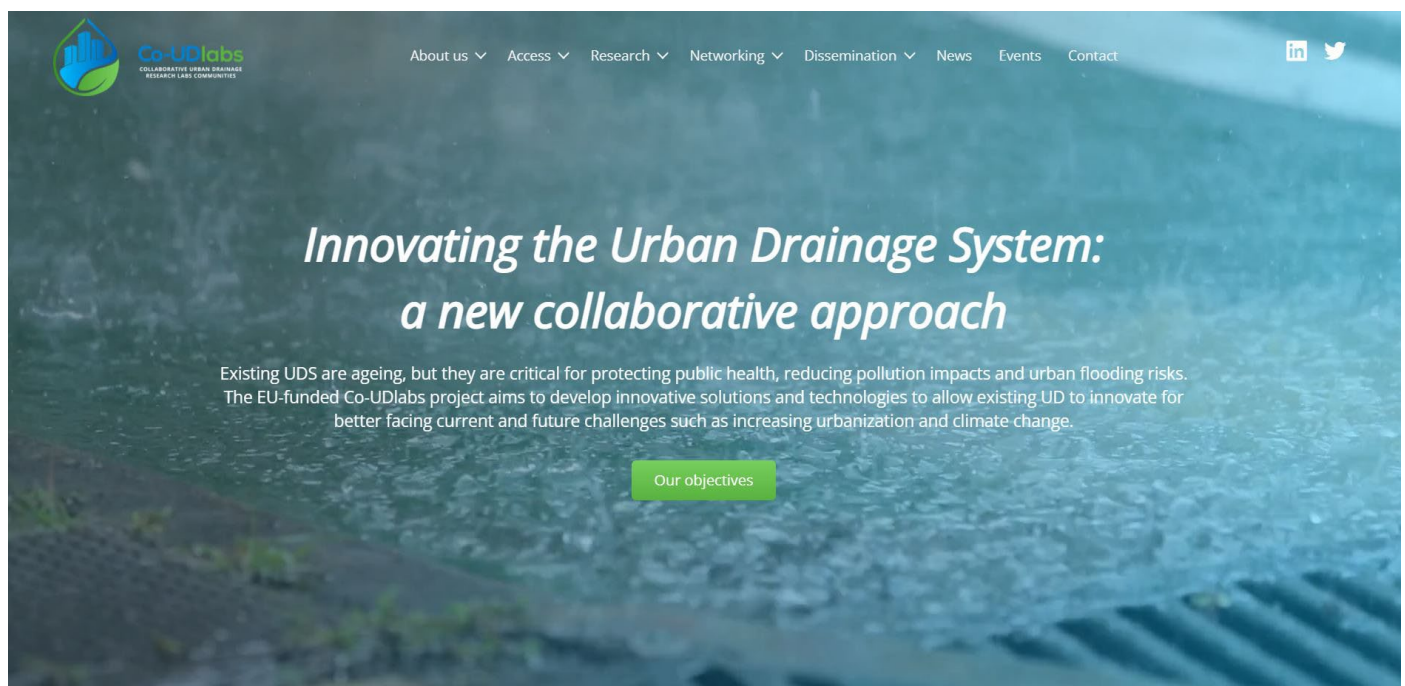


Figure 8: Co-UDlabs website landing page

The website includes information on the project scope, objectives and activities, partners, research infrastructures and information on the dissemination activities and project documents. A specific section of the website is dedicated to the Transnational Access (TA), with useful information on the calls for proposals and related launching events.

Created in October 2021, the Co-UDlabs website is being frequently updated with new content, as the project develops. The website currently includes the following sections:

- The **homepage** provides an overview of the project scope and concept and a selection of latest news;
- **About us:** it provides information on the objectives, workplan, expected impacts and the partners involved in the project;
- **Access:** this section includes information on transnational access and a complete description of the research facilities available within the consortium, as well as a section dedicate to the TA call;
- **Research:** it includes information on the Joint Research Activities and the tools and outputs, including datasets, developed within the project;
- **Networking:** a section with information on the different networking activities, trainings offered by the consortium;
- **Dissemination:** provides information on the project communication material, deliverables, publications and newsletter;
- **News:** a page including the list of news published by the consortium;
- **Events:** it includes information on future and past events organised by the project partners within the project;
- **Contact:** it includes the email address to reach us with specific questions as well as the link to the contact form created on Limesurvey to become part of the project community;
- **Links to social media**

The impact of the website is monitored using Google Analytics. In the period from October 2021 to April 2024, the website was visited by 2163 unique visitors, with 21994 page views and an average visit duration of 3:28 minutes.

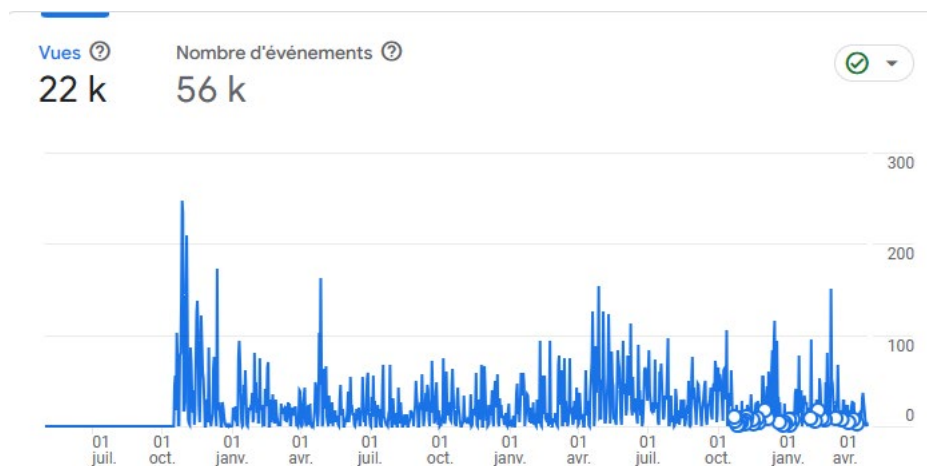


Figure 9: Overview of the Co-UDlabs website page views over time

The website received an excellent worldwide coverage, with visitors spread over all continents (101 countries mapped), demonstrating a worldwide interest in the project. The top-10 countries of origin of the website's visitors are: Spain, France, UK, Germany, Netherlands, Colombia, Switzerland, Italy, Denmark and the United States.



Figure 10: Co-UDlabs website visitors by country

The most visited pages, after the homepage, are the page with information on the TA call, the general news (with 68 news published) and the description of the research facilities, demonstrating the high interest of visitors for this particular activity of the project.

		21984 100 % du total	2162 100 % du total
1	Home - Co-UDlabs	4664	1033
2	TA Call - Co-UDlabs	1470	348
3	General news - Co-UDlabs	1107	200
4	Research Facilities - Co-UDlabs	994	384
5	Events - Co-UDlabs	912	165
6	Training - Co-UDlabs	723	167
7	About Transnational Access - Co-UDlabs	695	283
8	Co-UDlabs Ideas Marketplace - Co-UDlabs	549	169
9	Objectives - Co-UDlabs	540	287
10	Joint research activities - Co-UDlabs	431	253

Figure 11: Mostly visited pages of the Co-UDlabs website

1.5.4. Social networks and online presence

Social media is being used to inform and stay connected with the professionals, policy makers and scientific community as well as reach out to an interested general public.

A **LinkedIn page** and a **Twitter account** have been created in the first months of the project to develop a community of people interested in the project, to raise awareness on the project launch and objectives and to allow for more interaction with related initiatives:

- LinkedIn page: <https://www.linkedin.com/company/co-udlabs-project/>
- Twitter account: <https://twitter.com/CoUDlabs>

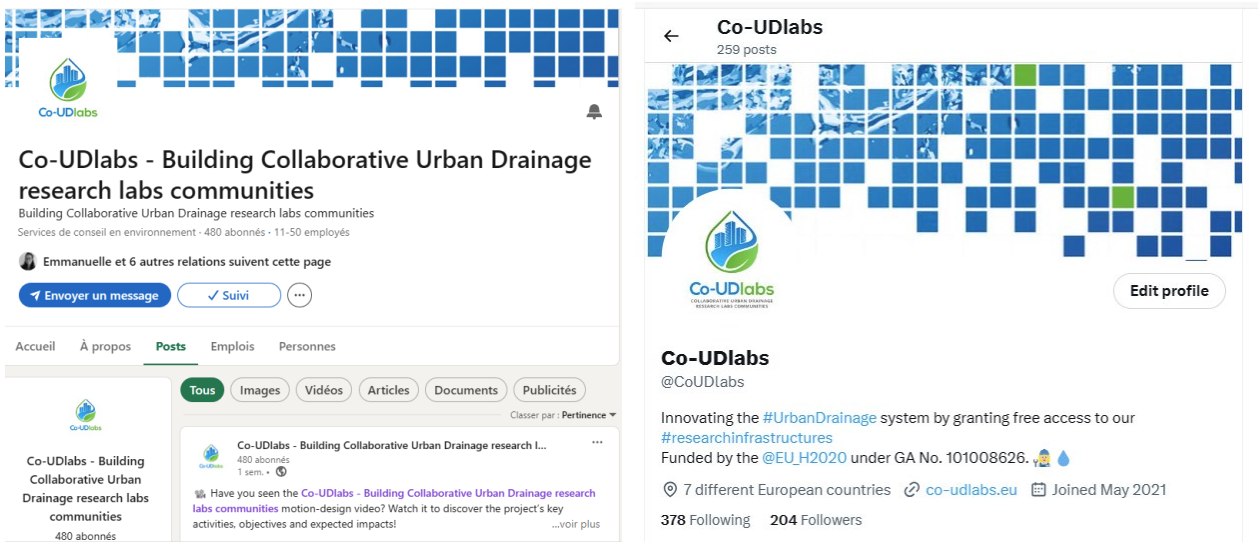


Figure 12: Co-UDlabs LinkedIn page and Twitter account

LinkedIn and Twitter users are very active, web-savvy and heavy internet users, thereby improving the visibility of the Co-UDlabs messages. These are proved to be very useful channels to enhance the visibility of publications, newsletters, project members' participation in conferences/events (improving networking) and the dissemination of any important activities related to the project. Partners are encouraged by UDC and Euronovia to actively participate by sharing news, articles about their work and regular information on the project developments, to initiate discussions and provoke debates. Such peer-to-peer insights delivered to personal professional contacts can be very effective in creating awareness and impact on the project.

The impact of using Twitter is analysed through Twitter Analytics while the impact of the LinkedIn page is accessible by the group administrators.

At M36, the project LinkedIn group hits 482 followers with 114 posts published. Below is some interesting analytics data concerning LinkedIn visitors.

Industry	Total followers	Job function	Total followers	Visitors location	Total followers
Higher Education	117	Research	79	Ferrol Metropolitan Area, Spain	40
Research Services	70	Education	74	Paris Metropolitan Region, France	29
Environmental Services	38	Engineering	46	Lyon Area, France	22
Civil Engineering	37	Business Development	32	The Randstad, Netherlands	18
Government Administration	33	Program and Project Management	28	Bogotá D.C. Metropolitan Area, Colombia	15
Business Consulting and Services	15	Operations	23	Zürich Metropolitan Area, Switzerland	12
Utilities	15	Information Technology	20	Ruhr Region, Germany	10
Construction	12	Community and Social Services	16	Madrid Metropolitan Area, Spain	9
Water Supply and Irrigation Systems	10	Consulting	14	Barcelona Metropolitan Area, Spain	9
Non-profit Organizations	7	Sales	12	Brussels Metropolitan Area, Belgium	8
Engineering Services	6	Administrative	11	Valencia Metropolitan Area, Spain	7
				Sheffield Area, United Kingdom	6

Figure 13: Co-UDlabs LinkedIn users' profiles

At M36, the Twitter account has 205 followers, with 259 published tweets. In addition, several partners used their institutional LinkedIn and Twitter accounts to communicate about the project, some of them being very active on social media and with an important number of followers. More analytics data can be provided upon request.

1.5.5. Press relations

Press Relation (PR) is a very important tool for reaching the target audiences. Co-UDlabs will create several articles to inspire and engage the citizens and to reach a higher level of the importance of innovating urban drainage systems.

Different types of press relations and media coverage are planned to take place during the lifetime of the project:

- 2 media press kit** were planned to be published at mid-term and the end of the project for dissemination to the press, to show project and TA programme results. However, the press kit planned at mid-term has been replaced with the Brochure on TA published at M24.
- Media coverage:** at least 15 external articles in the press/media (national/international press, communication to citizens and authorities).

At M36, **18 external articles** have been published about Co-UDlabs in regional and national online and print media.

Table 6: Press articles published about Co-UDlabs

Articles:	Published in:	Date of publication:	Dissemination level:
<u>Investigadores de la UDC lideran un proyecto europeo de estudio de sistemas de saneamiento urbano</u>	<u>www.iAgua.es</u>	April 2021	National
<u>El saneamiento urbano, a revisión</u>	<u>www.laopinioncoruña.es</u>	April 2021	National
Temos que ir cara sistemas máis sostibles e intelixentes	OSIL newspaper	June 2021	Regional
<u>IKT in EU-Laborforschungsverbund: Forschung und Innovationskraft für städtische Entwässerungssysteme</u>	<u>https://irf.nrw/</u>	June 29, 2021	Regional
<u>Le laboratoire DEEP participe au projet européen Co-UDlabs</u>	<u>https://www.insavalor.fr/</u>	August 2021	National
<u>Le Graie prend part au projet européen Co-UDlabs</u>	<u>www.constructioncayola.com</u>	August 27, 2021	National
<u>Eaux pluviales urbaines : le Graie engagé dans un programme européen</u>	<u>www.enviscope.com</u>	September 29, 2021	National
<u>Infraestructura coruñesa al servicio del saneamiento</u>	<u>www.laopinioncoruña.es</u>	October 2021	Regional
<u>Co-UDlabs: Forschung und Innovationskraft stärken</u>	BI Umweltbau	June 2021	National
<u>La Universidade, sede de la primera asamblea del proyecto europeo sobre drenaje</u>	<u>www.laopinioncoruña.es</u>	June 2022	Regional
<u>A Universidade da Coruña acollerá tres equipos de investigación internacionais que realizarán ensaios punteiros sobre inundacións en contornas urbanas</u>	<u>www.21noticias.com</u>	July 2022	Local
<u>La UDC acogerá a tres equipos internacionales que investigarán sobre inundaciones urbanas</u>	<u>www.elespanol.com/quincemil</u>	July 2022	Regional
<u>L'ambition est de sortir les résultats de recherche des cartons pour améliorer la gestion de l'eau urbaine</u>	<u>www.actu-environnement.com</u>	July 19, 2022	National

Städtische Entwässerungssysteme – Treffen des europäischen Forschungskonsortiums in A Coruña	https://jrf.nrw/	August 8, 2022	Regional
Digitalisierung in der Abwasserentsorgung – ein wichtiger Baustein zur Lösung der globalen Wasserkrise	https://jrf.nrw/	September 19, 2022	Regional
El proyecto europeo liderado por la Universidad de A Coruña, ‘Co-udlabs’, cierra su convocatoria transnacional	https://www.elidealgallego.com/articulo/a-coruna/proyecto-europeo-liderado-universidad-coruna-co-udlabs-cierra-convocatoria-transnacional-4721314	February 15, 2024	Regional
Wo die Abwasser erzählen	https://www.horizonte-magazin.ch/	March 7, 2024	National
Spitzenforschung im Untergrund	https://www.eawag.ch/	March 11, 2024	National



Figure 14: We have to go towards more sustainable and intelligent systems”, interview of Jose Anta Alvarez (UDC) about Co-UDlabs in the Spanish O Sil regional newspaper in June 2021

In addition, the project coordinator presented Co-UDlabs during a **radio interview** on a Spanish regional radio in April 2021: <https://www.crtvg.es/rg/destacados/a-tarde-a-tarde-do-dia-29-04-2021-5012510> and Elodie Brelot from GRAIE presented the Co-UDlabs project during a **filmed interview** by Acta Environment in June 29, 2022: <https://youtu.be/vjD8WLFpZL4>.

1.5.6. Scientific and technical publications

In the course of the project, we will actively publish in both scientific (for academic) and technical (for practitioners) journals and trade magazines to widely disseminate the project outcomes and support its results. The partners are confident to publish at least **15 conference papers**, **10 scientific publications** in peer-reviewed journals and **8 technical papers** in national and international journals.

Here is the list of relevant journals that the consortium has identified for the dissemination of the results to the scientific and industrial community:

- International journals
 - Water Research

- Hydrology and Earth System
- Earth System Science Data
- Environmental Science: Water Research & Technology
- Science
- Journal of Hydrology
- Urban Water Journal
- Blue and Green Infrastructure
- Water21 (IWA magazine)
- National journals
 - TSM – Techniques Sciences Méthodes (FR)
 - Korrespondenz Abwasser (D)
 - BI Umweltbau (D)
 - Revista Ingeniería del Agua (SP)
 - Water Management (UK)
 - Water and Environment Journal (UK)
 - Aqua und Gas (CH)

At M36, partners have published **15 conference papers**:

- *“Co-Udlabs: Una red europea de infraestructuras de investigación en saneamiento y drenaje urbano”, Jose Anta, Jerónimo Puertas, Luis Cea, Joaquín Suárez, Juan Naves, Manuel Regueiro, Andrea Ciambra, XIV Seminario de la Red de Laboratorios de Hidráulica de España, RLHE*
- *“Permeable pavement clogging laboratory experiments using rainfall simulators”, Jose Anta, Joaquín Suárez, Proceedings of the 39th IAHR World Congress*
- *“Monitoring Sewer Sediment Deposits with Passive Temperature Sensors”, Jose Anta, Jörg Rieckermann, Proceedings of the 39th IAHR World Congress*
- *“Improving sediment monitoring strategies based on analysing heat transfer processes in sewer pipes”, Jörg Rieckermann, Proceedings of the 10th International Conference on Sewer Processes and Networks*
- *“How reusable are your data? - Towards truly FAIR open data for urban drainage”, J. Rieckermann, P. Lechevallier, J. Agustsson, L. Rossi, S. Tait, Proceedings of the 10th International Conference on Sewer Processes and Networks*
- *“Machine learning to improve understanding of sewer pipe failures”, Ehsan Kazemi, Will Shepherd, Simon Tait, Proceedings of the 10th International Conference on Sewer Processes and Networks*
- *“Towards non-contact pollution monitoring in sewers with hyperspectral imaging”, P. Lechevallier, C. Felsheim, J. Rieckermann, Proceedings of the 10th International Conference on Sewer Processes and Networks*

- “Co-Udlabs: Construyendo una red europea de grandes instalaciones de investigación en saneamiento y drenaje urbano”, Jose Anta, Jerónimo Puertas, Luis Cea, Joaquín Suárez, Juan Naves, Manuel Regueiro, Andrea Ciambra, XXXVI CONGRESO. Asociación Española de Abastecimientos de Agua y Saneamiento
- “Monitoring sediment accumulation in urban drainage systems with temperature measurements”, M. Regueiro-Picallo, A. Moreno-Rodenas, F. Clemens-Meyer, J. Rieckermann, *Proceedings of the NOVATECH 2023*
- “Co-UDlabs: una red europea de grandes instalaciones de investigación en drenaje urbano”, Jose Anta, Jerónimo Puertas, Luis Cea, Joaquín Suárez, Juan Naves, Daniel Carreres and Andrea Ciambra, VII Jornadas de Ingeniería del Agua
- “Aplicaciones de visión artificial para la monitorización de sistemas de drenaje urbano”, Juan Naves, Daniel Carreres, Antonio Moreno-Rodenas, Jesper E. Nielsen, Jose Anta, VII Jornadas de Ingeniería del Agua
- “Efecto de almacenamiento de los edificios durante inundaciones urbanas. Un acceso trasnacional del proyecto Co-UDlabs”, Jose Anta, Jerónimo Puertas, Luis Cea, Juan Naves, VII Jornadas de Ingeniería del Agua
- “Houses as reservoirs in urban flood modelling”, Jose Anta, Jerónimo Puertas, Luis Cea, Juan Naves, *Proceedings of the NOVATECH 2023*
- “Visions et besoins des parties prenantes européennes pour les futurs systèmes de gestion des eaux pluviales urbaines”, Katharina Tondera, Frederic Cherqui, Simon Tait, Elodie Brelot, Fanny Fontanel, Jesper Ellerbaek Nielsen, José Anta, Thomas Brüggemann, Iain Naismith, Marcel Goerke, Joaquin Suárez López, Jörg Rieckermann, João Paulo Leitão, François Clemens-Meyer, Antonio Moreno-Rodenas, *Proceedings of the NOVATECH 2023*
- “MONTSE: MONitorización de las Temperaturas de SEdimentos para evaluar su acumulación en sistemas de drenaje urbano”, M. Regueiro-Picallo, A. Moreno-Rodenas, F. Clemens-Meyer, J. Rieckermann, VII Jornadas de Ingeniería del Agua

The Coordinator has received the permission from IAHR to publish the “Monitoring Sewer Sediment Deposits with Passive Temperature Sensors” and “Permeable pavement clogging laboratory experiments using rainfall simulators” papers on the open-access Zenodo repository, under the Co-UDlabs community, during the embargo period. The Permission letter from IAHR can be forwarded on request.

At M36, partners have also published **5 scientific publications in journals**:

- “Towards urban drainage sediment accumulation monitoring using temperature sensors”, M. Regueiro-Picallo, J. Anta, A. Naves, A. Figueroa, J. Rieckermann, *Environmental Science Water Research & Technology*
- “European stakeholders’ visions and needs for stormwater in future urban drainage systems”, Katharina Tondera, Elodie Brelot, Fanny Fontanel, Frédéric Cherqui, Jesper Ellerbaek Nielse, Thomas Brüggemann, Iain Naismith, Marcel Goerke, Joaquín Suárez López Jörg Rieckermann, João P. Leitao, François H.L.R. Clemens-MeyerO, Antonio Moreno-Rodenas, Simon Tait & José Anta, *Urban Water Journal*
- “Combining a daily temperature pattern analysis and a heat-pulse system to estimate sediment depths in sewer systems”, M. Regueiro-Picallo, J. Langeveld, H. Wei, J.-L. Bertrand-Krajewski, J. Rieckermann, *Environmental Science Water Research & Technology*
- “Towards non-contact pollution monitoring in sewers with hyperspectral imaging”, P. Lechevallier, C. Felsheim, Villez, K., J. Rieckermann, *Environmental Science Water Research & Technology*

- “Low-cost monitoring systems for urban water management: Lessons from the field”, [...] *Frederic Cherqui, Nicolas Walcker, Jean-Luc Bertrand-Krajewski [...], Water Research X*

1.5.7. Events

The Co-UDlabs project partners will organize and participate in several public events to promote the project and disseminate the results.

1.5.7.1. Events planned to be organised by the project

- 2 seminars or special sessions associated with the 2022 SPN conference and 2023 Novatech international conference to create and consolidate a group of ‘early adopters’ users (WP1);
- 2 dissemination workshops on smart governance in urban water sector as side-events in national or international conferences (WP2)
- Internal 2 early-stage research seminars comprising PhDs and early-stage researchers from partners of Co-UDlabs (WP3)
- 1 open workshop and 1 PhD course for the UD European junior research community in 2022 and 2023 (WP3)
- 5 industrial workshops targeting UD industry professionals and practitioners (WP3)
- Public webinars and online lectures for specific and emerging monitoring techniques in UD (WP3)
- 3 workshops to disseminate the project results achieved in WP6, WP7 and WP8 (WP4);
- 2 webinars and 2 hackathons to promote the TA calls (WP5);
- 1 final infoday targeted at the general public and other non-experts (WP4).

At M36, the following events have been organised by the Co-UDlabs project (ordered by date):

- Co-UDlabs Introductory Webinar on Transnational Access, organised by UDC on October 13, 2021 (online);
- Co-UDlabs Online Workshop on UD Practice and Research Needs, organised by IKT on November 3-4, 2021 (online);
- Co-UDlabs Hackathon on Transnational Access to RIs, organised by Deltares on November 23-25, 2021 (online);
- Co-UDlabs 25th EJSW - European Junior Scientists Workshop on "Monitoring urban drainage systems and rivers", organized by INSA and DELTARES on May 15-21, 2022 in St-Maurice-en-Valgaudemar (France);
- Co-UDlabs 1st Early-Stage Researchers Seminar, organized by UDC on June 27-28, 2022 in A Coruña (Spain);
- Co-UDlabs live workshop on “Strengthening the links between scientists and practitioners to accelerate the transition towards smart and sustainable urban stormwater management – the Co-UDlabs project” organised by GRAIE at the CGLE Carrefour des gestions locales de l’eau on June 29-30, 2022, Rennes (France);
- Co-UDlabs Workshop on “Urban Drainage Metrology Toolbox”, organised as a side-event to the International Conference on Sewer Processes and Networks (SPN) by INSA on August 23, 2022 in Graz (Austria);
- Co-UDlabs session on “Tapping the value of urban drainage systems (UDS) Data” organised as part of the IWA World Water Congress by UDC on September 13, 2022 in Copenhagen (Denmark). The session aimed to investigate issues that may impact water utilities as they move towards a more data driven world, where evidence

will be essential to justify action and improve UDS performance. The workshop investigated three issues arising from new data collection, storage and analysis capabilities: (i) data quality and assurance of big data, (ii) the use of data enhance performance and ensure compliance, (iii) the dangers and opportunities to society from “open data” approaches.

- Co-UDlabs Webinar on “Fourier transform infrared spectroscopy (FTIR) chemical mapping”, organized by AAU on September 21, 2022 (online);
- Co-UDlabs Workshop on “Capacity problems and flow rate determination in pressurized systems”, organized by Deltares on November 17, 2022 (online);
- Co-UDlabs Webinar on the principles and applications of acoustic backscattering to monitor suspended solids in natural and engineered systems organized by Eawag on May 16, 2023;
- Co-UDlabs Webinar on “Routine Uncertainty Assessment”, organized by INSA and Deltares on June 12, 2023 (online);
- Co-UDlabs Webinar to present the 2nd Co-UDlabs call on Transnational Access on June 20, 2023 (online);
- Co-UDlabs Workshop to launch the 2nd TA call during the Novatech 2023 conference taking place in July 2023 in Lyon (France);
- Co-UDlabs Hackathon for participants in the 2nd TA call to connect, team up, share ideas and discuss early proposals, on September 6, 2023.
- Co-UDlabs Workshop on Uncertainty assessment in UD monitoring data (in French) to present the UDMT toolbox to a technical audience, on October 10, 2023 in Lyon (France).
- Co-UDlabs UDMT Workshop at the 7th edition of the Spanish Water Engineering Days (VII Jornadas de Ingeniería del Agua, JIA) on October 18, 2023 in Cartagena (Spain).
- Co-UDlabs Workshop on Uncertainty assessment in UD monitoring data, organized by GRAIE and INSA on March 6-7, 2024
- Co-UDlabs Webinar on Optical and computer vision techniques for flow and processes measurements, organized by UDC and Deltares on March 15, 2024.

The list of upcoming events to be organised by the Co-UDlabs project are available in the deliverable dedicated to trainings (D3.2). In addition, we highlight the Co-UDlabs participation in the **Green Week 2024** by proposing two different activities:

- UDC will host two Open Days at the Centre for Technological Innovation in Construction and Civil Engineering (CITEEC) laboratories on June 19-20, 2024 to show to early-stage researchers, school pupils, and youth how impactful research can be on water management, resilience, and sustainability in our own cities and territories
- Co-UDlabs is organising a course for urban drainage practitioners, regulators, and utilities interested in monitoring the main hydraulic and water quality parameters of sewers and drainage networks on July 16-19, 2024 at the CITEEC laboratories, University of A Coruña, Spain. Participants will be able to access and discover CITEEC’s STREET and BLOCK experimental facilities.

1.5.7.2. *Participation in external events*

Co-UDlabs is planning to be represented in a series of different national and international events. Partners attending these events are expected to engage with specialist groups of stakeholders and be confident ambassadors of the project.

- **Scientific conferences** where the project results will be presented either via oral/poster presentations, which could lead to the publication of conference proceedings (WP4);
- **National technical events** with practitioners, water utilities and regulators to disseminate Co-UDlabs products and services in the non-scientific UD community minimizing language barriers bottlenecks (WP4)
- **Exhibition booths** in fairs in innovation and technology related events (WP4);
- **Open-science events** to raise awareness of the project among the public and non-specialist audience in general (WP4)

More specifically, the Co-UDlabs scientific partners are facilitating the dissemination of the project results in national and international conferences in the UDS field. At the beginning of the project, the partners identified a list of relevant events and conferences to which a participation could be envisaged. This list, which has been continuously updated, is available in Annex 1. It is to be noted that, depending on the timing of these events, the type of results to be disseminated and budget constraints, only a limited number of events from this list will be selected. This is discussed by the consortium on a case-by-case basis.

So far (M36), **the consortium participated in 39 external events** for promotion and scientific dissemination where partners presented the work done within the project with an oral or poster presentation:

- **14 scientific conferences**, including:
 - A poster presentation by EAWAG at Aqua Urbanica 2021 "Schwammstadt" - German speaking Urban Drainage community on 13-15 September 2021, Innsbruck (Austria);
 - An oral presentation by INSA at the **POLLUTEC conference** on October 12-15, 2021, Lyon (France).
 - An oral presentation by UDC at the **GW4 WSA Seminar Series** of the GW4 Water Security Alliance on May 26, 2022 (online);
 - An oral presentation by UDC during the IAHR Institute Meetings (part of the **39th World Congress of IAHR**) on June 19-25, 2022 in Grenada (Spain), and two oral presentations by UDC and UDC-EAWAG;
 - An oral presentation by UDC at the **Water Innovation Europe 2022** (NBS working group event) on June 23, 2022;
 - Oral presentations by USFD and EAWAG at the 10th **International Conference on Sewer Processes and Networks (SPN)** on August 23-25, 2022 in Graz (Austria);
 - An oral presentation by UFSD, UDC and IKT and discussion on future research directions at the **Symposium on Urban Flooding Experiments** on September 1-2, 2022 in Lyon (France);
 - An oral presentation by IKT at the **Water Networking Event "Water in an international context 2022"** on November 8, 2022, Mülheim (Germany)
 - A poster presentation by Eawag at the **Aqua Urbanica 2022 "Grün statt Grau"** - German speaking Urban Drainage community on November 13-15, 2022, Glattfelden (Switzerland)

- An oral presentation by USFD at the **3rd IAHR Young Water Professionals Conference 2022** on November 29, 2022, online.
 - Two presentations by IKT at the **EUR-SAM** (Sewer Asset Management Workshop held at Lulea University (Sweden) on 15-16th February 2023, (I) A deep learning based framework for automated detection of in-pipe defects in CCTV sewer survey, (ii) Machine learning for prediction of failures in sewer networks.
 - Two oral presentations by UFSD with EAWAG, INSA at the **NOVATECH 2023 Conference** on July 3-4, 2023 in Lyon (France)
 - Oral presentation on “Annular Flume Studies to test the effect on antibiotic resistant genes and use of Crispr-Cas in *E. coli* from sediments affected by sewage pollution” by USFD-UPC BarcelonaTech at the **"Modern aspects of microbiology, virology and biotechnology in wartime and post-war period"** Conference on November 15-16, 2023 in Kyiv (Ukraine).
 - An oral presentation by IKT at the **Water in an international context - Climate change** in North Rhine-Westfalia, Great Britain and the Commonwealth Conference on December 13, 2023 in Gelsenkirchen (Germany), hybrid.
- **14 national technical events**, including:
- An oral presentation by UDC at the **Galicia Innovation Days – Towards Horizon Europe** on October 25-29, 2021 (online);
 - An oral presentation by IKT at the **StarkRegen Congress 2021** (Heavy Rain Congress) on December 2-3, 2021 in Gelsenkirchen (Germany);
 - An oral presentation by IKT at the **Göttinger Abwassertage** (Goettinger Wastewater Days) on February 15-16, 2022 (online);
 - A poster presentation by GRAIE at the **Webinar France-Québec “Ville Perméable”** on 17 March 2022.
 - An oral presentation by UDC at the **14th Annual Seminar of the Spanish Network of Hydraulics Laboratories** on March 29, 2022 in Barcelona (Spain);
 - Oral presentation by GRAIE at **Carrefour des gestions locales de l'eau** - June 29, 2022 in Rennes (France) & online (hybrid);
 - A poster presentation by UDC at the **Jornadas de la AEAS** on September 28-30, 2022 in Córdoba (Spain);
 - An oral presentation by INSA and GRAIE at the **Journée d'échanges Autosurveillance des systèmes d'assainissement** on October 13, 2022 in Lyon (France);
 - Participation of IKT with a small exhibition stand at the **Oldenburg Pipeline Forum** on March 30-31, 2023 in Oldenburg (Germany), where Co-UDlabs flyers were distributed to visitors;
 - Participation of IKT with an exhibition stand at the **ROKATECH Kassel 2023** on May 9-12, 2023 in Kassel (Germany), where Co-UDlabs flyers were distributed to visitors;
 - An oral presentation by INSA at the **Journées Techniques EPNAC 2023** on October 3, 2023 in Angoulême (France)
 - An oral presentation by IKT at **Kennis - en netwerkdag Professioneel Afvalwatertransport** on December 6, 2023 in Amersfoort (The Netherlands)

- An oral presentation by USFD at the **Advances in flood modelling and forecasting event** on February 1-2, 2024 in Sheffield (UK)
- A poster presentation by IKT during **the Jubiläumsfeier "10 Jahre Johannes-Rau-Forschungsgemeinschaft"**, Mit Grußworten, Podiumsdiskussion, Begleitausstellung und Empfang (Anniversary celebration "10 years Johannes-Rau-Research Association" on April 8, 2024
- **2 exhibition trades:**
 - Online booth organised at the **ICRI 2022** conference on October 19-21, 2022 in Brno (Czech Republic) – hybrid event.
 - Booth organized at the **NOVATECH 2023** conference on July 3-4, 2023 in Lyon (France)
- **3 Open science events:**
 - Poster presentation by UDC at the **Galician Night of Researchers** taking place at A Coruña (Spain) on September 24, 2021.
 - Visit of the INSA research infrastructure and other urban drainage infrastructures for schools during the **"Fête de la Science" 2023** on October 9-13, 2023 in Villeurbanne (France).
 - Presentation by USFD of **"Autonomous Sensing in Urban Drainage Systems"** on February 12, 2024 at the University of the 3rd Age association in Sheffield (UK).
- **6 Other events:**
 - Oral presentation by UDC at the **LIFE DRAINRAIN** project final event on October 20, 2022 in Ferrol (Spain).
 - One panel discussion by Deltares at the **Blue planet Online conference** "Artificial Intelligence: Reshaping the Water Industry" on November 22, 2022, Berlin (Germany) and online.
 - Oral presentation by UDC at BARCOVE - **BlueGreen Innovation Challenge Hackathon** on September 14, 2023, online
 - UDMT presentation by INSA during a seminar at the **Delta Water Institute** on October 23, 2023 in Nanjing, China
 - Oral presentation by GRAIE at an information exchange/coffee morning at **CEREMA** (France) on March 25, 2024 in Clermont Ferrand, France. Presentation of: Co-UDlabs overview, RI mapping/cataloguing goal (get involved), Data/ Protocol Harmonisation (get involved), JCUD new UDRAIN group (get involved), presentation of UDMT tool and sharing of supporting documents, discussion of the optical observation techniques being developed in Co-UDlabs.
 - Presentation of findings from JRA8 (gully pot sediments monitoring) by Deltares at the **Global Webinar on Best practices and Innovations in Water Sensing of the SWIG** (Sensors for Water interest group) on April 23, 2024.

1.6. IMPACT ASSESSMENT

Monitoring the impact of the different dissemination activities involves a systematic collection of data and reporting of information from all partners. This information serves to deliver the final verdict on the success of the dissemination process undertaken by the project.

Monitoring the impact of the different dissemination activities involves a systematic collection of data and reporting of information from all partners. This information serves to deliver the final verdict on the success of the dissemination process undertaken by the project.

A detailed communication and dissemination plan was created at M6 to measure the success of the implemented communication and dissemination activities and to check that all activities are planned and are effectively taking place. **Key Performance Indicators (KPIs)** were integrated to measure the impact of each dissemination and communication activity. KPI's are a measuring factor for the performance and progress of an activity, message, task, etc. towards its expected impact. Several KPIs have been defined for each communication activity. They are being used to assess the performance of the dissemination activities all along the project duration. If some KPIs are not reached within a certain reporting period, or if some delays appear evident, Euronovia warns the partners and encourages them to undertake the necessary measures (more publications, participation in events, etc.) to make sure all KPIs will be met by the end of the project.

The project communication and dissemination plan, including the detailed list of communication and dissemination activities planned within the project, related KPIs and responsible partners, is available in Annex 2. This document has been updated with the indication of performance indicators at the end of the second reporting period (M36).

In addition to quantitative KPIs, some **qualitative indicators** are taken into consideration to understand the impact of the actions carried out, for example:

- Individual feedback obtained through satisfaction questionnaires sent to participants after project events: we have sent out questionnaires to participants in the hackathon and the workshop organised before the launch of the TA calls and we received a few9 responses with very good feedback on the content and utility of these events for the participants. Responses to these questionnaires can be provided to the EC upon request.
- Feedback obtained from users of the RIs: a questionnaire was sent to TA users to collect feedback on the quality and process of the Co-UDlabs Transnational Access programme. 8 answers were collected, providing a very positive feedback and useful information on how every aspect of the process was perceived. This feedback was taken into consideration when planning the 2nd call for Transnational Access. In addition, we collected 7 testimonials out of 13 from RIs users from the first TA call, which are very positive. The remaining testimonials from the other user groups are currently being collected and will be gathered into the dedicated factsheet (https://co-udlabs.eu/wp-content/uploads/2023/07/TA_call_factsheet_testimonials.pdf).
- Feedback obtained from users of the RIs: a questionnaire was sent to TA users to collect feedback on the quality and process of the Co-UDlabs Transnational Access programme. 8 answers were collected, providing a very positive feedback and useful information on how every aspect of the process was perceived. These feedbacks will be considered when planning the 2nd call for Transnational Access. In addition, we are currently collecting testimonials from RIs users from the first TA call, that will be gathered into a dedicated factsheet.

1.7. TRACKING AND MONITORING OF THE ACTIONS

The partner in charge of communication (Euronovia) is overseeing the task of tracking all the communication activities of the partners. By performing regular monitoring of the activities, it is possible to assess if the action plan is being carried out properly and on time. It will also be possible to see which activities had the biggest impact on the stakeholders (both in quantitative and qualitative terms) and to improve communication actions, if necessary.

At this scope, an Excel table composed of 3 different spreadsheets was created in June 2021 to gather information related to the activities implemented by each partner, namely: communication actions, scientific dissemination activities, scientific publications.

This document has been uploaded to the project SharePoint platform and all partners are being reminded to update it as soon as they are involved in a communication or dissemination action to keep track of all the activities implemented. Reminders are being send regularly by email and on the occasion of face-to-face meetings.

This document allows us to evaluate the impact of the actions, the type and number of people reached and to check if KPIs planned have been met and if not, to plan corrective measures. This document is available upon request to Euronovia, the WP4 leader.

Table 7: Overview of the online form tracking partners' communication and dissemination actions

Communication channel (please select from the drop-down list)	Name of the communication source/channel	Title	Date	Place	Links to the event or other online resource	Target Audiences						Outreach level (please select from the drop-down list)	Partner in charge			
						Academia and researchers	Industry/Practitioners	Government/Policy makers	EU/International networks	National technology networks	EU projects			General public/ advocacy groups		
55	News in website	JRF website (www.jrf.nrw), a website of Johannes-Rau-Forschungsgemeinschaft - regional Research Association of 15 independent research institutes of the region Northrhine-Westfalia (Germany)	Digitalisierung in der Abwasserentsorgung - ein wichtiger Baustein zur Lösung der globalen Wasserkrise. IKT und seine europäischen Partner organisierten Workshop auf dem IWA World Water Congress & Exhibition 2022 (WWCE) in Kopenhagen	19 September 2022	online	https://jrf.nrw/veranstaltung/digitalisierung-in-der-abwasserentsorgung-ein-wichtiger-baustein-zur-loesung-der-globalen-wasserkrise/	x		x						Regional	IKT
56	News in website	Actu-environnement	L'ambition est de sortir les résultats de recherche des cartons pour améliorer la gestion de l'eau urbaine	19/07/2022	online	https://www.actu-environnement.com/ae/news/video-iv-graie-elodie-brelot-recherche-techniques-alternatives-gestion-eaux-pluviales-ville		x	x						National	GRAIE
57	Video	Actu-environnement	Le projet Co-UDlabs - pour une meilleure gestion des eaux pluviales urbaines	19/07/2022	online	https://www.youtube.com/watch?v=viDBWLFpL4		x	x						National	GRAIE
58	News in website	JRF website (www.jrf.nrw), a website of Johannes-Rau-Forschungsgemeinschaft - regional Research Association of 15 independent research institutes of the region Northrhine-Westfalia (Germany)	Digitalisierung in der Abwasserentsorgung - ein wichtiger Baustein zur Lösung der globalen Wasserkrise: IKT und seine europäischen Partner organisierten Workshop auf dem IWA World Water Congress & Exhibition 2022 (WWCE) in Kopenhagen	19/09/2022	online	https://jrf.nrw/veranstaltung/digitalisierung-in-der-abwasserentsorgung-ein-wichtiger-baustein-zur-loesung-der-globalen-wasserkrise/	x		x		x				Regional	IKT

EXPLOITATION STRATEGY

Creating marketable products from research output is becoming a requirement to boost the innovation potential of the research activity towards a constant evolution, in which universities and research centres are engaging with the non-academic/private sector. In its nature, Co-UDlabs holds the potential and is experienced for exploiting research outputs at various levels involving different types of organizations, such as water utilities, the SMEs in their supply chain, research centres as well as other public interest organizations, for the benefit of the final users of the RIs. The plan for exploitation takes into consideration these different levels through the different aspects presented below:

- Target groups identification:** lead (technology makers) and end users principally, and/or potential future competitors.
- Lists of outputs to be exploited** and explanation on how to proceed with their development (see Table 9: Preliminary list below).
- Definition of the exploitation strategy:** we will select the most promising project outputs (i.e. Key Exploitable Results) and we will define the partners' exploitation intentions, risk assessment, use options, exploitation roadmap and characterization table. Also, the Key Exploitable Results of the project will be uploaded to the Horizon Results Platform (<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-results-platform>) to boost dissemination and maximize chances of being discovered by the right stakeholders for valorisation purposes.

- **Methods of exploitation** – IPR strategy (patents, company creation, investor or equity driven technology development and sales, private public partnerships, etc.). The conclusion of a fair and generally agreed Consortium Agreement (CA) before the start of the project represents an important first step towards a sound exploitation of the project results. Then, the range of different possibilities for exploitation will be studied in order to develop the appropriate plan, which takes also into account the nature of the partner(s) involved in the dissemination and exploitation and of their financial capability to fund marketization conditions.

The consortium requested the support from the **Horizon Results Booster service** (Module C) to optimize its exploitation strategy. Thus, the list of **exploitable results** provided in the GA (Table 8) was updated by the consortium based on the most recent outputs of the projects (Table 9) – and it will be further refined by project partners until the end of the project, adding new outcomes as soon as they are available. Among this KERs, the consortium selected 3 which were considered more relevant for their analysis, as requested by the external consultants of the Booster, and an **Exploitation Seminar** took place in February 2024 (see section 2.1 below for more information).

2.1. LIST OF RESULTS WITH POTENTIAL FOR EXPLOITATION

The major project outputs that were considered to have the most value for exploitation, were already identified at the proposal stage, as indicated in the table below.

Table 8: Preliminary list of results with potential for exploitation

Type of results to be commercially or non-commercially exploited	Lead user, target groups	Exploitation	Dissemination to ensure the exploitation
Creation of open data-sets and standardized methodologies for data management in WPs 2, 6, 7, 8 and their aggregation in the data management plan (WP4)	Basic and applied Researchers, Engineers, Technology Developers	Open databases Data management plan	Dissemination in open access, Lectures and courses, Publication through websites, press releases
Demonstration prototype for drainage solutions based on water infiltration (Soil designer WP8)	Water utilities Design Engineers, SMEs	Further investment commercialisation of the technology, creation of patent and know-how, IP	Dissemination in Industrial Conferences, participation to trade fairs. Websites and press releases
Reports and data on the evaluation of new monitoring solutions to be developed in the WP6.	Basic/applied researchers, water utilities SMEs	Through the publication of scientific papers and evaluation reports	Participation to Scientific conferences to present the publications, project website and open access data bases, press releases
Creation of new services or products on data management, buried assets evaluation and rehabilitation (WP 2, 6, 7)	PhD students, post-doctoral Researchers, water utilities, SMEs from outside water sector, e.g. Microsoft/Siemens	Creation of start-ups, patents, know how, licensing, service sales	Support to young researchers in the creation of start-ups. Media information for water utilities, SMEs and other sector companies
Data management toolboxes and training content developed in the WP2 and WP3	Early-stage researchers, students, water engineering consultants,	Integration of the training content in university degree courses and industry training courses	Contacts with universities dealing with urban drainage courses to promote the training content
Strategic agenda on urban drainage research infrastructures	The policy makers (national and international level)	Inputs provided to policy makers	Promotion of the results in the several conferences and other open events at national levels

This preliminary list of project results has been updated under the lead of Euronovia during RP2: WP leaders were asked to update this initial list taking into consideration all the main knowledge outputs developed or to be developed within each WP. An overview of this list is available below, while the detailed list is available upon request to Euronovia.

Table 9: Updated list of Co-UDlabs Key Exploitable Results (KERS)

#	Name of the result (to be commercially or non-commercially exploited)	Lead partner (willing or best positioned to exploit the result)	Description: explain to EXTERNAL READERS the potential/benefit of this result	Nature	Open or restricted access	WPs allowing for the development of the result	Expected completion date (when will the result be ready for exploitation?)	Future users/beneficiaries	Exploitation intentions
1	Toronto Exfiltration System	USFD	This is a novel configuration of a drainage system that combines infiltration with normal flow transport. The aim is to increase the flow capacity of buried stormwater systems without increasing the asset footprint.	Methodology	TBC	WP9	end of project	Engineering consultancies, water utilities	Working with engineering consultancies
2	Creation of open data-sets and standardized methodologies for data management in WPs 2, 6, 7, 8 and their aggregation in the data management plan (WP4)	EAWAG	Open datasets can be used to ensure reproducibility of scientific discoveries or to revisit the analysis after some years	Other (please specify in comments)	Open Access	WP2, WP6, WP7, WP8	end of project	Basic and applied Researchers, Engineers, Technology Developers	Open databases Data management plan, Urban drainage "data and models" community
3	Demonstration prototype for drainage solutions based on water infiltration (Soil designer WP8)	AAU	Model for predicting infiltration and pollutant transport of infiltration soil	Model	Restricted access	WP8	end of project	Water utilities Design Engineers, SMEs	Further investment commercialisation of the technology, creation of patent and know-how, IP
4	Reports and data on the evaluation of new monitoring solutions to be developed in the WP6.	EAWAG	Prior information on i) the perspectives of novel monitoring devices for relevant issues and ii) their reliability from independent field tests in the community	Other (please specify in comments)	Open Access	WP6	end of 2024 TBC	Basic/applied researchers, water utilities SMEs	Through the publication of scientific papers and evaluation reports
5	Creation of new services or products on data management , buried assets evaluation and rehabilitation (WP2, 6, 7)	USFD	Codes to access the impact of operational and structural defects	Software	Open Access	WP2, WP6, WP7	end of project	PhD students, post-doctoral Researchers, water utilities, SMEs from outside water sector, e.g. Microsoft/Siemens	Creation of start-ups, patents, know how, licensing, service sales
7	Strategic agenda on urban drainage research infrastructures (UDRAIN)	GRAIE	clarification and illustration of principles, levers, organisation and practical solutions to facilitate the transfer and appropriation of research results into practice and regulations	Methodology	Open Access	WP1 and all WP's because Co-UDlabs is an experimentation	end of the project	Policy makers (national and international level) and scientists	Inputs provided to policy makers
8	UDMT - Urban Drainage Metrology Toolbox	INSA	A series of tools / methods / algorithms to promote best practices in urban drainage metrology and monitoring	Software	Open Access	WP6	March 2023	practitioners, scientists, students	Communicate about the tool availability and benefits, Identify needs for future developments
9	Camera system to track flow velocities, depths and other features	UDC	An edge computing systems on RaspberryPi to track flow velocities, depths in UDS. Some applications on UDC models and Aalborg Pond	Other (please specify in comments)	Open Access	WP8	October 2023	practitioners, scientists, water utilities, SMEs	Develop an open platform. Identify possible users. Possible creation of a start-up
10	Sediment detection and monitoring device using temperature signals (MONTSE)	UDC, EAWAG	Probe to detect bed sediment elevation using temperature signal in different urban drainage infrastructures. Hardware + Software developed by UDC researcher at EAWAG. First prototype tested at UDC, developed at EAWAG TA, tested at Deltares (JRA3) and USFD TA.	Other (please specify in comments)	Open Access	WP8, TA	November 2023	practitioners, scientists, water utilities, SMEs	Technology is further tested in gully pots in Zurich. Exploration with full user groups currently happening, interest in the international community (NL)
11	Camera system for non-contact monitoring of water quality in inflows of WWTPs	EAWAG	A commercially available camera platform ("Pollutionkeeper") to monitor a set of water quality variables without direct contact to the wastewater	Other (please specify in comments)	Restricted access	WP6	Prototype completed, not commercially available	practitioners, scientists, water utilities, SMEs	A commercially available camera platform ("Pollutionkeeper") sold by Photrack AG (CH) is being developed with follow-up money from Swiss innovation fund.

Among this list of Key Exploitable Results (KERs), the consortium selected 3 KERs (highlighted in yellow in Table 9) which were analyzed in detail during an **exploitation seminar** organized online in February 2024 by Euronovia and with the support of the **Horizon Results Booster** service. The consortium applied for the Module C to receive guidance and training to improve the existing project strategies towards effective exploitation of Key Exploitable Results. This seminar was very useful to improve the following aspects:

- A review of the KERs of the project;
- A joint reflection of partners on the exploitation aspects of the project;
- A collaborative revision and clarification of the existing exploitation plans and ownership of project results as well as barriers and opportunities for their uptake;
- The opportunity for partners to start reflection on future developments of the results, possible funding mechanisms for their results and which partners will be mainly involved to ensure exploitation after the end of the project.

The main outcome of this seminar is a series of **tools** (characterisation table, priority map, exploitation roadmap, recommendations) and **guidelines for the consortium** to make the most out of the exploitation activities of the project as well as a **final report** which will be provided by the experts of the Booster in the next weeks, including KERs analysis and recommendations for partners. This report will be included in the final deliverable on exploitation (D4.4). Other modules of this service will also be considered for some of the results (e.g. Business Plan Development).

2.2. ACTIONS PLANNED TO ACHIEVE THE EXPLOITATION OF RESULTS AND IMPACTS OF THE PROJECT

Several types of actions are planned by the consortium before and after the end of the project to achieve the exploitation of results, as showed in the table below.

Table 10: Actions planned to achieve the exploitation of results

Type of actions	Description	Targeted groups	Status at M36
During the project			
Events	Organisation of several training workshops (industrial workshops and summer schools) addressing the main technology application of the RI project. Creation of training content.	The R&D sector, the academic and non-academic organizations with specific players in the field, the public at large, related EU projects	Several trainings have already been organised by project partners: webinars, trainings for early-stage researchers and trainings for industry professionals. Full list available at https://co-udlabs.eu/networking/training/
Events	Organisation of Novatech side event (WP1). Participation in practitioners and policy-makers national and international events (WP4)	The different international Urban Drainage research community users and policy makers.	The Co-UDlabs workshop was organised on July 3, 2024 to launch the second TA call: https://co-udlabs.eu/evenements/co-udlabs-workshop-at-novatech-2023/
Events	Local and national meetings to optimize the transmission of knowledge and know how to operators.	The different Urban Drainage community users	14 national technical events attended to date by the Co-UDlabs partners to disseminate its results
Events	Organisation of one final info day: the impact and further exploitation of the project results will be introduced to a wider public. Virtual attendance will be allowed.	Public at large, policy makers, media, and all other stakeholders	N/A Planned in 2025
Internal event	Exploitation and IPR workshop. Potential licensees and water utilities will be invited.	Consortium	The exploitation workshop was organised by the Horizon Results Booster in February 2024

Internal event	Participation to IPR webinars organized by the IPR EC Helpdesk	Consortium (at least one webinar during the course of the project)	Some of the partners attended at least one IPR webinar organized by the IPR EC Helpdesk. Additional webinars may be targeted.
Engagement of young researchers	New recruitment and engagement of 8 PhD candidates and 5 post-doctoral positions on Co-UDlabs who should be especially relevant candidates for the creation of innovative start-ups.	These PhD students and post-doc positions will be especially targeted related to all actions on exploitation and IPRs. A special focus will be put on training them for innovation creation.	Several recruited postdocs and MsC students recruited and engaged on Co-UDlabs at 31 April 2024. Final figures will be made available in the final version of the PEDR.
Work package tasks	Activities of WP2 (Smart governance) will be dedicated to provide information and evidence to support the revision of EC Directives related with water sector ¹ (e.g. Bathing water, ICT, Nature Based Solutions, WWTD, etc).	Policy makers and industrials	The Co-UDlabs project partners contributed to the revision of the European Urban Waste Water Treatment Directive (UWWTD) via consultations in 2019, SPN9 in 2019 and the public consultation in 2021. 6 Co-UDlabs partners from Spain, France, Switzerland, UK and Germany have made complete and precise contribution to the public consultation for UWWTD revision. These responses can be put into perspective with the needs and expectations expressed by 285 respondents, from 22 Member States and 6 other countries (UK, Norway, Switzerland, Serbia, USA and Israel), among which scientists seem to be few.
Collaborations with other projects	Results containing fundamental information, system evaluations, innovative inputs, network publication	Stakeholders from national, EU and international funded projects. EU wide bodies such as WaterEurope or EurEau.	Several collaborations are being implemented with the following: <ul style="list-style-type: none"> • <u>Water associations</u> EWA - IFAT; WATER-EUROPE (Group of NBS) • <u>EU projects</u> Project VITALISE; EUROPLANET SOCIETY, WATER4ALL • <u>National projects</u> SATURNO, DigitalRAIN
Creation of an International Advisory Board	Ensure the management of innovation within the consortium and guarantee that all effective measures are taken to maximize the dissemination and potential exploitation of the results during and after the project. This board will include key actors in the target areas and will be used as a tool to advise on related issues such as public acceptance, local regulations, set up of adequate and fair incentive schemes and the exploitation of the project results.	Consortium actors in the development of Key Exploitable Results	See paragraph 2.4 below
After the project			
Research development	Future internal research at the partners' institutions will be carried out to ensure the further sustainability of the technology development and upgrade. The results will be used as background for future collaborative innovation projects. This should take place potentially through new EU funding (like the COST actions to favour networking on a targeted R&D topic) or national funding targeting knowledge transfer between academia and industry.	Consortium partners and new key actors in the field, especially targeting the industry actors	This is currently being explored by partners.

¹ <https://ec.europa.eu/info/law/better-regulation/have-your-say>

Creation of new services and products	The new services and products free software tools and methods for data handling (WP2, WP6) could be exploited by the SMEs of the consortium to propose new services or with the creation of spin-off and start-up companies.	SMEs, end users of the project, external industry actors	As part of WP6, a tool was made, the Urban Drainage Metrology Toolbox (UDMT), for the calibration and correction of sensors, for calculating the uncertainties in data (type A, type B, M-C) and for tracing experiments. This is available as a free to use online and offline Matlab app and the code will be published in 2025 at the end of the Co-UDlabs project, allowing end users to modify and improve the code to suit their needs.
Further funding	PPP, EU funding for innovation (especially the SMEs instruments, such as Eurostars SMEs instrument ²), public procurement, venture capitals, private investors, banks, business angels will be sought for, to ensure the further development of the RI .	End users of the project, investors	Not yet explored
Standards	The possibility for providing inputs to European standards in the manufacturing sector will be also deepened.	Standardization sector	Not yet explored
Policy Roadmap	A wide dissemination of the roadmap will ensure that stakeholders engage with the project results even after the end of the project.	Industrial and policy makers, including international policy makers like the IEA or IRENA	While the Roadmap is due to be delivered at M42, some preliminary work has been published: https://zenodo.org/records/8017076
Open databases	Permanent access to the main results of the project in different databases, including OpenAIRE.	All interested stakeholders	All project datasets are made available in the Co-UDlabs community on Zenodo: https://zenodo.org/communities/coudlabs/

2.3. PROTECTION OF RESULTS AND IP

The overall Intellectual Property (IP) approach of the project is in line and builds on the principles and guidelines described in the European Commission Recommendations on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations, along three main aspects: (i) internal IP management; (ii) knowledge transfer activities; (iii) collaborative and contract research.

For internal IP management, a Consortium Agreement has been signed between all partners to address all relevant issues related to IP and the results generated during the project (access rights to background and foreground necessary for the execution of the Project, rules for dissemination and use of own knowledge). The Consortium Agreement (CA) complements the rules of the Grant Agreement. In particular, treatment of partners' background, the disclosure of new ideas with potential commercial interest, the ownership of research and results, record keeping and confidentiality, are all elements tackled in the consortium agreement.

In general, IP will be the property of the partners and facility users that have contributed to the creation of the knowledge. The degree of ownership will depend on the degree of contribution to the IP. This general rule will apply as long as it does not violate national legislation, specific agreements for scientific publication, and specific agreements among partners regarding ownership of IP. Partners that have jointly carried out work generating foreground and where their respective share of work cannot be ascertained shall have joint ownership of that foreground and may establish appropriate joint ownership agreements or license agreements. This task is considered essential as a guarantee for the good implementation of the project.

Further to the draft of the CA, the coordinator has an active role in providing advice and recommendations to the project partners and implement innovation management actions. If relevant, for any protection of IPR regarding the results

² <https://www.eurostars-eureka.eu/>

generated during the project, UDC (or in case, an entrusted external IP attorney), will be responsible for filling the registration. Further to the start of the project, the coordinator made sure that all partners are aware of the IP policy (presentation at the Kick-off meeting) and that the partners support the Code of Practice concerning the management of IP as stated by the recommendation from the European Commission (i.e. to better convert knowledge into socio-economic benefits, to more effectively exploit publicly-funded research results with a view to translating them into new products and services, ...). Partners have been recommended to attend one of the webinars on IP organised by the IP Helpdesk to boost the understanding of the consortium on these matters.

As regards to the rules for dissemination activities, any beneficiary has the possibility to object to dissemination if it can show that it would suffer significant harm (in relation to background or results). In this case, the results is not disseminated unless appropriate steps are taken to safeguard the interests at stake. For the dissemination, the Grant Agreement rules will be followed (45 days prior notice before any dissemination). At partner level, there is a periodical review of the results created by each partner and all partners will be encouraged to protect any knowledge that has potential commercial applications.

In addition, a Facility User Agreement is signed for TA access of the different User groups with the Facility provider to address all the relevant issues related with the access and related with the IP and results generated during the project. This agreement is signed just for the access to the RIs and defines Open access data policies.

2.4. THE INTERNATIONAL ADVISORY BOARD

The Co-UDlabs consortium is accompanied and supported during the project lifetime by **an International Advisory Board (IAB)**. The IAB has been constituted at the proposal stage and it brings powerful stakeholders to the table, such as EurEau (EU level network of water operators), IKT Association of Industry (70 companies from the private), SUEZ France (global expert in the water and waste sectors), RTO SINTEF (an independent research organization with 2000 employees from 75 countries), and two leading scientists from Université Laval (Canada) and University of New South Wales (Australia).

These members are providing valuable feedback on the project, introducing challenging requirements to be considered, and have a major impact on the project's sustainable development. The IAB has a role in fostering exchanges with external industrial players regarding the exploitation potential and options.

WP4 DELIVERABLES

- D4.1: Data Management Plan [M6]:** The DMP describes the data management life cycle for the data to be collected, processed and/or generated by the project;
- D4.2: Plan for exploitation and dissemination of the project results [M6]:** The PEDR summarizes the beneficiaries' strategy and concrete actions related to the protection, dissemination, communication and exploitation of the project results;
- D4.3: Mid-term report on dissemination and communication activities, including KPIs reports [M24]:** Report on the dissemination and communication actions for the first half of the project;
- D4.4: Final report on the project exploitation initiatives and related impacts on innovation, including dissemination and communication activities [M48]:** Report on the concrete actions related to the protection and exploitation of the project results (including dissemination and communication activities) undertaken during the project duration toward the objectives (PEDR) and evaluation of their impact.

ANNEX 1 – LIST OF EVENTS TO TARGET

SCIENTIFIC CONFERENCES			
Name	Date	Venue	Partner planning to attend
IFAT - World's Leading Trade Fair for Water, Sewage, Waste and Raw Materials Management	May 13-17, 2024	Munich, Germany	IKT
8th Europe Congress of the International Association for Hydro-Environment Engineering and Research (IAHR)	June 4-7, 2024	Lisbon, Portugal	INSA
International Conference on Urban Drainage (ICUD)	June 9-14, 2024	Delft, The Netherlands	UDC, INSA, AAU, Euronovia, USFD, EAWAG
Aqua Urbanica 2024	September 22-24, 2024	Graz, Austria	EAWAG
NATIONAL TECHNICAL EVENTS			
Name	Date	Venue	Partner planning to attend
XXXVII Congreso de AEAS (Congress of the Spanish Wastewater Operator's Association)	June 5-7, 2024	Castellón, Spain	UDC
German Water Association Rainwater Congress (DWARegenwassertage)	TBA	Germany	TBC
ASTE Annual Conference	2025	Toulouse, France	INSA
Carrefour des Gestions Locales de l'Eau	2025	Rennes, France	GRAIE
EXHIBITIONS AND TRADE FAIRS OR OTHER INDUSTRY EVENTS			
Name	Date	Venue	Partner planning to attend
IFAT - World's Leading Trade Fair for Water, Sewage, Waste and Raw Materials Management	May 13-17, 2024	Munich, Germany	IKT
Water Environment Federation's Technical Exhibition and Conference	October 5-9, 2024	New Orleans	TBC
Water Innovation Europe 2024	June 17-19, 2024	Brussels, Belgium	TBC
OPEN SCIENCE EVENTS			
Name	Date	Venue	Partner planning to attend
European Researchers' night	Every year, September	Several countries	Several partners
Día da ciencia na rúa	Every year, May	A Coruña, Spain	UDC
Fête de la Science	Every year, October	Several cities in France	Euronovia / GRAIE / INSA
Open door day Eawag /EMPA presentation/representing Co-UDLabs to layman audience	September 2024	Dubendorf (CH)	EAWAG
ESOF	June 12-15, 2024	Katowice, Poland	TBC
Co-UDlabs Open Days at CITEEC during the EU Green Week 2024	June 19-20, 2024	A Coruña, Spain	UDC
Applied Course on Urban Drainage Metrology during the EU Green Week 2024	July 16-19, 2024	A Coruña, Spain	UDC

ANNEX 2 – KPI REPORT (AT M36)

Co-UDlabs Communication and dissemination plan													
Dissemination or communication channel	Tool	When (and where, if relevant)	Target audiences						KPI	Target (by the end of the project)	M36 April 2024	Partner(s) in charge	
			Academics and researchers	Industry / Practitioners	Government / Policy-makers	EU and international networks	National technology networks	EU projects					General public/advocacy groups
Events to be organised by the project partners	2 Early-stage researchers seminars	June 27-28, 2022 and September 2024	X						Number of participants	20	33	UDC, USFD	
	- 25th European Junior Scientists Workshop (EJSW) on UD monitoring	May 15-21, 2022	X						Number of participants	22	20	INSA	
	PhD course on Sewer Processes	2023 --> October 7-11, 2024	X						Number of participants	40	-	AAU	
	Industrial workshop on flow rate determination of pumping stations and hydraulic structures (1 day)	November 17, 2022		X			X		Number of participants	20	45	DEL	
	Uncertainty assessment in UD monitoring data (2 days)	2023--> 6-7 March 2024		X			X		Number of participants	maximum 12	8	INSA	
	Applied course on UD metrology (4 days)	July 16-19, 2024		X			X		Number of participants	maximum 12	-	UDC	
	2 IKT-association practice workshops (2 days)	November 3-4, 2021 and 2025	X	X			X		Number of participants	20	59	IKT	
	Webinars and online lectures	2022 to 2025 1) September 21, 2022 2) May 16, 2023 3) June 12, 2023 4) March 15, 2024		X	X		X	X	X	Number of webinars	6	4	IKT / all research institutions
										Number of attendees	30	1st webinar: 18 2nd webinar: 50 3rd webinar: 35 4th webinar: 25	
	Side event at the Sewer Processes and Networks (SPN) conference	August 23, 2022 (Graz, Austria)		X		X	X		Number of participants	30	18	INSA/GRAIE	
	Side event at the NOVATECH conference	July 2023 (Lyon, France)		X		X	X		Number of participants	30	49	GRAIE	
2 webinars and 2 hackathons	Before the TA calls the access to the research infrastructures	X	X		X	X		Number of attendees	60	1st webinar/hackathon: 100/61 2nd webinar/hackathon: 28/28	UDC		

	2 dissemination workshops on smart governance	Side events of IWA specialized working groups conferences or meetings 1) September 13, 2022 2) WP6 webinar in 2024		X	X	X	X	X			Number of participants	30	1st workshop: 40	EAWAG	
	3 Workshops related with results of JRAs	Side events of IWA specialized working groups conferences or meetings 1) UDMT workshop - August 23, 2022 2) UDMT workshop - October 18, 2023 2) WP7 online workshop in 2025 (IWA WG data and models)	X	X		X	X	X			Number of participants	40	1) 18 2) 11	INSA, USFD, UDC	
	Final Info Day	At the end of the project	X	X	X	X	X	X	X		Number of attendees	50	-	Euronovia, UDC	
Participation in external events and conferences	Scientific conferences	2022, 2023, 2024, 2025	X	X	X	X	X				Number of conferences	15	14	All research partners	
	National technical events	2022, 2023, 2024, 2025		X			X				Number of events	10	14	All partners	
	Fairs in innovation and technology related events	2022, 2023, 2024, 2025		X		X	X	X			Number of exhibitions	3	2	All partners	
	Open-science events	2022, 2023, 2024, 2025						X	X		Number of events	10	3	All partners	
Communication/dissemination material and activities	Project branding (logo, visual identity, communication templates, project leaflet, etc.)	At the beginning of the project	X	X	X	X	X	X	X	1		1	1	Euronovia	
	Communication package	M6	X	X	X	X	X	X	X	1		1	1	Euronovia	
	Flyer	M6	X	X	X	X	X	X	X		Number of flyers distributed	2000	1000	Euronovia	
	Brochure	M24	X	X	X	X	X	X	X		Number of brochures distributed	2000	1000	Euronovia	
	Newsletter	Every 6 months, starting M6	X	X	X	X	X	X	X	X	Number of issues	8	4	Euronovia	
											Number of subscribers	100	481	Euronovia	
	Press release	At the start and at the end of the project	X	X	X	X	X	X	X	X		Number of press releases	2	1	Euronovia
	Articles in specialized magazines	Whole project duration	X	X		X	X					Number of articles	2	0	All partners
	Timeline infography	At the end of the project	X	X	X	X	X	X	X	X		Number of infography	1	2 infographics on results of TA	Euronovia
	1 Motion design video	September 2022	X	X	X	X	X	X	X	X		Number of views on Youtube	500	312	Euronovia
	Website	Whole project duration	X	X	X	X	X	X	X	X	Number of visits	100/month	90/month	Euronovia	
											Number of news	1 news/month = 48	68		
	LinkedIn page	Whole project duration	X	X	X	X	X	X	X	X	Number of members	200	482	All (leader: Euronovia)	
											Number of posts	1/month = 48	114		
	Twitter account	Whole project duration	X	X	X	X	X	X	X	X	Number of followers	200	205	All (leader: Euronovia)	
											Number of tweets	1/week= 208	259		
Youtube channel with videos and interviews	from M12	X	X	X	X	X	X	X	X	Number of videos	15	21	All (leaders: Deltares/IKT)		
										Number of views /videos	500/video	1235 in total			
Media press kit	M24 and M48	X	X	X	X	X	X	X	X		Number of press kit	2	-	Euronovia	
Public relations and media coverage	Whole project duration			X	X	X	X	X	X		Number of external articles in the media	15	18	All partners	

Publications	Scientific publications (peer-reviewed research papers) and related datasets	From 2022	X	X						Nber of scientific papers	10	5	All research partners
										Nber of datasets	20	10	
										Number of visits / downloads of data-sets on Zenodo	3000	2716	
	Technical articles (international and national journals)	From 2022		X		X	X			Nber of technical papers	8	0	All research partners
Conference proceedings	From 2022	X	X		X	X			Nber of conference papers	15	15	All research partners	