IWA
the international
water association

The 2nd IWA
Digital Water Summit

Join the Transformation Journey

Conference Programme

14 — 16 NOVEMBER 2023
BILBAO | SPAIN
www.digitalwatersummit.org

Organisers

IWA
the international
water association

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Abastecimientos de
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Welcome

Dear colleagues,

It gives me great pleasure to welcome you to the 2023 IWA Digital Water Summit. This event is of great value for the global community, offering a shared platform for our journey towards harnessing the power of digitalisation for water management.

The inaugural 2022 Summit was a great success, bringing together a diverse gathering of experts from the water industry, technology companies, utilities, and research institutions. This premier event facilitated crucial connections across the water management supply chain, especially between technology providers and end-users.

We delved deep into critical topics, exploring the role of the Internet of Things (IoT) in water systems, the transformative potential of data analytics and artificial intelligence in water management, smart metering, leakage detection, and the cutting-edge technology of digital twins for modelling water networks.

Industry leaders shared success stories, underlining the benefits of enhanced data collection, real-time monitoring, and predictive analytics. The programme encompassed panel discussions and case studies, spotlighting applied technologies from around the globe. Delegates had the opportunity to witness best practices, exchange innovative ideas, and establish collaborations. The summit featured the InnoHub, a stage where technology companies and startups unveiled their latest innovations, confirming the event as a showcase for cutting-edge solutions.

Building on that success, the IWA Digital Water Summit is returning to Bilbao. We are bringing together pioneers of digital transformation in the water sector to share the latest updates on the digital water landscape. The 2023 edition focuses on tangible applications of digital technologies and solutions through a mix of technical sessions, interactive discussions, live demonstrations, the InnoHub showcase, and social events. This Summit is set to contribute further insights and connections within our vibrant digital water community.

It is important to note that the strength of this summit reflects the quality and vision of the IWA Digital Water Programme. This is serving as a compass for the sector, facilitating the water industry's transition towards digital integration and adoption to enhance capacity and performance.

As we gather here, at this 'digital juncture' for water, I invite you to embark on this journey together. Let's connect, collaborate, and innovate to shape the future of water management and address the world's most pressing water concerns. The compelling need to tackle global water sector challenges remains our driving force.

Through digitalisation, we can better navigate the path towards a more resilient, efficient, and sustainable water future. Here at the IWA Digital Water Summit 2023, let us make the most of this opportunity to create a brighter, digitally-driven future for water management.

Kalanithy Vairavamoorthy

Executive Director, International Water Association

Welcome back to the Digital Water Summit

In 2022 we had an amazing Summit. This year the Summit is back, bigger and better than ever.

Digital Transformation is advancing, but while some countries are going faster than others, still the overall progress is relatively slow for an industry that has some big challenges ahead of it. The Digital Water Summit is here to help accelerate the pace. It puts all the right people in the room to see how we can ignite a little spark of magic and see the results of transforming the global water industry into something that is, at the very least, digitally enabled.

What do we have planned this year? Well, the InnoHub is back, as are the Fun Sessions being hosted by Piers Clark and Enrique Cabrera, who are going to challenge everyone present to think about the Digital Water Industry and the challenges and opportunities that it brings, as well as the knotty subject of how we keep it secure. Meanwhile, I will be hopefully entertaining everyone with a new initiative at this year's Summit – the Live Demonstration sessions. That's right, you heard it correctly; we are challenging four companies to demonstrate their products live on stage in front of everyone, with no preparation and no rules, as you as the audience are empowered to investigate all of the nooks and crannies of a company's digital product in front of everyone.

Why are we doing all of this? The water industry is facing issues such as Net Zero, pollution monitoring, and treating water to ever-more stringent standards with the adoption of the new urban wastewater regulations. This is alongside some of the toughest problems that the water industry has faced for years in terms of leakage and asset management, for example. To move forward on all of this will need Digital Transformation and a plethora of digital tools to help manage our future industry. The Digital Water Summit is here to help bring people together to identify the needs and the technologies that can help us do the job that we all do each and every day.

Tools we saw last year ranged from drones that can fly down sewers to Earth Observation techniques and this year will be just as informative. Our keynote speakers including Wim Audenaert, Jorge Helmbrecht, Khalid H. Al-Jamea, Fernando Cortabitarte and Rebekah Eggers will challenge us to think about how we can innovate, how we can be sustainable, and how we can adapt Digital Transformation to give us the information that we need to work in our industry as efficiently as possible. Our technical presentations cover a wide range of topics, from Digital Twins to metering technologies, to how we can set up monitoring systems to ensure both public health and global environmental health – a challenge that is increasingly hitting the headlines.

All the challenges that the global water industry faces must include Digital Transformation and they cannot be delivered by us as individuals. Collaboration is key and the Digital Water Summit is here to help everyone and ignite that spark of two genius that those who have come together in Bilbao surely have.

Enjoy this year's Summit!

Oliver Grievson
Chair, IWA Digital Water Programme

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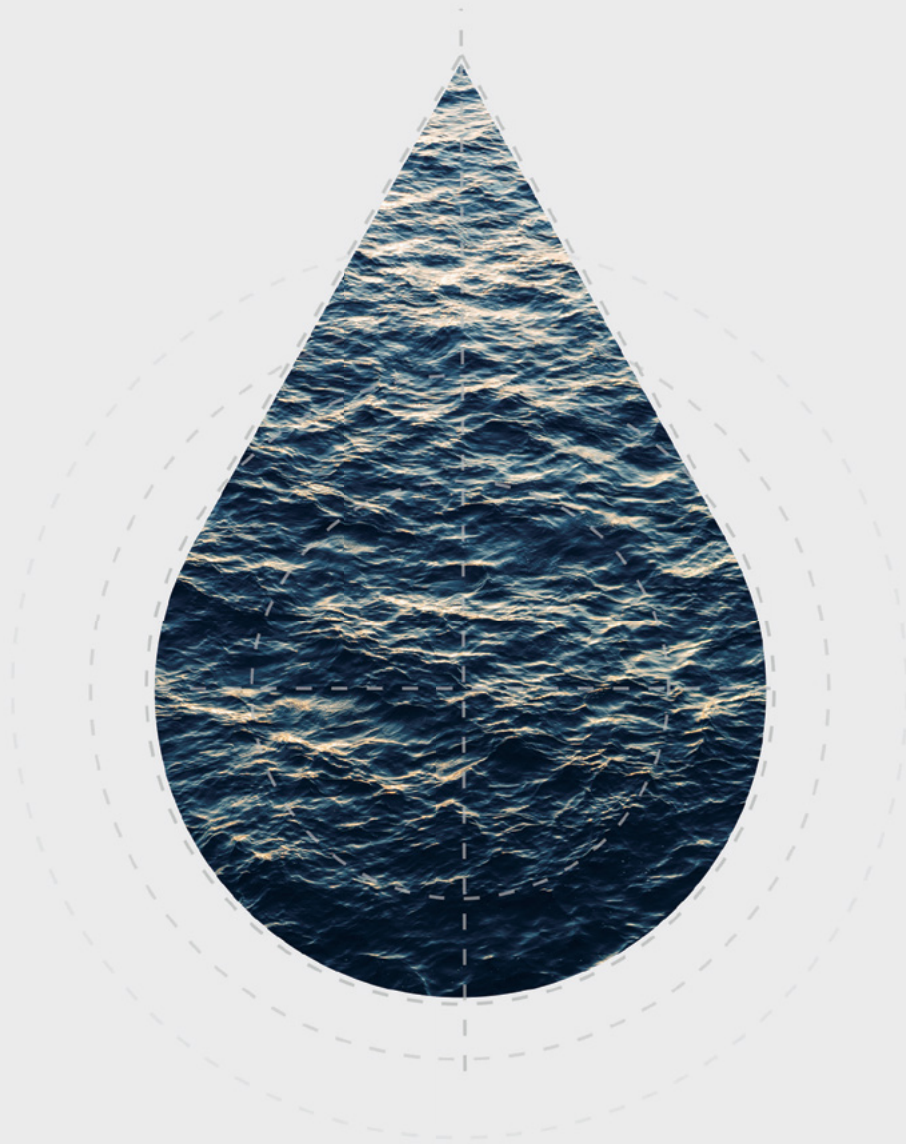
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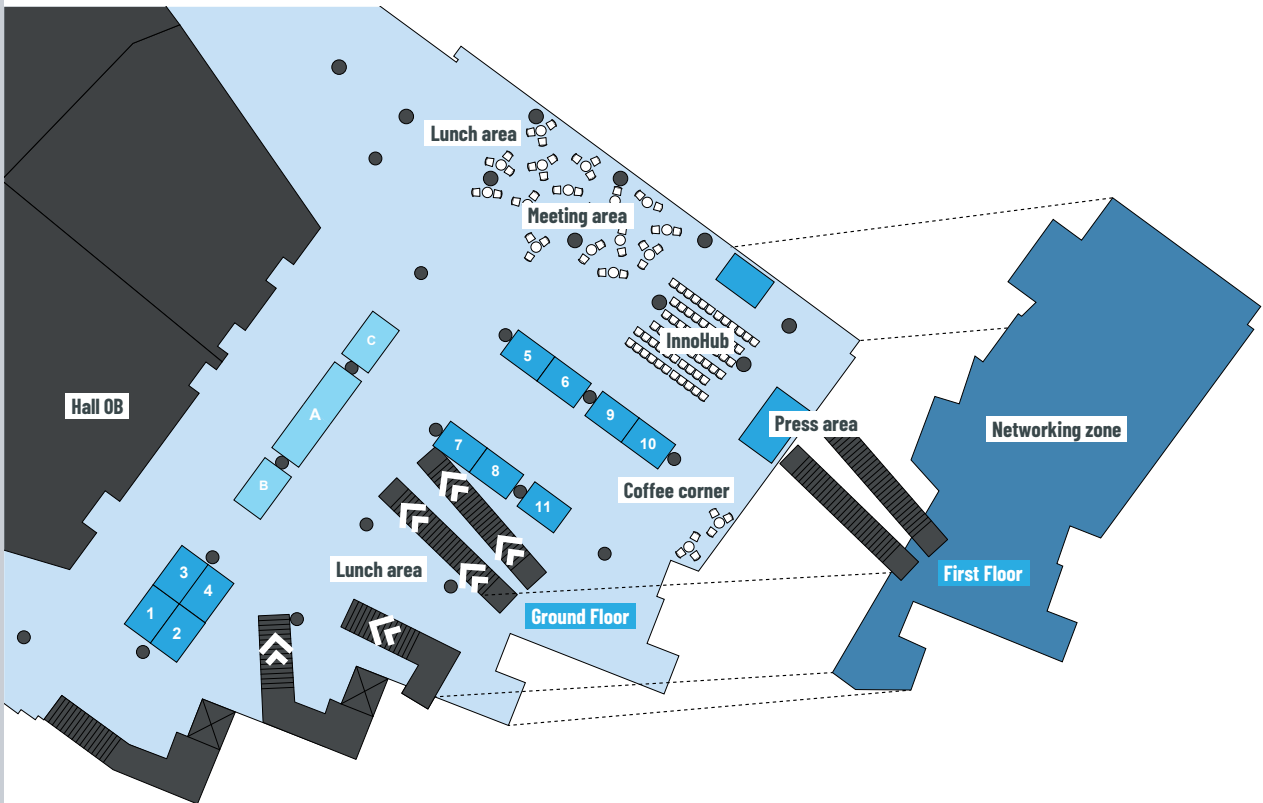
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Programme Overview
IWA Digital Water Summit

Keynote Speakers
All sessions
InnoHub Sessions / Lunch / Breaks / Networking
Summit
Social Event

Tuesday 14 November

8:00 - 14:00	Delegates Registration
9:00 - 11:00	Assembly
10:00 - 13:00	Technical Tours
14:00 - 15:00	Lunch
15:00 - 16:00	Welcome Ceremony
16:00 - 16:30	Keynote: **Khalid H. Al-Jamea** *(Saudi Aramco)*
16:30 - 17:00	Coffee Break
16:40 - 17:00	InnoHub Sessions
17:00 - 18:30	Session 1
18:30 - 20:30	Welcome Reception

Wednesday 15 November

8:00 - 9:00	Delegates Registration
9:00 - 9:30	Keynote: **Fernando Cortabitarte** *(Acciona)*
9:30 - 10:45	Session 2
10:45 - 11:45	Morning Break | 1-to-1 Networking
11:05 - 11:45	InnoHub Sessions
11:45 - 12:45	Interactive Fun Session
12:45 - 14:00	Session 3

14:00 - 15:45	Lunch Break	1-to-1 Networking
15:25 - 15:45	InnoHub Sessions
15:45 - 16:15	Keynote: **Wim Audenaert** *(AM-Team)*
16:15 - 17:15	Live Demonstrations
17:15 - 18:15	1-to-1 Networking
18:00 - 20:00	Pinxto Challenge

Thursday 16 November

8:00 - 9:00	Delegates Registration
9:00 - 9:30	Keynote: **Jorge Helmbrecht** *(IDRICA)*
9:30 - 10:45	Session 4
10:45 - 11:45	Morning Break	1-to-1 Networking
11:05 - 11:45	InnoHub Sessions
11:45 - 12:45	Live Demonstrations
12:45 - 14:00	Session 5
14:00 - 15:45	Lunch Break	1-to-1 Networking
15:05 - 15:45	InnoHub Sessions
15:45 - 16:15	Keynote: **Rebekah Eggers** *(IBM)*
16:15 - 17:15	Interactive Fun Session
17:15 - 18:15	Closing Ceremony
18:15 - 20:00	Free
20:00 - 00:00	Gala Dinner

* **The InnoHub** exhibition area will be an open space featuring some of the key digital providers from the industry. Participants will be able to explore networking opportunities and schedule meetings during the Summit to discuss new technologies and solutions. The InnoHub presentations will feature commercial solutions and will focus on the products and solutions offered by companies.

** A **Live Demonstration** is an opportunity to see a digital product in action, showcasing its features and capabilities in real-time. It offers a hands-on experience, allowing you to witness the product's performance, understand its benefits, and ask questions through the Summit App. This session demonstrates how the product addresses specific challenges in water resource management, helping potential users, customers, or stakeholders evaluate its usability and value.

*** **The Interactive Fun Sessions** will allow an open, participative, and controversial debate around the digital journey for service providers. The sessions will feature an informal tone, the participation of key experts in the panel and the possibility for the audience to engage in the discussion. To participate, we would kindly ask you to have your phone with you.

The Digital Water Summit's **Networking Sessions** are a focal point of connection and collaboration. These sessions provide a dynamic platform for industry leaders, experts, and innovators to engage in open dialogues, exchange ideas, and explore potential collaborations. Attendees can share their experiences, discuss the latest digital water solutions, and form long-lasting relationships in a relaxed and interactive setting. The goal is to foster a vibrant community of forward-thinkers committed to addressing today's water challenges with tomorrow's technology by sparking new synergies, sparking innovation, and collectively driving the digital transformation of the water sector.

Programme Overview
Detailed Information

14 November	
8:00 – 14:00	**REGISTRATION**
9:00 – 11:00	**ASSEMBLY**
10:00 – 13:00	**TECHNICAL TOURS**
14:00 – 15:30	**LUNCH**
15:30 – 16:00	**WELCOME CEREMONY** **Kizito Masinde** *(IWA, United Kingdom)*, **Marie Whaley** *(IWA, United Kingdom)*, **Maria Aranzazu Tapia** *(Regional Environment Government, Spain)*, **Pascual Fernandez** *(AEAS, Spain)*, **Kepa Odriozola** *(CABB, Spain)*, **Juan Maria Aburto** *(Local Authority, Spain)*, **Enrique Cabrera** *(IWA, Spain)*
16:00 – 16:30	**KEYNOTE | DIGITALISATION TO SOLVE THE SUSTAINABILITY BALANCE** **Khalid H. Al-Jamea** *(Saudi Aramco, Saudi Arabia)* Introduced by: **Harsha Ratnaweera** *(Norwegian University of Life Sciences and DOSCON, Norway)*
16:30 – 17:00	**COFFEE BREAK** *Sponsored by CADAGUA*
16:40 – 17:00	**INNOHUB SESSIONS** Presentation *(Fhimasa)* Presentation *(Tecuni Vinci)*
17:00 – 18:30	**SESSION 1 |** **TECHNICAL PRESENTATIONS** Moderated by: **Harsha Ratnaweera** *(Norwegian University of Life Sciences and DOSCON, Norway)* IT Road Map Strategies to Create a Spatial Digital Twin — **Joan Pere Avariento Vicent** *(FACSA, Spain)* Digital Twins for Integrated Real-Time Control of Wastewater Collection Systems and Water Resource Recovery Facilities — **Henrik Refstrup Soerensen** *(Utilizero ApS, Denmark)* Connecting with Transport Pipelines: Pathways for Digitalisation — **Daniel Mediano Guillén** *(Aganova SL, Spain)* Applications of Digital Twins in Practice: Full-Scale Pilot Results — **Bruce Johnson** *(Jacobs, United States)* & **Imre Takacs** *(Dynamita, France)*

18:30 – 20:30	**WELCOME RECEPTION** *Sponsored by AQUALIA*

15 November

8:00 – 14:00	**REGISTRATION**
9:00 – 9:30	**KEYNOTE	DIGITALISATION IMPACT IN THE CHALLENGES OF THE WATER SECTOR** **Fernando Cortabitarte** *(Acciona, Spain)* Introduced by: **Cathy Xiaojun Liu** *(Kemira, Germany)*
9:30 – 10:45	**SESSION 2 |** **TECHNICAL PRESENTATIONS** Moderated by: **Cathy Xiaojun Liu** *(Kemira, Germany)* The Vitens Digital Twin Distribution: From Idea to Reality in an Agile Way — **Friso Postma** *(Vitens, The Netherlands)* How Utilities in Different Digital Maturity Stages Significantly Improved Network Management — **Berry Drijsen** *(Xylem, France)* SEMAplus Modelling: Efficient Rehabilitation Planning and Maintaining the Value of the Urban Water Infrastructure — **Nicolas Caradot** & **Regina Gnirss** *(KWB & Berlin Water Utility, Germany)*
10:45 – 11:45	**COFFEE BREAK** *Sponsored by TECMAN* **| 1-TO-1 NETWORKING**
11:05 – 11:45	**INNOHUB SESSIONS** SEWDEF®-AI: Maximising the Value of Sewer CCTV Inspections for Cost-Effective Maintenance — **Lucas León** *(INLOC Robotics, Spain)* Presentation — **Lorena Rodríguez** *(Baseform, Spain)* Presentation *(Gaimaz)* Combining Autonomous Aerial Robots and Artificial Intelligence for Underground Pipeline Digitalisation and Pathology Analysis — **Yuliya Panchy** *(Hovering Solutions, Spain)*
11:45 – 12:45	**INTERACTIVE FUN SESSION |** **NAVIGATING THE DIGITAL WATERS:** **A LIVE JOURNEY TOWARDS TRANSFORMATION** Moderated by: **Piers Clark** *(Isle Group Ltd, United Kingdom)* Panellists: **Oliver Grievson** *(AtkinsRéalis, United Kingdom)*; **Rebekah Eggers** *(IBM, United States)*; **Henrik Refstrup Sorensen** *(Utilizero Aps, Denmark)*

Congress Details

12:45 – 14:00	**SESSION 3 |** **TECHNICAL PRESENTATIONS** Moderated by: **Piers Clark** (Isle Group Ltd, United Kingdom)
	Unlocking Water's Hidden Value: Leveraging Reservoir Emissions Data for Competitive Advantage and Net Zero Success — **Cristina Diez Santos** (Open Hydro, Spain)
	Lessons from the First Phase of Spain's Water Cycle Digitalisation Project — **Manuel Menendez** (MITECO, Spain)
	Full Scale Digital Twin with Integrated Hybrid Model Predictive Controller for Ammonia Based Aeration Control — **Jeff Sparks** (HRSD, United States)
14:00 – 15:45	**LUNCH | 1-TO-1 NETWORKING**
15:05 – 15:45	**INNOHUB SESSIONS**
	Guillermo Navarro (Arsondata Metering, Spain)
	Smart Hydrant for non-revenue water in municipalities – **Joan Galtés** (BELGICAST Internacional, Spain)
	Presentation (Boslan)
	Presentation (GRUPO INTXAUSTI)
15:45 – 16:15	**KEYNOTE | THE WATER INDUSTRY IN THE DIGITAL ERA: MEETING CHALLENGES WITH INNOVATION** **Wim Audenaert** (AM-Team, Belgium) Introduced by: **Nicolas Caradot** (KWB, Germany)
16:15 – 17:15	**LIVE DEMONSTRATIONS** Moderated by: **Oliver Grievson** (AtkinsRéalis, United Kingdom) Panellists: **Joana Costa** (EPAL, Portugal); **Mikel Maiza Galparsoro** (Vicomtech, Spain)
	Qatium: easy-to-use, open water management platform — **Jorge Muñoz** (Qatium, Spain)
	Innovation and usability in water digitalisation: SiWA LeakPlus in action — **Raul Navas** (BuntPlanet, Spain)
17:15 – 18:15	**1-TO-1 NETWORKING**
18:30	**PINTXO CHALLENGE**

Congress Details

16 November

8:00 – 14:00	**REGISTRATION**
9:00 – 9:30	**KEYNOTE | DIGITAL SUSTAINABILITY: LOOKING INTO THE FUTURE** **Jorge Helmbrecht** *(IDRICA, Spain)* Introduced by: **Janelcy Alferes Castano** *(VITO, Belgium)*
9:30 – 10:45	**SESSION 4 |** **TECHNICAL PRESENTATIONS** Moderated by: **Janelcy Alferes Castano** *(VITO, Belgium)*

Operational Center, Sensorics, and Artificial Intelligence in the Water Cycle - aWA (Aqualia Water Analytics) — **Diego Naranjo Roldan** *(Aqualia, Spain)*

Pioneering a Sustainable Future: Embracing Digital Predictive Technology in the Water Industry — **Francesco Giuseppe Ladisa** *(Flowserve, Spain)*

Integration of Turbines in the Supply Network: A Practical Case for Smart Solutions for Drinking Water — **María Pedro Monzonís** *(Global Omnium, Spain)*

10:45 – 11:45	**COFFEE BREAK** *Sponsored by TECMAN* **| 1-TO-1 NETWORKING**
11:05 – 11:45	**INNOHUB SESSIONS**

Grundfos — a Digital Partner — **Ulrik Højbjerre** *(Grundfos, Denmark)*

How Purecontrol's Real-time & Predictive AI Solutions Help Water Utilities Reduce OPEX & footprint — **Victor Ollivier** *(Purecontrol, France)*

Innovative Solutions to Manage Drinking Water Distribution Networks — **Jordi Raich** *(Badger Meter, Spain)*

How to digitise the construction of water facilities — **Ricardo Munguía** *(Ferrovial Construction, Spain)*

11:45 – 12:45	**LIVE DEMONSTRATIONS** Moderated by: **Oliver Grievson** *(United Kingdom, AtkinsRéalis)* Panellists: **Wim Audenaert** *(AM-Team, Belgium)*; **Eva Martinez Diaz** *(Isle Utilities, Spain)*

Interactive Demo of Xylem Vue Powered by GoAigua Platform — **Joan Carles Guardiola** *(Idrica, Spain)*

Outcome-Driven Demo of the Baseform Analytics Software for Water and Wastewater — **Sergio T. Coelho** *(Baseform, Portugal)*

Congress Details

12:45 – 14:00	**SESSION 5 |** **TECHNICAL PRESENTATIONS** Moderated by: **Eva Martinez Diaz** *(Spain, Isle Utilities)*

Canal de Isabel II and SEWDEF®: A Case Study on Leveraging AI in Sewer CCTV Inspections for Cost-Effective Maintenance and Advanced Data-Driven Asset Management — **Lucas León** & **Celia Ortega** *(INLOC Robotics & Canal Isabel II, Spain)*

Data-Driven Operation of Water Networks - Feedback from the Deployment of 5,000 Sensors in Marseille's Wastewater and Stormwater Networks — **Guy Lecurieux Lafayette** *(Greencityzen, France)*

GIS Technologies for Enhanced Water Utility Operations in Kampala, Uganda — **Frank Kizito** *(National Water and Sewerage Corporation, Uganda)*

14:00 – 15:45	**LUNCH	1-TO-1 NETWORKING**
15:05 – 15:45	**INNOHUB SESSIONS**

Integration of Advanced Control Algorithms in a Controller. RTC on SC4500 — **Xavier Cantarero** *(Hach Lange, Spain)*

HydroTwin: Digital Twin for an Optimum Management of the Segura River Basin — **Mikel Maiza** *(Vicomtech, Spain)*

Go Faster, Aim Higher, and Become Stronger With Twinplant by DHI — **Carles Pellicer-Nàcher** *(DHI, Sweden)* & **Henrik Refstrup Sørensen** *(Utilizero Aps, Denmark)*

Vircore, a common data environment for industrial water projects — **José Manuel Baraibar Díez** & **Jesús de Paz** *(Viuda de Sainz, Spain)*

15:45 – 16:15	**KEYNOTE	HARNESSING THE POWER OF DATA AND AI TO OPERATIONALISE DIGITAL SOLUTIONS FOR CURRENT AND FUTURE CHALLENGES OF THE WATER SECTOR** **Rebekah Eggers** *(IBM, United States)* Introduced by: **Enrique Cabrera** *(Universitat Politecnica de Valencia, Spain)*

16:15 – 17:15	**INTERACTIVE FUN SESSION | CYBERSECURITY UNPLUGGED: INTERACTIVE INSIGHTS FOR A SECURE FUTURE**
	Moderated by: **Enrique Cabrera** *(Universitat Politecnica de Valencia, Spain)* Panellists: **Regina Gnirss** *(Berliner Wasserbetriebe, Germany);* **Frank Kizito** *(National Water and Sewerage Corporation, Uganda);* **Alfonso López-Escobar** *(EMASESA, Spain)*
17:15 – 18:15	**CLOSING CEREMONY**
18:15 – 20:00	**FREE**
20:00 – 00:00	**GALA DINNER** *sponsored by ACCIONA*

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Keynote Speakers

14 November

16:00 – 16:30 |
DIGITALISATION TO SOLVE THE SUSTAINABILITY BALANCE

by **Khalid H. Al-Jamea**, *Saudi Aramco, Saudi Arabia*
Introduced by **Harsha Ratnaweera**, *Norwegian University of Life Sciences and DOSCON, Norway*

Presentation summary: As the world's largest integrated energy and chemicals company, Aramco established a Digital Sustainability Flagship Program which bolsters its sustainable water management operations. Energy is consumed in the water sector for provision, treatment, and distribution. On the other hand, water is used in myriad ways to produce energy. The interdependence of water and energy is bound by an objective towards being carbon-neutral. To solve this sustainability balance between energy, water and carbon, the creative power of digital transformation comes to play. Drawing from Aramco's experience, a framework of digital transformation continues to strengthen leadership in sustainability by increasing operational efficiency, promoting nature-based solutions and streamlining the measurement and reporting of ESG metrics including those related to water. In this framework, water management operations at Aramco implemented pioneering robotics enabling unmanned operations, advanced data analytics for reliability and decarbonisation, and AI-powered process automation. With past success, how may industry usher the power of innovation in digital transformation to solve the sustainability balance?

15 November

9:00 – 9:30 |
DIGITALISATION IMPACT IN THE CHALLENGES OF THE WATER SECTOR

by **Fernando Cortabitarte**, *Acciona, Spain*
Introduced by **Cathy Xiaojun Liu**, *Kemira, Germany*

Presentation summary: Digitalisation means that effective data management becomes one of the competitive advantages of any company. Current technologies allow you to capture, store, classify and process data, converting it into knowledge that helps in decision-making.

15:45 – 16:15 |

THE WATER INDUSTRY IN THE DIGITAL ERA: MEETING CHALLENGES WITH INNOVATION

by **Wim Audenaert**, *AM-Team, Belgium*
Introduced by **Nicolas Caradot**, *KWB, Germany*

Presentation summary: Digitalisation is not a goal, but an opportunity to address key challenges in our industry. Such challenges include climate change, changing demands, an ageing workforce etc. A great starting point for successful implementation of new digital tools is where the most acute problems (i.e. 'Market Readiness Level – MRL') can be matched with the most ready solutions (i.e. 'Technology Readiness Level – TRL'). This creates organisation and sector-wide buy-in and serves as inspiration for further deployment. This keynote will map the trees within the forest of digital tools (a forest in which sometimes people get lost) and will illustrate by means of inspiring examples how digitalisation can change our industry and society for the better. The keynote will end with a future vision for a digital water industry.

16 November

9:00 – 9:30 |

DIGITAL SUSTAINABILITY: LOOKING INTO THE FUTURE

by **Jorge Helmbrecht**, *Idrica, Spain*
Introduced by **Janelcy Alferes Castano**, *VITO, Belgium*

Presentation summary: Water utilities are facing challenges derived from increasing water demands, undetected losses in networks and climate-change-related events, such as droughts and floods. In this context, digital transformation is being increasingly adopted by utilities to improve water and wastewater management, and to anticipate extreme events. However, the organisational and data silos created by the implementation and integration of smart water technologies are bringing about a new set of challenges. How can the present and future success of this process be ensured? The only way is to apply digital sustainability criteria. This involves ensuring data integration and analysis to make better decisions, even when different technologies and providers are being used.

15:45 – 16:15 |

HARNESSING THE POWER OF DATA AND AI TO OPERATIONALISE DIGITAL SOLUTIONS FOR CURRENT AND FUTURE CHALLENGES OF THE WATER SECTOR

by **Rebekah Eggers**, *IBM, USA*
Introduced by **Enrique Cabrera**, *Universitat Politecnica de Valencia. Spain*

Presentation summary: Innovation at the intersection of technology and critical infrastructure is driving remarkable advances in the clean energy transition. The concurrent transformation of the water sector will be paramount to our resilient future. This journey has already begun, delivering many successful examples of foundational instrumentation and digital solutions. The emergence of generative AI, with its promise to radically transform business and society forever, will accelerate progress. Think about the data that exists across the water sector, whether it's sensor data, images, speech, different data about the business — this is all intelligence that's just waiting to be unleashed. However, we must be mindful of the socio-technological and process-driven challenges that utilities seeking to leverage trusted and transparent AI are facing. Early adopters are showcasing the potential and establishing benchmarks for anticipated operational and financial benefits. They inspire innovation, collective collaboration, research, and investment. Let's create a resilient water future!
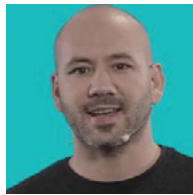
Technical Sessions

14 November

Session 1 |
Afternoon | 17:00 – 18:30

Moderated by: **Harsha Ratnaweera,** *Norwegian University of Life Sciences and DOSCON, Norway*

IT ROAD MAP STRATEGIES TO CREATE A SPATIAL DIGITAL TWIN

by **Joan Pere Avariento Vicent**, *FACSA, Spain*

Presentation summary: In the presentation "IT Road Map Strategies to Create a Spatial Digital Twin," as an introduction, we will discuss FACSA's purpose in setting a GIS-based digital twin as its IT horizon or strategy. The next part of the presentation will focus on addressing the context, paradigms, and considerations to be taken into account in order to establish this digital twin strategy. In the final part, we will talk about what we have accomplished at Facsa and where we currently stand in terms of our IT strategy in this regard, including some of the tools we have developed.
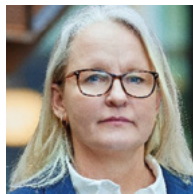
DIGITAL TWINS FOR INTEGRATED REAL-TIME CONTROL OF WASTEWATER COLLECTION SYSTEMS AND WATER RESOURCE RECOVERY FACILITIES

by **Cecilia Wennberg**, *DHI, Sweden*

Presentation summary: The use of Digital Twins within the water sector is getting increasing attention. This presentation focuses on two digital twins for the wastewater collection systems (Future City Flow – FCF) and for wastewater treatment plants (TwinPlant) as well as early plans for a complete, integrated Digital Twin approach ultimately considering the water collection system, the wastewater treatment plant, and the receiving water. The presentation will present the digital twin concepts and scientific approaches used by DHI, combined with real-life examples and highlight some of the typical opportunities and obstacles related to a successful implementation of digital twins in water utilities.

CONNECTING WITH TRANSPORT PIPELINES: PATHWAYS FOR DIGITALISATION

by **Daniel Mediano Guillén**, *Aganova SL, Spain*

Presentation summary: On the path of water cycle digitalisation and focusing on water loss reduction, transport pipelines are at the tail end of this process. The challenges are greater in large-diameter transport pipelines due to different factors: age, difficulty of access, and inaccuracy in their planimetry. Aganova´s approach is to establish a field-to-office connection to bring these facilities closer to digitalisation through the combination of our technologies: a sensorised device that collects information in the field, Nautilus; and a software, Nemo, which analyses data by digitising key and valuable data.
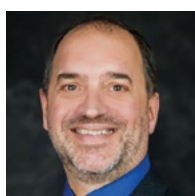
APPLICATIONS OF DIGITAL TWINS IN PRACTICE: FULL-SCALE PILOT RESULTS

by **Bruce Johnson**, *Jacobs, United States* & **Imre Takacs** *(Dynamita, France)*

Mr. Bruce Johnson is a wastewater technology senior fellow with Jacobs located in Denver. He has been doing wastewater treatment design for over 30 years, the last 28 of which has been with CH2M/Jacobs where he has held the roles of wastewater process and simulation global technology leader. He has been active outside of Jacobs both in WEF and IWA. Within WEF, he has led and contributed the development of a number of MOPs and helped found the MEGA group. Within IWA, Mr. Johnson is a past scientific chair of WWTmod and a founding member of the IWA Design and Operations Uncertainty Task Group.

Dr. Imre Takacs is a widely recognized expert on process modeling with 43 years of experience. He received his PhD in environmental sciences in Ghent, Belgium. He is active member of IWA and WEF, worked on the Good Modeling Practice STR, several books and many peer reviewed papers. He is founder and first director of the MEGA workgroup in MRRDC, WEF. Imre participated in and directed the development of process software that are widely used in the industry: GPS-X, BioWin and Sumo. He has also developed new concepts in process models that extend their applicability for real-world, whole plant applications: settling, chemical and biological phosphorus removal, side-stream treatment, carbon capture for energy recovery, biofilms, equilibrium chemistry, natural and engineered precipitation such as for nutrient recovery. Imre trained hundreds of companies around the world in the use of process modeling. He is currently CEO of Dynamita, a new kind of simulation company, makers of Sumo.

Session 2 |
Morning | 9:30 — 10:45
Moderated by: **Cathy Xiaojun Liu,** *Kemira, Germany*

THE VITENS DIGITAL TWIN DISTRIBUTION: FROM IDEA TO REALITY IN AN AGILE WAY

by **Friso Postma**, *Vitens, The Netherlands*

Presentation summary: In this showcase, the Dutch drinking water company Vitens will first present why they started building a digital twin of their distribution network (DTD), reflecting on the benefits of the used agile/scrum approach for this project, after which we will share some technical details. The digital twin is developed using mostly publically available software (e.g., Esri, Aveva PI), and is used by Vitens to ultimately monitor our entire network (50,000 km) in real-time and conduct scenario studies. This presentation will conclude with a live demonstration of the digital twin.

HOW UTILITIES IN DIFFERENT DIGITAL MATURITY STAGES SIGNIFICANTLY IMPROVED NETWORK MANAGEMENT

by **Berry Drijsen**, *Xylem, France*

Presentation summary: In this presentation, we will be focusing on how utilities can benefit from using advanced platforms to obtain significant improvements in managing the water network. We will examine utilities in various stages of the digital journey and evaluate how they benefitted from leveraging the capabilities of currently available software, independent of size or stage. The examples will highlight the applications used and the outcomes from the implementation of these solutions.

SEMAPLUS MODELLING: EFFICIENT REHABILITATION PLANNING AND MAINTAINING THE VALUE OF THE URBAN WATER INFRASTRUCTURE

by **Nicolas Caradot**, *KWB* & **Regina Gnirss**, *Berliner Wasserbetriebe, Germany*

Presentation summary: In Berlin, the strategic decisions on sewer rehabilitation are based on the simulation tool SEMAplus. SEMAplus uses advanced statistical and AI techniques 1) to forecast the long-term development of the sewer network structural condition over several decades, considering a variety of investment scenarios and rehabilitation techniques, and 2) to determine the current condition of individual sewer pipes and localise urgent rehabilitation needs. This contribution will highlight the relevance of data-driven asset management for the city of Berlin. In particular, it will demonstrate the added value of using a machine learning tool to predict the structural condition of sewer pipes and identify pipes at risk and how AI solutions can help water utilities negotiate rehabilitation priorities and investment needs at the city scale.

Session 3 |
Afternoon | 12:45 – 14:00
Moderated by: **Piers Clark,** *Isle Group Ltd, United Kingdom*

UNLOCKING WATER'S HIDDEN VALUE: LEVERAGING RESERVOIR EMISSIONS DATA FOR COMPETITIVE ADVANTAGE AND NET ZERO SUCCESS

by **Cristina Diez Santos**, *Open Hydro, Spain*

Presentation summary: The water sector plays a vital role in achieving net-zero goals. Shockingly, greenhouse gas (GHG) emissions from freshwater are equivalent to 20% of all global CO_2 fossil fuel emissions, and climate change is poised to amplify this impact. As our world's population grows, so does the number of reservoirs to meet our water, food, and energy demands. Aligned with the Global Methane Pledge from COP26, Open Hydro is on a mission to combat methane emissions, aiming to limit temperature rise to 1.5°C. This presentation delves into the heart of our technological innovation to measure and mitigate emissions from water reservoirs, highlighting its potential to reduce 20% of global methane emissions while driving both environmental sustainability and financial gains. Join us in this session to discover our cutting-edge digital solutions.

LESSONS FROM THE FIRST PHASE OF SPAIN'S WATER CYCLE DIGITALISATION PROJECT

by **Manuel Menendez**, *MITECO, Spain*

Presentation summary: Spain is implementing a very ambitious program of digitalisation in the water sector. The "Water Cycle Digitalisation Project" includes investments of 3.000 million euros for the next 3 years in order mainly to monitor in real-time both water resources and uses and to reduce water leakage in networks. Two-thirds of the total funding comes from the Ministry of Ecological Transition taking advantage of "Next Generation" funds and the rest from the private sector.

FULL-SCALE DIGITAL TWIN WITH INTEGRATED HYBRID MODEL PREDICTIVE CONTROLLER FOR AMMONIA BASED AERATION CONTROL

by **Jeff Sparks**, *HRSD, USA*

Presentation summary: This work encompasses the full-scale integration of a Digital Twin (DT) with a Hybrid Model Predictive Controller (HMPC) for Ammonia-Based Aeration Control (ABAC) at a Water Resource Recovery Facility (WRRF). The DT links HMPC performance with control authority, nitrifier kinetics determined via optimisation in the DT, and Solids Retention Times (SRTs) informed via scenario analysis.

Session 4 |
Morning | 9:30 – 10:45

Moderated by: **Janelcy Alferes Castano,** *VITO, Belgium*
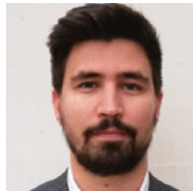
OPERATIONAL CENTER, SENSORS AND ARTIFICIAL INTELLIGENCE IN THE WATER CYCLE-AWA (AQUALIA WÁTER ANALYTICS)

by **Diego Naranjo Roldan**, *Aqualia, Spain*

Presentation summary: For a few years Aqualia have been working on the creation of an Operational Control System to provide services and assistance when operating networks to wide geographical areas. Through these centres, Aqualia can operate the water network more efficiently adding standard procedures to different municipalities. Water operators observe, control, analyse and manage the water network using specific platforms as well as machine learning technologies, which are based on: data collection, data analysis and incident resolution with AI assistance. In order to manage and visualise all the data and information coming from sensors and assets Aqualia has built a SCADA platform, and when it comes to data analysis Aqualia counts on an application called Water Analytics (aWA). The Aqualia Operational Control Centre along with the integration of modern monitoring technologies, advanced data analysis methods and AI are key to maintaining reliable, safe, and sustainable water supplies for consumers and municipalities. Aqualia combines technology, data analysis, and human expertise to address complex water management challenges

PIONEERING A SUSTAINABLE FUTURE: EMBRACING DIGITAL PREDICTIVE TECHNOLOGY IN THE WATER INDUSTRY

by **Francesco Giuseppe Ladisa**, *Flowserve, Spain*

Presentation summary: Water is one of the most basic and essential resources for life, as well as for the maintenance of ecosystems, and it is also a strategic component of the world economy. Water has high rates of exploitation with a fragile balance between available water resources and demand. Thanks to digitisation, it's never been easier to achieve operational efficiency, productivity, reliability, and sustainability in the water management industry while meeting energy transition and ESG goals.

Technical Sessions
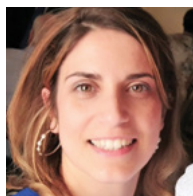
## INTEGRATION OF TURBINES IN THE SUPPLY NETWORK. A PRACTICAL CASE FOR A SMART SOLUTION FOR DRINKING WATER

by **María Pedro Monzonís**, *Global Omnium, Spain*

Presentation summary: Currently, there is a rising need to increase the efficiency and sustainability of cities, due to a growing population and a high consumption of resources. In the water sector, the water-energy nexus is and still is a highly relevant issue, as one of the most energy-consuming activities in a city is the water consumption cycle. However, water supply and distribution are basic services that must be provided to the entire population on a mandatory basis, as it is a right that concerns everyone. In this context, it is necessary to keep looking for management formulas and systems that allow us to minimise the resources used and provide a quality supply that respects our environment. With all this in mind, the main objective of LIFE TURBINES is to contribute to the decarbonisation of drinking water supply networks by implementing a system of energy recovery and pressure regulation through the use of turbination systems that contribute to a supply and cities with low greenhouse gas emissions.

Session 5 |
Afternoon | 12:45 — 14:00
Moderated by: **Eva Martinez Diaz,** *Isle Utilities, Spain*
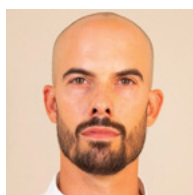
CANAL DE ISABEL II AND SEWDEF®: A CASE STUDY ON LEVERAGING AI IN SEWER CCTV INSPECTIONS FOR COST-EFFECTIVE MAINTENANCE AND ADVANCED DATA-DRIVEN ASSET MANAGEMENT

by **Lucas León**, *INLOC Robotics* &
Celia Ortega, *Canal de Isabel II, Spain*

Presentation summary: Inspection and assessment of the sewer network's condition are vital for water utilities to optimise their asset renewal budget allocation. However, this is a costly process requiring expensive equipment and specialised personnel. Not only is it labour-intensive, but it's also prone to human error. This is particularly significant for water utilities like Canal de Isabel II, Spain's largest, which diagnoses its entire 15,000-kilometer sewer network every four years. Furthermore, emerging global regulations call for improved sewer asset management. It's foreseen that, in the near future, mandates will require periodic comprehensive inspections of infrastructures spanning thousands of kilometres, making current conventional diagnostic methods economically unfeasible. Deep Learning, the most advanced technique within Artificial Intelligence, offers a more efficient diagnostic approach. Assessments can be performed in parallel outside regular working hours, thus enhancing

operational efficiency and reducing costs. Utilising the AI-based sewer condition assessment software, SEWDEF®, CANAL automated the analysis of CCTV footage and the generation of damage reports. In collaboration with the vendor, INLOC Robotics, CANAL obtained a comprehensive view of the structural and functional state of the sewer network segment analysed in the joint project.

DATA-DRIVEN OPERATION OF WATER NETWORKS – FEEDBACK FROM THE DEPLOYMENT OF 5,000 SENSORS IN MARSEILLE'S WASTEWATER AND STORMWATER NETWORKS

by **Guy Lecurieux Lafayette**, *Greencityzen, France*

Presentation summary: In the heart of Marseille, we're taking on waste-related challenges head-on. Our groundbreaking project is revolutionising traditional manual inspections with cutting-edge IoT solutions. With real-time data, proactive cleaning, and efficient management, we're reshaping urban water management for a cleaner, more sustainable future!

GIS TECHNOLOGIES FOR ENHANCED WATER UTILITY OPERATIONS IN KAMPALA, UGANDA

by **Frank Kizito**, *National Water and Sewerage Corporation, Uganda*

Presentation summary: In the face of resource constraints, attaining growth in service delivery for a water utility may be achieved not only through investment in new piped infrastructure but also through efficiency gains from the optimal use of existing infrastructure. Digital geospatial technologies are a formidable catalyst in uncovering and harnessing such efficiency gains. This presentation showcases the practical use of geospatial technologies to enhance field operations in an urban water utility. Application areas ranging from surveying and mapping new customers and piped infrastructure, to carrying out condition assessments and preventive maintenance of network fixtures, and to reporting and handling incidents such as pipe breaks and water outages within the shortest possible time, are described. The presentation demonstrates how the field data routinely collected during these activities has subsequently been utilised to aid in planning and decision-making for optimal network upgrades, to identify hotspots requiring urgent attention, to streamline plant and human resource deployment, and to increase individual staff accountability for work done.

InnoHub

14 November
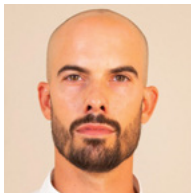
Afternoon | 16:40 – 17:00

FHIMASA PRESENTATION

VINCI ENERGIES SPAIN PRESENTATION

15 November

Morning | 11:25 – 11:45

SEWDEF®-AI: MAXIMISING THE VALUE OF SEWER CCTV INSPECTIONS FOR COST-EFFECTIVE MAINTENANCE

by **Lucas León**, *INLOC Robotics, Spain*

Presentation summary: SEWDEF® is an innovative SaaS (Software-as-a-Service) platform designed to streamline and automate the entire workflow of diagnosing, inspecting, and maintaining sewer networks. At its core, SEWDEF® serves as a comprehensive inspection management platform, powered by the state-of-the-art SEWDEF®-AI technology. This advanced system harnesses the power of artificial intelligence, computer vision, and autonomous navigation techniques to analyse CCTV sewer inspection videos and automatically generate condition grading evaluations and standard-compliant reports. SEWDEF®-AI not only enhances the efficiency of sewer inspection processes but also paves the way for precision and effectiveness in managing sewer infrastructure.

BASEHUB PRESENTATION

GAIMAZ PRESENTATION

COMBINING AUTONOMOUS AERIAL ROBOTS AND ARTIFICIAL INTELLIGENCE FOR UNDERGROUND PIPELINE DIGITALISATION AND PATHOLOGY ANALYSIS

by **Yuliya Panchy**, *Hovering Solutions, Spain*

Presentation summary: Since 2020, the Consorcio de Aguas Bilbao Bizkaia has been exploring the use of autonomous aerial robots for pipeline inspections, reducing risks to personnel. Although initial inspections were successful, manual analysis was required. Hovering Solutions has since improved its robots, enabling faster data processing and remote assessment. To further expedite analysis and reduce subjectivity, the Consortium adopted Inloc Robotics' software, utilising artificial intelligence. A successful flight over a 900-meter pipeline section was conducted, and results were compared to human evaluations to validate the AI software's reliability.

Afternoon | 15:25 — 15:45

SOLVING THE BIG CHALLENGES OF AN EFFICIENT AND PROFITABLE METERING SYSTEM

by **Guillermo Navarro**, *Arsondata Metering, Spain*

Over the years, ARSONDATA METERING has made progress in defining a method to make metering efficient and cost-effective. To this end, it has developed a management platform and control system that is at the forefront of the metering market.

SMART HYDRANT FOR NON-REVENUE WATER IN MUNICIPALITIES

by **Joan Galtés**, *BELGICAST Internacional, Spain*

Presentation summary: x. For many years, municipalities have managed water sources in partnership with the private sector. In general, private companies have a flat rate or a license or free use of use of hydrant networks as a source of water. There is no control over who and how much water is being used for municipal services. Having monitoring and a real amount of water consumption will allow for more sustainable water consumption and allocated revenue depending on each service. MONECA™ SMART is the latest generation of smart hydrant standposts. Designed for professionals, it is a completely secure solution for drawing large volumes of water. This new generation system incorporates communication functions which allow remote monitoring of the meter index of usage and card refilling. MONECA™ SMART offers a secure alternative to unauthorised draws from your fire hydrants. It not only enables you to protect your fire-protection portfolio, but it also helps to reduce non-revenue water volumes. This is the type of Hydrants for SMART Cities.

16 November

Morning | 11:15 – 11:45

GRUNDFOS – A DIGITAL PARTNER

by **Ulrik Højbjerre**, *Grundfos, Denmark*

Presentation summary: The global water sector is embracing a digital transformation, adopting a range of technologies for remote sensing, asset management, and predictive analytics. Explore our digital solutions to minimise your energy consumption together with water and wastewater challenges. Grundfos Utility Connect: Remotely monitor and control pumping stations at any time and anywhere. Demand-Driven Distribution: Minimise water loss and energy consumption with our pressure management system for water networks. Grundfos Machine Health: Continuously monitor equipment using sensors to notify about maintenance and get intelligence on historical data to predict the best way forward. Grundfos Utility Analytics: Get insights to improve water and wastewater network performance including water loss reduction and asset management optimisation.

HOW PURECONTROL'S REAL-TIME & PREDICTIVE AI SOLUTIONS HELP WATER UTILITIES REDUCE OPEX & FOOTPRINT

by **Victor Ollivier**, *Purecontrol, France*

Presentation summary: Innovation is the only way to be resilient. Purecontrol's innovation is now available and has proven efficiency in complex use cases of the water industry. By optimally optimising processes continuously, our unique AI solutions address main Water Utilities & Operators challenges facing rising energy prices while meeting their sustainability goals. Easy-scalable solutions to accelerate Digital transformation across the water lifecycle.
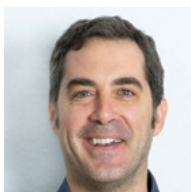
INNOVATIVE SOLUTIONS TO MANAGE DRINKING WATER DISTRIBUTION NETWORKS

by **Jordi Raich**, *Badger Meter, Spain*

Presentation summary: The presentation will provide an overview of different solutions from Badger meter combining flow, water quality, pressure and transients in order to get insights into the drinking water distribution network and improve its operation by saving costs and time.

HOW TO DIGITISE THE CONSTRUCTION OF WATER FACILITIES

by **Ricardo Munguía**, *Ferrovial Construction, Spain*

Presentation summary: The presentation will show how to draw a strategy of digitalisation, in terms of platforms, people, processes and technology. With examples of real digitalisation strategy inside Ferrovial Construction. And the importance of a focus wide strategy to become a data driven company.

Afternoon | 15:15 — 15:45

INTEGRATION OF ADVANCED CONTROL ALGORITHMS IN A CONTROLLER. RTC ON SC4500.

by **Xavier Cantarero**, *Hach Lange, Spain*

Presentation of individual and independent control loops for waste water treatment processes, for controlling and optimising these processes in order to reduce costs and assure with the discharge limits, from the most advanced field transmitter, the SC4500.

HYDROTWIN: DIGITAL TWIN FOR AN OPTIMUM MANAGEMENT OF THE SEGURA RIVER BASIN

by **Mikel Maiza**, *Vicomtech, Spain*

Presentation summary: The impact that certain climatic events can have on natural areas can become a problem if prediction and analysis of possible scenarios likely to occur are not carried out, as well as optimisation of the planning of the distribution of the water resources available at any given time. Therefore, to ensure an optimal water management in the Segura River Basin (Murcia, Spain), "HydroTwin: Digital twin for an optimum management of the Segura River Basin" was created, a project whose main objective is to develop a set of tools based on Artificial Intelligence (AI), aimed at helping to optimise the distribution of (water) resources to demands, complying with the historical rights of farmers, water uses priorities, ecological flows and the operating rules of water infrastructures. By means of the AI tools developed, the CHS (Confederación Hidrográfica del Segura) can carry out, by simulation, an exhaustive analysis of the various planning scenarios, being able

to prioritise between meeting the guaranteed criteria, the economic benefit and the environmental impact of water uses. Likewise, the AI tools developed have predictive capacity, in the short and medium term, allowing CHS to anticipate possible natural disasters that may affect the basin and other derived consequences.

GO FASTER, AIM HIGHER, AND BECOME STRONGER WITH TWINPLANT BY DHI

by **Carles Pellicer-Nàcher**, *DHI, Sweden* &
Henrik Refstrup Sørensen, *Utilizero Aps, Denmark*

Presentation summary: The push for efficiency, climate resiliency, and water quality in a turbulent socio-economical context has brought into the market a wide range of isolated digital twin solutions that facilitate the operability of different elements of collecting systems and wastewater treatment plants.DHI's digital twin, TwinPlant, is the result of more than 25 years of experience using digital tools to support the wastewater industry and a dedicated recent investment in cloud technology. The presentation will gather the return of experience on the implementation of TwinPlant in 7 wastewater treatment plants serving a total population of more than 1,500,000 inhabitants. Focus will be put on the interplay between the implemented forecasting and control features to achieve safe and efficient management of wastewater treatment processes, tailor energy, climate, and resource footprints, and facilitate operator training.

VIRCORE, A COMMON DATA ENVIRONMENT FOR INDUSTRIAL WATER PROJECTS

José Manuel Baraibar Díez & **Jesús de Paz**, *Viuda de Sainz, Spain*

Summary: VIRCORE is a Common Data Environment (CDE), specially designed for collaboration. It is also designed for maximising resources and developing ultra-competitive working methods in areas ranging from civil engineering and building to industrial design. Its use is of particular interest in water-related industrial projects.

VIRCORE allows the centralisation of all project information and the tracking of schedules and costs thanks to a refined BIM methodology. Its objective is to facilitate efficient collaboration between different technical profiles throughout each phase of the project.

Fun Sessions & Live Demonstrations

15 November

Fun |
Morning | 11:45 — 12:45

Moderated by: **Piers Clark,** *Isle Group Ltd, United Kingdom*

NAVIGATING THE DIGITAL WATERS:
A LIVE JOURNEY TOWARDS TRANSFORMATION

Presentation summary: In this thought-provoking session, the audience will be actively engaged in a live survey. We'll delve into the pressing topic of digital transformation in the water sector. During the session, you'll have the opportunity to voice your opinions and insights in real-time: when will we achieve digital transformation in the water sector? Is it achievable? What are the key challenges to its adoption? This session will be a fantastic opportunity to collaborate, share ideas, and collectively map our path towards a digitally transformed water industry.

Panellists:
Oliver Grevson, *AtkinsRéalis, United Kingdom*
Rebekah Eggers, *IBM, United States*
Henrik Refstrup Sorensen, *Utilizero Aps, Denmark*

Live |
Afternoon | 16:15 — 17:15

Moderated by: **Oliver Grievson,** *AtkinsRéalis, United Kingdom*

Panelists:
Joana Costa, *EPAL, Portugal*
Mikel Maiza Galparsoro, *Vicomtech, Spain*

QATIUM: EASY-TO-USE, OPEN WATER MANAGEMENT PLATFORM

by **Jorge Muñoz**, *Qatium, Spain*

Get a clear & actionable view of your water systems; operate networks effortlessly and optimize them proactively. In Qatium's demo, you'll see how operators can quickly build a digital replica of their system and then use it to streamline daily operations, and run simulations to help maximize performance. Qatium's core functionalities are available for free to support utilities of all sizes, especially in rural or underserved communities.

INNOVATION AND USABILITY IN WATER DIGITALISATION: SiWA LEAKPLUS IN ACTION

by **Raul Navas**, *BuntPlanet, Spain*

Presentation summary: The SIWA LeakPlus is an AI-based application for leakage detection in the distribution water networks, with a local case study from Spain highlighting its effectiveness. Usability is considered a paramount factor in its design, ensuring that water utilities can seamlessly integrate it into their operations. One of its notable innovations lies in its Virtual DMAs approach, which optimises water distribution by creating virtual monitoring zones. This approach covers different parameters within the water distribution system, involving smart metering, sensors, cloud computing, artificial intelligence and hydraulic simulations, thus allowing utilities to detect and address leaks and inefficiencies with precision. This holistic approach not only enhances water conservation efforts but also promotes these sustainable water management practices at a global scale.

16 November

Live |
Morning | 11:45 – 12:45

Moderated by: **Oliver Grievson,** *AtkinsRéalis, United Kingdom*
Panelists: **Wim Audenaert,** *AM-Team, Belgium;*
Eva Martinez Diaz, *Isle Utilities, Spain*

INTERACTIVE DEMO OF XYLEM VUE POWERED BY GOAIGUA PLATFORM

by **Joan Carles Guardiola**, *Idrica, Spain*

Presentation summary: Through this interactive demo, we will demonstrate how final users of the platform can benefit from a holistic approach to solving different operational challenges. The speaker will show different user stories to navigate from the Operational Intelligence layer of the platform to the different applications where data analytics provide valuable insights to identify and solve problems.

OUTCOME-DRIVEN DEMO OF THE BASEFORM ANALYTICS SOFTWARE FOR WATER AND WASTEWATER

by **Sergio T. Coelho**, *Baseform, Portugal*

Presentation summary: Water utilities are reaching critical levels of deferred maintenance, and need to re-invest substantially, requiring long-term vision and systematic, defendable and transparent planning processes. Conversely, fast-expanding sensorisation and data generation mean we can now increasingly observe reality in detail and continuously adapt infrastructures to the changing needs, vastly improving our control over operations and everyday performance. This demo aims to show how the promise of digitisation is taking place in utilities, with available data, enabling key outcomes to become more fact-based, efficient and sustainable.

Fun |
Afternoon | 16:15 – 17:15
Moderated by: **Enrique Cabrera,** *Universitat Politecnica de Valencia, Spain*

CYBERSECURITY UNPLUGGED: INTERACTIVE INSIGHTS FOR A SECURE FUTURE

Presentation summary: In this interactive session, the audience and our esteemed panellists will come together to explore the future of cybersecurity. You will be encouraged to share your thoughts and perspectives in real-time. We'll tackle questions such as: "When can we expect a more secure digital landscape and what roadblocks stand in our way?" Cybersecurity Unplugged promises an engaging and fun-filled experience where you can contribute to the ongoing conversation about safeguarding and securing our digital water assets.

Panellists:

Regina Gnirss, *Berliner Wasserbetriebe, Germany*
Frank Kizito, *National Water and Sewerage Corporation, Uganda*
Alfonso López-Escobar, *EMASESA, Spain*

Social Events

14 NOVEMBER | 18:30 – 20:30
WELCOME LIGHT DINNER

On Tuesday, 14 November, all delegates are invited to the Welcome Reception, set against the splendid backdrop of the Euskalduna Congress Palace, in the prestigious Hall I. This enchanting evening will unfold in a cocktail-style format, offering an opportunity to further nurture the connections forged during the Digital Water Summit's opening day. Stay enthralled as the day concludes, savouring exquisite cuisine and a captivating live performance.

Sponsored by

15 NOVEMBER | 18:00
PINTXO CHALLENGE *

We are delighted to host the second edition of the renowned Pintxo Challenge, following on from last year's great success. **The Basque Country is known for its unrivalled culinary expertise, and Bilbao is home to six Michelin-starred restaurants**. The organisers of the IWA Digital Water Summit encourage delegates to immerse themselves in Bilbao's gastronomic wonders, beginning with its famous pintxos. We've created a new trail of curated city bars, each serving a tempting selection of bite-sized treats. Who will take on this culinary challenge and consume the most pintxos?

*The organisers have created this activity to encourage delegate conviviality and networking. Please note that all costs are borne by participants; the invitation to participate does not carry any financial obligations on the part of the organisers.

16 NOVEMBER | 20:00 – 00:00 |
GALA DINNER

The IWA Digital Water Summit is proud to offer an exclusive dining experience by the seaside at the picturesque **Getxo Cruise Port**. This unique station resembles a vast glass container, providing unparalleled vistas of the iconic Vizcaya Bridge, a UNESCO World Heritage Site. Join us for an enchanting evening by the sea, featuring a lavish dinner and an afterparty led by a local DJ.

The organisers will arrange transportation by coach to convey delegates to Getxo Cruise Port. The exact pick-up time will be confirmed.

Sponsored by

Technical Visits

TUESDAY 14 NOVEMBER |
GALINDO, WASTEWATER TREATMENT PLANT (WWTP)

Construction began in 1985 and the first phase came into service in 1990, with the ensuing notable improvement to the water quality of the river estuary. The biological treatment started functioning in 2001, thanks to which the estuary has recovered an adequate environmental status to be home to numerous species of fish and birds.

In total, over 165 kilometres of drains collecting industrial and household wastewater and taking them to the Galindo Wastewater Treatment Plant (WWTP) in Sestao. Designed to treat an average daily volume of 350,000 m^3 of wastewater, produced by Bizkaia's more than a million inhabitants, this plant is the cornerstone of the whole system.

TUESDAY 14 NOVEMBER |
ETXEBARRI STORMWATER

The Etxebarri stormwater tank is used to store and control the surplus unit wastewater circulating through the Nervión-Ibaizabal Interceptor at times of heavy rainfall. It relieves the operating of the interceptor in the area downstream from the tank.

In 2014, the Etxebarri stormwater tank, with an approximate value of 70,000 m^3, came into service. The structure is in the Lezama-Legizamon industrial estate, next to the River Nervióin, on a meander opposite the Bolueta neighbourhood.

TUESDAY 14 NOVEMBER |
DEUSTO UNIVERSITY SYPHON

The Deusto University Syphon is a spectacular infrastructure delivered by the Integrated Sanitation Plan. The purpose of the work, which has been operating in 1997, is to enable the transfer of wastewater from one bank to the other of the river estuary on its way to the Galindo WWTP.

The syphon consists of two large vertical wells, connected under the river estuary by a gallery perforated through the rock. The difference in levels of the vertical wells produces the syphon effect, which drives the water through the pipes in the gallery. The control building is in Deusto and is fully fitted out to guarantee the optimum functioning of the syphon.

Furthermore, the facility features advanced electronic and electrical appliances so that it can be remoted controlled from the Galindo treatment plant.

IMPORTANT INFORMATION:

Registrations will take place from 8:00 to 14:00 on 14 November. Please make sure you have registered by 9:30 to take part on the Technical Tours. The buses depart at 10:00.

Digital Water Summit Sponsors

Platinum & App Sponsor

Saudi Aramco is one of the world's largest integrated energy and chemicals companies, creating value across the hydrocarbon chain, and delivering societal and economic benefits to people and communities around the globe who rely on the vital energy we supply. They are committed to playing a leading role in the energy transition. Saudi Aramco has a responsibility to help the world achieve a net-zero economy, and their people are working hard to help solve the world's sustainability challenges. For their customers, they are a supplier of choice. For their shareholders, they provide long-term value creation. For communities around the world, Saudi Aramco's ambition is to provide reliable, affordable, and more sustainable energy.

Platinum Sponsor

Xylem Vue powered by GoAigua is the result of the partnership between *Xylem*, a global leader in water technology and *Idrica*, an international pioneer in water data management, analytics and smart-water solutions.

Xylem Vue powered by GoAigua is a single, integrated software and analytics platform – built by utilities, for utilities – that enables utilities to take digital transformation to the next level, maximise investments, identify and solve problems more quickly, operate more efficiently and deliver water more effectively and affordably to their communities.

Gala Dinner Sponsor

ACCIONA leads the water treatment sector through its design, construction and operation of drinking water treatment plants, wastewater treatment plants, reverse osmosis desalination plants and tertiary treatments for water reuse, and has reinforced its focus on services for cities. The Company explores innovative solutions and applies the latest technologies in water treatment in parallel with the drive to digitise the sector, which it considers essential to bring about more efficient and sustainable water treatment processes.

Welcome Reception Sponsor

Aqualia is the fourth water company in Europe by population served and the ninth in the world, according to the latest Global Water Intelligence ranking (December 2022). It currently provides service to 43.7 million users in 18 countries.

The company is positioned as a reference brand in the sector, positioned as avant-garde, specialised, transparent and innovative. Thanks to a committed human team, with great experience, that constantly seeks to improve efficiency in production processes and the optimisation of resources and with a clear orientation towards the citizen. This way of working and the continuous advances in innovation and in the use of new technologies have allowed it to consolidate its leadership in Spain, which is also reflected in the foreign market with an ambitious but prudent strategy defined to consolidate internationally.

Sponsors

Silver Sponsors

In an ever-changing world, VINCI Energies contributes to the environmental transition by assisting in significant changes within the digital landscape and the energy sector. VINCI Energies teams deploy technologies and integrate customised multi-technical solutions from design to implementation, operation, and maintenance. With a strong local presence and an agile and innovative structure, VINCI Energies' 1,900 business units have positioned themselves at the heart of their clients' energy decisions, driving the reliability, efficiency, and sustainability of their infrastructures and processes. VINCI Energies strives for overall performance, caring for the planet, being of service to people, and committed to local communities.

Delegate Bag Sponsor

Ansareo is a Basque company owned and managed by the Ansareo family since its inception in 1991.
Our commitment: To meet the needs of our customers by providing tailored, efficient, and innovative services.
Our main clients: municipalities, institutions, industry.
Our sectors of activity: water, garbage collection, cleaning, gardening, and civil works.

ArsonData Metering is a service engineering company firm boasting over 15 years of experience in Water and Gas Metering projects, overseeing the management of more than 400,000 meters utilising various technologies. Our solution seamlessly adapts itself to the needs of each municipality, including:

• Training and tools for the meter installation process.
• 100% LoRaWAN coverage for the meters, thanks to our small Solar Gateway.
• Network communications and maintenance.
• Management platform replete with a multitude of data analysis and anomaly detection tools.
• Support provided from the control centre in Bilbao, by telephone, email, WhatsApp, and other means.

Badger Meter is an innovator in flow measurement, water quality and control products, serving water utilities, municipalities, and commercial and industrial customers worldwide. With more than 115 years of innovation and strong, stable growth, Badger Meter continues to help protect one of the world's most precious resources.

Our smart water metering solutions provide actionable intelligence without the need for utility-owned infrastructure, enabling customers to optimise the delivery and use of water, maximise revenue and reduce waste. We offer the widest range of water metering technologies, proven remote meter reading solutions, cloud-based software, and consumer engagement tools. Learn more at www.badgermeter.com

Since its establishment in 2015, Baseform has rapidly gained a leading position in the markets where they are present. This is because of a few key notions:
• water networks are not sets of pipes, they are living organisms that jointly provide a service – we focus on making sure utilities provide the service 24/7, now and in the long run.
• public infrastructures have to last beyond us, and the changes that each generation can introduce are very limited.

Sponsors

• the software tools available on the market – billing, inventory, SCADA, maintenance – are good at their respective roles; but they scatter data, processes, and sources of information away from the key decisions.
• daily operation is an attention-sapper; operational decisions, planning efficiency and long-term corporate objectives have little chance of effectively aligning unless something is done right at the root of the problem.

Since 1957, Belgicast has been one of the leading Spanish valve manufacturers focusing on the water sector cycle. Belgicast manufactures their own high quality, safe and long-lasting valves such as: resilient seated gate valves, centric butterfly valves, check valves as well as water network accessories.

The company employs almost 160 people spread among Spain and their subsidiaries in Portugal and Italy. Main headquarters are based in Mungia (Vizcaya) where it also has the main manufacturing facility for resilient seated gate valves. The company also has a manufacturing facility for butterfly and check valves in Los Yébenes (Toledo) where apart from manufacturing there is the centre of excellence for desalination projects.

The company belongs to AVK Water Division from AVK Holding Group.

Ferrovial is one of the world's leading infrastructure operators, committed to developing sustainable solutions.

The company operates in more than 15 countries and has a workforce of over 24,000 professionals worldwide.

Ferrovial is dually listed on the Dutch and Spanish stock exchanges and is a member of Spain's blue-chip IBEX 35 index. It is part of the Dow Jones Sustainability Index and FTSE4Good, and all its operations are conducted in compliance with the principles of the UN Global Compact, which the company adopted in 2002.

Gaimaz Infrastructure and Services is a Basque company with 35 years experience.

Currently is a company Specialised in Civil Works (Hydraulic works, road infrastructure, city planning, etc.), Restoration of Degraded Spaces and Ecosystems, Construction, as well as Environmental Services.

GAIMAZ is a reference company for institutions and municipalities as well as private clients. Achieving this does not mean leaving behind the values that GAIMAZ has always had: caution, adaptability, discipline, responsibility, capacity, and effort.

Our experience in the sector is the best guarantee and sustainability is our commitment.

Grundfos is more than just a water pump company. Through our solutions and services, we are impacting millions of peoples' lives daily, without most of them even noticing. Our vision is to work together with utilities to drive a revolution in the water sector, using unmatched data insights, expertise, and autonomous end-to-end solutions. We help you transform and optimise water management solutions. With more than 20 years of data-driven development experience, we understand connectivity, data, and AI and deliver significant benefits to water utilities.

Hach is a leading global technology provider for water quality analysis. Hach's portfolio of solutions embraces laboratory and process (online) instruments and sensors for the complete integrated water cycle and industrial applications. Hach's technological proposal also integrates digital solutions through the ClarosTM system and integrated customized engineering solutions for the industry and effluent monitoring through AnaShell cabinets.

Hach offers a wide range of technologies to provide the optimal measurement solution for each application, water matrix, range, and parameter. In addition, Hach has an expert Service and Technical Assistance team guaranteeing maximum instrument reliability and productivity.

Hovering Solutions´s autonomous flying robots are suited for the inspection and 3D digitalisation of critical underground infrastructure. Capable of flying without GPS, radio communication or pilot, they can access hazardous or restricted areas, covering several kilometers in a single flight while generating a georeferenced point-cloud with high-resolution panoramic images.

Since its founding in 2014, INLOC ROBOTICS has been developing innovative solutions in robotics, artificial intelligence, and IoT for the water and wastewater sector. Aiming to enable state-of-the-art sewer asset management for water utilities, the company introduced its SaaS platform, SEWDEF®, in 2019. This AI-based sewer condition assessment tool features SEWDEF®-AI, which automates CCTV video analysis and report generation using artificial intelligence, computer vision, and autonomous navigation techniques optimised for mobile robotics.

Viuda de Sainz was established as a public limited company in 1984. Our activity started at the foot of Mount Arraiz, Bilbao. Our business areas cover a broad field involving the construction and maintenance of all types of public and private works: Civil Works, Building, Special Works and Industrial projects.

Coffee Break Sponsors

the international
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inspiring change

www.iwa-network.org