出國報告（出國類別：開會）

出席「2024IWA 數位水峰會」
（IWA Digital Water Summit 2024）

服務機關：經濟部水利署

姓名職稱：阮香蘭組長、楊志偉正工程司

派赴國家：西班牙

出國期間：中華民國 113 年 11 月 10 日至 11 月 16 日

報告日期：中華民國 113 年 12 月

目錄

摘要

本屆國際水協會(IWA, International Water Association)舉辦 2024 年數位水峰會（Digital Water Summit 2024），這是該活動的第三屆，期間為 2024 年 11 月 12 日至 14 日，地點位於西班牙畢爾包之巴斯克宮會議中心(Palacio Euskalduna Conference Centre and Concert Hall)，主題為「型塑我們的水未來」(Shaping our water future)，橫跨 40 個國家共計 329 位全球水務產業數位化專家齊聚一堂。數位水峰會主要任務為推動全球水務領域的數位化，特別關注於商務與產業層面，匯聚全球技術供應商和水務公司，共同研討水務數位化技術。在活動期間，與會者探討了智慧水管理、數據分析、人工智慧和機器學習整合等相關主題，深入研析數位技術在解決當前水務領域挑戰的創新潛力。此外，本數位水峰會還包含 5 場專題演講、5 場互動討論、12 場技術展示和創新中心（InnoHub）等活動，讓各界分享水務領域最新的創新成果。

水利署與 IWA 已合作多年，水利署除多次受邀參加 IWA 世界水大會暨展覽會(IWA World Water Congress & Exhibition)，2023 年水利署與 IWA 合辦「第 9 屆國際水協會亞太地區會議暨展覽會」(IWA-ASPIRE Conference & Exhibition 2023)，與台灣國際水周—國際水論壇結合辦理，2024 年水利署國際水論壇亦邀請 IWA2 位專家

擔任講者。本次出席會議及考察係 IWA 深知台灣水利數位治理的多元發展，故於 2024 年初邀請水利署出席 IWA 2024 年數位水峰會並建議水利署可考慮未來申辦該活動於台灣主辦。本活動由阮香蘭組長與楊志偉正工程司於 113 年 11 月 10 日至 11 月 16 日赴西班牙畢爾包，期間除參與大會活動外，並與 IWA 討論雙方未來合作規劃，進一步建立未來長期之交流管道。

本次活動亦參訪 ETXEBARRI STORMWATER 滯洪設施，展示如何利用大規模蓄水池因應強降雨及城市排水挑戰，成功減少洪水風險與污染溢流問題，為智慧水資源管理提供典範。

本次大會專題演講主題包括數位化水管理的市場趨勢、數據應用於永續水管理、智慧水網絡技術整合與系統變革策略等，講者強調跨部門合作、數據整合與網路安全的必要性，並系列分享全球各地數位水資源管理的成功案例。

現場有 11 家參展廠商展示最新技術解決方案，包括物聯網、數位孿生、智慧水表與水質監測等。這些技術不僅提升運營效率，也在數位化過程中推動永續發展。

本次參加收穫頗豐，認知到水利署應結合台灣特色與國際標準推動水資源數位化，加強資料共享平台建設以支持數位化，推動跨部門合作與技術教育，提供資金及政策支持，亦了解到技術應基於實際需

求並確保其價值。

水利署與 IWA 全球活動總監 Kizito Masinde 討論了申辦 2026 或 2027 年峰會的可能性，並獲得 IWA 相關標準與指引建議。申辦需展示台灣的場地條件、國際交通便利性、贊助與參與能力，以強化申辦成功機率。

水利署此次參與數位水峰會不僅增進台灣與國際交流，也為台灣水資源管理提供了具體策略與技術啟示，助力未來數位化轉型與永續發展。

壹、目的

2024 年數位水峰會（Digital Water Summit 2024）由國際水協會 (International Water Association, IWA) 主辦，並與畢爾包-比斯開水務聯盟 (Consorcio de Aguas Bilbao Bizkaia) 以及西班牙城市水務管理企業協會 (AGA-AEAS) 合作，目標是成為水務產業數位化的世界領導者，2024 年 11 月 12 日至 14 日為期 3 天再次在西班牙畢爾包舉行，這是該峰會連續第三年於該市舉辦，旨在成為水務行業數位化的全球參考典範。

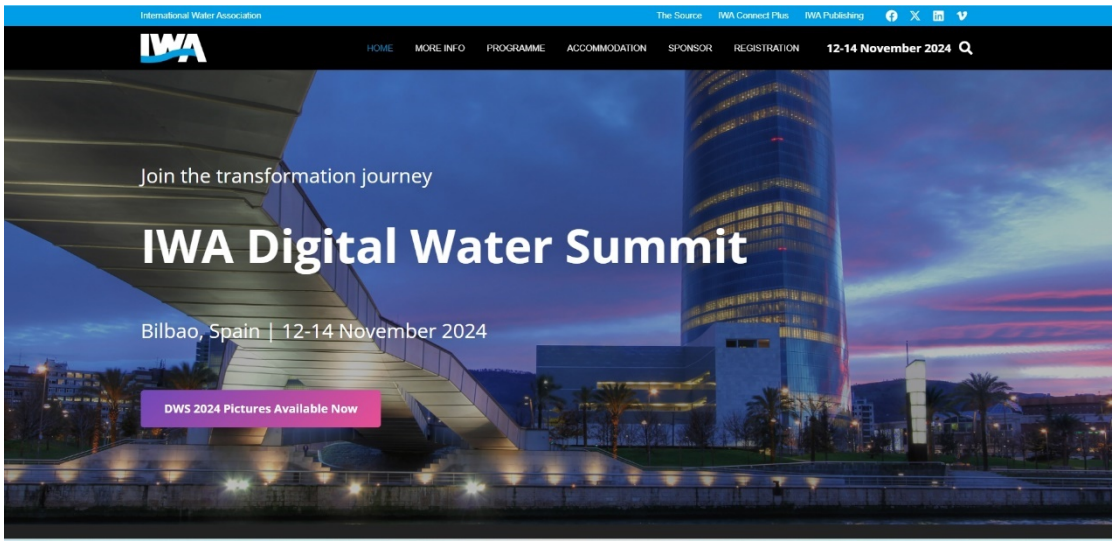


圖 1、2024 年數位水峰會網站，以畢爾包伊比德羅拉塔（Torre Iberdrola）作為主畫面，也是本活動正式晚宴舉辦地點

該峰會吸引了約 350 位全球數位水務領域的專家參與，面向與水務行業相關的各方，特別是企業和工業界，會議目標包括：

一、推動創新：鼓勵數位科技在水務管理中的創新應用。

二、促進效率:幫助水務行業更高效地解決基礎設施維護和資源分配問題。

三、加強韌性:應對氣候變遷帶來的水資源挑戰,提升城市和社區的水務韌性。

四、知識共享:匯集全球最佳實踐與研究成果,促進知識傳播和能力建設。

包括來自西班牙、比利時、葡萄牙、德國、英國、法國、荷蘭、紐西蘭、贊比亞和南非等國的專業人士分享在水務行業中的知識和經驗。大會主要特色包括:

一、主題聚焦數位化:探討水務行業的數位化轉型,包括數據管理、物聯網(IoT)、人工智慧(AI)、數位孿生(Digital Twin)等最新技術如何提升供水、污水處理及水資源管理的效率與韌性。

二、跨領域合作:匯聚政策制定者、水務專業人士、技術開發商及投資者,共同研討如何推進水務行業的數位轉型,解決水資源挑戰。

三、展示與交流:展示最新的數位化工具和技術解決方案,提供專業網絡活動,促進合作與投資。

四、技術研討與案例分享：針對性的技術研討和成功案例分享，幫助與會者了解具體應用場景及實踐經驗。

水利署與 IWA 近年交流緊密，賴建信署長 2018 年受 IWA 執行董事 Dr. Kalanithy Vairavamoorthy 邀請，率團赴日本東京參加「世界水會議及展覽會(World Water Congress and Exhibition)」，並安排參與大會專題演講之 Panel discussion，與各國與談人探討如何實現永續發展目標 6，以及參與流域鏈結城市論壇，賴署長以「臺灣流域鏈結城市」為主題進行演講，為論壇揭開序幕；賴署長亦帶領國內業者以「智慧防汛」為主題籌組臺灣館參加本次展覽，以展現臺灣於水資源物聯網及智慧防汛投入的努力，使國際瞭解我國先進智慧防災技術，並拓展臺灣水產業國際市場。

2022 年水利署賴建信署長再次接受 IWA 邀請，擔任大會專題演講「建立韌性城市水管理的實用觀點(A Practical Perspective in Building Resilience Into Urban Water Management)之與談人，以及受邀參與 IWA 高峰會議(IWA High-level Summit)與用水事業領導人論壇(Utility leaders forum)。

2023 年水利署舉辦「2023 臺灣國際水論壇(Taiwan International Water Forum 2023)」，以「水未來(Vision for Water)」為主題，藉由國、

內外產官學研各界共同探討創新、前瞻及永續性的水戰略，本活動特別與「第 9 屆國際水協會亞太地區會議暨展覽會」(IWA-ASPIRE Conference & Exhibition 2023)結合辦理，增進臺灣水利各界人士及事務與國際之交流。其中水領袖峰會更邀請到 IWA 執行董事 Dr. Kalanithy Vairavamoorthy 等水利界重量級講師，分享促進水資源永續管理及水韌性調適等面向之獨特觀點。

2024 年水利署持續深化與 IWA 合作， IWA 除推薦美國萊斯大學土木工程系教授 Qilin Li 及巴西聖保羅州供水公司 SABESP 總裁行政助理 Mara Ramos 等 2 位委員擔任水利署 2024 臺灣國際水論壇講者外，Dr. Kalanithy Vairavamoorthy 於近年與水利署多次交流後，鑑於水利署數位治理多方面發展及斐然成效，提議水利署可考量接辦 IWA 數位水峰會，並邀請赴西班牙畢爾包參加 2024 年數位水峰會及討論雙方未來合作交流規劃。

為利了解國際數位技術發展趨勢，並赴會議現場洽談主辦數位水峰會之可能、相關申辦程序，及觀摩會議舉辦規模、場務等相關安排方案，以利未來藉主辦國際會議擴大我國水利影響力，爰由水利署水文技術組組長阮香蘭及綜合企劃組楊志偉正工程司赴會，與會期間參與大會安排的技術參訪行程 ETXEBARRI STORMWATER 滯洪設施、專題演講、互動討論、技術展示和創新中心（InnoHub）等活動，

並拜會 IWA 全球活動與獎項總監 Kizito Masinde 先生，交流主題包括本活動申辦流程、關鍵考量、資源需求、評估標準等，進一步建立未來長期的交流管道。

貳、行程

本次出國行程如下表：

表 1 每日行程表

日期	活動時間	活動目的	地點
11/10 (日)	23:10-07:35(+1)	啟程	桃園機場→法蘭克福機場
11/11 (一)	07:35-09:40	轉機	法蘭克福機場
	09:40-11:55	航程	法蘭克福機場→畢爾包機場
	11:55-12:30	出關	畢爾包機場
	12:30-13:30	前往飯店放置行李	Hotel NH Collection Villa de Bilbao
	13:30-14:30	午餐	—
	14:30-18:00	會場交通路線勘查	畢爾包
11/12 (二)	09:00-10:00	報到及確認現場	巴斯克宮會議中心
	10:00-13:00	技術參訪	ETXEBARRI STORMWATER
	14:00-15:00	午餐	巴斯克宮會議中心
	15:00-16:15	參加數位水峰會 拜會 IWA	巴斯克宮會議中心
	18:20-20:20	歡迎晚宴	巴斯克宮會議中心
11/13 (三)	09:00-14:00	參加數位水峰會	巴斯克宮會議中心
	14:00-15:45	午餐	巴斯克宮會議中心
	15:45-18:15	參加數位水峰會	巴斯克宮會議中心
11/14 (四)	09:00-13:45	參加數位水峰會	巴斯克宮會議中心
	13:45-15:30	午餐	巴斯克宮會議中心
	15:30-18:00	參加數位水峰會	巴斯克宮會議中心
	20:00-21:00	正式晚宴	Torre Iberdrola
11/15 (五)	04:20-04:50	車程	飯店→畢爾包機場
	06:50-09:00	航程	畢爾包機場→阿姆斯特丹機場
	09:00-11:10	轉機	阿姆斯特丹機場
	11:10-06:35(+1)	航程	阿姆斯特丹機場→桃園機場
11/16 (六)	06:35	返程	桃園機場

備註：活動時間為當地時間

參、過程紀要

此行水利署由阮香蘭組長與楊志偉正工程司出席 2024 年數位水峰會（Digital Water Summit 2024），參加重要會議與拜會活動。

圖 2、水利署參加 2024 年數位水峰會側拍，阮香蘭組長(中)、楊志偉正工程司(右 2)

一、 技術參訪

圖 3、畢爾包大型雨水蓄水池（ETXEBARRI STORMWATER）系統

西班牙畢爾包因其地形和多雨的氣候特點，曾經面臨嚴重的都市洪水問題，其中雨水下水道因溢流至污水下水道系統造成污水溢流而隨雨水下水道污染河川環境。為解決這個挑戰，畢爾包於地下建造了了大型的雨水蓄水池（ETXEBARRI STORMWATER）系統，目的是在強降雨事件期間有效儲存並控制雨水流量，減少洪水風險和污水溢流對環境的污染。

圖 4、畢爾包地理位置

設計原由

1. 地理與氣候挑戰：暴雨時水流迅速匯集在市中心，極易引發洪水。
2. 減少污水溢流：在降雨量過大時，原有的下水道和排水系統無法及時排出大量雨水，會導致混合污水溢流（combined sewer overflow, CSO），污染河川和自然水體。雨水蓄水池的設計旨在儲存多餘的雨水和污水，避免這一情況。

3. 減輕下水道負荷：大規模蓄水池可在暴雨期間暫時存儲過量雨水，待雨勢減緩後再逐步釋放，減輕下水道系統的負荷，延長其使用壽命。

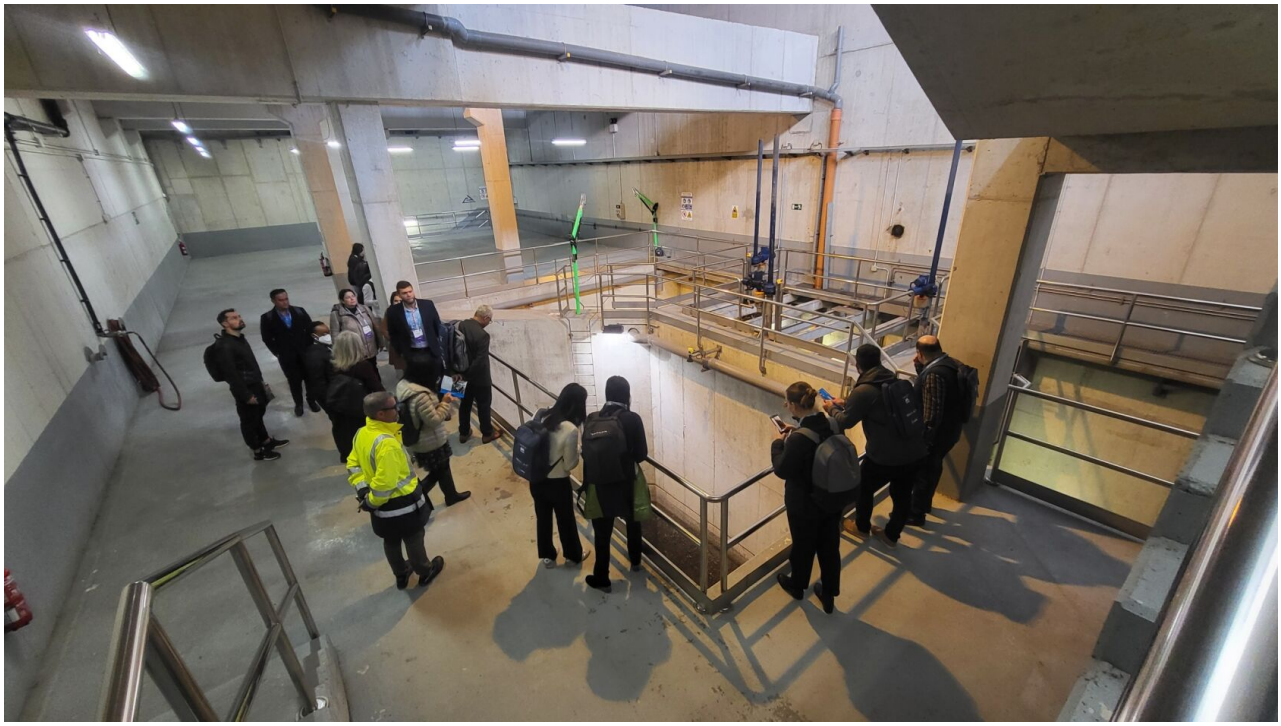


圖 5、ETXEBARRI STORMWATER 雨水蓄水池

效益

1. 有效防洪：雨水蓄水池在暴雨來臨時能夠立即啟動儲水功能，減少水流匯入河道的速度和流量，有效降低洪水風險，保障城市安全。
2. 環境保護：避免污水溢流進入河道及附近水體，有助於保護當地的自然生態環境。
3. 節省資金：透過減輕下水道系統的負荷，延長基礎設施壽命，從而減少未來的維護和改建成本。

畢爾包的雨水蓄水池系統已成為一個典範，展示了如何透過智慧化的水資源管理和基礎設施設計應對極端氣候帶來的挑戰。這類設施也有助於提升城市

韌性，面對日益加劇的極端氣候影響。

圖 6、ETXEBARRI STORMWATER 調節池

CATABB（Centro Avanzado de Tecnologías del Agua Bilbao Bizkaia）位於西班牙畢爾包，由比斯開水務聯盟（CABB）設立，旨在推動水處理技術的研究創新。聚焦於先進水處理技術，尤其是面對氣候變遷、提高供水和污水管理效率等挑戰，並為新技術開發提供試驗基地。

圖 7、CATABB（Centro Avanzado de Tecnologías del Agua Bilbao Bizkaia）外觀

作為水質研究的開放平台，CATABB 與公私機構、技術中心和大學合作開展

各類研究項目，涉及新興污染物的處理、抗生素耐藥性基因的檢測，以及水質安全保障措施等。此外，CATABB 還與當地中小企業和創新公司合作，推動地方水資源管理技術的發展，並力求成為歐洲水處理技術的參考中心。

圖 8、CATABB 職員簡報

CATABB 的試驗項目（pilot trials）在其設施內，主要用於探索水處理技術的創新應用。該中心位於畢爾包的 Etxebarri，設有管道、儲水罐和小型實驗室，具備水處理相關的各種設備。這些試驗的主要目的是檢測和改善水質處理技術，例如消除氯消毒過程中產生的三鹵甲烷（THMs）等副產物。此外，CATABB 也在開展 Emer Gen 項目，專注於識別和處理抗生素耐藥基因和新興污染物，以確保飲用水的安全。

圖 9、CATABB 參訪

這些試驗也讓中心在必要時具有每小時處理 10 立方米的水質淨化能力，應對潛在的水資源短缺。隨著持續的研究，CATABB 希望進一步改善水處理流程的效率，並成為技術和知識共享的核心平台。

圖 10、CATABB 職員介紹設施

CATABB 的水處理系統主要結合了多種先進技術，以達到淨化水質的目的，尤其針對新興污染物和微生物安全的挑戰。以下是該系統可能使用的核心技

術：

1. 氯消毒：氯是一種常用的消毒劑，但會生成三鹵甲烷（THMs）等副產物。為了控制這些副產物的生成，CATABB 進行了相關的試驗和技術優化，以減少 THMs 在水處理過程中的產生。
2. 先進氧化技術：這種技術適用於分解水中難以降解的有機污染物，能夠有效去除微量污染物質。常見的先進氧化方法包括臭氧化和紫外線處理，有助於提高水處理的效率。
3. 膜過濾技術：例如超濾（UF）和反滲透（RO）等，能夠有效去除水中的懸浮物、細菌和病毒等微生物污染，保證水質的清澈和安全性。
4. 生物過濾技術：這項技術利用微生物降解水中的有機污染物，是一種相對環保的水處理方法，適合於因應小分子有機污染。

圖 11、CATABB 汙水處理單元

透過多層次的處理流程，CATABB 的系統可依水質需求進行靈活調整，提供安全穩定的水質，並符合飲用水的嚴格標準。

圖 12、CATABB 參訪大合照

二、 開幕儀式

參與開幕儀式的嘉賓（如圖 13 由左至右）包括 IWA 全球活動總監 Kizito Masinde、比斯開省主席 Ana Otadui、畢爾包-比斯開水務聯盟主席 Kepa Odriozola、畢爾包市長 Juan Mari Aburto、西班牙城市水務管理企業協會（AGA-AEAS）主席 Jesús Maza、比斯開省自然環境和農業副代表 Arantza Atutxa、巴斯克水務局局長 Asier López 以及西班牙供水和污水處理協會（AEAS）國際事務負責人 Belén Ramos。

圖 13、2024 年數位水峰會開幕典禮合照

在開幕致詞中，Jesús Maza 強調了西班牙城市水務數位化進程的巨大推動力，特別是在第三輪水務數位化計劃（Perte）啟動之際。他指出數位化具有巨大的潛力，可以為市民提供質量和效率最佳的城市水務服務保障。他還提到，西班牙水務行業在全球範圍內處於領先地位，必須繼續走在數位化的前端。因此，像 IWA 數位水峰會這樣的活動至關重要，為企業提供了與全球頂尖專家接觸的機會，學習最新的數位化知識。

圖 14、西班牙城市水務管理企業協會主席 Jesús Maza 開幕致詞

畢爾包-比斯開水務聯盟主席 Kepa Odriozola 在開幕致詞中指出，Urdata Bizkaia 1 項目在第二輪水務數位化計劃中被評為最佳項目之一，獲得近 1,000 萬歐元的資助。他強調數位技術提供了無限的潛力，可以改變全球水系統，幫助公共服務機構提高韌性和效率，同時為未來建立更加穩固且經濟上可行的基礎。

圖 15、畢爾包-比斯開水務聯盟主席 Kepa Odriozola 開幕致詞

三、 拜會活動

由於 IWA 的大力支持，推薦了兩位卓越的講者 Qilin Li 和 Mara Ramos 參加由水利署主辦的 2024 台灣國際水週-國際論壇。他們的參與吸引了眾多觀眾，對本活動的成功有重要貢獻。水利署希望在未來繼續與 IWA 保持這種具有成效的合作關係。

此行透過 IWA 執行董事 Dr. Kalanithy Vairavamoorthy 協助，與 IWA 全球活動總監 Kizito Masinde 當面討論交流合作議題。Kizito Masinde 總監擁有肯亞埃格頓大學自然資源管理理學碩士，負責 IWA 在世界各地的活動、獎項的開發和實施等方面。在此之前，他是內羅畢非洲區域辦事處的戰略計畫高級官員，為非洲水資源的保護和管理以及發展供水服務提供者的能力提供技術支援，以透過改善公用事業的治理和管理來提高其服務品質。他也與非洲各地的多家公用事業公司合作進行水質項目，特別是製定和實施水安全計畫，也曾擔任熱帶生物學協會的專案官員，透過生物學實地課程和專業技能研討會積累了生物多樣性保護和研究方面的專業知識。其隨後加入聯合國環境規劃署，擔任專案專家，負責保護海洋環境免受陸地活動污染全球行動計畫（UNEP－GPA）。

11 月 12 日下午阮香蘭組長率員與 Kizito Masinde 總監進行會談，首先阮組長向 Kizito Masinde 總監介紹水利署舉辦台灣國際水週-水利產業主題館與國際論壇的工作內容，並開始進行對談討論，討論內容摘錄如下：

Q：數位水峰會是否已為未來幾年指定了主辦國。我們最有可能何時申請主辦

此活動？何時應該開始申請過程？台灣應採取哪些步驟來申請主辦高峰會？是否有具體的指導方針或文件可以參考？

A：

1.2025 年的主辦地點已確定在土耳其伊斯坦堡。如果台灣有興趣申請主辦，可考慮 2026 或 2027 年的峰會。

2.建議在 2025 年初提交申請，這樣可以比其他國家更早展現準備與誠意。

3.提交提案時，需闡明希望主辦數位水峰會的原因、能提供的資源與設施、可用的場地及其容納能力(約 400-500 人)，還需展現對活動的贊助與參與支持。

Q：在申請過程中，我們應與誰聯絡？是否有專門負責國際會議申請的辦公室或人員？

A：提案可提交至 Kizito Masinde，並副知 Dr. Kalanithy Vairavamoorthy。總監會將提案提交至管理層審核。如果有任何問題，可以聯繫總監並與地方的合作夥伴（如大學、公用事業單位）共同準備申請。

Q：根據您的經驗，我們在組織此類活動時應注意哪些關鍵細節，以確保活動的順利進行和成功舉辦？

A：

1.場地需有足夠的會議區域、展覽空間及與會者交流的場地。

2.交通是重要因素，必須方便於國際人士與本地代表前來。

3.需展現能夠吸引足夠的參與者及贊助商，確保活動至少收支平衡。

4.活動並非一次性，應考量吸引更多 IWA 會員並建立長期合作。

Q：主辦高峰會需要投入何種程度的人力、物力和財務資源？IWA 是否提供任何支持，或者是否建議分配特定資源以確保活動成功？

A：

1.人力資源：需要一支專業團隊負責活動規劃與執行，包括聯絡當地合作夥伴和管理參與者登記。

2.物力資源：合適的場地（如展覽中心）、先進的技術設施，以及支持活動的物流安排。

3.財務資源：要有詳細的預算，涵蓋成本及預期收益，還要展現如何吸引贊助商及參與者的策略。

4.IWA 的支援：雖然 IWA 不直接提供財務支援，但會提供活動標準、參與者人數和費率等相關資訊，協助估計預算。

Q：IWA 在選擇峰會的主辦國或城市時考慮哪些具體標準或條件？我們如何加強自身以滿足這些標準？

A：

1.地點選擇：需展現場地的便捷性及適合性。

2.參與人數與支持：需展示能吸引本地與國際參與者的能力。

3.財務可行性：需確保至少收支平衡，最好能獲利以支援 IWA 活動。

4.合作夥伴：最好與當地大學或公用事業單位合作，可以提升申請的成功率。

5.整體貢獻：除活動本身外，需展現能為 IWA 帶來更多會員及長期影響的潛力。

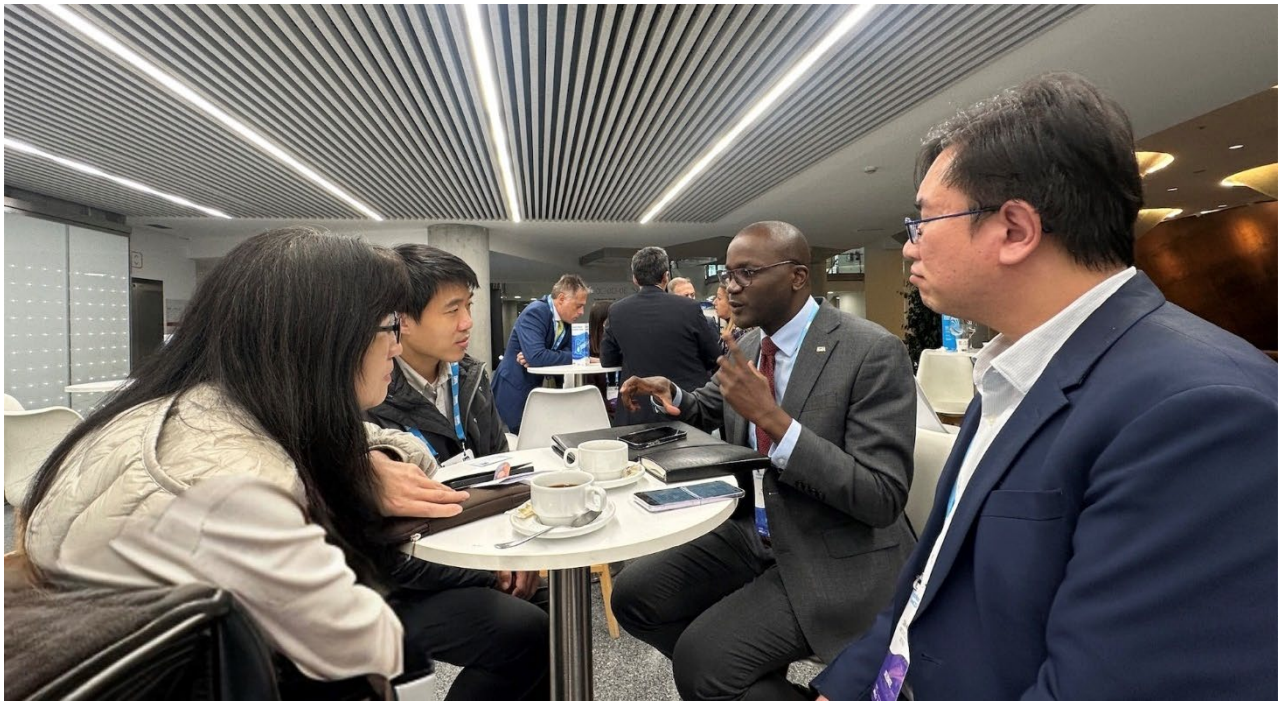


圖 16、阮組長率員與 Kizito Masinde 總監進行會談

圖 16、代表水利署致贈紀念品

四、 專題演講

(一)講者介紹如下表 2

表 2 專題演講講者表

照片	姓名及職務	講題及簡介
	**Maria Cardenal** 西班牙 Bluefield Research 分析師	**數位水務市場展望：主要驅動因素、競爭轉變與預測** 本演講評估了數位水技術的不斷發展的前景，重點介紹了主要趨勢、競爭動態和市場預測。主要趨勢包括物聯網、先進感測器和數據驅動決策的日益普及。數位水務公司可以透過建立合作夥伴關係和採用顛覆性技術來保持競爭力，從而進入不斷擴大的市場。儘管存在網路安全和財務挑戰，數位水務產業預計在未來十年將出現強勁成長。
	**Sandile Mbatha** 南非合作治理與傳統事務部國家首席資料官	**利用數據實現永續水的未來－增強合作夥伴關係和效率** 主題演講將討論數據在為永續水未來建立強有力的夥伴關係方面的作用。該演講將展示公用事業和監管機構如何透過整合的部門級數據和分析從「單一視圖」中受益。透過利用這些分析，利害關係人可以增強決策流程、提高營運效率並確保有效的監管監督和合規性。這種整體方法將有助於協調並準確的預測，及能夠主動因應該部門面臨的挑戰，最終形成更永續和具有彈性的水管理系統。

	**Zuzana Kalincikova** 業務開發總監，Xylem Vue 東歐，賽萊默，斯洛伐克	**理解數位轉型** 面對氣候變遷等日益嚴峻的挑戰，水務公司面臨越來越大的壓力，需要加速數位化流程。本主題演講將重點介紹如何確定投資優先順序、擴大專案規模和增強防禦能力的實用策略。
	**Frank Zamora** 西班牙 ACCIONA 水務業務 IT 總監	**智慧水網路：整合數據、物聯網和人工智慧以增強水系統運營** Acciona 展示智慧水網路中資料、物聯網設備和人工智慧技術的整合如何實現即時監控、自動化決策和提高系統效率。關注水質監測、洩漏檢測和壓力管理等應用。（智能資產）
	**Olivia Bailey** 英國奧雅納高級數位水務顧問	**數位工具如何支持水務產業的系統變革** 「實現水智能社區」是一個位於英國的 Ofwat 創新項目，由 Anglian Water、Thames Water、United Utilities 和 Arup 領導。該計畫的願景是重新思考終身水資源管理，加速採用綜合水資源管理，以支援社區和環境的繁榮。該創新項目正在探索綜合水管理、社區參與實施及住房開發之間的關係，釋放跨部門管理的新機緣。透過開發以數位工具為基礎的框架和系統，在複雜的環境中採取行動，能夠在水智能世界中蓬勃發展。

(二)演講重點摘要

1. 數位水務市場展望：主要驅動因素、競爭轉變與預測

Maria Cardenal（Bluefield Research, 西班牙）分析了全球數位水市場的

關鍵驅動力與阻礙因素如下：

- 驅動力：財務壓力、基礎設施老化、環境法規（如歐盟 NIS2 指令），以及 AI 與數位孿生的普及，使水資源管理的數位化解決方案得以推動。
- 阻礙因素：網路安全問題（如美國公用事業在 2010-2020 十年內的網攻增長 223%、歐洲網路安全支出僅佔 IT 總支出的 7%）、資料孤島現象及資源不足與缺乏專業培訓是數位化的主要障礙，而非員工意願不足，尤其是在新興市場如中國和印度，儘管有潛力，但基礎設施落後和污染問題成為重大挑戰。

而目前市場現狀：

- 全球約有 1600 家技術供應商，50%集中於美加地區，歐洲以傳統技術公司為主，小型創新公司則專注於軟體解決方案。
- 應用領域以網路管理、客戶管理及預測性維護為主，並逐漸向數位孿生與 AI 方向轉型

未來數位化技術在水務行業具巨大潛力，但需克服挑戰並推動跨領域合作與統一行業標準，以促進技術應用與創新發展。

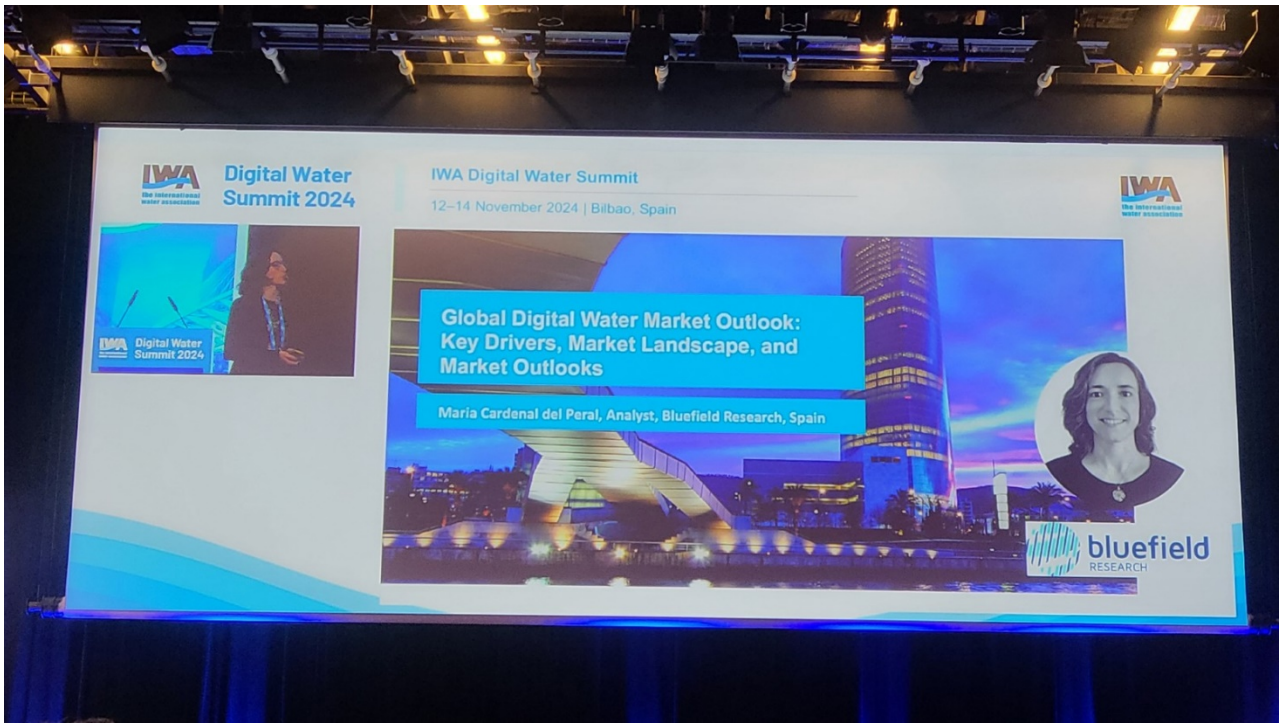


圖 17、專題演講- Maria Cardenal

2. 利用數據實現永續水的未來—增強合作夥伴關係和效率

Sandile Mbatha 指出，許多非洲國家的水資源問題源自治理和基礎設施不足。南非擁有 44 個區、8 個都市區和 105 個地方政府，有效管理對公民獲取水資源至關重要。研究顯示，每投入 1 美元於資訊系統，可帶來 32 美元的經濟回報，強調應優先投資這些系統，而非視為次要任務。

然而，許多政府未認識到資訊系統的重要性，需專注於長期資料投資和永續解決方案。現有基礎設施往往無法滿足城市擴張需求，且對其狀態了解不足。例如，一些地區雖有水源，卻因缺乏有效的收集系統，導致資源浪費。

他舉例說明資料管理缺失對系統的影響：當村莊水管破裂時，居民透過系統上報問題，但因資料未正確傳輸，水管工無法即時獲取資訊，導致修復延誤。此外，採購與維修系統未連接，備品不足進一步延長修理時間，增加居民不滿。

改善資料流通並整合相關系統可提升水管理效率，減少水損耗、縮短維修時間並提升服務品質。Mbatha 強調，水是人類基本需求，也是尊嚴的體現，整合的資料圖像能讓政府、社區和企業共同參與，確保水資源永續利用。

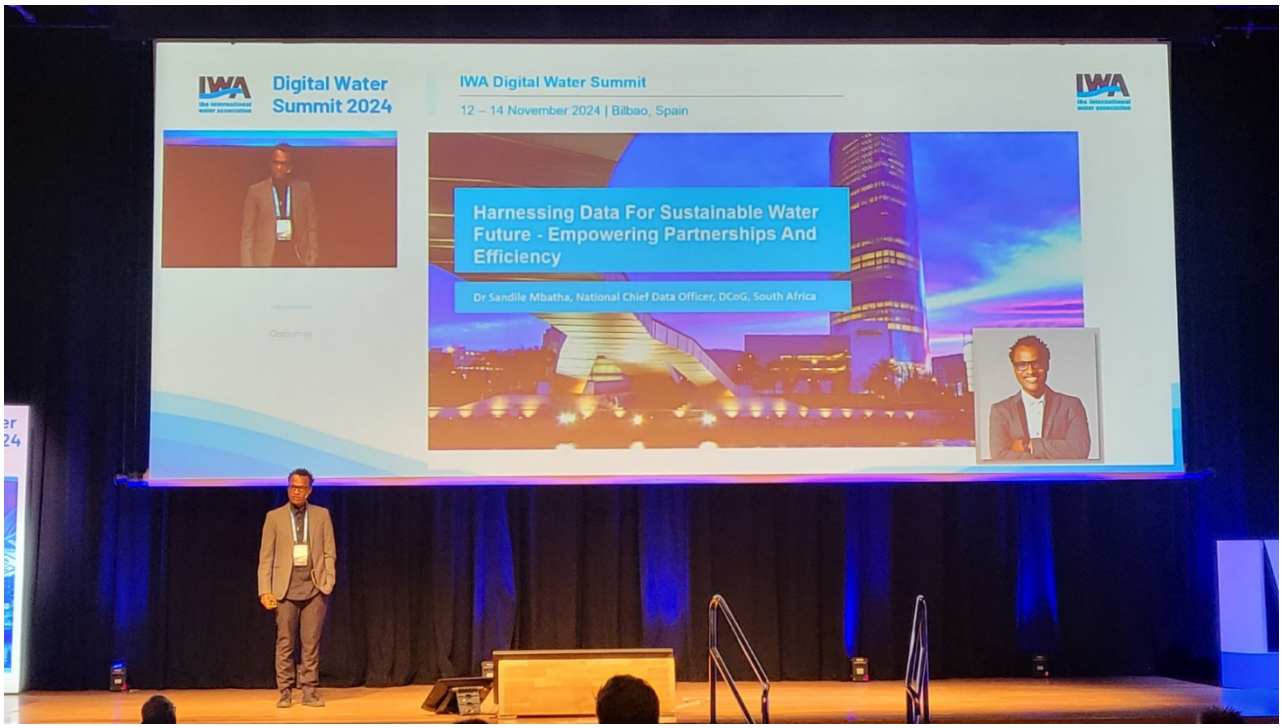


圖 18、專題演講-Sandile Mbatha

3. 理解數位轉型

Zuzana Kalincikova 討論有關資料相關性和其影響的重要觀點。目前約 100 多個國家在水資源管理和技術改進方面持續進步，特別是在水管理和基礎設施發展上，我們看到許多地區面臨挑戰，比如如何處理有限的資源來為更廣大的民眾服務。

人工智慧已大幅應用於水資源領域，並利用創新技術提升營運效率。有許多實際案例，人工智慧顯示技術解決方案可以幫助因應洪水風險、改善供水安全，以及為監測和維護提供更準確的資料分析。

但仍面臨一些困難，例如如何有效收集和使用資料，尤其是在資源有限或基礎設施老舊的地區。再次強調跨部門合作及民眾協力的重要性，也呼籲必須建立標準化流程來加強因應能力。

應用最新的數位技術，如智慧感測器、光纖技術，以及以用戶為核心的數位解決方案。這些工具可以幫助水相關企業更精準地管理系統，從而在提高效率的同時，促進永續發展。

她強調系統性改革的必要性，培養技能、教育和技術培訓是實現這些改革的關鍵。希望各方共同努力，推動更高效、更永續的水資源管理系統。

圖 19、專題演講-Zuzana Kalincikova

4. 智慧水網路：整合數據、物聯網和人工智慧以增強水系統運營

Frank Zamora 表示現在面臨許多挑戰，例如資料的增長和不完整性，這需要我們定義解決方案以避免可能造成的損害。這種情況對人類社會的影響尤其

顯著。希望透過提供更多資訊和知識，能幫助找到解決方案，並在未來更能預測和因應問題。需要建立一個資料整合的框架，使資料得以高效使用，並幫助我們改善資源管理。

例如，他觀察到水資源的管理需要改進，不僅僅是處理資料的問題，還涉及對基礎設施的優化。缺乏資料會導致計畫延誤，增加營運成本。需要在不同的地方和項目中應用現代技術，如物聯網和人工智慧，來提升決策效率，特別是在管理水資源的過程中。

為了實現更高效的資源管理，必須改善資料的整合和視覺化流程。系統需要能夠因應來自不同來源的大量資料，並轉換為有用的結果。將人工智慧和物聯網技術應用於水資源管理，如漏水檢測、流量控制及污染預警等。這些技術不僅能減少資源浪費，還能提升營運效率。

人員技能提升至關重要，特別是在技術的使用和資料分析上。構建合作與培訓機制，讓工作人員能有效利用技術解決問題。將解決方案中心放在以人為本的需求上，確保系統的設計是以用戶為核心的。與社區建立合作，確保技術的實施能帶來實際效益。

圖 20、專題演講-Frank Zamora

5. 數位工具如何支持水務產業的系統變革

Olivia Bailey 探討某些地方政府在改進基礎設施和管理方式上的努力，並研究如何因應資源短缺和提升營運效率。這包括了透過整合技術來增強社區的適應力和管理效能。也討論到某些地區已經成功地實現了這些改變，這為其他地區提供了有價值的啟示。

特別是在水資源管理方面，他注意到越來越多的需求集中在提升水質和改善基礎設施上。例如，英國的一些地區已經採取了措施來因應洪水風險，並實施了新的政策以管理資源和保護自然環境。

隨著全球範圍內對水資源需求的增加，這種努力變得至關重要。目前，有超過 1.5 億人生活在水資源稀缺的地區，而這個數字預計還會持續增加。討論還涉及到如何更佳規劃和管理有限的資源，以因應氣候變遷帶來的挑戰。

他強調技術的重要性，尤其是運用智慧系統來提升水資源管理的效率。例如，透過使用新的感測器技術，可以即時監測水資源的使用情況，並迅速採取行動來解決問題。

其中一個挑戰是如何平衡短期需求與長期規劃。他探討了如何透過政策、教育和技術的結合來實現這一目標，並確保基礎設施能夠因應未來的挑戰。政策與產業之間的協作，特別是如何在地方和國家層面上共同努力來實現永續的發展目標。這樣的協作對於解決未來的挑戰是至關重要的。

圖 21、專題演講-Olivia Bailey

五、 技術應用與創新案例分享摘要

1.數位工具整合與實際應用

Wim Audenaert（AM-Team, 比利時）強調：

- 問題：現有數位工具過多，應用範圍不明確，導致數位化效益未完全釋

放。

- 解決方案：以「需求導向」選擇技術，結合機械模型（基於科學知識）與資料驅動模型（依賴大數據訓練）。
- 成果：這些模型在污水處理、氣體排放量預測、能耗優化等場景中，展現了提升決策速度和基礎設施設計能力的潛力。

2.數位孿生與電腦視覺技術

Sergi Baena Miret 和 Carlos Carmona Vázquez（Cetaqua Barcelona, 西班牙）：

- 背景：Cetaqua Barcelona 開發數位孿生技術，實現供水系統的預測性維護與異常監控；在機場飲用水分配系統中應用 AI 模型檢測並解決管網異常情況。
- 核心技術：利用分類模型將設備狀態分為正常、故障或異常，進行即時維護判斷；結合攝像頭監控，及時辨識與調整問題設備。
- 成功實例：某機場飲用水分配系統中，應用該技術檢測異常，將故障處理時間縮短一半，保障了供水穩定性；預測維護模型減少月均性能下降率，並降低營運成本。

3.智慧計量與資產管理

- 智慧計量：Eva Martinez Diaz（Isle Utilities, 荷蘭）展示 DUMA 計畫，幫助 12 個城市提升數位化成熟度。歐洲和澳洲的實驗證明，智慧水表有效降低用水投訴，提升資料透明度。

- 資產管理：Pau Sanabras（Samotics, 荷蘭）提到，透過電氣監測技術及預測維護系統，可顯著減少能源浪費，降低維護成本數十萬歐元。

4.光纖感測技術

Rick De Visscher（DALI, 比利時）：利用光纖感測技術進行即時管道監測，有效識別洩漏、堵塞或異常干擾，大幅提升管道安全性並降低事故風險。

- 應用場景：管道監測，包括城市飲用水管線與石化管道。
- 技術特點：
  - 分布式聲學感測能檢測整條管道的聲學振動變化，識別洩漏、堵塞或第三方干擾。
  - 提供即時警報功能，幫助營運商快速處理異常情況。
- 成果：某石化管道項目中，運用光纖技術降低了 20%的維護成本，減少因腐蝕引發的洩漏事故。

5.數位孿生技術在減碳中的作用

James Ballard（Severn Trent Water, 英國）展示數位孿生在低碳轉型和永續資源管理中的應用，例如水處理過程中即時優化操作，減少碳足跡。

- 背景：荷蘭與澳洲率先測試智慧水表對家庭用水模式的影響。
- 技術優勢：
  - 實時用水監測，提升資料透明度。
  - 提供用戶端用水建議，幫助節約資源。

- 成果：
  - 用戶投訴率下降 25%，平均家庭用水量減少 15%。
  - 在南非等發展中國家，智慧計量技術因基礎設施限制，則需分階段推廣。

6.偏遠地區與難民營數位解決方案（非洲與柬埔寨案例）

Abi Croutear-Foy（AquaWatch Solutions, 紐西蘭）：提出透過標準化框架與全球合作應對飲用水與廢水管理需求，並以智慧技術實現 30%以上的水資源浪費減少。

- 非洲難民營（奈及利亞）：
  - 安裝數位監控設備，監測水塔儲水情況，透過雲端資料即時調整供水策略。
  - 減少水資源浪費，確保難民穩定獲得飲用水。
- 柬埔寨商業模式：
  - 利用智慧水錶監測供水狀態，確保水質與效率。
  - 結合當地營利性操作，提升供水系統的自給自足能力。

7.數位孿生助力減碳（英國案例）

- 背景：Severn Trent Water 應用數位孿生技術於水處理過程，推動低碳轉型。
- 技術細節：

- 使用 AI 模型分析水處理過程中的碳排放與能源消耗。
- 優化操作並進行即時調整。

➢ 成果：一年內碳排放量減少 18%，能源使用效率提升 25%。

8. 智慧資產管理（荷蘭案例）

➢ 技術特色：採用電氣監測技術檢測幫浦與其他設備的耗能異常，及早預警可能的故障。

➢ 案例成效：

- 減少不必要的檢修，將維護成本降低 15%。
- 某大型供水公司利用此技術，年節省數十萬歐元。

六、 廠商展覽

IWA 數位水峰會除了專題演講以外，現場亦有廠商展覽部分，在 3 天的時間裡，展覽活動有 11 家廠商共同參展。介紹如下：

(一)Xylem Vue：由 GoAigua 支援，提供單一整合的數位轉型軟體平台，專注提升公用事業運營效率與社區供水經濟性。

圖 22、Xylem Vue 展攤

(二)MONOM：水數據平台供應商，基於人工智慧和生成式 AI 技術，提供水循環資產與流程管理解決方案。

圖 22、MONOM 展攤

(三)VEOLIA：專注於水資源的脫碳、循環經濟與高效管理，強調城市、農業

及工業用水的回收與再利用。

圖 23、VEOLIA 展攤

(四)novha.io：從事水資源及基礎設施的控制與優化，應用物聯網、數位孿生及 BIM 技術。

圖 24、novha.io 展攤

(五)Qatium：為各規模公用事業提供水管理平台，支持服務不足地區的水資源管理。

圖 25、Qatium 展攤

(六)Badger Meter：專注於智慧水表解決方案，優化水輸送與使用效率。

圖 26、Badger Meter 展攤

(七)GEMU：提供液體與氣體控制系統的創新解決方案，聚焦數位化應用。

圖 27、GEMU 展攤

(八)NAVIA：整合水管理與數據分析平台，推動營運效率及資源最佳化。

圖 28、NAVIA 展攤

(九)ACTEMIUM：針對水處理廠提供即時監控與能源效率解決方案，專注數位化整合。

圖 29、ACTEMIUM 展攤

(十)Viuda de Sainz：從事公共與私人工程，包括土木工程及基礎設施建設。

圖 30、Viuda de Sainz 展攤

(十一) aqualia：歐洲第四、全球第九大水務公司，服務 18 國的 4,370 萬用戶，專注創新及透明管理，致力於全球市場擴展。

圖 31、aqualia 展攤

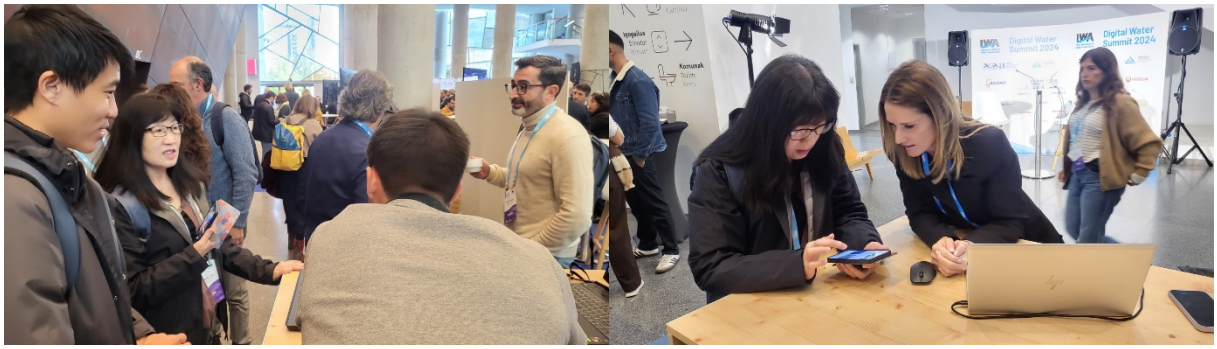


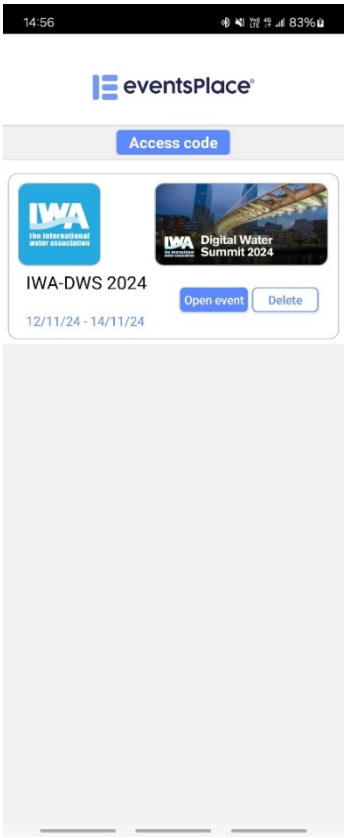
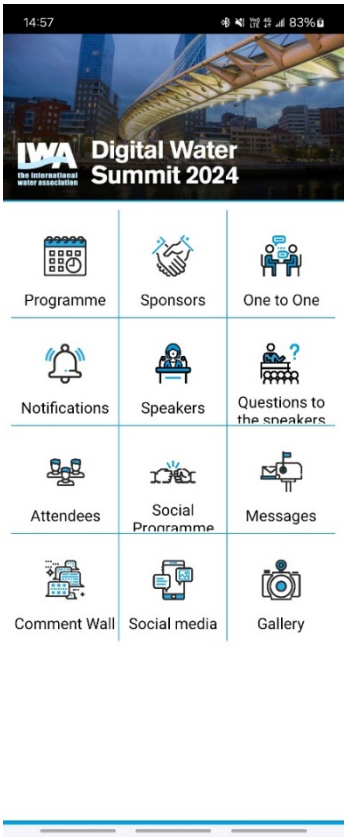
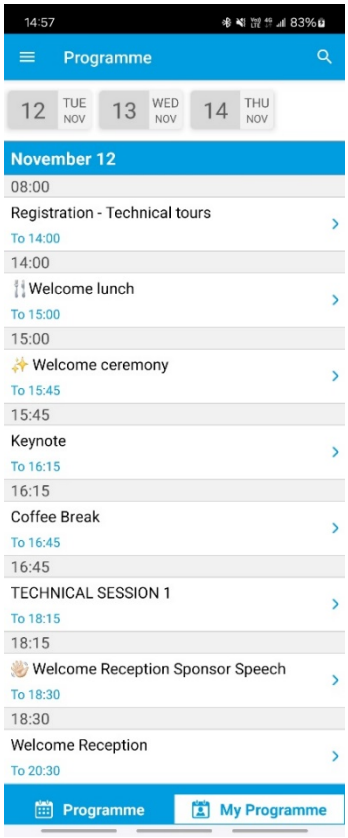
圖 32、33、水利署與廠商交流互動

圖 34、35、InnoHub 廠商現場展示

七、 資訊分享

本次活動 IWA 除於大會網頁提供相關資訊及大會手冊(詳附錄 1)，亦透過 eventsPlace APP 提供資訊。eventsPlace 可在 iOS 和 Android 平台上免費下載，是一款專為高端活動、會議、展覽、研討會和大會設計的 APP。透過此 APP，使用者可以在手機上追蹤會議，隨時掌握活動資訊、獲取最新更新，並與其他與會者互動交流。該 APP 提供了對話牆、聊天頻道、與會者名單、私人訊息和上傳照片等功能，可提升與會者的活動體驗。此外，活動主辦單位也可以透過 eventsPlace 為其活動提供專屬的功能。

表 3 eventsPlace APP 功能表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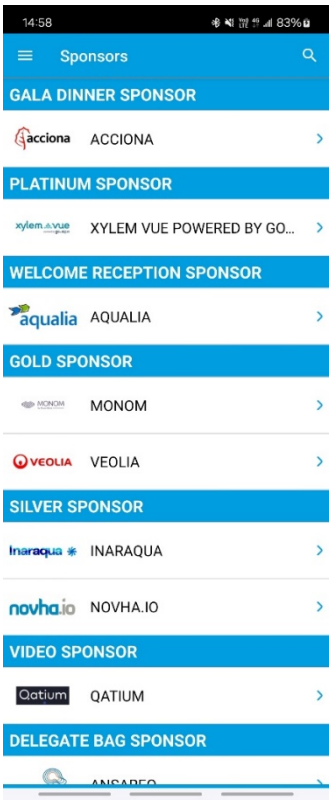
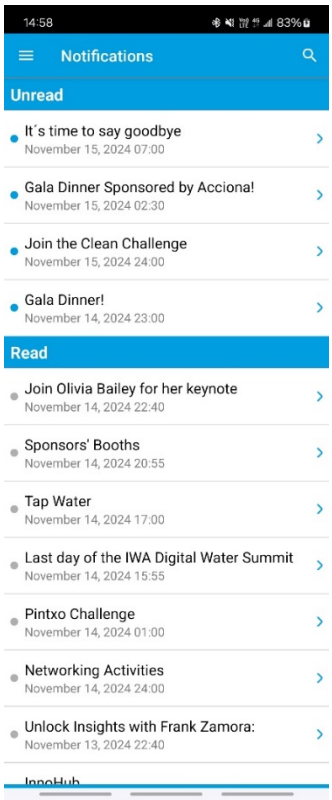


贊助商資訊



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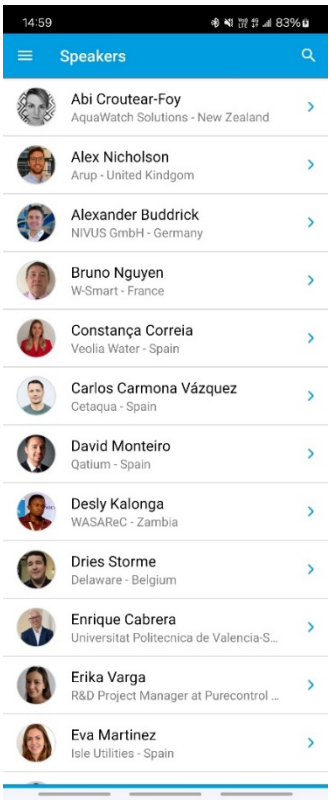
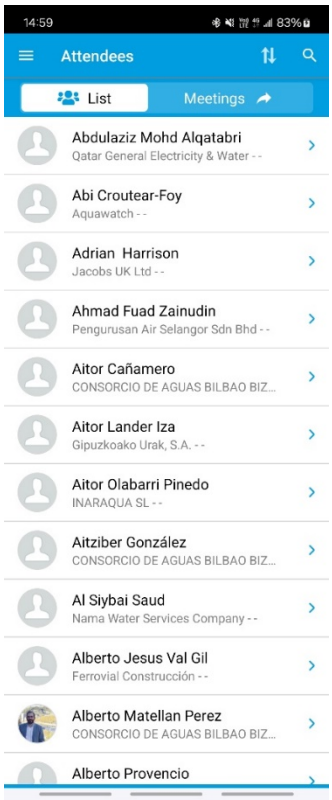


講者資訊

線上提問



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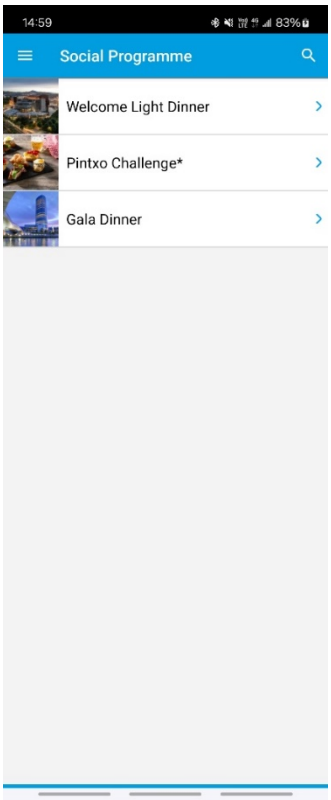

社交活動

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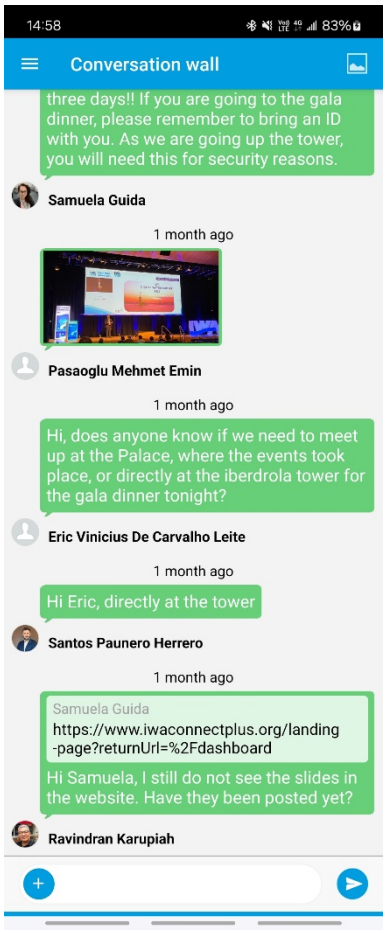
<td> 
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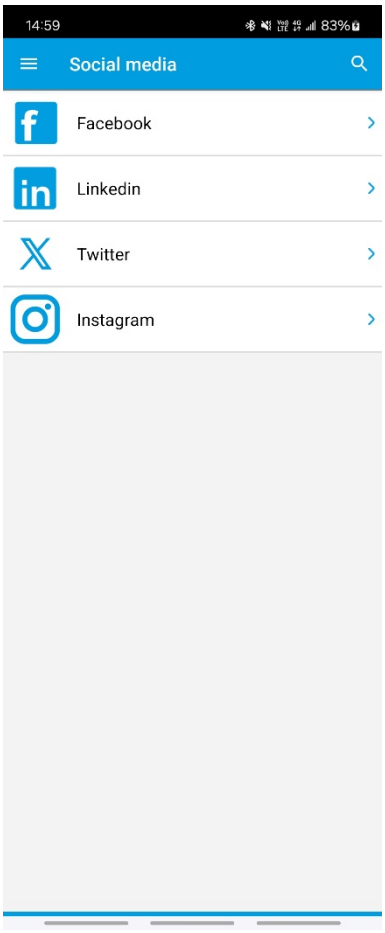
<td> 
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八、 閉幕交接

IWA 數位水峰會自 2022 年迄今已辦理 3 屆，均在畢爾包舉辦，2025 年已確定在土耳其伊斯坦堡舉辦，為首次走出畢爾包舉辦，由 IWA 主辦及伊斯坦布爾技術大學 (Istanbul Technical University, ITÜ)協辦，地點為土耳其伊斯堡哈利奇會展中心(Haliç Congress Center)。閉幕典禮上由 Dr. Ismail Koyuncu 教授進行 2025 數位水峰會簡報(詳附錄 2)，簡報重點如下：

(一)主題背景：伊斯坦堡的水資源歷史

1.羅馬與拜占庭時期

(1)開放與封閉式水庫，以及水道構成水資源管理基礎。

(2)著名水道包括：

I. Mazul 水道：長 110 公尺，以三層陶管建築。

II. Bozdoğan(Valens)水道：全長 971 公尺，86 個拱形結構。

III. Kara 水道：以 7 個拱形結構而成。

2.鄂圖曼時期

(1)建設 16 條水道，包括著名的 Halkalı 和 Fatih 水道。

(2)修建金角灣的 Kırkçeşme 泉。

3.土耳其共和國時期

(1)建設近代化的水資源基礎設施，包括：

I. Istranca 至伊斯坦堡輸水工程

II. 主要水壩和水資源項目。

(二)活動特色

1.會議目標：

(1)推動數位工具應於水資源領域。

(2)提供與土耳其和全球水資源領域專家的交流機會。

2.技術參訪：規劃以下地點

(1)ISKI-Tuzla 三級處理廠：每日可處理汙水 65 萬立方公尺。

(2)博斯普魯斯水道隧道：全長 5.5 公里。

(3)ISKI-Baltalimani 生物處理廠：每日可處理汙水 60 萬立方公尺

(4)ISU-Kocaeli SCADA 控制中心：監控全國 334 個水質測站。

(三)活動細節

1.場地設施

(1)位於哈利奇會展中心，為濱海與具有戶外活動空間。

(2)具有多個多功能會議廳與尖端科技設施。

2.住宿建議：周邊 10 分鐘車程內有多家知名酒店可供選擇，包括 Windsor、Mövenpick、Ramada、Hilton Garden Inn 等。

3.社交活動：晚宴地點規劃於伊斯坦堡著名的 Çırağan Palace Kempinski，結合歷史與現代奢華。

(四)過去活動經驗:土耳其 1989 年至 2012 年與 IWA 曾多次合作舉辦廢水管理、膜技術與古代水資源技術專題會議。

(五)組織架構

1.當地組織委員會:包括土耳其多名教授及工程專家。

2.贊助合作:土耳其政府部門及多家水資源科技與工程企業。

(六)結語：本簡報充分展現了 IWA 數位水高峰會 2025 的國際影響力，以及土耳其在水資源管理領域的專業技術與文化魅力。

肆、心得與建議

一、 全球水資源數位化呈現出三大趨勢：

1. 技術驅動創新：以 AI、數位孿生、光纖感測為代表的新技術，正在大幅改變水務行業的營運模式與效率。
2. 政策法規推動：歐盟、南非等地的政策法規對數位化轉型提供了明確方向。
3. 跨國合作與在地化實施並重：全球成功案例如西班牙、新加坡的經驗顯示，結合在地需求與國際技術標準是落地實施的關鍵。台灣在推動水資源數位化時，應善用當地特色結合國際標準。

二、 基礎設施更新與數據整合：資料孤島及舊有設施限制了數位化的進一步發展。應投入更多資源改善基礎設施，並建立高效的資料共享平台。

三、 技術與人才雙管齊下：數位化轉型需同步提升人才技能，應推動跨部門合作、增加教育與培訓，確保新技術的永續應用。

四、 政策與資金支持不可或缺：政府層面的資金投入與政策支持對推動數位水資源管理至關重要，如提供專項資金支持中小型水務公司的技術更新。

五、 前瞻性與實用性平衡：技術的選擇與應用需基於實際需求，避免一味追逐創新而忽視效益，務求每項技術都能落地實現其價值。

六、 內外在環境驅動數位化發展：多位講者強調數位化是為了要追求最佳化操作，加以各國均面臨有經驗的資深員工相繼退休、年輕的畢業生未投

入領域，似乎是普遍面臨的挑戰問題，因此數位化已為未來重要的趨勢，在追求最佳化操作中不只可以省成本、省能源、對環境衝擊更小，也會更有效率，但相對的，需更為重視網路安全問題並投入資源與技術。

七、 跨域全方位思考：都市計畫的演變（城市化的聚集對住宅的需求、住宅區的需求）與水的關係、節水推動對污水下水道的衝擊等必須多層次的考慮，這些論點在台灣尚未具體討論，值得參考。

八、 台灣申辦 Digital Water Summit 的可能性、會議執行等相關觀察

(1) IWA 全球活動總監 Kizito Masinde 建議水利署可申辦 2026 或 2027 年峰會，並建議強化展現台灣的場地條件、國際交通便利性、贊助與參與能力，以提高申辦成功機率。

(2) 可能因為地緣關係與會者多為歐美人士，亞洲人屈指可數，同理，如若於台灣舉辦可能只有周圍東南亞、東北亞的人士參加，而歐美與會者可能不多。

(3) 會議進行中安排穿插贊助商影片，各項小活動包括茶點、餐食也都有贊助商，非常商業化。

(4) 會議安排不會很緊湊，中場休息至少有一個小時，與會人員除在場外互相熱烈交流外並和展覽攤位互動，同時場外 innohub 廠商可以做產品發表，就技術面再進一步深度交流。

(5) 案例分享時台上與台下互動（線上投票），讓台下選擇想看到的展示項

目，此舉與台灣習慣辦理模式很不一樣，更貼近參加者需求。

(6) 簡報者很多都是贊助商，廢水處理的效率提升及自來水檢漏的內涵較多，顯示此領域的數位治理已趨成熟。

伍、參考資料

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4. https://www.interempresas.net/Agua/Articulos/578811-Arranca-en-Bilbao-el-congreso-IWA-Digital-Water-Summit.html
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陸、附錄

附錄1、大會手冊

Organisers

Event Programme

Welcome

Dear Colleagues,

It is with great excitement that I welcome you to the 2024 IWA Digital Water Summit. Now in its third edition, this event has matured into a cornerstone for the global water community, providing an essential platform for exploring how digitalisation can transform water management. With each edition, the Summit has continued to establish itself as a pivotal gathering for the sector.

The first two summits were resounding successes, bringing together a diverse cross-section of water experts, technology providers, utilities, and researchers. These events facilitated key connections across the water management supply chain, particularly between innovators and end-users, catalysing significant strides in the sector.

Over the past editions, we've explored transformative digital technologies such as the Internet of Things (IoT), AI-driven analytics, smart metering, leakage detection, and digital twin modelling. Industry leaders have shared case studies that illustrate the benefits of real-time monitoring, enhanced data collection, and predictive analytics, helping us all understand how these tools can revolutionise water management.

This year, as we return to Bilbao, the 2024 Digital Water Summit continues to focus on practical applications of digital solutions, with a special emphasis on how these technologies can benefit lower-middle income countries. With an expanding global audience, this year's programme features a mix of technical sessions, interactive discussions, live demonstrations, and the InnoHub, where technology companies and startups will present their latest innovations.

The growing success of this Summit is a testament to the vision of the IWA Digital Water Programme, which serves as a compass for guiding the sector's digital integration journey. As we gather here, I encourage you to engage fully in the opportunities presented, to collaborate and innovate as we address the world's pressing water challenges.

Together, through digitalisation, we can build a more resilient, efficient, and sustainable future for water management.

Let's make the most of the 2024 Digital Water Summit as we continue shaping the future of water, creating lasting solutions, and driving global progress.

Kalanithy Vairavamoorthy
Executive Director, International Water Association

Welcome back to the Digital Water Summit

Welcome to the 3rd International Water Association Digital Water Summit and of course to the wonderful city of Bilbao.

Ten years ago, I was asked the question as to why do we need Digital Water? At the time the concept of Digital Water had a long way to go and was in its infancy. As we step forward in time from that point, we can see how the concept of Digital Water has developed into a rich architecture of digital tools that allows the industry to cope with a world that is becoming more and more complex.

In the past few years we have seen an explosion in the tools that are available from BIM to Digital Twins and the only way to keep up with the developments in the Digital Water space is events such as the Digital Water Summit where we can collaborate as an industry to face some of the huge challenges that the industry has faced. An example of this is in the UK where the pollution challenges has seen information shared with the public in an openness that the industry has never seen before. This is a new element of Digital Water that the industry has never seen before and is learning as it goes along ensuring that the messaging that is shared with the public is not misconstrued leading to the situation that is currently present.

There is a whole wealth of challenges that can utilise the components of Digital Water and the next few days at the IWA Digital Water summit will hopefully open up the knowledge of the challenges that we all face in both an industry that faces huge challenges but also as we work diligently to help address the global challenges outlined in the sustainable development goals which are sadly not on track to meet by the deadline of 2030 when it comes to water.

So how can Digital Water be used to help us meet the global water needs? Well its through the use of Digital Water that we can see and quantify the challenges that the world faces, decrease carbon emissions, manage our water resources more efficiently and improve our wastewater treatment through using tools to better monitor and control our water environments using monitoring techniques all the way through to machine learning techniques and digital twins.

Enjoy the next few days of the Digital Water Summit and collaborate together to develop the ideas that the industry as whole needs but also remember that, when the summit finishes, the work begins to use Digital Water to help improve our global water environment.

Oliver Grievson
Chair, IWA Digital Water Programme

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acciona

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.

Platinum Sponsor

xylem vue powered by go-aigua

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.

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. Through this partnership, Xylem and Idrica bring together their technology, innovation, and expertise to solve the world's most critical drinking water, wastewater and other water-related challenges.

Welcome Reception Sponsor

aqualia

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.

Gold Sponsors

MONOM
by Grupo Álava

MonoM, a company of the Álava Group, provides a cloud-based SaaS platform designed to digitise asset management and production processes across industries like water, energy, and manufacturing. By leveraging advanced technologies such as big data, edge computing, AI, machine learning, and predictive analytics, the platform eliminates information silos and enables real-time monitoring and predictive maintenance of assets. This improves productivity, profitability, and the lifespan of assets, offering tailored solutions for industries like advanced water cycle management, wind and hydro power, and process industries.

With decades of expertise in IT and OT technologies, MonoM is equipped to address specialised fields such as maintenance, reliability, and performance optimisation for various assets, from motors and turbines to wind turbines and sensors. The platform is hardware-agnostic, modular, and scalable, allowing organisations to easily digitise and maintain their production chains based on evolving needs, ensuring informed decision-making and maximised operational efficiency.

VEOLIA

Along with its international expertise, Veolia has a strong local presence in Spain. Thanks to its more than 15,000 employees, it is positioned as a benchmark company in decarbonisation, circular economy and optimised resource management. In the field of water, through innovation and technology, it develops solutions for the sustainable and efficient management of water resources, promoting the reclamation and reuse of water for new uses in cities, agriculture and industry.

Silver Sponsors

Inaraqua

INARAQUA is a company formed by professionals with high and proven experience in the hydraulic sector.
Our company is specialised in providing solutions to clients in terms of O&M (Operations and Maintenance) and the execution of hydraulic installations.
Our greatest commitment is the satisfaction of our customers and the care of the environment based on principles such as responsibility and innovation.

novha.io

NOVHA.IO specialises in the control and optimisation of infrastructures (water, buildings, agriculture), as well as in innovation and digitalisation projects related to the construction industry, always providing turnkey projects and 360° services.

Main activities:
Control and optimisation of infrastructures (water, buildings, agriculture, etc.): Internet of Things; Sensorisation and civil works; Engineering, Electronics & Automation; Communications; Platforms – monitoring interface; Data analytics; Operation and maintenance.

Innovation in the construction industry: Digital twins, BIM, and 3D models; Augmented and Virtual Reality; Building efficiency monitoring; Application development.

Video Sponsor

Qatium Data Meets Water

Qatium is an easy-to-use water management platform for utilities of all sizes. We give operations and planning teams full visibility to run their networks effortlessly in an open, digital environment. In particular, Qatium supports rural or underserved communities – often most impacted by climate change – by offering core functionality for free.

Satchel Bag Sponsor

ansareo

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.

Bronze Sponsors

ACTEMIUM

Actemium is the VINCI Energies brand fully dedicated to industry, it delivers bespoke solutions and services to clients across 40 countries. Its multi-disciplinary network combines the expertise of 400 local business units with a global approach to create value throughout the entire industrial life cycle.
The Actemium's 24,400 experts share with their clients the strong conviction that industry is key to building a sustainable world and strive to make a positive contribution to global performance.
In Spain, it offers solutions in Maintenance, Engineering, installation, and commissioning in sectors such as water, aerospace, automotive, logistics, chemicals, and agrifood.
Regarding water treatment plants, it specializes in telecontrol systems for real-time monitoring, the automation of water treatment processes, enabling remote and flexible management of facilities, as well as improving energy efficiency and minimizing water consumption.
Additionally, it carries out integrations with various management tools used by the client and IoT solutions to complete the SMART solution for water cycle control.

Badger Meter

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.

BOSLAN
ENGINEERING AND CONSULTING

With more than 20 years of experience, Boslan is a modern, consolidated and solvent company supported by its numerous references developed for an important portfolio of Clients, by the implementation of an integrated quality, environment and safety management system and occupational health applicable in each and every job. We have a multidisciplinary human team of 900 qualified and experienced professionals equipped with the most advanced tools integrated into a professional and close organisation that allows us to approach each project in an integral manner, as well as guarantee an agile, personalised and reliable response with the levels of quality required.

ferrovial

Ferrovial is one of the world's leading infrastructure companies. The Company operates in more than 15 countries and has a workforce of over 24,000 worldwide. Ferrovial is triple listed on Euronext Amsterdam, the Spanish Stock Exchanges and Nasdaq 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

Gaimaz Infrastructure and Services is a Basque company with 35 years experience. Currently is a company Specialized in Civil Works (Hydraulic works, road infrastructure, Urbanizations, 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 position has not meant leaving behind the values that GAIMAZ has always had: CAUTION, ADAPTABILITY, STRICTNESS, RESPONSIBILITY, CAPACITY AND EFFORT.
Our experience in the sector is the best guarantee and sustainability is our commitment.
Gaimaz Infrastructure and Services is a Basque company with 35 years experience.

GEMÜ

Founded in 1964, the GEMÜ Group is a leading manufacturer of valves, measurement and control systems for liquids, vapors and gases. GEMÜ is a global market leader when it comes to solutions for sterile applications. The wide product range for water treatment and transfer covers nearly all sectors in the water industry. With more than 2500 employees around the world, GEMÜ serves customers in more than 50 countries with reliable and innovate solutions.
As part of the digitalisation process, a new division was created – the Digital Transformation Unit ("DTU"). In order to efficiently advance digitalisation in the various markets, the DTU is continuously evolving, motivated by the strong focus on offering customers exceptional added value. We are now able to offer digital solutions in addition to high-quality products for controlling and regulating all types of media.

Honeywell

Honeywell has been a trusted and recognised name in the utility services industry for over 120 years. With over 18,000 engineers and 9,000 software engineers worldwide, and over 1,000 utility customers using its solutions, devices and services, it is uniquely positioned to help utilities manage the energy sector.
Water networks are critical to building a safer, smarter, more sustainable world. Keeping up with changing global demands and ensuring peak performance of complex networks in favor of improved safety and sustainability requires constant innovation, management and monitoring. As a leading provider of smart meters, software and service solutions, Connected Water from Honeywell empowers customers to transform their operations from end to end and redefine the future of water.
Its water meters are designed to optimise the operational efficiency of water utilities by enabling preventative and quantifiable grid maintenance strategies. In addition to minimising non-revenue water and sensing leaks, the advanced functionalities of these meters also improve operator efficiency and minimize manual operations.
No matter the objective, its metering, software and service solutions can help provide short-term and long-term success.
To learn more about Honeywell and their offerings, visit their website at Honeywell Smart Energy.

NAVIA™

With over 25 years of pioneering innovation in the water sector, NAVIA Solutions revolutionises water management and infrastructure with its state-of-the-art software platform and consulting services in the water sector. NAVIA seamlessly integrates advanced features for water management, collaboration, mobility, and data integration, providing organisations with unparalleled operational efficiency and resource optimisation. Standing at the forefront of digital innovation, Navia empowers organisations to exceed evolving market demands, sharpen their competitive edge, and champion sustainable practices, aligned with digital transformation initiatives. By choosing NAVIA, water managers join industry leaders in embracing cutting-edge technology to transform the future of water management.

Viuda de Sainz

Our aim is to find the balance between economic growth, care for the environment and social welfare. To this end we develop, implement and maintain high added value projects.
At present our company is branching out so that we can position ourselves as a global business and provide advanced solutions with a high level of specialisation as well as a clear commitment to the protection of the environment and the sustainable use of resources.
The highly qualified staff, together with the availability of sophisticated technical means, enable the company to deal with any type of project with full guarantees of success.

Xupera
making things happen

Since our founding in 1998, we have been dedicated to transforming the customer service experience, offering comprehensive, multi-channel solutions tailored to the needs of each client. In recent years, we have taken an innovative step by developing hybrid customer service, which combines the efficiency of our professionals with the power of generative AI Voicebots. This evolution has allowed us to significantly increase our response capacity, speed up the delivery of solutions and optimize the necessary investment, thus guaranteeing an excellent service that adapts to the demands of a constantly changing market.

Coffee Break Sponsors

baseform

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:

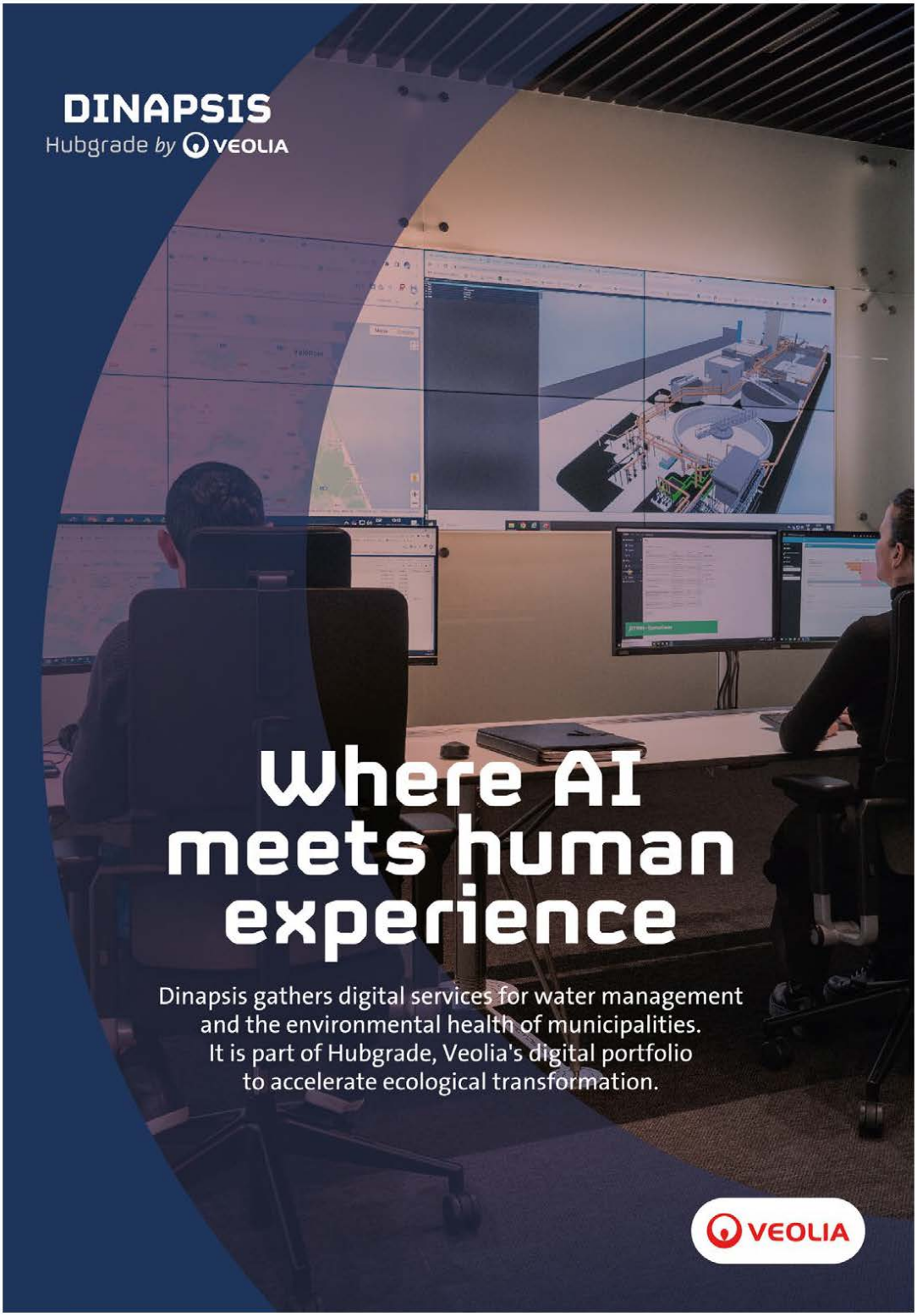
- Water networks are not sets of pipes, they are living organisms that jointly provide a service – we focus on making sure utilities provide the service 24/7, now and in the long run.
- Public infrastructures have to last beyond us, and the changes that each generation can introduce are very limited.
- 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.

cadagua

Cadagua, S.A. is a 100% subsidiary of the multinational group Ferrovial, specialises in the design, construction, and operation of water treatment plants. With over 50 years of experience, the company is a leader in wastewater treatment, potable water treatment, seawater desalination, and industrial water treatment. Cadagua is committed to sustainability, environmental protection, and social well-being, integrating advanced technologies and digitalisation to ensure efficient and eco-friendly solutions. The company strongly invests in research and development, aiming to address future challenges such as energy neutrality, minimising greenhouse gas emissions, removing emerging contaminants, and promoting water reuse and nutrients valorisation.

Grupo Tecman

Tecman Group is a consortium of companies specialising in industrial services, including cold/heat production, heating, air treatment, climate control, ventilation and distribution, cogeneration, gas installations, electricity, and data communication systems. We divide our activities among various subsidiaries (Tecman, ECI, Laenk, Meditec).
We have a robust in-house engineering team, enabling us to design, size, and deliver technical solutions for projects, overseeing both planning and on-site assembly.
Our experienced team of specialised technicians excels in the conductive, preventive, and corrective maintenance of our clients' installations.
Our commitment to our clients has driven us to enhance our focus on Energy Efficiency and Decarbonisation, with Tecman acting as a Designated Entity within the new "Energy Savings Certificate" system.


DINAPSIS
Hubgrade by VEOLIA
Where AI meets human experience
Dinapsis gathers digital services for water management and the environmental health of municipalities. It is part of Hubgrade, Veolia's digital portfolio to accelerate ecological transformation.
VEOLIA

Floorplan
IWA Digital Water Summit

1 | BADGER METER
2 | ACTEMIUM
3 | GEMÜ
4 | VIUDA DE SAINZ
5 | NOVHA.IO
6 | NAVIA
7 | MONOM
8 | VEOLIA
9 | AQUALIA
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11 | XYLEM-IDRICA

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The Digital Water Summit organisers have made arrangements for professional photographers and videographers to be on-site throughout the event. The images may be used for post-congress reports, case studies, marketing collateral and supply to industry media if requested. If you do not wish for your picture to be taken please inform a staff member at the Registration Desk.

The **Keynote Sessions** at the IWA Digital Water Summit bring together global thought leaders to inspire and drive the future of digital innovation in water management. These visionary speakers will share bold insights and practical strategies on how digital technologies are transforming the sector.

Technical Sessions are a curated collection of real-world case studies and cutting-edge digital solutions, presented by technology providers, utility representatives, and industry leaders. Each session offers concrete results and insights into the transformative power of digital technologies in water management.

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 InnoHub exhibition area will be an open space featuring some of the key digital providers from the industry. The InnoHub presentations will feature commercial solutions and will focus on the products offered by companies.

The Interactive 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.

During lunch and coffee breaks, participants will be able to explore networking opportunities and schedule meetings. The extended networking opportunities will provide a dynamic platform for industry leaders, experts, and innovators to engage in open dialogues, exchange ideas and explore potential collaborations.

Programme Overview
IWA Digital Water Summit

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

Tuesday 12 November	
8:00 - 14:00	Delegates Registration
10:00 - 13:00	Technical Tours
14:00 - 15:00	Welcome Lunch
15:00 - 15:45	Welcome Ceremony
15:45 - 16:15	Keynote: **Maria Cardenal** *(Spain)*
16:15 - 16:45	Coffee Break
16:45 - 18:15	Session 1
18:15 - 18:20	Welcome Reception Speech
18:20 - 20:20	Welcome Light Dinner
Wednesday 13 November	
9:00 - 9:30	Keynote: **Sandile Mbatha** *(South Africa)*
9:30 - 10:45	Session 2
10:45 - 11:45	Morning Break | 1-to-1 Networking
11:00 - 11:45	InnoHub Sessions
11:45 - 12:45	Interactive Session
12:45 - 14:00	Session 3
14:00 - 15:45	Lunch Break | 1-to-1 Networking
15:00 - 15:45	InnoHub Sessions

15:45 - 16:15	Keynote: **Frank Zamora** *(Spain)*
16:15 - 17:15	Live Demonstrations
17:15 - 18:15	1-to-1 Networking
18:30	Pinxto Challenge
Thursday 14 November	
9:00 - 9:30	Keynote: **Zuzana Kalincikova** *(Slovakia)*
9:30 - 10:45	Session 4
10:45 - 11:45	Morning Break | 1-to-1 Networking
11:00 - 11:45	InnoHub Sessions
11:45 - 12:45	Live Demonstrations
12:45 - 13:45	Interactive Session
13:45 - 15:30	Lunch Break | 1-to-1 Networking
15:00 - 15:30	InnoHub Sessions
15:30 - 16:00	Keynote: **Olivia Bailey** *(United Kingdom)*
16:00 - 17:15	Session 5
17:15 - 18:00	Closing Ceremony
18:00 - 20:00	Free
20:00 - 00:00	Gala Dinner

Programme Overview
Detailed Information

Tuesday 12 November

8:00 – 14:00	**REGISTRATION**
10:00 – 13:00	**TECHNICAL TOURS**
14:00 – 15:00	**LUNCH**
15:00 – 15:45	**WELCOME CEREMONY**
15:45 – 16:15	**KEYNOTE |** Digital Water Market Outlook: Key Drivers, Competitive Shifts, and Forecasts **Maria Cardenal** *(Analyst, Bluefield Research Spain)*
16:15 – 16:45	**COFFEE BREAK** *Sponsored by Cadagua*
16:45 – 18:15	**SESSION 1 |** **TECHNICAL PRESENTATIONS** Moderated by: **Youri Amerlinck** *(Aquafin, Belgium)* Shedding Light on the Trees in the Forest of Digital Tools — **Wim Audenaert** *(AM-Team, Belgium)* Next-Gen Water Management: Case Studies in Computer Vision & Digital Twins — **Sergi Baena Miret**, and **Carlos Carmona Vázquez** *(Cetaqua Barcelona, Spain)* Net Zero – Do Digital Twins Have a Role to Play? — **James Ballard** *(Severn Trent Water)* and **Jeremy Black** *(AtkinsRéalis)* Practicality in Innovation: Digital Twins of Waterways for Effective, and Fast Improvement — **Abi Croutear-Foy** *(AquaWatch Solutions, New Zealand)*
18:15 – 18:20	**WELCOME RECEPTION SPEECH**
18:20 – 20:20	**WELCOME LIGHT DINNER** *Sponsored by AQUALIA*

Wednesday 13 November

9:00 – 9:30	**KEYNOTE |** Leveraging Data for Sustainable Water Future – Empowering Partnerships and Efficiency **Sandile Mbatha** *(Cooperative Governance and Traditional Affairs (CoGTA) Ministry, South Africa)*
9:30 – 10:45	**SESSION 2 |** **TECHNICAL PRESENTATIONS** Moderated by: **Sandra Ryan** *(SNV Netherlands Development Organisation, Spain)* Real Time Monitoring of Water Network in Rural and Refugees Camps — **Guy Lecurieux Lafayette** *(Greencityzen, France)* Revolutionising Water Management through Advanced Digital Technologies — **Desly Kalonga** *(WASAReC, Zambia)* Enhancing Digital Transformation and Digital Maturity through Piloting and Testing at Rand Water, South Africa — **Mogan Padayachee** *(Rand Water, South Africa)*
10:45 – 11:45	**COFFEE BREAK** *Sponsored by Baseform* **| 1-TO-1 NETWORKING**
11:00 – 11:45	**INNOHUB SESSIONS** Fast Operational Decisions with Qatium — **David Monterio** *(Qatium, Canada)* Integrated Asset Management with DouroECI's Platform — **José Pedro Ferreira** *(DouroECI, Portugal)* DALI Pipeline Monitoring: Asset Management Optimisation with Accurate, Real Time Information Provided by Fiber Optic Sensing – **Rick De Visscher** *(DALI, Belgium)*
11:45 – 12:45	**INTERACTIVE SESSION |** Adoption of Digital Technologies in Emerging Economies Moderated by: **Zach White** *(GSMA, United Kingdom)* Panellists: **Mogan Padayachee** *(Rand Water, South Africa);* **Sandile Mbatha** *(Cooperative Governance and Traditional Affairs (CoGTA) Ministry, South Africa)*

12:45 – 14:00	**SESSION 3 | TECHNICAL PRESENTATIONS** Moderated by: **Janelcy Alferes Castano** *(VITO, Belgium)* NatureInsight: Empowering NbS Design and Planning with Data and Algorithms — **Alex Nicholson** *(Arup, United Kindgom)* A Qualitative Knowledge-Based Method for Planning the Renewal Works of Water Pipes with Unreliable Operational Data — **Sattar Salehi** *(National Water and Wastewater Engineering Company of Iran, Iran)* and **Mohsen Shams** *(Kashan Water and Wastewater Company, Iran)* Empowering Utilities through Digital Metering Adoption — **Eva Martinez Diaz** *(Isle Utilities, The Netherlands)*
14:00 – 15:45	**LUNCH | 1-TO-1 NETWORKING**
15:00 – 15:45	**INNOHUB SESSIONS** How Digitalisation in Water Treatment Can Save Time and Money — **Marcus Ripsam** *(GEMU, Germany)* Why is AI Revolutionising Water Management? — **Jorge del Valle** *(MonoM, Spain)* SUEZ Digital Twins: Actionable Insights Connecting Long-Term Strategy with Daily Operations to Drive Real-World Decisions — **Melissa Parot** *(Suez, France)* and **Guillaume Rondot** *(Optimatics, United Kingdom)*
15:45 – 16:15	**KEYNOTE |** Smart Water Networks: Integrating Data, IoT and AI for Enhanced Water System Operations **Frank Zamora** *(Acciona, Spain)*
16:15 – 17:15	**LIVE DEMONSTRATIONS** Moderated by: **Oliver Grievson** *(AtkinsRéalis, United Kingdom)* Combining Real-Time Control with Predictive Insights: How AI Optimise Wastewater Treatment — **Dr Erika Varga**, and **Malo Rotureau** *(Purecontrol, France)* From Data to Decisions: A Fully Integrated Digital Water Platform — **Pedro Vieira** and **Francisco Castro** *(Navia Solution, Spain)*
17:15 – 18:15	**1-TO-1 NETWORKING**
18:30	**PINTXO CHALLENGE**

Thursday 14 November

9:00 – 9:30	**KEYNOTE** | Making Sense of Digital Transformation **Zuzana Kalincikova** *(Xylem Vue, Slovakia)*
9:30 – 10:45	**SESSION 4 |** **TECHNICAL PRESENTATIONS** Moderated by: **Eva Martinez** *(Isle Utilities, Spain)* Transforming Catchment Monitoring with CMaaS®: Leveraging AI for Emerging River Health Regulations — **Rob Passmore** *(Additive Catchments, United Kingdom)* Smart Asset Management Using AI — **Pau Sanabras** *(Samotics, The Netherlands)* Finally in Control of (Heavy) Precipitation: Sensor Network and AI-Based Precipitation Forecast — **Alexander Buddrick** *(NIVUS GmbH, Germany)*
10:45 – 11:45	**COFFEE BREAK** *Sponsored by Tecman* | **1-TO-1 NETWORKING**
11:00 – 11:45	**INNOHUB SESSIONS** Opportunities of Advanced Machine Learning in Water-Intensive Processes — **Markus Jääskeläinen** *(SimAnalytics / Kemira, Finland)* A Technological Platform for Advanced Water Management — **Francisco Castro** and **Natalia Torres** *(Navia Solution, Spain)* Agile Network Control to Increase the Resilience of Critical Water Supply Infrastructure — **Clarisse Umugwaneza** *(Wasserversorgung Rheinhessen-Pfalz GmbH, Germany)* Digital Metering: from IoT Data to Value for the Water Cycle — **Constança Correia** *(Veolia Water, Spain)*
11:45 – 12:45	**LIVE DEMONSTRATIONS** Moderated by: **Oliver Grievson** *(AtkinsRéalis, United Kingdom)* Enhance Your Water Network Management with the AQS-SYS Platform: Leveraging Advanced Analytics for Smarter, More Efficient Performance — **Santi Singla** *(Hidroglobal/ Matholding (Exclusive Partner for AQS by Aliaxis Technology in Spain), Spain)* Digital Water Platform for Water Security — **Nikhilesh Kumar** *(Vassar Labs, India)*

12:45 – 13:45	**INTERACTIVE SESSION | LET'S TALK CYBERSECURITY!** Moderated by: **Enrique Cabrera** *(University of Valencia, Spain)* Panellists: **Bruno Nguyen** *(W-Smart, France);* **Sérgio Trindade** *(Águas do Tejo Atlântico | Grupo Águas de Portugal, Portugal)*
13:45 – 15:30	**LUNCH | 1-TO-1 NETWORKING**
15:00 – 15:30	**INNOHUB SESSIONS** Reduce Water Loss with AQS's High-Performance Leak Management Solutions and Human-as-a-Service Offering — **Santi Singla** *(Hidroglobal/ Matholding (Exclusive Partner for AQS by Aliaxis Technology in Spain), Spain)* Digital Platform for Driving Climate Resilient Water Security — **Nikhilesh Kumar** *(Vassar Labs, India)*
15:30 – 16:00	**KEYNOTE |** How Can Digital Tools Support Systematic Change in the Water Sector? **Olivia Bailey** *(Arup, United Kingdom)*
16:00 – 17:15	**SESSION 5 | TECHNICAL PRESENTATIONS** Moderated by: **Dries Storme** *(Delaware, Belgium)* Fiber Optic Sensing as a Platform for Real-Time Pipeline Monitoring Applications — **Rick De Visscher** *(DALI, Belgium)*
17:15 – 18:00	**CLOSING CEREMONY**
18:00 – 20:00	**FREE**
20:00 – 00:00	**GALA DINNER** *sponsored by ACCIONA*

Keynote Speakers

Tuesday 12 November

15:45 – 16:15 |
DIGITAL WATER MARKET OUTLOOK: KEY DRIVERS, COMPETITIVE SHIFTS, AND FORECASTS

Maria Cardenal, *Analyst, Bluefield Research, Spain*

Presentation summary: This presentation evaluates the evolving landscape of digital water technologies, highlighting key trends, competitive dynamics, and market forecasts. Key trends include the rising adoption of IoT, advanced sensors, and data-driven decision-making. Digital water players can tap into an expanding market by building partnerships and adopting disruptive technologies to stay competitive. While cybersecurity and financial challenges exist, the digital water sector is expected to see strong growth over the next decade.

Wednesday 13 November

09:00 – 09:30 |
LEVERAGING DATA FOR SUSTAINABLE WATER FUTURE-EMPOWERING PARTNERSHIPS AND EFFICIENCY

Sandile Mbatha, *National Chief Data Officer at the Cooperative Governance and Traditional Affairs Ministry, South Africa*

Presentation summary: The keynote will talk about the role of data to build robust partnerships for a sustainable water future. The presentation will demonstrate how utilities and regulators can benefit from having a 'single view' through integrated sector-level data and analytics. By leveraging these analytics stakeholders can enhance decision-making processes, improve operational efficiencies, and ensure effective regulatory oversight and compliance. This holistic approach will allow for better coordination, accurate forecasting, and the ability to proactively address challenges facing the sector ultimately leading to more sustainable and resilient water management systems.

15:45 – 16:15 |
SMART WATER NETWORKS: INTEGRATING DATA, IOT AND AI FOR ENHANCED WATER SYSTEM OPERATIONS

Frank Zamora, *IT Director in the Water Business, ACCIONA, Spain*

Presentation summary: Acciona will present how the integration of data, IoT devices and AI technologies in smart water networks can lead to real-time monitoring, automated decision-making, and improved system efficiency. Focus on applications such as water quality monitoring, leakage detection, and pressure management. (SMARTASSET).

Thursday 14 November

09:00 – 09:30 |
MAKING SENSE OF DIGITAL TRANSFORMATION

Zuzana Kalincikova, *Director of Business Development Xylem Vue Eastern Europe, Xylem Vue, Slovakia*

Presentation summary: In the face of rising challenges such as climate change, water utilities are under increasing pressure to accelerate their digitalisation efforts. This keynote will highlight practical strategies for prioritising investments, scaling projects, and building resilience.

15:30 – 16:00 |
HOW CAN DIGITAL TOOLS SUPPORT SYSTEMATIC CHANGE IN THE WATER SECTOR

Olivia Bailey, *Senior Digital Water Consultant, Arup, United Kingdom*

Presentation summary: Enabling Water Smart Communities is an Ofwat Innovation Project, based in the UK, led by Anglian Water, Thames Water, United Utilities and Arup. The vision for the project is Rethinking whole-life water stewardship to accelerate the adoption of integrated water management, supporting communities and the environment to thrive. This innovation project is exploring the relationship between integrated water management, community engagement & practices, and housing development to unlock new opportunities for cross-sector delivery and stewardship. We are enabling action within a complex delivery environment through the development of frameworks and systems, underpinned by digital tools, that enable us to thrive within a water smart world.

Technical Sessions

Tuesday 12 November

Session 1 | Afternoon | 16:45 – 18:15

Moderated by: **Youri Amerlinck,** *Aquafin, Belgium*

SHEDDING LIGHT ON THE TREES IN THE FOREST OF DIGITAL TOOLS

Wim Audenaert, *CEO & Co-founder, AM-Team, Belgium*

Presentation summary: At the very core of digital twins and models, the two families 'knowledge driven' and 'data driven' models do their work. Our industry can be quite confused when it comes to understanding these concepts. This will be an educational talk that outlines the different frameworks and their respective applications.

NEXT-GEN WATER MANAGEMENT: CASE STUDIES IN COMPUTER VISION & DIGITAL TWINS

Sergi Baena Miret, *Programme Leader and Senior Researcher* and **Carlos Carmona Vázquez**, *Project Manager and Senior Researcher at Cetaqua Barcelona, Spain*

Presentation summary: This presentation explores how Aigües de Barcelona (AB), in collaboration with Cetaqua, is leveraging the power of artificial intelligence to transform water management through its Digital Lab initiative. We delve into two impactful projects utilising computer vision and digital twins, showcasing their real-world applications in AB's operational activities. Discover how computer vision enhances process monitoring and enables early problem detection in both wastewater and drinking water treatment plants. Furthermore, we explore the successful implementation of digital twins for predicting water quality issues and optimising asset management. Join us to learn how these cutting-edge technologies are driving efficiency, sustainability, and informed decision-making in the water sector.

NET ZERO – DO DIGITAL TWINS HAVE A ROLE TO PLAY?

James Ballard, *Severn Trent Water*
and **Jeremy Black**, *AtkinsRéalis*

Presentation summary: As the sector strives for Net-Zero we will see a push for new low-carbon technologies being implemented across our WasteWater infrastructure. Integrating these into the existing system will be essential in meeting the targets whilst minimising costs and ensuring environmental compliance.

Whilst modelling and simulations are not new to the Water sector, applying them across a full system to understand the CNZ performance is. Water companies will need to understand the emissions performance of the integrated system and balance this against Opex and effluent compliance. This will require the capability to measure and monitor Net-Zero performance, predict future performance under different scenarios, and optimise the overall system, in near real time, to balance the different drivers. Is this where the Digital Twin comes in, delivering these capabilities in a consistent, efficient, and useable way?

PRACTICALITY IN INNOVATION: DIGITAL TWINS OF WATERWAYS FOR EFFECTIVE, AND FAST IMPROVEMENT

Abi Croutear-Foy, *Managing Director, AquaWatch, New Zealand*

Presentation summary: In this presentation, we will focus on the practicality of using smart water solutions to build digital twins powered by real-time data. Instead of focusing on innovation, we'll delve into how these tools provide useful information—the data we need to understand what's happening right now in our waterways. By integrating continuous monitoring into digital twins, we gain a clear, accurate picture of current water conditions, which equips us with the facts necessary to make informed decisions for long-term water management.

Digital twins allow us to see how water systems are functioning in the present, offering a direct, grounded view that helps us identify issues as they arise. This immediate knowledge empowers us to take practical steps to improve water quality and resource management. To predict the future, we must see the present clearly, it's the foundation for making smarter, more sustainable improvements, quickly.

Wednesday 13 November

Session 2 |
Morning | 9:30 – 10:45

Moderated by: **Sandra Ryan,** *SNV Netherlands Development Organisation, Spain*

REAL TIME MONITORING OF WATER NETWORK IN RURAL AND REFUGEES CAMPS

Guy Lecurieux Lafayette, *Co-Founder at GreenCityzen, France*

Presentation summary: In 2015, the United Nations defined Sustainable Development Goal 6 (SDG6) to ensure safe water access for billions of people by 2030. By 2024, it was widely acknowledged that we are significantly behind on this goal. There are multiple challenges, one of which is how to scale up the development of distributed water production units. A key factor in this effort is optimising operations. Digitalisation and real-time monitoring using LoRaWAN technology provide one solution that can aid in scaling up. During this presentation, we will review two examples of real-world deployment in rural areas in Cambodia and refugee camps in Africa, exploring the challenges faced, the benefits realised, and the lessons learned

REVOLUTIONISING WATER MANAGEMENT THROUGH ADVANCED DIGITAL TECHNOLOGIES

Desly Kalonga, *WASH Engineer, WASAReC, Zambia*

Presentation summary: The presentation will highlight the transformative power of AI and machine learning in optimising water distribution networks, enhancing water quality monitoring, and enabling predictive maintenance strategies.

ENHANCING DIGITAL TRANSFORMATION AND DIGITAL MATURITY THROUGH PILOTING AND TESTING AT RAND WATER, SOUTH AFRICA

Mogan Padayachee, *Rand Water, South Africa*

Presentation summary: This presentation will focus on the identification of the key challenges that affect the rapid adoption of digital innovative technologies and solutions by water utilities in South Africa. More importantly, it will illustrate the results of a recent digital maturity assessment study that was completed and how through the model of piloting and testing of digital innovative solutions the organisation has been able to improve its digital maturity.

Session 3 | Afternoon | 12:45 – 14:00

Moderated by: **Janelcy Alferes Castano,** *VITO, Belgium*

NATUREINSIGHT: EMPOWERING NbS DESIGN AND PLANNING WITH DATA AND ALGORITHMS

Alexander Nicholson, *Principal Consultant at Arup, United Kingdom*

Presentation summary: Arup and SCALGO have been working in collaboration to combine years of experience in designing NbS and state of the art data analysis algorithms to build a new web-based opportunity mapping and hydrological modelling software package, NatureInsight, that puts the design and planning of NbS in the hands of those seeking to implement schemes. This talk will present the technical development behind NatureInsight and parallel lightweight hydrological modelling software to demonstrate how NbS can be more readily assessed on schemes and business cases can be developed for the implementation.

A QUALITATIVE KNOWLEDGE-BASED METHOD FOR PLANNING THE RENEWAL WORKS OF WATER PIPES WITH UNRELIABLE OPERATIONAL DATA

Sattar Salehi, *Member of the executive board of IWA IRAN (National Water and Wastewater committee of Iran). National Water and Wastewater Engineering Company of Iran, Iran* and **Mohsen Shams**, *Kashan Water and Wastewater Company, Iran*

Presentation summary: This technical session introduces a qualitative knowledge-based method, which has been used to plan the renewal works of some Iranian networks comprising pipes with unreliable operational data. The results of this session will indicate that using the qualitative knowledge-based method proposed, it is possible to determine the effective criteria for renewal planning of the water pipes in the networks where the use of data-based methods is limited. In addition, it will be revealed that the plan for renewal works of pipes with imprecise numerical operational data can be improved by using the qualitative-based method, which has been implemented in 6 case studies of Iran.

EMPOWERING UTILITIES THROUGH DIGITAL METERING ADOPTION

Eva Martinez Diaz, *Head of Sustainability and Smart Systems at Isle Utilities, The Netherlands*

Presentation summary: The presentation will showcase Isle's research on digital solutions in utilities, focusing on two main areas:
1. The Digital Utility Maturity Assessment (DUMA) identifies the current digital maturity of utilities (from where a utility's digital stands today to where it wants to be) analysing gaps in people, processes, and technologies. DUMA provides global recommendations to help utilities achieve their digital goals, highlighting strengths and areas for improvement.
2. One of the areas that DUMA researches is customer service and the use of smart meters. Indeed, many water utilities have reduced non-revenue water significantly through smart meters, with countries like Australia, the USA, and the UK leading the way. The study that will be shown proposes a framework, in collaboration with Water Research Commission, to address water loss through smart metering. It aims to understand the key drivers and barriers specifically in South Africa to support a strategic approach to smart metering in the country.

Thursday 14 November

Session 4 | Morning | 9:30 – 10:45

Moderated by: **Eva Martinez,** *Isle Utilities, Spain*

TRANSFORMING CATCHMENT MONITORING WITH CMAAS®: LEVERAGING AI FOR EMERGING RIVER HEALTH REGULATIONS

Rob Passmore, *CEO & Co-founder, Additive Catchments, United Kingdom*

Presentation summary: This presentation delves into how Catchment Monitoring as a Service (CMaaS®) is revolutionising continuous water quality monitoring (CWQM) in response to the UK's forthcoming river health monitoring regulations, with a focus on leveraging IoT, modelling and artificial intelligence (AI). We'll provide a technical demonstration of CMaaS® – created by Additive Catchments, Siemens, AtkinsRéalis and Galliford Try – to showcase its end-to-end turnkey solution that integrates advanced IoT sensor networks, real-time data analytics, and AI-driven insights for risk management and decision-making. By highlighting case studies from our pilot with Anglian Water, we'll illustrate how CMaaS® employs AI algorithms for real-time data analysis, anomaly detection, and predictive

maintenance, achieving up to 30% cost savings while ensuring compliance with stringent regulatory requirements. As similar regulations are anticipated across Europe and other markets, attendees will gain valuable insights into overcoming technical challenges in deploying scalable, AI-enhanced CWQM solutions, and positioning their organisations for future regulatory readiness.

SMART ASSET MANAGEMENT USING AI

Pau Sanabras, *Water Business Lead at Samotics, The Netherlands*

Presentation summary: In the global water sector, reliability and energy efficiency often appear to be at odds. With challenges like aging infrastructure, an aging workforce, rising energy prices, and ater scarcity, enhancing one aspect might compromise another. For instance, optimising pumps to operate them near their best efficiency points (BEPs) could conflict with achieving desired flow rates during high demand periods. In this presentation, we'll explore how proactive asset management, supported by continuous condition monitoring, effectively addresses these challenges. By integrating real-time data analytics, utilities can simultaneously improve operational efficiency and reliability, demonstrating that these objectives can complement each other. Through practical case studies and expert insights, we'll show how modern condition monitoring systems enable data-driven decisions that increase asset lifetime, reduce failures, enhance energy efficiency, and lower operational costs.

Join us to discover how adopting a proactive approach can transform your asset management practices, steering them toward more resilient, sustainable, and efficient operations.

FINALLY IN CONTROL OF (HEAVY) PRECIPITATION: SENSOR NETWORK AND AI-BASED PRECIPITATION FORECAST

Alexander Buddrick, *Business Administration and Engineering at NIVUS GmbH, Germany*

Presentation summary: The use-oriented digitisation of water systems is limited above all by the lack of reliable spatial rainfall data. Without such rain data, for example, an essential input variable is missing for the (predictive) determination of inflow volumes, which are of particular importance for control tasks. NIVUS RAIN is a digital service that is able to make an important contribution here based on a swarm measurement network of precipitation sensors and hybrid AI-supported forecasting technology. With the near street-level forecast in the last 60 minutes, NIVUS RAIN enables effective alerting and hazard prevention by emergency services and provides fundamental support in improving flood protection. In addition to the technology, this presentation will also present the experiences from three pilot projects and discuss the possibilities for further use of the data.

Session 5 | Afternoon | 16:00 – 17:15

Moderated by: **Dries Storme,** *Delaware, Belgium*

FIBER OPTIC SENSING AS A PLATFORM FOR REAL-TIME PIPELINE MONITORING APPLICATIONS

Rick De Visscher, *DALI, Belgium*

Presentation summary: Through Fiber Optic Sensing, optical fibers can used to sense acoustic signals and temperature changes inside any pressurised pipeline, in real time and spatially accurate across entire networks. By analyzing and combining the acoustic and temperature signals, a wide range of monitoring applications have been and are being developed: Leak detection, illegal tapping detection, situational awareness around networks, steel-reinforcement breaks, remote asset control and data communication,.. with more to come.

InnoHub

Wednesday 13 November

Morning | 11:00 – 11:45

FAST OPERATIONAL DECISIONS WITH QATIUM

David Monterio, *Director of Customer Success at Qatium at Qatium, Canada*

Presentation summary: Qatium visualises water networks and connects intelligence for faster decision-making. We give utilities full visibility to run and optimise their networks in an open, digital environment. Whether managing a small-town network or overseeing a vast regional system, Qatium's user-friendly platform has customisable options and plans to fit unique needs.

INTEGRATED ASSET MANAGEMENT WITH DOUROECI'S PLATFORM

José Pedro Ferreira, *Consultant at DouroECI, Portugal*

Presentation summary: Based on an integrated vision of infrastructure asset management, from operations to strategic decision-making, and operating exclusively in the water sector, DouroECI today offers a variety of services and tools to water utilities. The services provided include hydraulic engineering projects, which encompass the development of hydraulic models for water supply and urban drainage networks, consulting services, providing technical assistance to water utilities (in various aspects), project management, and the development of technical studies and plans focused on water efficiency and inflow and infiltration (I&I) in sewer systems. The aim of this presentation is to present the software solutions offered by DouroECI: ION (asset management tool), OBI (data integration and reporting tool) and WIT (advanced analytics).

DALI PIPELINE MONITORING: ASSET MANAGEMENT OPTIMISATION WITH ACCURATE, REAL TIME INFORMATION PROVIDED BY FIBER OPTIC SENSING

Rick De Visscher, *DALI, Belgium*

Presentation summary: DALI is an innovative pipeline monitoring system that integrates three crucial services:

Leak and intrusion detection: DALI provides real-time detection of leaks and intrusions in pipelines carrying drinking water and other liquids. By doing so, it assists utility companies in reducing Non-Revenue Water (NRW) losses and improving the network's safety and resilience.

Asset management: Utilising Distributed Acoustic Sensing (DAS) technology, DALI offers precise 24/7 monitoring. This proactive alert system empowers asset managers to extend infrastructure longevity and improve maintenance planning.

Telecom & Smart Networks: DALI's monitoring requires only a single optical fiber, leaving other fibers available for remote control of network assets (such as valves and sensors). Additionally, it can transform a water pipeline into a fiber backbone in collaboration with telecom operators.

DAS (Distributed Acoustic Sensing) systems are optoelectronic instruments that transform a fiber optic cable into a string of thousands of highly sensitive acoustic sensors. Remarkably, a single DAS device can cover up to 80 kilometers due to its optical measurement nature.

DALI is installed seamlessly without disrupting pipeline service. Specifically designed tooling allows for flexible and hygienic fiber cable deployment, enabling easy insertion and removal even around valves. Safe for drinking water applications, DALI's custom fittings ensure a waterproof seal at access points.

Afternoon | 15:00 – 15:45

HOW DIGITALISATION IN WATER TREATMENT CAN SAVE TIME AND MONEY

Marcus Ripsam, *Senior Head of Department Digital Business Development at GEMÜ, Germany*

Presentation summary: The presentation will address the Digital Product Passport (DPP) which allows users to access all product information easily, streamline spare part ordering, and improve customer service response times. The European Commission plans to mandate DPPs for various industries by 2030, which will help operators manage assets more efficiently. Smart products with intelligent automation modules and app control enable data collection and monitoring, supporting a range of water treatment applications. When combined with the DPP, these products offer significant advantages such as easier asset management, reduced manual processes, and continuous access to documentation.

WHY IS AI REVOLUTIONISING WATER MANAGEMENT?

Jorge del Valle, *MonoM, Spain*

Presentation summary: AI, and its evolution toward Generative AI, is poised to revolutionise the way data is analyzed and valuable information is generated. Water digitalisation is no exception to this trend, and data management technology platforms are enriched with AI to generate value for operators. MonoM will present how it is using AI and Machine Learning to solve use cases in the water cycle, from a holistic perspective that covers virtually all the analytical needs of operators, and how Generative AI enhances recommendation processes, positively impacting operators' return on investment

SUEZ DIGITAL TWINS: ACTIONABLE INSIGHTS CONNECTING LONG-TERM STRATEGY WITH DAILY OPERATIONS TO DRIVE REAL-WORLD DECISIONS

Melissa Parot *(Suez, France)* and **Guillaume Rondot** *(Optimatics, United Kingdom)*

Presentation summary: By using GIS and hydraulic models, live data and other data sources, water utilities are empowered to make informed strategic and operational decisions such as targeting the best mains for replacement in clean water network, investing in a combined sewer system to reduce floodings and CSOs or monitor their networks and detect leaks

in real time. But how to ensure that these decisions are optimal considering a range of competing objective and constraints such as cost, level of performance, risk, etc? Let's explore how Suez help water utilities in addressing these challenges through its dedicated suite of software solutions: Optimiser, Asset Advanced, and Aquadvanced Water Networks.

Thursday 14 November

Morning | 11:00 – 11:45

OPPORTUNITIES OF ADVANCED MACHINE LEARNING IN WATER-INTENSIVE PROCESSES

Markus Jääskeläinen, *SimAnalytics / Kemira, Finland*

Presentation summary: As the capacity to collect vast amounts of data continues to expand, so does the demand for clever and effective data utilisation. This presentation delves into powerful applications of data-driven models to monitor and optimise water-intensive processes. Soft sensors transform raw process data into continuous, insightful measurements for variables that are otherwise costly, time-consuming, or unmeasurable through physical instruments or traditional statistical methods. These innovations enable more efficient and accurate management of critical resources.

A TECHNOLOGICAL PLATFORM FOR ADVANCED WATER MANAGEMENT

Francisco Castro and **Natalia Torres**,
Navia Solution, Spain

Presentation summary: Showcasing NAVIA, the technological platform that combines real time data aggregation and collaborative operations, providing a widespread solution for the management of water utilities through the whole urban water cycle.

AGILE NETWORK CONTROL TO INCREASE THE RESILIENCE OF CRITICAL WATER SUPPLY INFRASTRUCTURE

Clarisse Umugwaneza, *Wasserversorgung Rheinhessen-Pfalz GmbH, Germany*

Presentation summary: The presentation introduces an innovative research project aimed at enhancing water supply resilience through advanced digital solutions. Addressing critical challenges like climate change, declining water resources, and infrastructure vulnerabilities, the project leverages a Digital Twin, AI-based forecasting, real-time IoT data infrastructure, and dynamic network control to empower water utilities. Attendees will learn how its decision support system streamlines network management by enabling real-time network adjustments within the distribution system. Pilot results will illustrate increased system agility, optimised resource utilisation, and water shortage prevention. The presentation will also outline opportunities for scaling these solutions to other regions facing similar challenges.

DIGITAL METERING: FROM IOT DATA TO VALUE FOR THE WATER CYCLE

Constança Correia, *Veolia Water, Spain*

Presentation summary: In this presentation, we will explore how advanced data analytics is revolutionising water and wastewater management, with a special focus on our Digital Metering platform. This solution addresses key environmental challenges by enabling real-time monitoring, leak detection, and waste reduction, providing insights that improve the efficiency of water networks and asset management. We will show how these insights help make smarter investment decisions, improve maintenance, optimise energy use, and support the management of groundwater resources and climate resilience. Ultimately, Digital Metering is helping to build a more sustainable and resilient approach to water resource management.

Afternoon | 15:00 – 15:30

REDUCE WATER LOSS WITH AQS'S HIGH-PERFORMANCE LEAK MANAGEMENT SOLUTIONS AND HUMAN-AS-A-SERVICE OFFERING

Santi Singla, *Hidroglobal/ Matholding (Exclusive Partner for AQS by Aliaxis Technology in Spain), Spain*

Presentation summary: AQS Leak Management technology provides an advanced solution for continuous daily monitoring of your water network. Strategically installed on fire hydrants and valves along the pipeline, these sensors offer high accuracy in suspected leak location, with a precision of ±1 m. AQS sensors are compatible with various pipe materials and diameters, ensuring versatile applications across the water network. Key dirretentiations are: 1. Advanced Acoustic Monitoring, 2. Human-as-a-Service and In-Depth Analysis Integration, 3. Environmental Impact and 4. Long-Term Value and Cost-Effectiveness.

DIGITAL PLATFORM FOR DRIVING CLIMATE RESILIENT WATER SECURITY

Nikhilesh Kumar, *CEO and Co-Founder at Vassar Labs, India*

Presentation summary: Vassar Labs is an MIT alumnus-founded climate tech company- that has developed aquaWISE, a cloud-based platform that empowers key policymakers, utilities and industries with advanced tools for real-time monitoring and predictive water management. By integrating IoT, AI/ML, satellite data, and digital twins, aquaWISE optimises reservoir operations, water distribution, reduces non-revenue water, and enhances operational efficiency with ready decision support. The platform is ideal for addressing gaps in water management, climate change and related risks. Further, ensuring regulatory compliance, water security and supporting sustainability goals. aquaWISE delivers cost benefits by improving asset management, reducing operational expenses, and extending infrastructure life— making it a competitive solution in the rapidly evolving digital water market.

Interactive Sessions & Live Demonstrations

Wednesday 13 November

Interactive |
Morning | 11:45 – 12:45

Moderated by: **Zach White,** *GSMA, United Kingdom*

ADOPTION OF DIGITAL TECHNOLOGIES IN EMERGING ECONOMIES

Panellists:
Mogan Padayachee, *Rand Water, South Africa*
Sandile Mbatha, *Cooperative Governance and Traditional Affairs (CoGTA) Ministry, South Africa*

Live |
Afternoon | 16:15 – 17:15

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

COMBINING REAL-TIME CONTROL WITH PREDICTIVE INSIGHTS: HOW AI OPTIMISE WASTEWATER TREATMENT

Dr Erika Varga, *R&D Project Manager* and
Malo Rotureau, *Sales Engineer for Spain, at Purecontrol, France*

Presentation summary: Join us for a live demonstration of Purecontrol's innovative platform, PureConnect, showcasing its real-time AI-powered predictive control solutions designed to optimise energy or chemical usage and enhance water treatment processes. Through real examples from WWTP using Purecontrol, we will explore how our self- learning platform predicts critical parameters and optimises phosphorus removal dosing strategies, or the planning of aeration cycles. Discover how Purecontrol's technology offers real-time visibility, predictive insights, and ultimately manages to reduce energy costs, chemical injection, and provide unparalleled transparency in operations.

FROM DATA TO DECISIONS: A FULLY INTEGRATED DIGITAL WATER PLATFORM

Pedro Vieira and **Francisco Castro**,
Navia Solution, Spain

Presentation summary: Imagine that you have a unique tech solution, customisable and agnostic, where you can integrate all the data from SCADA, GIS, LIMS, all the sensors and IoT in one single place, controlled by you, in real time. Imagine that at the same time, you can gather all the operations in a seamless interface that people in the field use and like. And imagine that the platform enables efficient operations and intelligent informed decision-making.
Your vision is our platform, this is NAVIA. In the session we'll show some incredible live examples.

Thursday 14 November

Live |
Morning | 11:45 – 12:45

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

ENHANCE YOUR WATER NETWORK MANAGEMENT WITH THE AQS-SYS PLATFORM: LEVERAGING ADVANCED ANALYTICS FOR SMARTER, MORE EFFICIENT PERFORMANCE

Santi Singla, *Hidroglobal/ Matholding (Exclusive Partner for AQS by Aliaxis Technology in Spain), Spain*

Presentation summary: Designed for comprehensive monitoring, AQS-SYS Platform automates the detection and analysis of leaks, making it easier to proactively safeguard your water network infrastructure. With its powerful features and user-friendly interface, this system enhances water savings by improving leak detection performance by up to 50% and allows water utilities to repair leaks up to five times faster than traditional methods, ensuring quicker resolutions and minimising water loss for a more resilient and efficient network.

DIGITAL WATER PLATFORM FOR WATER SECURITY

Nikhilesh Kumar, *CEO and Co-Founder at Vassar Labs, India*

Presentation summary: Experience the application of Digital Water Management developed by Vassar Labs. One Stop Solution powered by aquaWISE that aggregates data from IoT sensors, satellite data, AI/ML algorithms, GenAI, scientific modeling etc. for monitoring, prediction, planning and management of water in the supply and demand cycle. This ensures sustainable utilisation of water resources and maximises water use efficiency. The platform combines science and data to support decisions on the entire cycle of water. These include large-scale river basins, reservoirs, dams, canal systems, lakes and groundwater. Further, aquaWISE does real-time monitoring of water utilities, urban water supply and distribution networks, water accounting & allocation, sectoral water use, analytics on weather patterns, flood early warnings and water-related risk assessments.

Interactive |
Afternoon | 16:15 – 17:15

Moderated by: **Enrique Cabrera,** *University of Valencia, Spain*

LET'S TALK CYBERSECURITY!

Panellists:
Bruno Nguyen, *W-Smart France*
Sérgio Trindade, *Águas do Tejo Atlântico | Grupo Águas de Portugal, Portugal*

Social Events

TUESDAY 12 NOVEMBER | 18:20
WELCOME LIGHT DINNER

On Tuesday, 12 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 band performance.

Sponsored by aqualia

13 NOVEMBER | 18:30
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.*

14 NOVEMBER | 20:00
GALA DINNER

The IWA Digital Water Summit is proud to offer an exclusive dining experience at the Torre Iberdrola, on the 29th floor with an amazing view. Join us for an enchanting evening, featuring a lavish dinner, welcome cocktails and an afterparty led by a local DJ.

Sponsored by acciona

Technical Visits

TUESDAY 12 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 12 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 12 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 12 November.
Please make sure you have registered by 9:30 to take part on the Technical Tours.
The buses depart at 10:00.

inspiring change
www.iwa-network.org

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Registered Charity in England No.1076690

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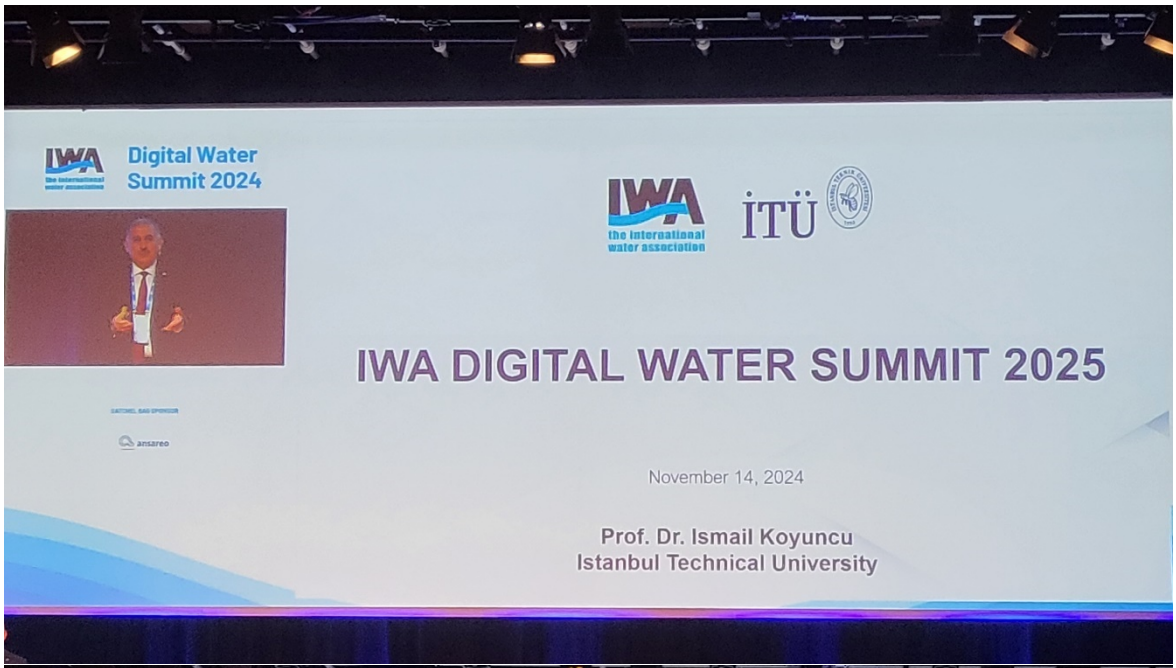
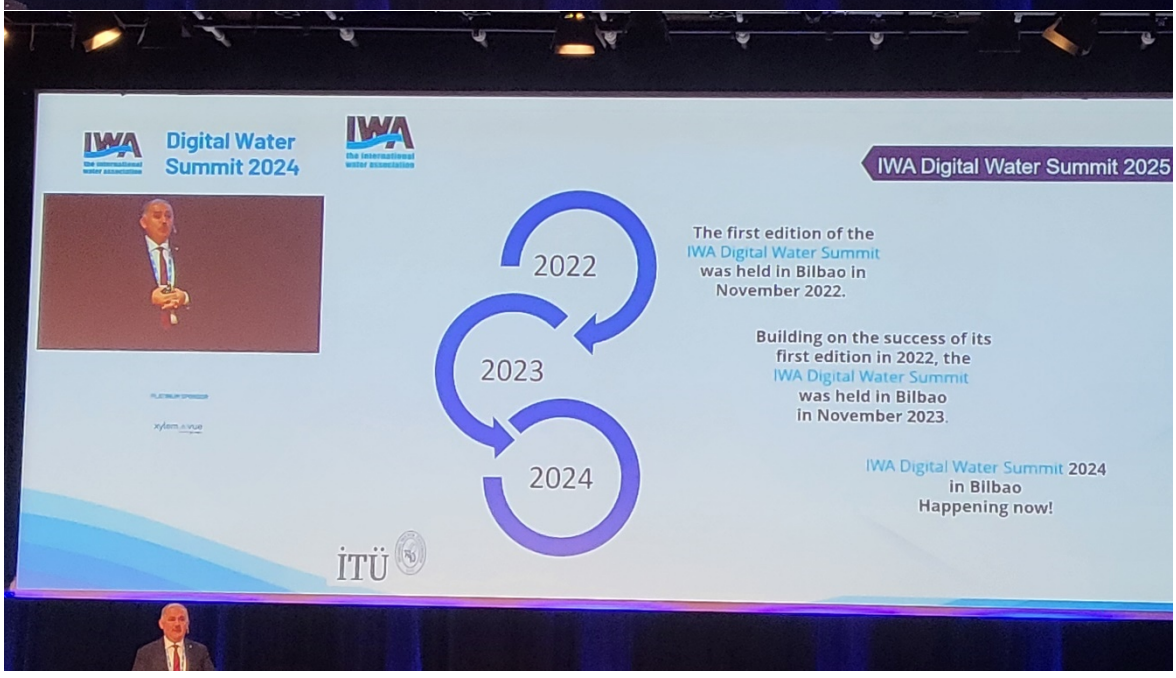
附錄 2、伊斯坦堡舉辦 2025 IWA Digital Water Summit 簡報






Digital Water Summit 2024
IWA Digital Water Summit 2025
The IWA Digital Water Summit 2025 will be held in Istanbul, outside of Bilbao for the first time!
İTÜ
Digital Water Summit 2024
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Digital Water Summit 2024
IWA Digital Water Summit 2025
Imperial Capital
for almost 1600 years during Roman, Byzantine and Ottoman empires
Transcontinental City
Europe & Asia across the Bosporus Strait
Tourist Attraction Points
Historical & natural places, museums, Bosporus, and the world-famous Turkish cuisine
Several Big International Events
World Water Forum & IWA, UN, UNESCO, and NATO summits
İTÜ
Digital Water Summit 2024
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The STORY of WATER in ISTANBUL
Istanbul is a city that is well suited to water, with her fountains, shadirvans and sebils on the one hand, and the seas that surrounded her on the other.
Istanbul has always respectful towards water, and the ancient residents have decorated every corner of the city with water structures in competition to offer water to people and animals.
The known history of Istanbul dates back to 658 BC.
İTÜ


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The STORY of WATER in ISTANBUL
The story of water in Istanbul can studied in three separate periods according to the documented sources and to what we know of the history of this settlement from when it was first established:
1- The Roman and Byzantine Period
2- The Ottoman Period
3- The Turkish Republican Period
İTÜ
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The STORY of WATER in ISTANBUL-The Roman and Byzantine Period
The Roman and Byzantine Period
Byzantium was founded on the Historical Peninsula; the need for water at first was met here by wells, small water sources and cisterns.
In 117 to 138 AD the emperor Hadrian went down in history as the first emperor to built conduit system to bring water from afar.
This made living attractive in Istanbul and lead to rapid increase in population of the city
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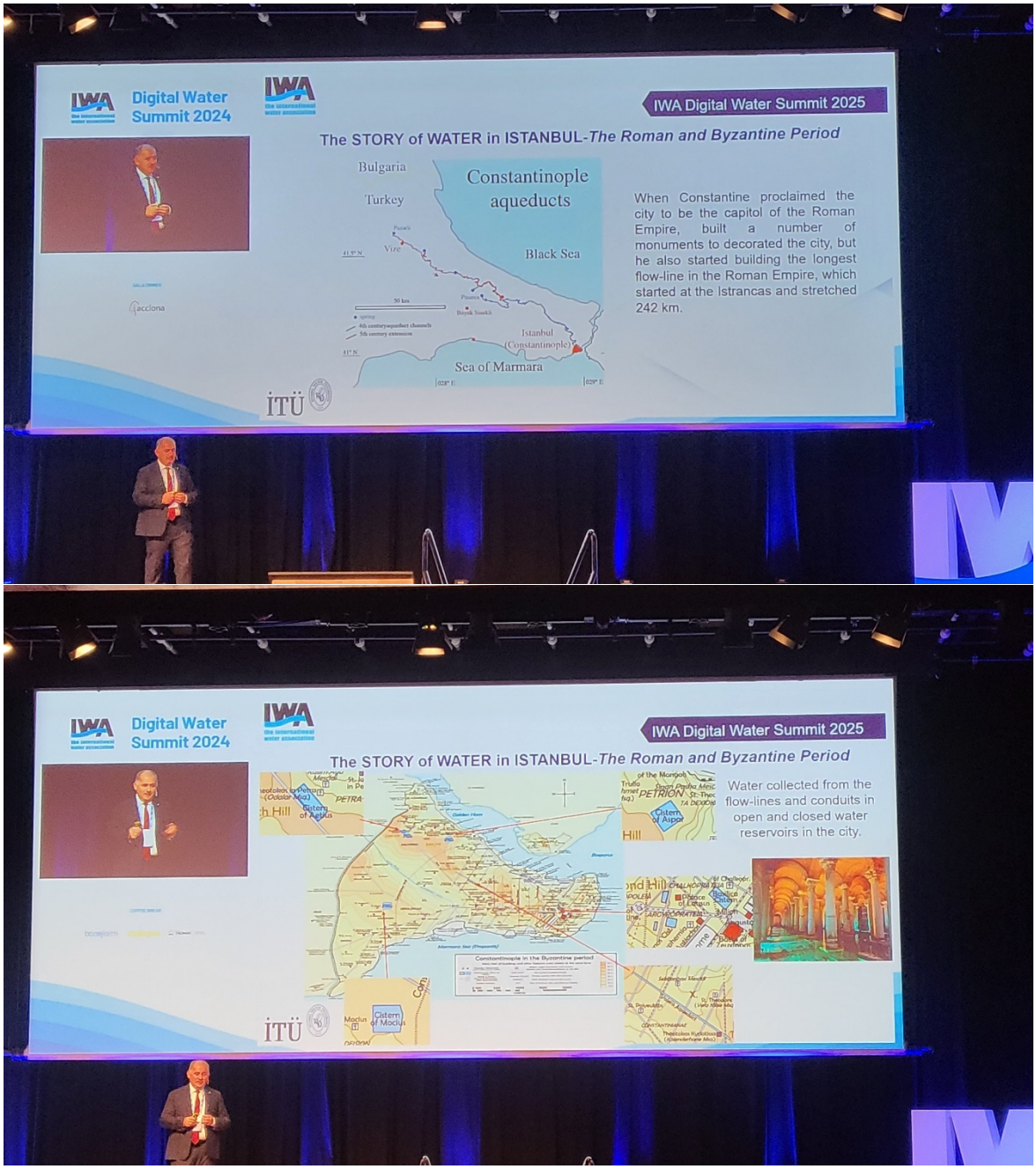
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The STORY of WATER in ISTANBUL-The Roman and Byzantine Period
Bulgaria
Turkey
Constantinople aqueducts
Black Sea
Sea of Marmara
Istanbul (Constantinople)
When Constantine proclaimed the city to be the capitol of the Roman Empire, built a number of monuments to decorated the city, but he also started building the longest flow-line in the Roman Empire, which started at the Istrancas and stretched 242 km.
İTÜ
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The STORY of WATER in ISTANBUL-The Roman and Byzantine Period
Water collected from the flow-lines and conduits in open and closed water reservoirs in the city.
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The STORY of WATER in ISTANBUL-The Roman and Byzantine Period
Mazul Aqueduct-110 m long
(Three level of terracotta pipes)
Kara Aqueduct
(7 arches on the aquaduct)
Bozdoğan (Valens) Aqueduct-971 m long
(86 arches on the aquaduct)
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The STORY of WATER in ISTANBUL-The Ottoman Period
After the conquest of Constantinapole in 1453 the population was 50.000.
Two of the 16 water canals that were collected as Halkalı, Fatih and Turunçluk were built in this period.
Kırkçeşme fountains were made on the Golden Horn side.
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The STORY of WATER in ISTANBUL - Turkish Republican Period
KARADENİZ
MARMARA DENİZİ
KOCAELİ
İTÜ
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The STORY of WATER in ISTANBUL - Turkish Republican Period
An image from installation...
KOCAELİ
İTÜ


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The STORY of WATER in ISTANBUL - Turkish Republican Period
Water transport from Istranca to Istanbul
MARMARA DENİZİ
İTÜ
Digital Water Summit 2024
IWA Digital Water Summit 2025
• Potential use and wide application of Digital Tools in Türkiye Water Sector
• Istanbul Technical University will host the IWA Digital Water Summit
• One of the oldest technical universities of the world (1773)
• Many professionals around the world in Digital Water Sector → A great chance to meet Turkish entrepreneurs and Professionals of the World.
• An Excellent Place → in the heart of the globe
Motivation of the organizers
• Celebrated the 250th year in 2023
• Having one of the leading departments of Türkiye in Environmental Engineering, Computer Engineering, Cybersecurity Engineering and Artificial Intelligent and Data Engineering
IWA Digital Water Summit Istanbul
Motivation for attendees
Technical tours for different full-scale applications of water sector
Networking activities with professionals and academicians
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Digital Water Summit 2024
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PAST IWA SYMPOSIUMS/CONFERENCES HELD IN TURKEY
International Symposium on Waste Management Problems in Agro-Industries
Specialized Conference on Marine Disposal Systems
The 5th Specialised Conference on Small Water and Wastewater Treatment Systems
IWA Specialist Conference On Facing Sludge Diversities: Challenges, Risks, And Opportunities
8th IWA International Symposium on Waste Management Problems in Agro Industries
1989
1992
1994
1998
2002
2006
2007
2010
2011
2012
2nd International Symposium on Waste Management Problems in Agro-Industries
4th International Symposium on Waste Management Problems in Agro-Industries
10th International Specialised Conference on Diffuse Pollution and Sustainable Basin Management
IWA Regional Conference on Membrane Technology and Water Reuse
IWA Specialised Conference on Water and Wastewater Technologies in Ancient Civilizations
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VENUE:
HALİÇ CONGRESS CENTER, ISTANBUL
The Only Congress Center on the Shores of Istanbul !
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Conferences
Venue Overview
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Getting to HALİÇ CONGRESS CENTER
Bus
Metrobus
Taxicab
Shared Taxi
Ferry
Route #
Route Name
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Digital Water Summit 2024
IWA Digital Water Summit 2025
ACCOMMODATION
Most of the Istanbul hotels, which have a total capacity of 100,000 beds, have been built or renovated in the past decade.
WINDSOR
MÖVENPICK
RAMADA
Hilton Garden Inn
There are a number of hotels that are currently being built around the Center, which is 10 minutes away by car from the hotel regions of Taksim, Sultanahmet and Aksaray.
İTÜ


Digital Water
Summit 2024
IWA Digital Water Summit 2025
ACCOMMODATION
İTÜ


Digital Water
Summit 2024
IWA Digital Water Summit 2025
GALA DINNER
ÇIRAĞAN PALACE KEMPINSKI
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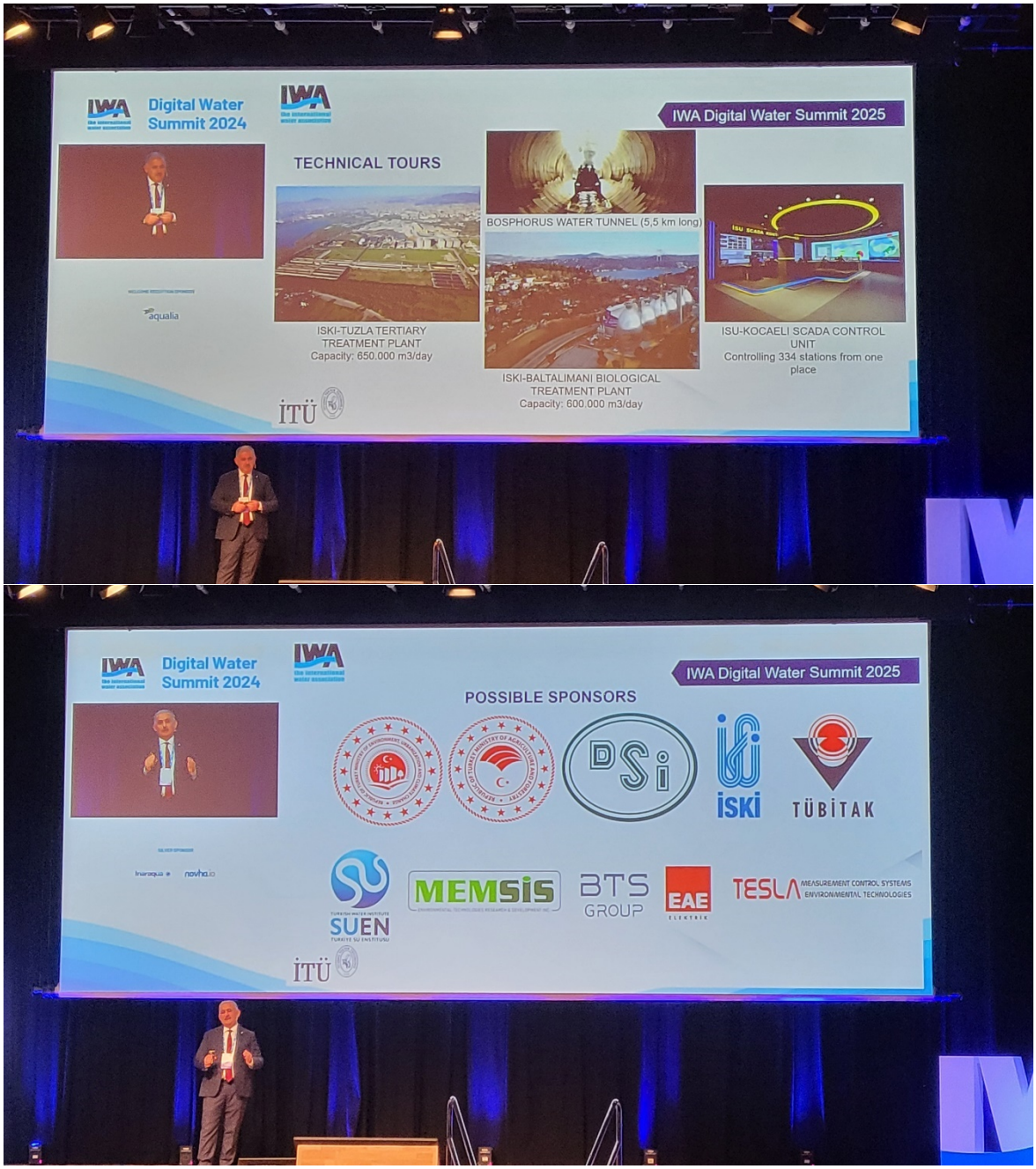
Digital Water Summit 2024
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TECHNICAL TOURS
BOSPHORUS WATER TUNNEL (5,5 km long)
ISKI-TUZLA TERTIARY TREATMENT PLANT
Capacity: 650.000 m3/day
ISU-KOCAELI SCADA CONTROL UNIT
Controlling 334 stations from one place
ISKI-BALTALIMANI BIOLOGICAL TREATMENT PLANT
Capacity: 600.000 m3/day
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DSi
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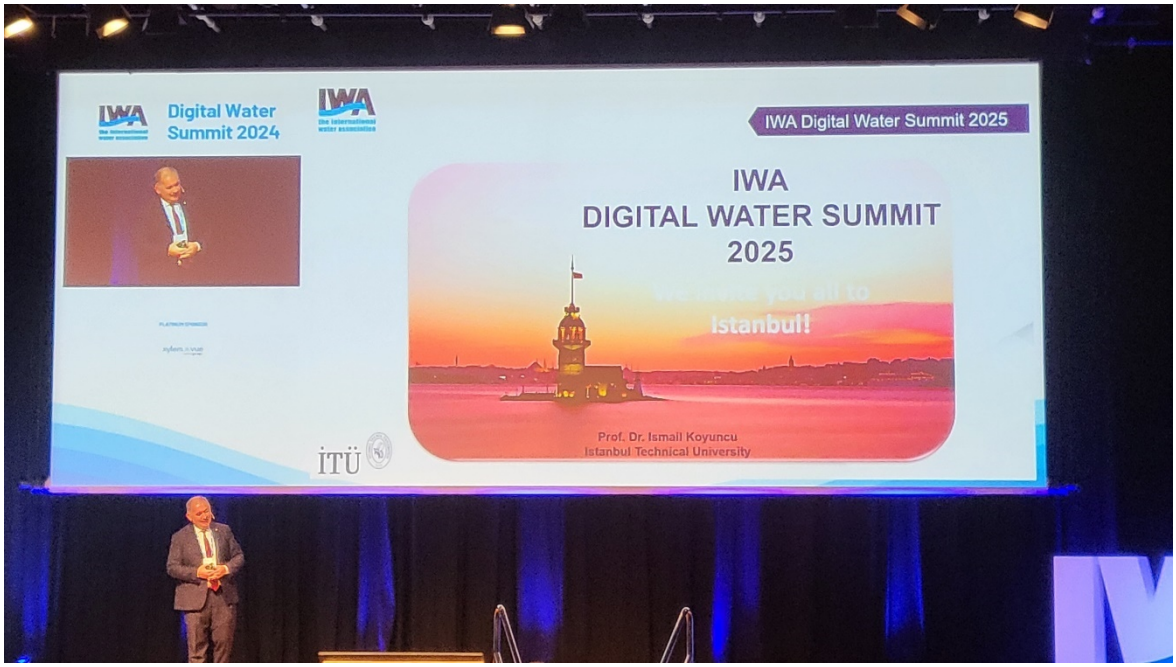
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