WaterLoss Asia

19-21 Nov 2024

Conference | Workshop | Exhibition | Networking

Exhibition & Conference:
19-20 Nov 2024

Workshop:
21 Nov 2024

Royale Chulan Hotel
Kuala Lumpur
www.waterlossasia.com

Asian Perspectives on Water Loss Management & Carbon Reduction

Programme Book

Organised by

PROTEMP Professional Trade Exhibitions & Meeting Planners | 40th Anniversary

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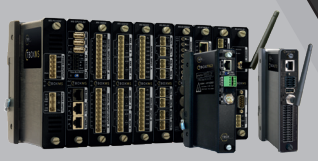
OVARRO
CONNECTING TECHNOLOGIES

Monitoring and Control SOLUTIONS

Connecting Technologies to enable millions of people to have access to safe drinking water. We deliver end to end solutions for the monitoring and control of critical assets to reduce water network leakage.

TBOX
AN OVARRO TECHNOLOGY



RTU with OT, IT and IoT protocols, ideal for digital transformation and remote asset management.

KINGFISHER
AN OVARRO TECHNOLOGY

Rugged and resilient remote process controller for monitoring and control of critical infrastructure.

DATAWATT
AN OVARRO TECHNOLOGY

STREAMWEBSCADA

Cloud based SCADA for monitoring distributed assets from the control room and from the field.

XiLOG
AN OVARRO TECHNOLOGY

4G capable flow and pressure logger with secure HTTPS communications, a graphical historian and an API for distributing data to analytics platforms.

ENIGMAREACH

NEW

The latest in Active Leak Detection with automation tools for immediate NRW reduction.

ENIGMA
AN OVARRO TECHNOLOGY

Family of correlating noise loggers for active and fixed network leak detection solutions.

EUREKA
AN OVARRO TECHNOLOGY

Real time correlating loggers for rapid follow up and leak verification.

LEAKINSIGHT

Suite of tools for planning logger deployment, tracking logger performance and automated analytics to determine precise leak locations.

CONTACT US:

Telephone +603 5525 2895
E-mail sales@ovarro.com
X www.x.com/ovarro_ltd
LinkedIn www.linkedin.com/company/ovarro

www.ovarro.com

Come and see us at

WaterLoss Asia

Exhibition & Conference

Stand 17 on **19-20th November**

HWM Global

Innovations that keep
critical resources flowing.

- Network Leak Detection
- Pressure Control
- Data Logging
- Trunk Main Leak Detection
- Pressure Transient Monitoring
- Customer Side Leakage Surveys
- Multi Utility Telemetry Monitoring
- Telemetry Acoustic Logging

WaterLossAsia

Come visit us at booth 3

hwmglobal.com

WaterLossAsia

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Ranhill

RANHILL UTILITIES BERHAD
Registration No. 201401014973 (1091059-K)

Bangunan Ranhill SAJ
Jalan Garuda, Larkin, 80350 Johor Bahru
Johor Darul Takzim, Malaysia
Tel : 07 225 5300
Fax : 07 225 5310
Email : ir.info@ranhill.com.my

www.ranhill.com.my

ENRICHING LIVES THROUGH SUSTAINABLE SOLUTIONS

Ranhill aspires to lift the quality of life by being at the forefront of nation-building through sustainable environment and energy solutions, whilst using innovative and clean technology

FTSE4Good — Ranhill is a constituent of FTSE4Good Bursa Malaysia index since 2019

UN Global Compact — Participant of United Nation Global Compact (UNGC) since 2008

ESG Awards 2022 — The Edge ESG Award 2022 (Gold) Utilities Category

ESG Awards 2023 — The Edge ESG Award 2023 (Gold) Utilities Category

YOKOGAWA
Co-innovating tomorrow™

WATER

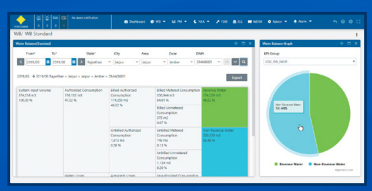
MAXIMIZING WATER RESOURCES AND PROFITABILITY WITH SMART LEAK MANAGEMENT

With a focus on reducing water leaks and maximizing the efficient use of limited water resources, our innovative solution offers a holistic approach to sustainable water management and enhancing the operation and maintenance of the water network. Speak to our experts and discover how you can easily implement our solution to improve the efficiency and profitability of your water network, contributing to a greener, more resource-efficient future.

1 Analysis

Water Balance Function

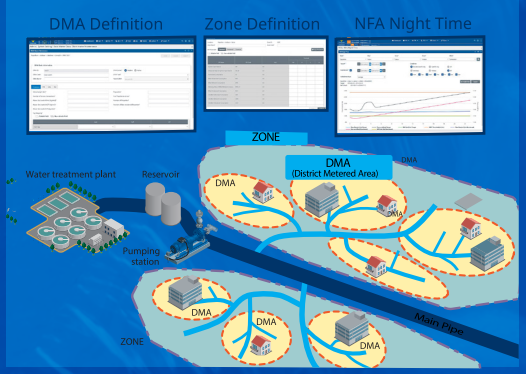
Easy grasp of the water balance of the water distribution area



2 Detection

Night Flow Analysis Function

Early detection of water leakage areas through changes to water volumes that take place at night



3 Proactive Action

Pressure Management Function

Reduction of the water leakage volume by optimising water distribution pressure

www.yokogawa.com

PLATINUM SPONSORS

Cosmos Instruments Sdn Bhd

COSMOS INSTRUMENTS: YOUR TRUSTED PARTNER IN ADVANCED AUTOMATION, PROCESS CONTROL AND DIGITALIZATION OF INTEGRATED WATER MANAGEMENT AND NRW SOLUTIONS PROVIDER.

With over 20 years of experience, Cosmos Instruments is a reliable partner in water and automation solutions across Malaysia and the region, delivering efficient, high-quality control systems to meet diverse industry needs.

As a certified Siemens Solution Partner in the Digital Factory and Process Industries and Drives Division, we provide cutting-edge products, including Siemens electromagnetic flowmeters and instrumentation. Siemens SITRANS electromagnetic flowmeters are known for their accuracy and durability, ideal for both general and leak-sensitive applications in water networks. Siemens' SIWA LeakFinder, a cloud-based tool leveraging AI, identifies and localizes leaks in real time, minimizing non-revenue water.

Our partnership with Lacroix further strengthens our offerings. Lacroix Data Loggers, such as the SOFREL LS and LT models, facilitate remote monitoring and leak detection in water systems. Additionally, the SOFREL Ydrix RTU offers advanced 4G communication and cybersecurity for effective water network management. These Lacroix solutions integrate seamlessly into smart water networks, ensuring precise control and monitoring.

With additional partnerships, including HEDA, IFM, TackGPS, and Axioma, Cosmos Instruments provides comprehensive solutions that improve operational efficiency and support sustainable water management and NRW solution. From system design to commissioning, Cosmos Instruments is committed to delivering innovative, reliable solutions tailored to client needs.

Gutermann AG

Gutermann is a global technology leader and innovator in intelligent water loss management products and solutions. The product offering covers the full range of conventional acoustic leak detection technology, from smart handheld instruments to fully automatic, permanently installed correlating network monitoring systems based on IoT communication, enabling utilities to pinpoint leaks with the highest accuracy. Established in 1948 and still privately held, Gutermann is headquartered in Zug/Switzerland, with R&D and manufacturing facilities in Germany, and own sales teams based in France, UK, USA and Australia as well as a comprehensive distribution network around the world.

PLATINUM SPONSORS

HWM Global

Since 1979, HWM Global has made detection our mission, driving us to constantly, innovate and manufacture products built to perform above and below the surface. Our innovations help simplify the critical job of monitoring water, wastewater, and energy infrastructure to safeguard the reliable flow of our most valuable resources.

Our products and innovations aren't the kind everyone notices and talks about, but the job they do is critical to everyday life, monitoring utility networks around the world, from the United States to Australia to the UK. A network of reliable products designed to perform in extreme environments, working seamlessly to alert and inform field crews, guiding them with pinpoint accuracy to intervene in the performance of critical infrastructure, preventing disruption and pollution of our precious resources.

Innovation is in our products. Trusted, accurate, and reliable technology backed by a commitment to unmatched quality and service that keeps critical resources flowing every day.

Ovarro Sdn Bhd

At Ovarro, we are committed to ensuring that everyone has access to clean water. Our innovative technology supports water authorities worldwide in addressing the critical challenges of water management and climate change. By enabling precise data collection and enhancing situational awareness, we deliver trusted insights that drive informed business decisions.

Our solutions help optimise operations, reduce leakage, and minimise environmental impact, all while supporting organisations in controlling costs and extending the life of their assets. Through close collaboration with our partners, we champion sustainable practices that benefit industries and communities alike. Together, we are shaping a cleaner, more sustainable future for water management.

Discover how Ovarro's advanced technologies—from leak detection to flow metering—can enhance your water and wastewater networks.

PLATINUM SPONSORS

Ranhill Utilities Berhad

SUSTAINING GROWTH MOMENTUM

Founded in 1973 as an engineering consulting company, Ranhill Utilities Berhad today owns and operates assets in the environment and energy sectors. We are aspiring to lift the quality of life by being in the forefront of nation building through sustainable environment and power solutions using innovative and clean technology.

With proven capabilities as a leading water operator in Johor, Ranhill's presence in the environment sector also extends to waste water management in Thailand and China, while in the energy sector, it is the largest Independent Power Producer (IPP) in Sabah.

Driven by sustainability- oriented strategies and its circular economy model, Ranhill is resiliently meeting challenges and taping opportunities in both sectors.

Ranhill aspires to meet the needs for an enhanced quality of life and a cleaner planet through innovation. Hence, the focus on the environment is driven by a motivation to be a force for good, to safeguard the future and to play a meaningful role in ensuring a liveable environment, while delivering a positive impact to society.

Water Systems Optimisation (WSO)

Waterframe Limited, established in 2005 through the acquisition of the international business operations of Bristol Water, has since become a trusted partner for Non-Revenue Water (NRW) reduction projects and technical assistance worldwide. Rebranded as WSO (Water Systems Optimisation), our global brand is renowned for delivering top-tier NRW expertise in diverse markets.

Our highly skilled team brings a wealth of industry experience, committed to providing comprehensive services tailored to meet our clients' needs. We proudly deploy NRWManager, our cutting-edge SaaS solution, for public water utilities across Southeast Asia and the USA, helping them achieve their economic loss reduction targets effectively.

Collaborating with local consultants and contractors, we foster NRW reduction capacity in regions we serve, with many of our trainees advancing to leadership roles within the water industry.

Reach out today to discover how our expertise can support your water management goals.

PLATINUM SPONSORS

Yokogawa Engineering Asia

With over 100 years of expertise in automation and technology, Yokogawa empowers global customers with advanced solutions in measurement, control, and information across diverse industries, including energy, water, chemicals, materials, pharmaceuticals, and food.

Recognising the vital role of water in sustaining life, ecosystems, and economies, Yokogawa is dedicated to transforming the status quo. Our multifaceted approach to water sustainability emphasises optimising water usage, minimising waste, and safeguarding water quality through innovative technologies and collaborative partnerships aimed at advancing Sustainable Development Goals and environmental objectives.

Yokogawa continually seeks to collaborate with like-minded partners, governmental bodies, and communities to drive collective action toward a sustainable water future and supporting our customers in Southeast Asia to ensure access to clean water for all.

Founded in Tokyo in 1915, Yokogawa continues to work toward a sustainable society through its 17,000+ employees in a global network of 126 companies spanning 60 countries.

GOLD SPONSORS

AFC Valves Malaysia Sdn Bhd

AFC Valves Malaysia Sdn Bhd, as part of AFC's global network, leads in innovative valve solutions across Southeast Asia. Strategically based in Shah Alam, Selangor, AFC Valves Malaysia serves as AFC's regional hub, combining manufacturing, R&D, logistics, and customer care to meet the diverse needs of clients in Malaysia, Singapore, Indonesia, Brunei, and Vietnam. The facility boasts a state-of-the-art assembly line managed by skilled engineers using advanced CAD technology, ensuring top-quality production. An in-house reliability testing lab upholds high standards through consistent product evaluation. The company's expansive warehouse offers a ready supply of valves, components, and parts to meet urgent demands. Customer support is at the core, with a dedicated care center for inquiries, and a technical advisory team offering customized valve solutions. Additionally, a specialized workshop provides repair and refurbishment services, reaffirming AFC Valves Malaysia's commitment to excellence and customer satisfaction.

GOLD SPONSORS

BIMAGE Consulting (M) Sdn Bhd

BIMAGE Consulting drives digital transformation and IR4.0 in the steel and construction sectors, offering specialized BIM (Building Information Modeling) services across diverse industries, including Smart Cities, Healthcare, and Infrastructure. Partnering with architects and designers, BIMAGE manages project workflows by creating BIM Execution Plans, performing clash detection, advising on BIM software, and producing documentation, enabling clients to focus on design and project management.

For corporate clients, BIMAGE provides strategic BIM/VDC (Virtual Design and Construction) direction, conducting project assessments, establishing BIM standards, and aligning tender documents with project requirements. With over eight years of expertise, BIMAGE's BIM modeling services convert 2D designs into 3D models, assist in constructability reviews, and produce as-built drawings. Additional offerings, like GIS Solution, 4D construction sequencing and site logistics modeling, support every stage from design to project completion. BIMAGE ensures efficient, precise solutions, enhancing productivity and quality across all project phases.

Crowder Consulting

Crowder Consulting have been at the leading edge of developing innovative solutions for water network management for over 30 years. Our focus is the support of our UK and International water operator clients with advanced solutions and high-quality services, for their water network management, leakage and NRW reduction initiatives by offering:

- **Netbase & Digital Solutions:** industry-leading solutions supporting our clients to monitor, manage and report on their networks efficiently.
- **Consultancy Services:** innovative and progressive services for the management, monitoring and improvement of water networks from source to tap.
- **Data Science Services:** a key partner to our Clients on their journey towards efficient data management and network intelligence.
- **Field & Leakage Services:** managing critical field tests; delivering high accuracy results through multiskilled teams with advanced knowledge of the latest technology & equipment.
- **Training Services:** providing a wide range of training including Production Planning, Water Industry, Leakage Detection, Netbase, and much more.

GOLD SPONSORS

Cubiq Meters Sdn Bhd

Cubiq Meters is a leading provider of smart water management solutions. We empower water utilities to optimize operations, reduce water loss, and enhance customer service.

Our cutting-edge ultrasonic smart water meters offer precise measurement, remote monitoring, and advanced data analytics. Coupled with our robust field service management system and data concentrator units, we provide a comprehensive solution for efficient water distribution and consumption management.

We are committed to helping our clients achieve a sustainable future through innovative technologies and expert support. By leveraging our expertise in migration strategy, implementation, and NRW management, we deliver tailored solutions to meet the unique needs of each utility.

EFAS Technologies, Inc.

EFAS Technologies is a software company headquartered in California, United States. By applying advanced technologies such as AI and Digital Twins, our solution – Global AI Leak Locator (GAILL) helps water utilities reduce Non-Revenue Water (NRW) and improve operational efficiency.

GAILL is designed to detect leaks within water pipelines, providing a non-invasive and cost-effective approach for water utilities. Beyond identifying leaks, GAILL also detects other anomalies, such as meter inaccuracies, ensuring comprehensive monitoring of the network. With 24/7 monitoring capabilities, GAILL serves as an ideal solution for maintaining pipeline integrity and optimizing water distribution networks.

GOLD SPONSORS

FAST, a company of Group Claire

WATER NETWORK MONITORING, LEAK DETECTION, MANAGEMENT

For over 40 years, FAST GmbH has manufactured solutions for monitoring, pre-locating, correlating, and pinpointing leakages in water transmission and distribution networks. Precise sensor technology and advanced algorithms developed by FAST allow the exact location of underground water leakages.

LESS WATER LOSS THANKS TO COMBINED INTELLIGENT MONITORING

Thanks to a close synergy with innovative instrumentation solutions from IJINUS, manufacturer of autonomous and connected devices (sensors, loggers and supervision platform), the entire network can be monitored and optimised.

The Claire Group, through its FAST and IJINUS brands, offers connected solutions that are ideal for the day-to-day work of water network operators, local authorities, and installers.

FAST training center

We provide our customers our own training programs are developed in-house and in accordance with leak detection methods and how the equipment and systems are used in the field.

Oracle

At Oracle, we pair the latest technology with innovative behavioral design to deliver solutions that solve your biggest challenges.

From intelligent grid management systems to insight-fueled customer engagement programs, we are proud to support utilities worldwide as together we drive towards a sustainable water and energy future.

Mission: See data in new ways. Discover insights. Unlock endless possibilities.

WSO

Water Systems Optimisation

DELIVERING WATER LOSS EXPERTISE

Expertise & Experience

We have been in the game for as long as we can remember and have worked on NRW projects big and small in some of the most challenging locations. Our expertise derives from those many years of experience of actual service delivery.

Services at Affordable Prices

Our small size means that our overheads are significantly lower than the big guys. This makes us very competitive and ensures you get maximum bang for your bucks.

Our Locations

With established business operations and associates in USA, SE Asia and the Western Pacific, we are never far from reach.

ABOUT US

WSO is an international engineering group that provides specialist consultancy and contracting services for public water utilities. We are specialised in water loss reduction technologies including water audits, leakage modelling, leak detection and repair, and pressure management. WSO has proven ability in this field through all phases of the project life cycle from investigation, analysis, design, development, planning and implementation.

- Our understanding of NRW issues arises from many years in the field. We can provide client-specific solutions to ensure you achieve your NRW reduction goals.
- We don't just talk the game, we play it, and we play it well. We have delivered real NRW reductions for our clients ensuring return on investment in the services we provide.
- We won't stop until the job is done. We know what it takes to meet your goals and will never miss a beat in delivering your expectations.

enquiry@waterframe.com +60 16 587 5924 www.wsoglobal.com

COSMOS

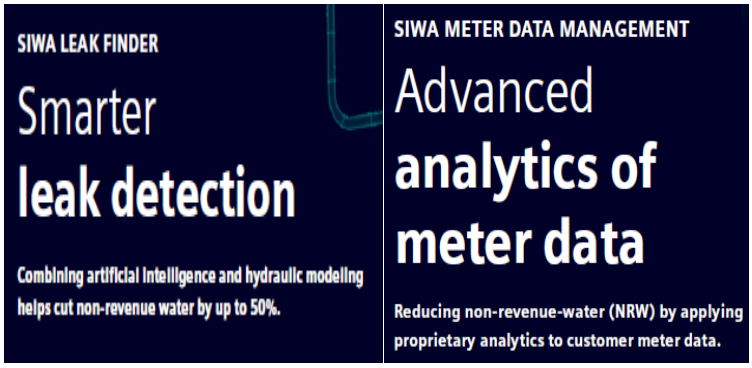
Discover Cosmos Instruments at Water Loss Asia 2024 – Booth 6!

NRW Solution provider, please explore our new products Siemens' Electromagnetic flowmeters, SIWA LeakFinder, Lacroix's data loggers, Ydrix RTUs, and LX SCADA for real-time control and Axioma ultrasonic household water meter. McCrometer insertion mag meters and Heda noise loggers, Advanced Pressure Monitoring System (APMS). With technologies from TackGPS and IFM, we're driving smarter, sustainable water solutions. Visit us to see how we can support your needs!

SIEMENS

LACROIX

SOFREL SOLUTION
Remote monitoring & process control for water networks



McCROMETER

FPI Mag®
Full Profile Insertion Flow Meter

HEDA和达科技

AXIOMA METERING

ifm

Smart PRV – PMCX Series | Noise Logger

ULTRA SONIC WATER METER

ifm application package:
full protection
for your pumps

WATER LOSS ASIA 2024 ORGANISER

- PROTEMP Exhibitions and Conferences Sdn Bhd (PROTEMP)

EVENT

- Water Loss Asia 2024 (WLA)
- Conference Theme : Asian Perspective on Water Loss Management & Carbon Reduction
- Workshop Theme : Smart Approaches to Addressing Water Leakage and Carbon Emissions
- Venue : Royale Chulan Hotel, Kuala Lumpur
- Date : 19-21 November 2024

EXHIBITION

- Date : 19-20 November 2024
- Venue : Taman Mahsuri Hall, Ground Floor
- Opening Hours : 10.00a.m – 5.00p.m (Trade Visitors)

CONFERENCE & WORKSHOP

- Date : 19-20 November 2024 (Conference)
- Venue : Taming Sari I & II Ballroom, Ground Floor,
- Time : 9.00a.m – 4.30p.m

- Date : 21 November 2024 (Workshop)
- Venue : Taming Sari III Ballroom , Ground Floor
- Time : 8.45a.m – 5.30p.m

KEYNOTES

- **Keynote and Opening by**
  YAB Dato' Sri Haji Fadillah bin Haji Yusof
  Deputy Prime Minister and Minister of Energy Transition and Water Transformation
  Day 1 | 19 November 2022 | Tuesday | 09:30 am | Taming Sari Ballroom

- **Keynote by**
  YBhg. Dato' Ahmad Faizal bin Abdul Rahman
  Chief Executive Officer, National Water Services Commission (SPAN)
  Title: Regulatory Framework of Effective NRW Management
  Day 1 | 19 November 2024 | Tuesday | 10:00 am | Taming Sari Ballroom

- **Keynote by**
  Gary Wyeth
  Secretary, IWA Water Loss Specialist Group
  Title: Leakage Emissions Initiative: Establishing a Standard Carbon Balance for Drinking Water Utilities
  Day 2 | 20 November 2024 | Wednesday | 9:00 am | Taming Sari Ballroom

CONFERENCE TRACKS

- Big Data and Analytics
- Leakage Management
- Smart Water Networks
- NRW Reduction Programs
- Customer Metering
- Country Experiences
- Asset Management
- Advanced Leak Detection
- Asset Condition Assessment
- Carbon Assessment and its Impact on Water Losses
- GIS – Hydraulic Modeling
- NRW Management

SUPPORTING PARTNERS

- Ministry of Energy Transitions & Water Transformation (PETRA)
- Water Loss Specialist Group
- Young Water Professionals Malaysia (MyYWP)
- Malaysian Water Engineers Action Committee (MyWAC)
- Malaysia Water Association (MWA)
- Malaysia Water Partnership (MyWP)

MEDIA PARTNERS

- Asian Water
- EveryThingAboutWater
- Impeller Net
- Waste & Wastewater Asia

PARTNERED EVENT

- The Global Leakage Summit

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  - COSMOS Instruments Sdn Bhd
  - Gutermann AG
  - HWM Global
  - Ovarro Sdn. Bhd.
  - Ranhill Utilities Sdn Bhd
  - Water System Optimisation Sdn Bhd (WSO)
  - Yokogawa Electric Corporation

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  - EFAS Technologies, Inc.
  - FAST GmbH
  - Oracle Corporation

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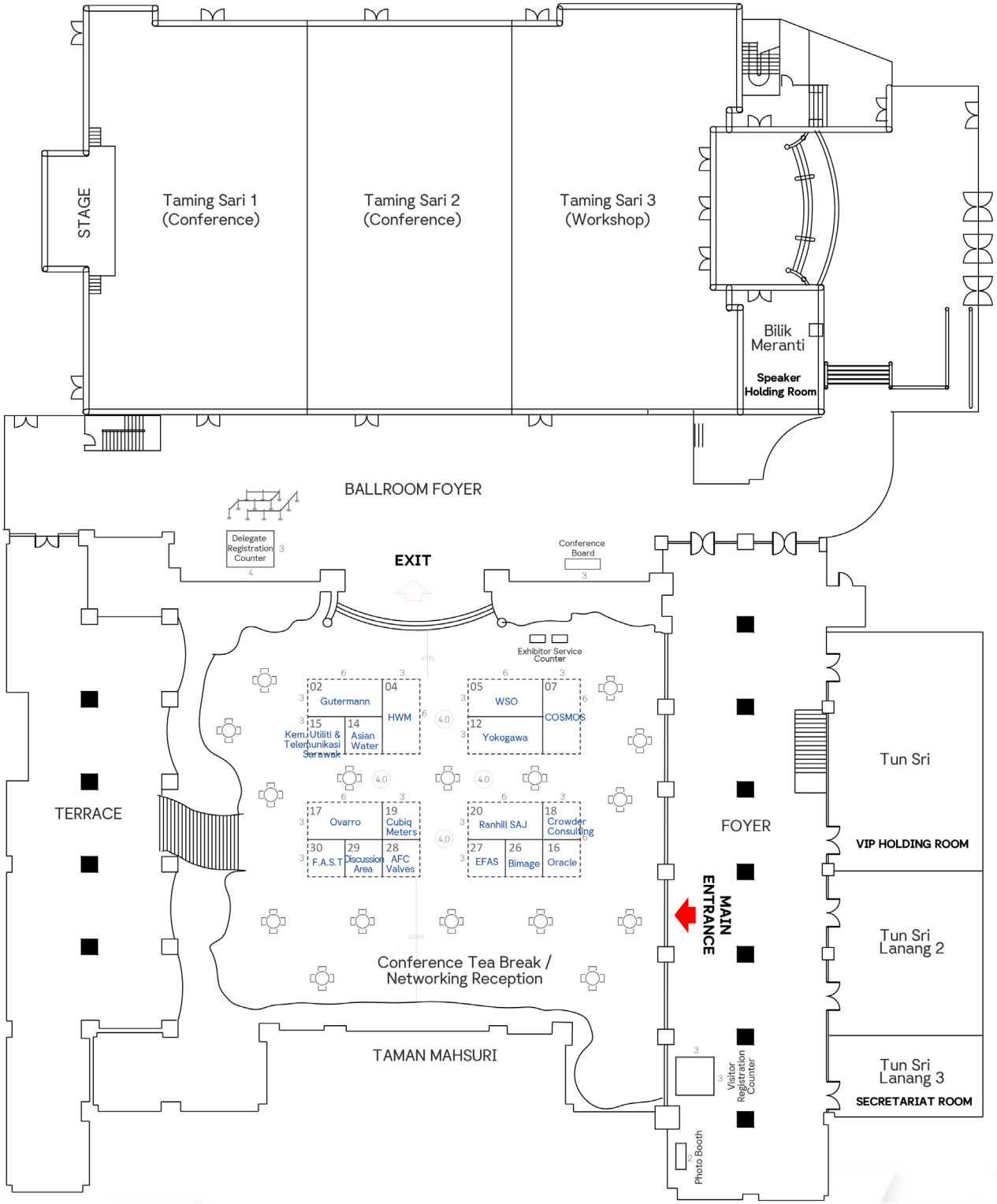

Day 1-19 November 2024 (Tuesday)

Time	Taming Sari 1	Taming Sari 2
08:30-09:30	Registration	
09:30 – 09:40	Welcome Remarks by **Mr. Gary Wyeth**, Secretary, IWA Water Loss Specialist Group	
09:40 – 10:00	Opening Speech by **YAB Dato' Sri Haji Fadillah Yusof**, Deputy Prime Minister and Minister of Energy Transition and Water Transformation	
10:00-10:30	National Water Services Commission (SPAN) Keynote Address by **YBhg. Dato' Ahmad Faizal bin Abdul Rahman**, Chief Executive Officer Regulatory Framework of Effective NRW Management	
10:30-11:30	Morning Break and Exhibition Visit	
Track	**Big Data and Analytics** ***Moderator: Hugh Chapman***	**Leakage Management** ***Moderator: Edmund Riehle***
11:30-12:00	Oracle **Matt Gleeson,** VP of Energy Transition and Water Conservation, Oracle Energy and Water Slow the Flow: Digital Strategies to Reduce the Financial, Operational, and Customer Impacts of Water Loss	Gutermann AG **Uri Gutermann**, CEO Advancements in IoT and Artificial Intelligence, and the Convergence of Data for More Effective Leakage Management
12:00-12:30	Yokogawa Engineering Asia **Puranut Wisutjindaporn (Pong),** Regional Business Development Manager, Water Industry Cost-Effective Digital Platform for Water Loss Management	Aqua Analytics **Bryce Haesler,** Project Team Lead The Use of Cellular-Connected Acoustic Loggers with Automated Correlation to Remotely Pinpoint Leaks in Smart Water Networks
12:30-13:00	Hulo **Frank van der Hulst**, CTO & Co-founder Research-Backed Approach to Enhancing Burst Detection Accuracy in Drinking Water Pipes Using Multiple Existing Sensor Data	F.A.S.T. GmbH – Groupe Claire **Edmund Riehle**, Sales Manager How Germany Achieves Good Leakage Rates
13:00-14:00	Lunch Break	

Track	Smart Water Networks ***Moderator: Keshvinder Singh***	NRW Reduction Programs ***Moderator: Joe Lim***
14:00-14:30	Schneider Electric **Keshvinder Singh,** Consultant Smart Water Real Time Pressure Optimization in Water Supply Network - Maintaining Just Needed Pressure in the Network	Stantec, Taiwan **Joe Lim,** Director, Pipeline & Network Service Line Non-Revenue Water Reduction Program Highlights for 3 Cities in Taiwan
14:30-15:00	Maynilad Water Services Inc. **Ryan Chico Revilla,** NRW Officer, NRW Solutions and Services Enhancing Leak Localization in Water Distribution: Maynilad's Experience Using Pressure Differential Analysis for DMA Diagnostic	Wyeth Water Consultant Sdn. Bhd. **Eva Lailatun Nisa,** Engineer NRW Assessment in PDAM Surabaya
15:00-15:30	Crowder Consulting **Tom Crowder,** Director Targeting Water Loss Reduction More Effectively & Improving Leakage Detection Efficiency	Stantec, Taiwan **Foo Sze Hui,** Engineer AI Integration in Water Services: A Strategic Blueprint for Taipei Water Department
15:30-16:00	EFAS Technologies, Inc. **James Valle,** CEO Smart Leak Detection: Choosing the Right Technology Fit to Drive NRW Reduction for Water Utilities	Ranhill Technologies Sdn. Bhd. **Nor Suhada Bt Hasan**, Head of Technology Challenges in Addressing NRW in Malaysia
16:00-16:30	LACROIX Group, Singapore **Mathieu Peretti,** Asia Pacific Business Development Director Smart Water Networks: The Next Frontier in Water Efficiency, Resilience and Security	
16:30-18:00	Networking Hi Tea End of Conference - Day 1	

**Programme is subject to change*

Day 2-20 November 2024 (Wednesday)

Time	Taming Sari 1	Taming Sari 2
08:30-9:00	Wyeth Water Consultants **Gary Wyeth,** Secretary, IWA Water Loss Specialist Group Importance of Reducing Carbon Emissions and How It Relates to Real Loss	
09:00-10:00	**Panel Discussion** **What Needs to Change to Enable Effective NRW Management in Malaysia** NRW in Malaysia has remained relatively constant over the past 20 years, despite investments from the Federal Government, State Governments and Private investors. The last series of Federal projects was aimed at establishing a baseline in NRW, enabling a second phase of projects to reduce NRW from these measured baseline levels. This discussion is aimed at determining whether anything has intrinsically changed in NRW Management over the past 20 years, what else needs to change to enable effective NRW reduction, and how low should Malaysia be aiming to reduce its NRW to. The Panel will include senior utility staff, Government representatives, regulators and NRW experts. Moderator: **Gary Wyeth,** Secretary, IWA Water Loss Specialist Group Panelists: **Anuar Abdul Ghani,** Chief Executive Officer, Ranhill SAJ **Kelvin Siew,** Head of NRW Department, Pengurusan Air Selangor Sdn. Bhd. **Joe Lim,** Director, Pipeline & Network Service Line, Stantec Taiwan **Uri Gutermann,** CEO, Gutermann AG	
10:00-10:30	Morning Break	
Track	**Customer Metering** ***Moderator: Richard Taylor***	**Country Experiences** ***Moderator: Dwike Riantara***
10:30-11:00	Thomas Consultant **Richard Taylor,** Principal Engineer- Water Fresh Thinking on Private Water Tanks	Perumda Air Minum Tirta Mayang, Jambi City **Dwike Riantara**, Managing Director Smart Water Monitoring System Using IoT Water Leak Detection Sensor: Jambi City Pilot Project
11:00-11:30	Premier Water Services Sdn. Bhd. **Andy Ko Seng Yang**, Sales Manager Customer Metering and Billing	Maynilad Water Services Inc. **Julio Cesar Eniceo,** North Quezon City Business Area NRW Partner Strategies and Outcomes in Maynilad's Non-Revenue Water Reduction: A Comprehensive Review
11:30-12:00	Deca Solutions Sdn. Bhd. | IWA MWA Young Water Professionals Malaysia **Nur Amira Murad,** Special Projects Manager | Non-Revenue Water Managing Non-Revenue Water in a Youth Perspective	Stantec Consulting Services Inc., Taiwan Branch **Andrew Yu,** Technical Lead Looking Back to Move Forward: Two Decades Journey of Addressing Water Loss in Taipei City

Track	**Asset Management** ***Moderator: Gary Wyeth***	**Advanced Leak Detection** ***Moderator: Tony Gwynne***
12:00-12:30	Ranhill SAJ **Ts. Zaulkarnain bin Abd Manap,** Head Division of Network & NRW Case Study on the Efficiency of Pipe Rehab Program 2018/2019	Ovarro Sdn. Bhd. **Tony Gwynne,** Leakage Solutions Sales Director Utilising Cloud Automation to Rapidly Locate Leaks in Water Networks
12:30-13:00	Terra15 Technologies Pty. Ltd. **Albert Carmenate**, Chief Geoscientist and Global Sales Manager City Scale Fiber Optic Leak Detection - Lessons Learned	HWM Global **David Crotty**, Head of International Sales – East Machine Learning and Leak Detection
13:00-14:00	Lunch Break	
Track	**Asset Condition Assessment** ***Moderator: Mark Nicol***	**Carbon Assessment and its Impact on Water Losses** ***Moderator: Tom Crowder***
14:00-14:30	Nicol Consulting Services Pte. Ltd. **Mark Nicol,** Director Utilising Pipe Condition Technologies to Assess Remaining Asset Life and Prioritising Pipe Replacement Works	National Water Services Commission (SPAN) **Loga Sunthri Veeraiah,** Senior Executive, ESG Unit of Strategic Planning Department GHG Emission Management of Water Services Industry with LCOS
14:30-15:00	Mueller Water Products, Inc. **Iznul Muazim**, APAC Sales Manager – Technologies Optimizing Pipe Renewal through Identification of Degraded Sections and Benefits of Formalized Condition Assessment Programs for Water Utilities	Excel Pipes Sdn. Bhd. **Abolfazl Khalafi,** Engineering Manager Sustainable Water Management: Reducing Non-Revenue Water and Carbon Footprint through Strategic Infrastructure Planning

Track	GIS - Hydraulic Modeling *Moderator: Igor Dundovic*	NRW Management Moderator: **Mathieu Peretti**
15:00-15:30	Aqua Analytics **Johnson Damian,** Project Coordinator Why Spatial Reporting Matters: GIS-based Identification of Leaks in Water Distribution Networks	Solinas Integrity **Moinak Banerjee,** Cofounder & CTO Robotic Leak Detection and Conditional Assessment of Small Diameter Pipelines
15:30-16:00	HIDROMODEL **Igor Dundović,** Independent Water Specialist | NRW Advisor Virtual DMA and Hydraulic Model as Main Tools for Starting Water Loss Project	Maynilad Water Services Inc. **Rafaelle Posadas,** Head, NRW Systems Management Enhancing Leak Detection Prioritization with Artificial Intelligence (AI): Maynilad's Experience in Using Artificial Intelligence for District Metered Area Diagnostics
16:00-16:30	PDAM Surya Sembada Kota Surabaya **Bagyo Gunawan**, Manager of Customer Connection Compliance **Nurlillah Satria Pratama**, Manager of Water Consumption Management Optimizing Leak Correlator Device for Creating Potential Leak Database Based on ESRI GIS to Reduce NRW in Surabaya City Indonesia	Siemens Malaysia Sdn. Bhd. **Ir. Johnson Tan**, Head of Sales, Digital Industries Division **Borja Arzac,** Technical Sales Director Effective Leak Detection Through Virtual DMAs and Smart Monitoring: Real-World Applications
16:30-17:00	Tea Break	
17:00	End of Conference - Day 2	

****Programme is subject to change***

Smart Approaches to Addressing Water Leakage and Carbon Emissions

Day 3-21 November 2024 (Thursday)

Time	Program
08:00-08:45	Registration
08:45-09:00	Welcome Address and Introduction
09:00-10:00	**Carbon Intensity and How it Affects Management of Carbon Emissions** **Gary Wyeth**, Secretary, IWA Water Loss Specialist Group
10:00-11:00	**The Benefits of Remote Monitoring in Reducing NRW and Carbon Emissions** **Mark Nicol,** Director, Nicol Consulting Services Pte. Ltd.
11:00-11:10	10 Minutes Break
11:10 - 12:10	**Navigating Your Next Smart Metering Step** **Thomas Allen**, Head of Digital Water, RSK Digital Water
12:10-13:10	**Enlightenment by Leak Detecting Smart Meters** **Marcus Chang**, Sales Director APAC & Country Manager Malaysia, Kamstrup
13:10-14:00	Lunch Break
14:00-15:00	**Making Consumptions Dynamic & the Water Balance Smarter** **Tom Crowder**, Director, Crowder Consulting **Gillian Sowden**, Director, Crowder Consulting
15:00-16:00	**Best Practices in Water Loss Management - For Improved Visibility and Reduced NRW** **Keshvinder Singh**, Consultant Smart Water, Schneider Electric
16:00-16:10	10 Minutes Break
16:10 – 17:10	**Integrated Solutions for Sustainable Water Loss Reduction:** **Real-Time Leak Detection and Prevention with Techimex & HULO (a Dutch Collaboration)** **Frank van der Hulst,** Co-founder & Chief Technology Office, HULO
17:10-17:30	**Q&A Session**
17:30	End of Workshop - Day 3

**Programme is subject to change*

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Chief Executive Officer,
National Water Services Commission (SPAN)

Biography

Ir. Muhamad Sobri Zakaria is the Executive Director of the Water and Sewerage Regulatory Department in Suruhanjaya Perkhidmatan Air Negara.

He holds a bachelor's degree in Civil Engineering from University Teknologi Malaysia. He had worked for 15 years in Perbadanan Bekalan Air Pulau Pinang Sdn Bhd (PBAPP), where his works involve strategic planning for water supply and NRW management.

In 2008, Ir. Sobri joined SPAN as a Director in the Southern Regional Office at Johor Bahru. In 2013, he was later as Senior Director at the Water Industry Audit Division, overseeing both water and sewerage auditory work scope in SPAN. Currently, he is the Executive Director for the Water and Sewerage Regulatory Department from 2019.

His fields of expertise include water and sewerage regulatory function, NRW management, technical audit and thematic audit, asset management, billing management, CAPEX planning & implementation and assessing of KPIs.

Gary Wyeth

Secretary, IWA Water Loss Specialist Group
Wyeth Water Consultants

Biography

Mr Wyeth graduated from Portsmouth University in 1991 with a Master of Engineering Degree in Civil Engineering.

He has 30 years experience in the water industry, with 26 of those years whilst working in South-East Asia. During this period Mr Wyeth has gained member status of the CIWEM (UK), is a Chartered Engineer, has gained a Graduate Diploma in International Operational Management and is the current Secretary of the IWA Water Loss Specialist Group

Mr Wyeth Started his career as a network modeling engineer for Biwater International and through this built up an expertise in how water supply systems operate. He then moved into NRW management, with Thames Water International and Ranhill Water Systems, gaining further expertise in leakage control, DMZ design & implementation, system monitoring, customer metering and production metering.

He also established the APAC regional office for i20 Water, specialists in advanced pressure management, where he was APAC managing director for 4 years. He further improved his experience of pressure management whilst managing the regional office for Singer Valves, a manufacturer of pressure control valves.

He is currently the Managing Director of Wyeth Water Consultants a Malaysian based NRW Management Company.

Matt Gleeson,
VP of Energy Transition and Water Conservation,
Oracle Energy and Water , Oracle

Biography

Matt boasts an impressive 25-year tenure in the utility sector, where he has served as a pivotal consultant to Oracle's clientele and partners, driving energy business transformation and fostering innovation. His influence has been pivotal in steering through the waves of deregulation sweeping across Asia Pacific, Europe, and the Americas. Matt's collaborative efforts with customers and partners have been instrumental in optimizing outcomes across diverse domains, ranging from grid performance to heightened customer engagement.

His fervor lies in witnessing utilities harness their boundless potential to elevate customer experiences, fine-tune utility operations, and expedite decarbonization objectives. Matt's driving passions encompass:

- Fostering a forward-moving drive within utilities to initiate their journey towards a low-carbon energy future, while also embracing inventive methodologies for water conservation.
- Unleashing the true potential of AMI and grid data for energy enterprises, effecting meaningful change.
- Pioneering a novel energy company-consumer relationship that begets shared advantages, both financial and environmentally driven.
- Disrupting conventional power-planning paradigms by propounding alternatives like demand response and behavioral shifts. Using these innovative approaches to sidestep superfluous generation and greenhouse gas emissions.
- Forging a nexus among ESG, EV, and DER aspirations, seamlessly translating visionary ideals into pragmatic solutions for the ever-evolving energy landscape.

Abstract

Slow the flow: Digital strategies to reduce the financial, operational, and customer impacts of water loss

It's well known that water loss, both behind the meter and on customer premises, negatively impacts revenue and creates risk for a utility. Without a holistic approach to non-revenue water reduction, the financial impact can compromise important initiatives to further expand and improve water supply, service and quality.

In this session, we'll dive into smart technologies and digital strategies that can help prevent and reduce the financial, operational, and customer impacts of water loss, to promote a more sustainable approach to water management.

Puranut Wisutjindaporn (Pong),

Regional Business Development Manager, Water Industry,
Yokogawa Engineering Asia

Biography

Puranut Wisutjindaporn or Pong has more than 17 years of work experience in the water industry. He has joined Yokogawa as the Regional Business Development Manager since March 2022. Prior to this, he had worked for many international water companies in various roles from project engineer, consultant, and business development manager. His experience spans design and construction of water infrastructure projects, public private partnership (PPP) projects, sewer rehabilitation and digital solutions for the water industry. He is committed to helping water companies propel the advancement of technologies and tackle their operational challenges. He received a Master of Science in Environmental Science and Engineering from Nanyang Technological University under the Singapore Stanford Partnership (SSP) Program and a Bachelor of Engineering in Environmental Engineering from Chulalongkorn University.

Abstract

Cost-Effective Digital Platform for Water Loss Management

Water loss reduction is a common challenge for all water utilities worldwide. It is a complex topic that not only requires technical expertise but also proven and cost-effective technologies to overcome. It demands a continuous and dedicated commitment from all stakeholders to achieve and maintain a desirable water loss level.

Until now, Yokogawa has supplied instrumentation and control systems together with third party software solutions to water utilities for water distribution network management. It was observed that most water utilities in developing countries often struggle to reduce water loss (or non-revenue water) despite their concerted effort. While mature utilities in developed countries deploy a plethora of sensors in their networks, utilities in developing countries sometimes find it difficult to locate leaks effectively and efficiently due to a lack of sensors and oftentimes budget.

Yokogawa recognizes a growing need for an affordable yet effective leakage management solution and has developed the OpreX - Water Loss Management System (WLMS) as a digital platform which acts as a decision support system and operational dashboard targeting customers in developing countries. After consultations with several utilities on their requirements, Yokogawa intends to include fundamental functions: Water Balance, Pressure Management, and Night Flow Analysis at launch. The software solution will later offer a range of features for the evaluation of economic benefits and the long-term utilization of assets.

Yokogawa hopes that the WLMS will assist water utilities to carry out their analysis, leak detection, and proactive action necessary to address water leakage issue.

Frank van der Hulst,
CTO & Co-founder,
HULO

Biography

Frank van der Hulst is a seasoned expert in robotics and machine learning, with a career spanning over a decade. For the past eight years, he has been transforming the water industry, leading advancements in sensor technology and machine learning to extract actionable insights. Frank has also been instrumental in developing robots designed for water pipeline inspections and asset management, showcasing his commitment to improving infrastructure resilience. As a leader in the sector, he has consistently demonstrated how innovative technologies can drive value, particularly in leak detection and network management. Now the co-founder and CTO of HULO, Frank leads a cutting-edge startup that develops advanced analytics software for water utilities. His work empowers utilities to make data-driven decisions, optimising operations and enhancing the sustainability of water management. Frank's contributions are vital to the future of water resource management, blending technology and environmental stewardship.

Abstract

Research-Backed Approach to Enhancing Burst Detection Accuracy in Drinking Water Pipes Using Multiple Existing Sensor Data

A Dutch water sector-funded study presents an innovative burst detection approach for drinking water pipes. Traditional methods suffer from false positives and require a specific network structure. The new method uses flow and pressure sensors, needing only one week of historical data per sensor. It combines Bayesian ridge regression with Random Sample Consensus for robust detection, showing superior results compared to conventional techniques, with a 91% accuracy in field tests. Moreover, a data driven approach for leak localisation is applied, to be able to localise leaks up to 250m accuracy, without the need for DMA structure and also without the need for a hydraulic model. The technology is live at Brabant Water and WML, offering substantial benefits like reduced water loss, extended infrastructure life, and cost savings, promising a revolution in burst detection for sustainable water management.

Keshvinder Singh,
Consultant Smart Water,
Schneider Electric

Biography

Keshvinder Singh has dedicated 16 years to the water industry, accumulating extensive experience with major water utilities and technology firms.

He started in Air Selangor, Malaysia, where he was involved in the hydraulic modeling and water loss departments. In 2016, he relocated to Saudi Arabia to join Marafiq-Saur, a joint venture between Saudi Arabia's Marafiq and France's Saur, overseeing the water supply operations for Yanbu Industrial City.

In 2017, Keshvinder transitioned to Singapore, taking on the role of Consultant Project Delivery at AVEVA, before moving to Schneider Electric as a Consultant for Smart Water solutions in 2021.

Holding a Master's degree in water engineering, Keshvinder currently leads Schneider Electric's smart water initiatives, focusing on business development, pre-sales, project delivery, and after-sales support. He collaborates with water utilities to optimize return on investment through innovative smart water solutions. Additionally, Keshvinder chaired the APAC Research Group for SWAN Forum from 2017 to 2020 and is an active member of IWA, SWA, and MWA.

Abstract

Real Time Pressure Optimization in Water Supply Network - Maintaining Just Needed Pressure in the Network

Real losses occur due to physical issues in the distribution network including leaks, bursts and overflows. Managing pressure in the water network is one of the key factors in reducing real losses as can be seen in Figure 1 which shows the four components approach to manage real losses

There is a direct correlation between pressure and real losses

The challenge in many utilities is determining the right pressure and demand that are needed to be met in the network. The key to a successful pressure management is to be able to predict the demand and pressure needed and automatically set the pressure regulating devices to deliver only the required pressure

In this paper, an AI approach of pressure management is explored which involves predicting the future water demand in the network and using that demand to calculate the pressure needed in the network. In order to have a closed loop optimization, the calculated pressure set points at pressure regulating devices are sent to SCADA for real time pressure control.

By using this AI based approach of demand forecast and pressure optimization, a few of the salient benefits that can be achieved are:

- Supplying only needed pressure in the network and thus reducing over pressure
- Closed loop optimization ensures low operator interference
- Extending network life span by reducing the stress on infrastructure
- Ensuring reduced real losses
- For pumped based network, pressure management will also reduce the cost of pumping
- Achieving net zero carbon goals

Ryan Chico Revilla,
NRW Officer, NRW Solutions and Services,
Maynilad Water Services Inc

Biography

Ryan C. Revilla is an accomplished mechanical engineer with extensive experience in Non-Revenue Water (NRW) management. He embarked on his professional journey at Maynilad Water Services Inc., where he initially served as a Project Engineer in the Central Non-Revenue Water (CNRW) Division, within the Engineering and Construction Department. In this role, Ryan was instrumental in overseeing and supervising contractor activities focused on the repair and replacement of secondary and tertiary water lines, which significantly contributed to NRW reduction and enhanced service levels.

His expertise and dedication led to a transition to the Business Area NRW Operations as a Team Engineer. There, Ryan was responsible for monitoring and conceptualizing pipe replacement projects and conducting critical diagnostic activities such as DMA Establishment, Step-testing, Zero Pressure Testing and other related activities. These efforts were key components of the NRW reduction program, aimed at improving water service efficiency and reducing wastage.

Currently, Ryan holds the position of Officer for NRW Services in the CNRW Management Division. His role involves supervising a team in conducting rapid NRW assessments, feasibility studies, and managing NRW operations. He is also responsible for implementing a comprehensive NRW reduction program in his assigned area. In addition, he is actively involved in training and capacity building, enhancing knowledge and skills related to NRW management among his team and stakeholders.

Abstract

Enhancing Leak Localization in Water Distribution: Maynilad's Experience Using Pressure Differential Analysis for DMA Diagnostic

Non-Revenue Water (NRW), referring to water produced but not billed to customers, poses a significant challenge in water management. Effective diagnostic techniques are crucial for reducing NRW and enhancing water utility efficiency. Maynilad has adopted Pressure Differential Analysis (PDA) alongside traditional step testing to improve leak localization across its network of over 1,600 District Metered Areas (DMAs). PDA works by adjusting the valves of set points of the distribution system of a DMA to alter the pressure and records the variations using data loggers. This method helps identify high water loss areas based on pressure differentials. In contrast, step testing involves closing valves and measuring changes in inlet flow to localize leaks. Data from Maynilad reveals that PDA has an efficiency of 2.2 leaks per kilometer, while step testing is 2.4 leaks per kilometer. Combining PDA with step testing provides a more robust approach to leak localization, improving NRW management both when flow data is available and when it is not. This integration enhances the efficiency of leak localization, thereby supporting better financial and resource management for water utilities.

Tom Crowder,
Director,
Crowder Consulting

Biography

Tom is a Chartered Manager with a strong technical understanding of water networks and high level of expertise in water loss management. He is a Director of Crowder Consulting, having worked full time for the company for 24 years.

In his director role, he is actively involved in developing new streams of work and building specialist service delivery teams. He is responsible for leading water loss consultancy projects, Netbase digital services projects, and leakage detection projects.

Tom is responsible for a multi-skilled specialist team delivering a range of water loss related services. He ensures that the team apply a very high standard of work and innovative approach that utilises cutting-edge technology.

Most recently, Tom has been helping to deliver NetAlytics our latest DMA targeting software, and NetOps our latest leakage detection management software across several clients.

Abstract

Targeting Water Loss Reduction More Effectively & Improving Leakage Detection Efficiency

Annual Real Losses for each DMA are split into Background Leakage, Reported Bursts Leakage and Unreported Bursts Leakage based upon a component loss model. By focusing on key data outputs and comparing results, emphasis is placed on achieving water loss reduction targets and making better decisions to meet strategic and operational leakage management objectives.

Strategic leakage management applies a grading system to categorise those DMAs that need to 'Reduce' water losses and those that should be maintained. DMAs categorised as 'Reduce' may need capital investment such as pressure management or mains replacement to reduce the volume of leaks. Other DMAs may benefit from having smart networks to reduce the time it takes to find leaks, in conjunction with better repair management to reduce the time it takes to fix leaks.

Operational leakage management is broken down into DMA leakage targeting and reactive DMA control. It involves ranking DMAs for investigation and determining the most effective leakage detection activities respectively. Central to operational leakage management is improving data confidence and mitigation of data issues, as well as visualising data analytics through digital applications.

Enhancing leakage detection activities can be achieved through use of digital applications that leverage mobile working. This enables visualisation of the water network insights to plan, monitor and optimise operations. It should include planning all types of leakage detection activities within DMAs, mobile feedback from technicians performing activities, and end-to-end performance management to drive continuous improvement.

James Valle,
CEO,
EFAS Technologies, Inc.

Biography

James Valle is the founder and CEO of EFAS Technologies, where he leads the development and commercialization of AI-powered leak localization software designed to assist water utilities in addressing critical issues of water loss. With over 40 years of experience across industries including high tech, aerospace, energy, water, and biotechnology, James has provided strategic leadership for ventures facing complex technological and operational challenges. Prior to his role at EFAS, he served as COO of IntelliFlux Controls, where he directed efforts to enhance process control and optimization for water treatment, chemical processing, and industrial separations—sectors where efficiency and precision are essential. James's career reflects a commitment to leveraging technology for practical, impactful outcomes, particularly in the water sector, where he aims to contribute to sustainable resource management and innovation in water conservation solutions.

Abstract

Smart Leak Detection: Choosing the Right Technology Fit to Drive NRW Reduction for Water Utilities

An effective NRW reduction program requires careful selection of the right technology for each utility's needs. In this talk, I'll assess the strengths and weaknesses of various leak detection technologies, considering risk factors and their potential impact on favorable outcomes. My goal is to help water utilities make informed choices that truly align with their operational needs.

Each technology type has unique advantages. Acoustic and non-acoustic methods serve different detection purposes, while software-based and hardware-based options offer different advantages in precision, data collection, and cost-effectiveness.. Drawing from my experiences, I aim to assist attendees in developing effective NRW strategies tailored to their networks.

Whether you're just starting your NRW initiatives or looking to refine existing strategies, I look forward to providing valuable information that can help you choose the most suitable leak detection solutions. Together, we can work towards more effective and sustainable water management practices that ultimately benefit our communities.

Ir. Johnson Tan,

Head of Sales, Digital Industries Division,
Siemens Malaysia Sdn Bhd

Biography

Ir. Johnson Tan, aged 50, a Malaysian, is currently the Head of Sales for the division Digital Industries; Siemens Malaysia Sdn Bhd. He graduated with a multi discipline in engineering; from Electronics & Electrical Engineering, Electronics Engineering, as well as Electronics & Control Engineering. Upon graduation in 1997, he joined a local system integration company; Energy & Process Control Sdn. Bhd., a control and instrumentation company as a Project Engineer responsible for DCS / SCADA programming as well as project engineering typically in Water Treatment plant for a period of 6 years, till finally departing as System Sales Manager.

Following suit, Ir. Johnson Tan has joined Siemens Malaysia Sdn Bhd as Assistant Sales Manager to take up new responsibilities in Sales and Business Development, where over time, promoted to Vice President for Process Automation Business Unit, as well as Head of Application of Technology for the division Digital Industries in Siemens Malaysia Sdn Bhd; and now as the Head of Sales for the division Digital Industries.

Ir. Johnson Tan draws most of his key experiences in the industries of Water and WasteWater, Semiconductor, Rail, OleoChemicals, Food & Beverages, Pharmaceutical, PetroChemicals as well as Oil & Gas.

Ir. Johnson Tan is a Professional Engineer with Practising Certificate registered with the Board of Engineers Malaysia, Institute Engineers of Malaysia under the discipline of Instrumentation & Controls, as well as ASEAN Certified Professional Engineer, and also certified Chartered Engineer conferred from the Engineering Council, U.K in the discipline of Measurement & Control; as well as a technical assessor to aspiring Chartered Engineers.

Also, Ir. Johnson Tan also the President of Malaysia Automation Technology Association (MATA, formerly known as the FMM-Automation Technology Industry Group (FMMATIG) and operated under the aegis of the Federation of Malaysian Manufacturers), with the primary objective to be the voice of the Automation Technology Industry.

He has more than 25 years of working experience in the field of automation systems; involving Distributed Control Systems (DCS) programming, Supervisory Control and Data Acquisition (SCADA) system programming, Programmable Logic Controllers (PLC) programming, system training, project engineering, project management, site commission works.

Other roles and responsibilities include technical marketing, design and system consultancy, project management, business development including profit and loss management; team management and personnel development.

Borja Arzac,
Technical Sales Director,
Siemens Malaysia Sdn Bhd

Biography

Borja is passionate about sustainability and innovation. In the last 5 years, he has been supporting private and public water utilities in reducing their NRW through the adoption of digital solutions, aiming to maximise the RoI through innovation.

In his former career, he worked as strategy consultant at the consulting firm Palladium covering several industries (Water, O&G, Health, Banking, Sports, Aluminum), as trade consultant at the Spanish Institute for Foreign Trade and as sales specialist at Vodafone.

Borja holds a Master's degree in international business management and commerce and a postgraduate in Circular Economy and Innovation.

Abstract

Effective Leak Detection through Virtual DMAs and Smart Monitoring: Real-World Applications

Keywords: virtual DMA; leak isolation; real-world application

The division of water supply networks into District Metered Areas (DMAs) is a widely adopted strategy in water management, enabling utilities to calculate water losses by comparing total inflows with registered consumption or by detecting leaks when inflows exceed expected levels. However, this method presents challenges, particularly in large, non-sectorized networks where detecting minor leaks is complicated due to the statistical noise associated with nighttime inflows. Additionally, while inflow anomalies can indicate a leak, they provide no insight into its precise location. Although several studies have proposed leak localization techniques using internal measurements and hydraulic modeling, practical applications remain rare due to implementation difficulties. This paper highlights successful real-world experiences with leak localization methods grounded in internal network monitoring and hydraulic simulations.

A DMA is a hydraulically separated zone equipped with flow (and sometimes pressure) meters at its entry and exit points, allowing for comprehensive monitoring. This data supports a range of assessments, such as estimating water losses by analyzing minimum nighttime inflows or evaluating DMA performance by comparing total inflow with registered consumption over time. Sectorized networks also aid in leak detection, as a sudden rise in nighttime inflow often signals a leak, with smaller DMAs enabling detection of smaller leaks.

Despite these advantages, DMA monitoring faces limitations. The segmentation of a network into smaller DMAs is both costly and complex to maintain. Furthermore, inflow data alone, while indicating the presence of a leak, does not specify its location.

To address this, recent literature has explored Virtual DMAs and hydraulic modeling for pinpointing leaks. A Virtual DMA involves the installation of internal flow and/or pressure meters, with continuous data collection at strategic points. This data is compared against a sensitivity matrix generated from the network's hydraulic model. By matching the observed data to the most probable scenarios in the matrix, the system can detect leaks and estimate their location when the identified scenario corresponds to a simulated leak.

While theoretically sound, real-world implementation of these methods poses challenges. Optimizing the placement and number of meters within budget constraints is complex, and practical issues such as data accuracy and model calibration can significantly impact results. Consequently, real-world examples of these techniques are scarce.

This paper presents successful real-world implementations of Virtual DMA systems enhanced with hydraulic modeling. Utilizing machine learning algorithms in a cloud-based environment, the systems have effectively identified and located small leaks within Virtual DMAs. This approach offers a innovative and verified solution for water utilities looking to maintain or expand DMA size without sacrificing leak detection efficiency.

Uri Gutermann,
CEO,
Gutermann AG

Biography

Uri Gutermann is CEO at Gutermann, a leading manufacturer of acoustic leak detection technology and intelligent water loss solutions, based in Switzerland. Uri joined the family business in 2011. In his former career, he worked as consultant at the strategy consulting firms McKinsey & Company and KPMG and as a banker in the Leveraged Finance practice of CIBC World Markets and in the Agribusiness sector team of the European Bank for Reconstruction and Development (EBRD). Uri holds a Masters degree in international business from the University of St. Gallen, Switzerland, and an MBA from INSEAD in Fontainebleau, France.

Abstract

Advancements in IoT and Artificial Intelligence, and the Convergence of Data for More Effective Leakage Management

Drought and in some cases worryingly desolate water networks pose a major challenge to European water suppliers. Steadily rising energy costs further exacerbate the situation. The water networks continue to grow due to the increase in population and leakage rates are very high in many European economies. The EU's new Drinking Water Directive 2020/2184 requires a massive increase in transparency and accountability in European utilities, driving significant roll-out of active leak detection programmes and the collection of enormous amounts of data to prove how much water is produced, pumped, consumed and physically lost. Billions of Euros are being funnelled into member states to address the high leakage rates and the ageing infrastructure.

Increasing demand for water loss solutions, actionable data and operational efficiency also drive innovation in our sector. On one hand, the large-scale monitoring of water networks with correlating noise loggers plays a central, strategic role in the fight against the ever-increasing water losses in municipal water networks. Daily updated data enables water utilities to quickly detect acoustic changes in the network, locate and repair leaks, and reduce leak runtimes to a minimum in order to keep overall losses at a moderate level - all without the need for additional staff or large numbers of specialised personnel on site. Thanks to all of these reasons, Gutermann won the largest monitoring project ever acquired in Continental Europe in 2022. An extensive case study with results will be presented.

On the other hand, advancement in communication, usability, artificial intelligence, and the integration of other data relevant for effective non-revenue water management are driving new product innovation at Gutermann. This presentation will showcase recent and upcoming innovations and product launches which should help also utilities in Asian markets approach water loss in a more efficient manner. This includes the integration of data from Gutermann's own compact flow and pressure logger range and new field instruments that allow uploading their data and events to a central cloud system. These advancements are expected to enable also Asian water utilities to reduce their water footprint and make their infrastructure more resilient.

Bryce Haesler,
Project Team Lead,
Aqua Analytics

Biography

Bryce Haesler is a licensed tradesman with over a decade of hands-on experience in water networks, specialising in acoustic leak detection, water loss management, and pipeline condition assessments.

Bryce plays a key role in overseeing and delivering water network projects that significantly reduce non-revenue water (NRW). His extensive background includes both technical expertise and leadership, honed through his experience managing critical infrastructure projects for some of Australia's largest water authorities.

At Aqua Analytics, Bryce leads teams in the deployment of advanced water loss strategies, pressure transient monitoring, and acoustic leak detection technologies. His strong interpersonal skills and leadership ensure seamless project delivery, while his technical knowledge ensures meaningful, measurable results are achieved.

Abstract

The Use of Cellular-Connected Acoustic Loggers with Automated Correlation to Remotely Pinpoint Leaks in Smart Water Networks

This paper explores the deployment of cellular-connected acoustic loggers combined with automated cloud-based correlation. This innovative approach provides operators and control room staff with precise leak locations for rapid investigation and repair. It eliminates the need for manual intervention, significantly enhancing response times and reducing water loss.

This paper discusses a case study conducted in a densely populated urban area, where traditional acoustic leak detection methods can face limitations. Over three months, several dozen small acoustic devices were deployed at 200-350 metres intervals across a metallic water reticulation network with an average pressure of 68 metres head. These devices monitored the pipeline network and transmitted data each morning via cellular protocol, enabling the client to trial the effectiveness and accuracy of the technology (from both a leak detection perspective and a below-ground communication perspective).

During the trial, the smart acoustic system identified several significant leaks, including large and small service pipe leaks, customer-side leaks, and even network anomalies such as a breached boundary valve and a large burst in an adjacent District Metering Area (DMA). Notably, a developing leak was tracked, and intervention could take place before it became a more disruptive burst, demonstrating the system's predictive capabilities.

The results have led the client to adopt this technology as a standard operating procedure, deploying the devices regularly throughout their urban water network. Aqua Analytics continues to support the client through deployment, analysis, and reporting, ensuring that the solution delivers optimal results for ongoing network integrity.

Edmund Riehle,
Sales Manager,
F.A.S.T. GmbH – Groupe Claire

Biography

Mr. Riehle has been working in the field of physical leak detection for more than 12 years. He is active in many national and international associations and organizations like the DVGW (German Association for Gas and Water), GWP (German Water Partnership), DWA (German Association for Water, Sewage and Waste) as well as the IWA (International Water Association) where he also participates in meetings related to regulations and technology. During his professional career he traveled around the globe and experienced a lot of different (water) infrastructure conditions, whereas each situation needs a different approach and solution for their NRW issues. Due to a 7-year project in China (2015 – 2022 SIGN – Sino German Network, funded through BMBF) he spent most of his time abroad there and has good experience and relationships to Chinese water companies and stakeholders in the water industry.

Abstract

How Germany Achieves Good Leakage Rates

Germany has one of the lowest leakage rates in Europe and world-wide. In my presentation I will give an insightful overview of how this was achieved. Even though the methods for physical leak detection are similar to how this is practiced in other countries, but Germany and its DVGW association have very strict regulations and guidelines for the water suppliers which they need to follow. Hence, a combination of technology, balanced regulations and well-educated staff is the key to success in this industry.

Joe Lim,
Director, Pipeline & Network Service Line,
Stantec, Taiwan

Biography

Joe Lim has more than 20 years of experience in the water-related engineering industry, in a wide range of projects including hydraulic modelling, DMA (District Metered Area) planning, transmission water mains design, stormwater sewerage planning & design, wastewater sewerage planning, design & construction management, and alternate project delivery management. His international experiences include Malaysia, Singapore, India, China etc.

Before joining Stantec (legacy MWH) in 2003, he worked as a research assistant in the National Taiwan University (NTU). In the following years, Joe has been extensively involved in projects such as evaluating stormwater sewerage with the aid of hydraulic modelling software, proposing upgrade schemes, and carrying out the planning and design works for water-related pipeline system. Joe specialises in network modelling, managing projects with multi-interface tasks and has good people and team management skills. He currently heads Pipeline & Network (PN) Service Line, and he also plays an important role in managing quality of project delivery.

Abstract

Non-Revenue Water Reduction Program Highlights for 3 Cities in Taiwan

Taiwan Water Corporation (Taiwan Water) is the largest water entity in Taiwan with more than 5,600 employees and 380 billion NTD (approximately 12 billion USD) total assets value, it comprises 13 regions to provide water services to its 7.8 million customers. Taiwan Water has devised a 2013-2024 master plan (extended 2 more years from 2022) to reduce and manage Non-revenue Water (NRW) to meet the ambitious leakage target 12% (originally shall meet leakage target 13.45% by 2022) with total budget 100 billion NTD (approximately 3.1 billion USD).

Stantec was awarded a contract by Taiwan Water in 2016 to assist them with reducing the leakage for 3 cities, i.e., Keelung, Taichung, and Kaohsiung by 29,000 cubic meters per day (CMD), 79,000 CMD and 66,000 CMD respectively. Stantec devised a NRW reduction program for these 3 cities, selected design and construction supervision consultants, oversaw the implementation of 2.8 billion NTD (approximately 87.6 million USD) program and provide consultancy services to Taiwan Water. This 3-tier project being executed via 3 phases, it involves different stakeholders e.g., municipality, consultants, contractors etc. which further increases its difficulty and complexity.

A focused combination of leakage reduction works and undertaken by contractors which covers the aspects of pressure management, pipe replacement, active leakage control, and speedy good-quality repairs. Although the journey to meet the leakage target is bumpy, we encountered the situation of metallic pipe shortage, Covid-19 pandemic, lacking construction workers, delay in deciding design and construction supervision consultants and outsourcing leakage reduction works etc., the leakage target achieved and maintained.

Eva Lailatun Nisa,
Engineer,
Wyeth Water Consultant Sdn Bhd

Biography

Eva is an engineer specializing in Non-Revenue Water (NRW) analysis, GIS spatial data analysis, and hydraulic modelling. At Wyeth Water Consultant Sdn Bhd, she enhances water supply systems by estimating water losses and performing cost-benefit analyses to drive NRW reduction initiatives. Her project involvements in various states, including Sarawak, Pahang and Surabaya, where she applies her expertise to optimize water management practices and improve efficiency.

Utilizing tools like WaterGEMS and GIS, Eva integrates complex datasets into hydraulic modelling processes to deliver actionable insights. Previously, as a Research Assistant at UPM Holdings, Eva assessed flood risks and investigated mobile flood wall barriers for community flood defense using hydraulic modelling and spatial data analysis. Her work involved integrating technical insights to develop effective solutions for mitigating flood impacts and enhancing community resilience.

With a practical approach to problem-solving, Eva is dedicated to leveraging data and technical skills to improve water management and infrastructure, ultimately contributing to sustainable practices and community well-being.

Abstract

NRW Assessment in PDAM Surabaya

Non-Revenue Water (NRW) is a major problem around the world with the World Bank estimating that about a third of water produced from water treatment works does not reach an authorized customer. This study presents the case of NRW assessment that takes place in PDAM Surabaya (or formally PDAM Surya Sembada Kota Surabaya) which is the water utility for the metropolitan region of the city of Surabaya, the second largest city on the Indonesian island of Java. The service coverage is about 99.9% but with limited network pressure of 0.2-0.5 Bar and there is a requirement to increase the level of available treated water resources, for resilience and to cater for future growth.

The study aims to assess the current water systems by reviewing recent NRW studies and evaluating the systems and processes used to prepare PDAM Surya Sembada's water balances. The findings indicate that there is a lack of complete and sufficient data regarding the water balance of system. Furthermore, no conclusive impact has been identified that directly correlates aging meter replacement, meter accuracy, usage patterns, or pressure. Additionally, the available data is inadequate to accurately calculate the impact in terms of cost and Return on Investment (ROI) before making any investments to reduce the NRW in Surabaya

Foo Sze Hui,
Engineer,
Stantec, Taiwan

Biography

Helen Foo is an engineer at Stantec, Taiwan, specializing in water supply planning and design. She has been actively involved in conducting maturity assessments for AI applications, leveraging tools such as the Intelligent Water System Maturity Assessment, Evaluation Scoring Tool, and Use Case Prioritization Matrix to optimize AI deployment in business, data, and technology dimensions. Helen has contributed to key projects, including the Pipeline Water Condition Assessment and the development of the Taipei Water Department's Leakage Control Master Plan, where she performed cost-benefit analyses to assess the financial viability of long-term strategies. Helen has supported water replenishment projects by assisting clients in planning and design phases. Her ability to combine technical expertise with project coordination ensures that each project meets its objectives efficiently. Helen's work continues to focus on improving operational efficiency and sustainability through innovative solutions.

Abstract

AI Integration in Water Services: A Strategic Blueprint for Taipei Water Department

Integrating Artificial Intelligence (AI) and Generative AI into water management systems offers significant potential to enhance operational efficiency and reduce water loss. The Taipei Water Department (Taipei Water) is undertaking a strategic initiative to address water loss by evaluating its current challenges and AI application needs. This study targets the strategic deployment of AI to address water loss management within the Taipei Water. By employing the Intelligent Water System Maturity Assessment, the current operational state is analyzed to pinpoint specific areas where AI can substantially improve water management efficiency and reduce non-revenue water (NRW). The Evaluation Scoring Tool is used to assess the suitability of various AI tools across business, data, application, and technology dimensions. The Value of Use Case and Implementation Effort Matrix is utilized to prioritize AI implementations, categorizing AI tools into quick wins, long-term strategies, secondary priorities, and deferred initiatives. This approach provides a strategic blueprint for deploying AI-driven water loss management and aiming to optimize future smart water networks.

Nor Suhada Bt Hasan,
Head of Technology,
Ranhill Technologies Sdn Bhd

Biography

Nor Suhada Hasan is currently the Head of Technology at Ranhill Technologies Sdn Bhd, formerly known as Ranhill Water Services. She holds a Bachelor's degree in Engineering Design and Manufacture from the University of Malaya, completed in 2003. With over 20 years of experience in the water industry, she specializes in Non-Revenue Water (NRW) Management. Her technical expertise spans NRW management, GIS, hydraulic modeling applications, and NRW management system development, where she has been actively involved in initiatives to enhance operational efficiency. She also brings valuable experience in Business Development, as well as Contract and Procurement, gained during her tenure at Ranhill Technologies.

She has also served as the coordinator for Twinning Activities under the US-AID program, where she played a key role in facilitating knowledge exchange and capacity-building ePorts between local and international water operators.

Before assuming her current role, she spent 5 years working with a pipe manufacturer, broadening her experience in sectors beyond the water industry. Her track record includes significant contributions to both local and international projects throughout her career

Abstract

Challenges in Addressing NRW in Malaysia

Non-Revenue Water (NRW) remains a major challenge for Malaysia's water supply system, affecting both cost-efficiency and resource sustainability.

This presentation will discuss the key obstacles in managing and reducing NRW, focusing on the need for a comprehensive, long-term approach. It will emphasize the integration of technical solutions, enhanced monitoring systems and the adoption of the right technologies.

The presentation will also stress the need for data-driven decision-making and balancing short-term solutions with long-term strategies. The goal is to provide practical solutions to overcome these challenges, ensuring more efficient NRW management and a sustainable water supply for Malaysia's future.

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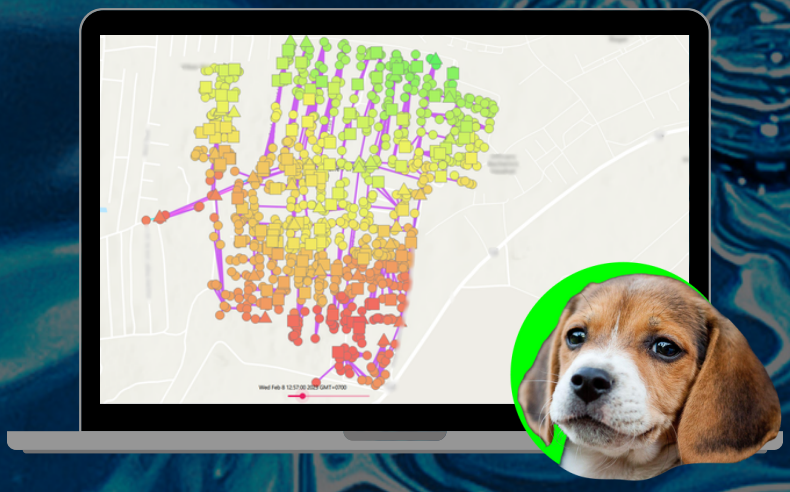

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Panel Discussion

What Needs to Change to Enable Effective NRW Management in Malaysia

NRW in Malaysia has remained relatively constant over the past 20 years, despite investments from the Federal Government, State Governments and Private investors. The last series of Federal projects was aimed at establishing a baseline in NRW, enabling a second phase of projects to reduce NRW from these measured baseline levels. This discussion is aimed at determining whether anything has intrinsically changed in NRW Management over the past 20 years, what else needs to change to enable effective NRW reduction, and how low should Malaysia be aiming to reduce its NRW to.

The Panel will include senior utility staff, Government representatives, regulators and NRW experts.

Anuar Abdul Ghani

Chief Executive Officer,
Ranhill SAJ

Panelist

Anuar Abd Ghani is the Chief Executive Officer of Ranhill SAJ, bringing over 30 years of dedicated service in the water supply industry. He holds a Bachelor degree in Civil Engineering (Hons) from UTM University of Technology Malaysia and a Diploma in Civil Engineering from UITM University Institute of Technology MARA.

Since taking on the CEO role in May 2024, Anuar has focused on fostering a culture of collaboration and innovation within the organization. His previous experience as Operations Director from January 2020 to December 2023 allowed him to work closely with various departments to streamline operations and enhance service delivery for the communities served by Ranhill SAJ. His extensive background includes pivotal roles such as Production and Distribution General Manager and Head of Departments for Production, Network & Distribution, and Non-Revenue Water (NRW).

Anuar is a long-standing member of both the International Water Association and the MalaysiaWater Association, where he actively participates in initiatives to promote sustainable water management practices. His international experience includes meaningful contributions to operational audits in the Holy City of Mecca, Saudi Arabia, and capacity-building programs in the Philippines and Indonesia.
With a strong commitment to community service and environmental stewardship, Anuar Abd Ghani is respected for his strategic approach and unwavering dedication to improving water supply solutions, ensuring that Ranhill SAJ continues to meet the needs of its customers with humility and integrity.

Kelvin Siew

Panelist

Head of NRW Department,
Pengurusan Air Selangor Sdn Bhd

Kelvin Siew is the Head of NRW Department in Air Selangor, Malaysia's leading water operator serving a population of 9.2 million consumers in the state of Selangor, Federal Territories of Kuala Lumpur and Putrajaya. He has 21 years of experience in the water industry; particularly in the fields of water distribution and non-revenue water (NRW).

He is now overseeing non-revenue water reduction, customer billing services and enforcement in line with Air Selangor's strategic plan initiatives towards sustainable NRW reduction, improving operational efficiency and delivering the best experience to our customers.

Kelvin graduated with a BEng (Civil) and has been involved in many facets of the water industry including NRW reduction, water distribution, water quality, water supply planning, customer billing services, crisis management as well as management roles at both regional offices and headquarters.

He is passionate in seeking and applying new emerging technologies in continuous efforts to provide clean water supply to customers in a more efficient and sustainable way. He was previously appointed to Senior Utility Advisory Group of Smart Water Network Forum (SWAN), representing Asia Pacific region. Mr. Kelvin also recently presented a paper at IWA Water Loss 2024 held at San Sebastian, Spain in April 2024 as well as invited as a panelist for Vietwater 2024.

Joe Lim

Panelist

Director, Pipeline & Network Service Line
Stantec, Taiwan

Joe Lim has more than 20 years of experience in the water-related engineering industry, in a wide range of projects including hydraulic modelling, DMA (District Metered Area) planning, transmission water mains design, stormwater sewerage planning & design, wastewater sewerage planning, design & construction management, and alternate project delivery management. His international experiences include Malaysia, Singapore, India, China etc.

Before joining Stantec (legacy MWH) in 2003, he worked as a research assistant in the National Taiwan University (NTU). In the following years, Joe has been extensively involved in projects such as evaluating stormwater sewerage with the aid of hydraulic modelling software, proposing upgrade schemes, and carrying out the planning and design works for water-related pipeline system.

Joe specialises in network modelling, managing projects with multi-interface tasks and has good people and team management skills. He currently heads Pipeline & Network (PN) Service Line, and he also plays an important role in managing quality of project delivery.

Uri Gutermann

Panelist

CEO
Gutermann AG

Uri Gutermann is CEO at Gutermann, a leading manufacturer of acoustic leak detection technology and intelligent water loss solutions, based in Switzerland. Uri joined the family business in 2011. In his former career, he worked as consultant at the strategy consulting firms McKinsey & Company and KPMG and as a banker in the Leveraged Finance practice of CIBC World Markets and in the Agribusiness sector team of the European Bank for Reconstruction and Development (EBRD). Uri holds a Masters degree in international business from the University of St. Gallen, Switzerland, and an MBA from INSEAD in Fontainebleau, France.

Gary Wyeth

Moderator

Secretary
IWA Water Loss Specialist Group
Wyeth Water Consultants

Mr Wyeth graduated from Portsmouth University in 1991 with a Master of Engineering Degree in Civil Engineering.

He has 30 years experience in the water industry, with 26 of those years whilst working in South-East Asia. During this period Mr Wyeth has gained member status of the CIWEM (UK), is a Chartered Engineer, has gained a Graduate Diploma in International Operational Management and is the current Secretary of the IWA Water Loss Specialist Group

Mr Wyeth Started his career as a network modeling engineer for Biwater International and through this built up an expertise in how water supply systems operate. He then moved into NRW management, with Thames Water International and Ranhill Water Systems, gaining further expertise in leakage control, DMZ design & implementation, system monitoring, customer metering and production metering.

He also established the APAC regional office for i20 Water, specialists in advanced pressure management, where he was APAC managing director for 4 years. He further improved his experience of pressure management whilst managing the regional office for Singer Valves, a manufacturer of pressure control valves.

He is currently the Managing Director of Wyeth Water Consultants a Malaysian based NRW Management Company.

Richard Taylor,
Principal Engineer- Water,
Thomas Consultant

Biography

Richard Taylor is a civil engineer with over 35 years experience in the operation and management of water supply networks. For 22 years he worked for a water supply network operator in Auckland, and for the last fourteen years Richard has been consulting in the area of water loss management and Non-Revenue Water for water suppliers around New Zealand. He has also completed several asset management assignments in the Pacific Islands.

Richard is now involved in training and organises national two-day water loss training events held every two years, and runs on-line water supply network training courses. He was also the lead author of the recently updated 'Water New Zealand Water Loss Guidelines'.

Abstract

Fresh Thinking on Private Water Tanks

Household private water tanks are common in many countries around the world, including Asia. These were traditionally installed to provide a more reliable supply of water by having on-site storage available when the public water supply was intermittent or unreliable. Should this be reviewed? Is this still an optimal solution? Furthermore, the low flows which occur when tanks are filling are often not able to be recorded accurately resulting in high levels of commercial losses (i.e. water meter under-registration). Reverting to on-demand supply would help resolve this metering issue.

This presentation will take a fresh look at private water tank systems, asking questions such as:

- Is emergency storage still necessary? How reliable has the public water supply become?
- Would customers prefer (and possibly pay more) for an on-demand supply if showers and taps operated better, and higher flows were available?
- Would household water use (including leakage) increase, and by how much, if a household changed from private tank to on-demand supply?
- What would be involved operationally for a water supplier to convert a supply area (or even individual properties) from private tanks to direct on-line supply? Is there sufficient network capacity available?
- If private tanks are to be retained, is a new ultra-low flow meter needed to record tank flows very accurately, to reduce commercial losses to low levels?
- Could these 'ultra low-flow' meters also act as a restrictor and limit maximum flows with water supply operational benefits?
- This presentation will hopefully stimulate interest, discussion and debate regarding these issues.

Andy Ko Seng Yang,
Sales Manager,
Premier Water Services Sdn. Bhd.

Biography

Andy Ko Seng Yang is presently the Sales Manager for Premier Water Services (PWS), which is a fastgrowing company focused mainly on water solutions with core on smart data acquisition, innovation in metering solutions and automated pressure controllers.

Together with the company, he has continued to lead a change in the water supply industry including being a pioneer in Malaysia in educating the prerequisite for higher metrology, improved reliability metering and kick-start the successful movement of smart water metering in Malaysia.

A combination of >10 years of dedication and passion, and with the continuous input from meetings and discussions with water industry players continues to provide him with shared insights and ideas to continue to advice and lead the change for water digitalization and management.

While acknowledging that complacency in technology is a hurdle, understanding that every water operation has different difficulties and challenges to overcome is still his priority in providing the optimum solution and advice to each individual scenario.

Abstract

Customer Metering and Billing

With the escalating focus on water resource conversation, the landscape of water management is undergoing a profound transformation. As Non-Revenue Water (NRW) continues to reduce to lower percentages, the feasibility of further reduction via conventional methods diminishes and changes to digitalization of the water network is becoming necessary. Leading this change are smart water meters serving a new era characterized by efficiency, sustainability, and intelligent resource allocation. At the core of this innovation are drive-by accurate water meters with reliable lifespan, while utilizing automated meter reading/ automated meter infrastructure (AMR/AMI) technology. This in turn reduces conventional metering challenges; while optimizing capital and operational expenditure. Representing a significant leap forward in water management technology, these devices harness cutting-edge modules with wired/wireless communication, and data analytics to capture data and alarms into water consumption pattern. Smart water meters empower both consumers and utility providers with a wealth of information, fostering a more informed and sustainable approach to water consumption; thus, becoming a recent popular topic in the water segment.

However, the major question is, what is the priority on metering to each individual water operation and the various different scenarios met? What is deemed important and how do we decide what should be focused on and to be considered? Is it commercially and technically sensible at the current moment and sustainable in the long run? The topic will take into the account the cores of smart metering, from the water meter itself to the smart modules and its subsequent online informative platforms.

Nur Amira Murad,
Special Projects Manager | Non-Revenue Water, Deca Solutions Sdn. Bhd.
IWA MWA Young Water Professionals Malaysia

Biography

Nur Amira Murad is a registered engineer with the Board of Engineers Malaysia (BEM) and holds a Bachelor's in Engineering (Hons) Civil from Universiti Tun Hussein Onn Malaysia, Batu Pahat, Johor. She currently serves as the Special Projects Manager at Deca Solutions Sdn Bhd, specializing in Non-Revenue Water (NRW) management and advanced water solutions. Her focus is on implementing innovative technologies for pressure management and leakage detection to optimize Malaysia's water distribution systems. Amira's career in NRW management began with comprehensive training, where she focused specifically on NRW reduction projects. She has successfully led numerous initiatives to reduce NRW through advanced pressure management and leak detection techniques, significantly improving the operational efficiency of water utilities.

Beyond her technical expertise, Amira is passionate about promoting youth involvement in the water industry. As an active member of the MWA IWA Young Water Professional Malaysia, she has led initiatives that emphasize the role of young people in addressing Malaysia's water challenges, including organizing events and fostering discussions on water loss and sustainable practices. Her contributions have played a significant role in advancing Malaysia's water sector, particularly in reducing NRW and optimizing water systems, while also mentoring the next generation of water professionals.

Abstract

Managing Non-Revenue Water in a Youth Perspective

Begin by framing NRW as more than just a technical problem; it is a critical issue for future generations and a pressing environmental and social challenge. Emphasize that youth today are coming of age in an era of climate crisis, where every resource is increasingly precious. NRW affects community resilience, economic development, and environmental sustainability which is key values held by the youth.

Young people see NRW management as a means to secure a more sustainable world. With growing urban populations and climate volatility, reducing NRW is essential not only for current infrastructure efficiency but also for safeguarding future water supplies. Youth recognize that poor NRW management is a missed opportunity to preserve resources, fight climate change, and build equitable access to clean water. This presentation delves into the critical issue of Non-Revenue Water (NRW) in Malaysia, emphasizing the transformative role that youth can play in pioneering advanced technological solutions to mitigate water loss and enhance system efficacy.

The presentation outlines several state-of-the-art strategies where youth can drive significant innovation. A key focus is the deployment of the Internet of Things (IoT) to enable smart metering systems, which facilitate real-time monitoring, automated leak detection, and precise consumption analytics, empowering utilities to adopt proactive, data-driven strategies for optimizing water distribution and minimizing waste. The application of Geographic Information Systems (GIS) for sophisticated hydraulic network modeling enables the identification of high-risk zones prone to leakage. By integrating predictive analytics and machine learning algorithms, the youth can significantly enhance the power to forecast system failures and optimize maintenance schedules, thereby mitigating operational downtime.

The presentation also emphasizes the utility of non-invasive leak detection technologies, such as acoustic emission (AET) and pressure transient analysis, which enable precise, real-time identification of hidden leaks within the distribution network. Additionally, the integration of pressure optimization systems, including variable frequency drives (VFDs) and pressure-reducing valves (PRVs), ensures the stabilization of system pressure, preventing over-pressurization and minimizing burst risks. In conclusion, youth-driven engineering innovations, underpinned by these cutting-edge technologies, are poised to play a pivotal role in reducing NRW, optimizing water resource management, and securing Malaysia's long-term water sustainability.

Ts. Zaulkarnain bin Abd Manap,
Head Division Of Network & NRW,
Ranhill SAJ

Biography

Ts. Zaulkarnain Abd Manap has been working in the water industry for more than 30 years. Following his graduation from Universiti Teknologi Malaysia (UTM) with a Bachelor of Science in Civil Engineering, he has developed a noteworthy career, beginning as a technical assistant and rising to the position of division leader for the preceding five years.

Zaulkarnain's proficiency in water asset management and non-revenue water (NRW) control is acknowledged by the Malaysia Board of Technologist (MBOT) and the Board of Engineers Malaysia (BEM), where he is a registered member. He participates actively in the Malaysia Water Association (MWA) as well.

His extensive knowledge and managerial skills make him a valuable asset in the water management sector, and he is dedicated to advancing sustainable practices within the industry.

Abstract

Case Study on the Efficiency of Pipe Rehab Program 2018/2019

Pipe rehabilitation is one of the major activities in NRW reduction program. However, it has to be executed diligently in order to achieve the desired objectives. Generally, a pipe rehabilitation program can benefit in more than just leakage reduction. It could result in better service level and reduced maintenance cost.

To ensure an effective long term investment, RSAJ has embarked on a small scale pipe rehabilitation program to study the dos and the don'ts, and to find out the best methodology in order to achieve the objectives.

These findings are then planned to be implemented in the big scale pipe rehabilitation program. However, as the size of contracts got bigger with limited time frame, the execution proved to be more challenging than expected with less than desired results.

This paper will discuss the comparison between the two pipe rehabilitation approaches with the associated challenges.

Albert Carmenate,
Chief Geoscientist and Global Sales Manager,
Terra 15 Technologies Pty. Ltd.

Biography

Albert Carmenate is the Chief Geoscientist and Sales Manager at Terra15, a leader in distributed acoustic sensing technology for infrastructure monitoring. With a robust background spanning over eight years in geophysics, structural geology, and business development, Albert has made significant strides in applying fiber optic technology for urban water management and leak detection. At Terra15, he manages a global sales team and deployment of the Treble interrogators, which detect vibroacoustic signals on fiber optic cables to monitor infrastructure integrity.

As a passionate professional he enjoys sharing insights gained from deploying fiber optic technology across large urban networks, focusing on the successes, challenges, and critical considerations for implementing such systems at scale. His expertise in integrating advanced geophysical solutions has positioned him as a key figure in sustainable infrastructure monitoring, helping cities manage water resources more effectively and reduce water loss.

Abstract

City Scale Fiber Optic Leak Detection - Lessons Learned

Since November 2019, Terra15 has been utilizing Distributed Acoustic Sensing (DAS) technology to detect pipeline leaks. This approach involves using a single fiber optic cable, often tens of kilometers long, as a "listening array" that can pinpoint sounds and vibrations at specific locations along the pipeline to within several meters.

One of the key advantages of DAS is its suitability for monitoring long linear lengths, making it an ideal solution for pipelines. Additionally, existing fiber optic cables are often already in place near many pipelines, providing a convenient opportunity to deploy DAS without additional infrastructure costs. Installing new fiber optic cables with new pipelines can also be done at a very low cost.

Proactive leak detection enabled by DAS allows utilities to extend the lifespan of aging assets, respond quickly to hidden leaks, and prioritize pipeline renewal programs. A case study in one central business district has shown promising results. Terra15 is currently monitoring approximately 60% of the pipelines in this area and has detected a wide range of water usage patterns and leaks, including non-visible leaks that eventually developed into bursts. Other notable detections include high-rise building leaks, broken valves, and hydrant usage during fires.

DAS's real-time detection capabilities are particularly notable, as it can identify leaks that account for less than 1% of the pipe's flow. Recently, Terra15's technology successfully directed crews to a leak in a newly commissioned water pipeline, allowing for fast repairs. Large pipes are ideal candidates for DAS due to the limited number of suitable technologies available for sensitive leak detection.

Mark Nicol,
Director,
Nicol Consulting Services Pte. Ltd.

Biography

Mark has 22-years of experience in the water industry, crossing multiple geographies, cultures, and levels of development. Having worked as a Network Engineer for Thames Water in the UK, Mark relocated to Malaysia in 2007 to join Ranhill Water Services as Network Modelling Manager, where he was responsible for establishing and leading the modelling department and delivering projects in Malaysia, India and Indonesia.

In 2011 Mark joined Mueller Water Products to lead the expansion of the recently acquired Echologics, initially in the Asia Pacific region and later also in the European and Latin American regions

In September 2023 Mark established Nicol Consulting Services which provides bespoke consulting services to connect innovative technology companies with end clients in the Asia Pacific region.

Mark has a BSc in Geography and a MCs in Surface Water Modelling and Management from the University of Reading, and an Executive MBA from Henley Business School.

Abstract

Utilising Pipe Condition Technologies to Assess Remaining Asset Life and Prioritising Pipe Replacement Works

Keywords: Water network asset management, data-driven insights, emerging technologies, cost optimization, service reliability, smart networks, condition assessment

Aging infrastructure, budgetary constraints, climate change, and ever-evolving customer demands have converged to create a pressing need for transformation in water network management. Across Asia, this has been exacerbated by rapidly growing populations and increased demand for water due to significant commercial and domestic development, to a point where in many places the existing infrastructure is no longer fit for purpose. At the same time, we are witnessing substantial levels of water loss in most networks.

Significant investments have been made and continue to be made to address these problems, which are due in part to aging infrastructure. However, the problem persists, and it is widely acknowledged that to address the root cause, more pipe replacement is needed. While funding is being made available for this in some countries, it is still insufficient to replace entire networks, and it is not always feasible to do so.

This presentation will address two main questions:

1. Do we need to replace all our pipes, or can we focus on those that need to be replaced today?
2. How do we decide which pipes to replace, and in what order should we replace these assets to achieve the best return on investment?

The presentation will provide a proven methodology that can be followed by water utilities, asset owners, regulators, and other stakeholders to gain better insights into the condition of our water networks. This approach will enable more informed decisions, justify capital and operational investments, and ultimately ensure the long-term sustainability of water supply networks by addressing leakage while also meeting current and future demands.

Iznul Muazim,
APAC Sales Manager – Technologies,
Mueller Water Products, Inc

Biography

Iznul Muazim has extensive experience in the water, wastewater, stormwater, and environmental sectors, with a proven track record in strategic business development and project management. His collaboration with utilities, engineering consultants, system integrators, technology companies, solution providers, and industry interest groups—both locally and internationally—enables him to understand client needs and support data-driven decision-making through the adoption of smart water technologies and solutions.

Abstract

Optimizing Pipe Renewal through Identification of Degraded Sections and Benefits of Formalized Condition Assessment Programs for Water Utilities

Buried pipelines are crucial for the transport of drinking water, providing an essential service to society. Water-main breaks can cause significant economic losses, catastrophic failures, and contribute to NonRevenue Water (NRW) rates. Consequently, continuous maintenance and renewal of pipelines are necessary to mitigate these risks. Current practices often lead to the premature replacement of large pipe segments still in good condition, resulting in considerable resource waste. Efficient pipeline replacement requires the identification of the most deteriorated and 'at risk' pipelines.

Pipeline condition monitoring offers opportunities to reduce costs and enhance efficiency in the renewal process. However, many condition assessment methods are invasive and disrupt service. Acoustic condition assessment emerges as a vital non-invasive and non-disruptive solution.

This paper presents a method for identifying structural defects in pipes using acoustic measurements. A validation study compared acoustic measurements to ground truth data, revealing that high-resolution acoustic assessments measure pipeline condition with less than 10% error. This method provides a crucial tool for water utilities to develop effective asset management strategies proactively.

Understanding the health and performance of assets is fundamental to effective planning for their management and renewal, but it presents significant challenges. Monitoring and inspecting assets is expensive, and proactive condition assessment programs are often underfunded. Water utilities, typically possessing limited information on asset condition, face the challenge of prioritizing renewals and assessing the confidence in available data. Given limited funding, a risk-based approach is essential, prioritizing the inspection and assessment of critical pipes. These inspections improve assurance that renewal and maintenance expenditures are appropriately allocated.

This paper outlines the benefits of formalized condition assessment programs based on lessons learned from planning and implementing a Condition Assessment Project. The discussion includes:

- The essential role of condition assessment as a major toolbox item.
- Processes and strategies adapted over the program's lifecycle in response to funding and priority changes.
- Insights into the importance of detailed planning for inspection programs.

KEYWORDS

Asset Management, Condition Assessment, Pipe Replacement, Asset Investment

Johnson Damian,
Project Coordinator,
Aqua Analytics

Biography

Johnson Damian is the Project Coordinator and GIS Specialist at Aqua Analytics, a consultant for water loss management in Australia and New Zealand.

With over 10 years of experience in Geography and GIS, Johnson handles various geospatial aspects of water network asset management, leak detection, pipeline condition assessment, and water network optimisation performed by Aqua Analytics.

Johnson is passionate about data science and communicating information through cartography. He also previously taught Geography at the University of the Philippines.

Abstract

Why Spatial Reporting Matters: GIS-based Identification of Leaks in Water Distribution Networks

Spatial reporting of leakages and asset defects is essential for the sustainable management of Water Distribution Networks (WDNs). This paper highlights how a GIS-based framework for locating, reporting, and documenting leakage in WDNs benefits water utilities and government agencies.

A scalable methodology with a Geographic Information System (GIS) at its core has been developed by Aqua Analytics to meet the requirements of various water utilities in Australia and New Zealand. Most of these have unique systems for managing Non-Revenue Water (NRW) and mapping their network assets. An online map of water assets is created within a digital spatial environment using client data in the form of GIS files or georeferenced drawings. Then, water network technicians use digital survey solutions that are integrated with the spatial tools, so that all leaks found are linked to asset IDs, geographic coordinates, or street addresses as the minimum.

Leakage reports can then be seamlessly integrated into the Enterprise Asset Management (EAM) environment of clients. This will help them address leakage within target response times, accuracy, and location identification. For utilities with assets in remote areas and lacking extensive mapping, the photos and maps on the reports can help them locate the issues with ease.

GIS-based documentation of leaks also presents opportunities for data analysis and determining further action to improve WDN efficiency such as transient pressure monitoring. Moreover, the spatial reporting provides advanced insight to the operations on asset risks and helps stakeholders develop strategies to mitigate their impacts.

Igor Dundović,
Independent Water Specialist | NRW Advisor,
HIDROMODEL

Biography

Water specialist with more than 15 years of experience in hydraulic modelling, master planning, water loss and NRW analysis and design/supervising for water supply distribution systems in Europe, Asia and Africa, working on 200 projects with 50 different water supply service providers. Main specialties in Water loss reduction projects are current state analysis, due-diligence and preparation of pre-implementation documents for NRW projects including GIS preparation, DMA zoning and design, hydraulic modelling, staff training and master planning of short- and long-term development program for water supply distribution systems including Project Management of Water loss reduction project implementation.

Igor's education includes Master engineering degree in Civil Engineering in a field of Hydrotechnic, Post-graduate University specialisation in Environmental protection with focus on Water losses and currently finishing Doctorate (PhD) in field of Hydrotechnic with focus on Water Losses. Igor is member of Croatian and European chamber of Civil Engineers.

Professionally, Igor is currently engaged in Water loss projects in European Union and East Africa. and currently serving under four-year appointment as an International Water Association Water Loss Specialist Group Management Committee member.

Abstract

Virtual DMA and Hydraulic Model as Main Tools for Starting Water Loss Project

This presentation is a result of 15 years of intense work performed in more than 50 Water Distribution Systems (WDS) in developing countries of Africa and Middle east, European Union (EU) and Eastern Europe. Best practices shows that Water Loss reduction (WLR) project should implement Soft Tools before starting DMA construction, Pressure management installations and Pipe replacement works. Soft tools include designing of GIS, implementation of Virtual (temporary) DMA's and establishing Calibrated Hydraulic Model with a result in a form of a detailed Master Plan or NRW Reduction Programme.

Main goal of this presentation is to raise the awareness that every step to successful WDS management and WLR starts with easiest and most affordable step and that is implementation of Soft Tools with development of NRW Reduction Programme. During this process, all included parties work together in solving basic problems like network layout, object interdependence and flow and pressure values, apparent losses status, etc. Case studies show how several big and small problems were solved even during this inception phase as it includes intensive field investigation and pressure/flow measurement with establishment of virtual DMA's and Hydraulic assessment.

Presentation will show proven approach in starting of WLR project with several case studies for immediate benefits of implementing Virtual DMA's and Calibrated Hydraulic model. As every WDS is different in size, consumption patterns and time under pressure (intermittent supply or 24/7 pressurized), this presentation will show scalability and flexibility in an approach that can be implemented anywhere in the World.

Bagyo Gunawan,

Manager of Customer Connection Compliance,
PDAM Surya Sembada Kota Surabaya

Biography

Mr. Bagyo Gunawan, having a formal education background in electronic engineering and geographic information system. Starting career as a customer relation in PDAM Surya Sembada Kota Surabaya. Now already 18 years experience in field of commercial area of water business. Align with company focus area in reducing NRW, my job is lead a unit to reduce NRW in commercial area, also assisting the NRW technical team. I am also specialist in detecting illegal connection, both in domestic and commercial area.

Nurlillah Satria Pratama,

Manager of Water Consumption Management,
PDAM Surya Sembada Kota Surabaya

Biography

With background formal education of Bachelor in Information Engineering. I am starting career in Information Technology Department. Specialized in water billing system. Now, with 18 years of experience, this last two years I lead a departement that the main role in generating corporate revunue from water. I focus to reduce NRW by maintain revenue water and increasing the accuracy of water meter. I also starting to digitalized water metering system with smart meter.

Abstract

Optimizing Leak Correlator Device for Creating Potential Leak Database Based on ESRI GIS to Reduce NRW in Surabaya City Indonesia

PDAM Surya Sembada Kota Surabaya, is a water company owned by the government of Surabaya City, Indonesia. Serving for water only in Surabaya City. With more than 625,000 customers, it has 6 water treatment plants, total production capacity of 12,000 lps. Distribution pipe network of 6300 km. The challenge currently faced is to reduce high NRW of 30%. The method reduction in physical NRW currently carried out is still reactive, by accelerating the time to repair of pipe leaks. Preventive method by replacing pipes that have expired service life. There is no active physical NRW reduction strategy yet.

Utilizing Gutterman Aquascan TM2 Leak Correlator and already owned ESRI Geographic Information System (GIS), can actively detect potential leaks in the pipe network. With the potential risk already shown in GIS. The development is adding a thematic spatial layer to GIS that shows the location of potential leaks. Field Engineers periodically detect potential leaks in the pipe section network by utilizing Aquascan TM2 Leak Correlator. The output of this active method of searching for potential leaks is spatial points on the pipe network shown in GIS. Followed by the Field Leakage Engineer to conduct detailed search at the indicated location and repair the leaks.

Within 1 month of implementation, 2 leak points have been found and repaired in 600 mm diameter pipe. We plan within 1 year of this implementation, will be able to significantly reduce NRW in the city of Surabaya. Details of this method will be presented in the presentation.

Dwike Riantara,
Managing Director,
Perumda Air Minum Tirta Mayang, Jambi City

Biography

Dwike Riantara is a former journalist, now the Managing Director of Perumda Air Minum Tirta Mayang, a public water utility of Jambi City in Sumatera, Indonesia. Prior to this, he worked with the Indonesian Water Supply Association (PERPAMSI) where he initiated, supervised and completed more than 50 Water Operators Partnerships (WOPs) projects in South East Asia since 2011, including the Indonesian national WOPs. Dwike has more than 10 years of experience in facilitating international water partnership to build the capacity of water utilities. He holds a Master Degree in Environmental Studies from the University of Indonesia. He was invited to speak in a number of international water events, including the recent Korea International Water Week (Daegu, 2022), JICA Executive Forum (Yokohama, 2023), Water Loss Forum (Istanbul, 2023), and Malaysia International Water Convention (Kuala Lumpur, 2023).

Abstract

Smart Water Monitoring System Using IoT Water Leak Detection Sensor: Jambi City Pilot Project

Water loss in distribution has become a significant issue for Tirta Mayang Jambi City, leading to service disruptions, potential revenue loss, and increasing operational costs. To resolve this issue, the project "Smart Water Monitoring System Using IoT Water Leak Detection Sensor" in partnership with USOL Co., Ltd., Korea, has been developed to mitigate water loss by utilizing IoT-based leak detection sensors in District Metered Area (DMA) Remaja, Tirta Mayang Jambi City. This sensor system is connected through an IoT network for continuous monitoring and identification of leaks. Data from the sensors is transmitted in real-time to a platform that provides early warnings and detailed reports on the location and severity of leaks (Abebe, 2024). The sensors are installed in the DMA Remaja, established by Tirta Mayang, covering 1,444 house connections. DMA Remaja records 40% Non-Revenue Water in the last 12 months. The sensors work in order to effectively monitor and promptly identify the problems (Kumar and Jagadeep, 2022). The pilot project aims to significantly reduce water loss and accelerate response times to leaks. This project provides a practical solution to water loss while also advancing smart technology in water resource management and establishing a model for similar projects in other regions (Curry et al., 2018).

Keywords: water loss; water leak detection; IoT

Acknowledgement

This project is fully supported by USOL Co., Ltd. In the process of project delivery, we were also supported by the Korea Institute of Procurement. PT Telekomunikasi Selular provides us with NB-IoT services.

Julio Cesar Eniceo,
North Quezon City Business Area NRW Partner,
Maynilad Water Services Inc.

Biography

Julio Cesar Eniceo is an NRW Assistant Manager from Maynilad Water Services Inc., with over 14 years of experience in managing and reducing non-revenue water. He has been assigned to various positions within their Division. From being a Project Inspector to a Team Engineer and Planning and Analysis Officer, he is currently the Business Area NRW Partner of North Quezon City Business Area. In 2013, Julio Cesar presented to the Division's managers a paper on the study on the effects of small meter replacement using volumetric meters. And in 2018, he co-authored a study on the benefits of PRV optimization. He played an instrumental role in the company's NRW reduction in 2019. As a result he was awarded Best Supervisor during the "Dakilang Manggagawa Awards", a division-wide recognition, that year. He also became an Employee of the Year finalist at the "Golden Meter Awards", a company-wide recognition, the following year. His commitment to excellence is evident through his continuous desire to learn. He hopes to inspire other engineers to contribute to achieving the company's mission and vision.

Abstract

Strategies and Outcomes in Maynilad's Non-Revenue Water Reduction: A Comprehensive Review

The growing demand for expertise in minimizing water losses has become a critical global issue in non-revenue water (NRW) management. Many water operators, particularly in middle- and low-income countries, face significant challenges in addressing the various factors contributing to NRW. High personnel turnover exacerbates these difficulties, leading to a loss of institutional knowledge and hindering effective management.

To effectively address NRW, water utilities must concentrate on four essential pillars designed to mitigate both physical and commercial losses. These pillars provide a framework for developing a comprehensive NRW Management and Reduction Plan tailored to the specific conditions of each distribution system. Equally important is the need to develop and empower employees to ensure sustainable NRW management.

This paper seeks to provide a comprehensive overview of Maynilad's NRW reduction initiatives. It will detail the specific programs implemented to tackle various NRW challenges, assess the outcomes of these strategies, and outline Maynilad's future plans for achieving its NRW reduction targets. Additionally, the paper will explore how Maynilad has educated and engaged both employees and consumers in water conservation efforts, highlighting their role in the overall success of NRW reduction strategies.

Andrew Yu,
Technical Lead,
Stantec Consulting Services Inc.,
Taiwan Branch

Biography

Menghsu (Andrew) has a wealth of experience in the water industry, with a particular focus on planning, design and project management of Non-Revenue Water (NRW) reduction. His expertise also extends to District Metering Area (DMA), trunk mains condition assessment, water supply network, data-driven analytics, and

hydraulic modelling.

Since joining Stantec (former MWH) in 2014, his team has assisted significant water utilities in Taiwan with developing an NRW reduction strategic plan for many cities, including Taipei, the capital. His team also managed two of the comprehensive NRW programs from the strategic plan for eight years since 2016 for the cities of Keelung and Taichung. Other selected project experiences include building an island-wide smart water network for Lienchiang County, planning for a resilient water supply system for Hsinchu City, which is known for the semiconductor industry, assessing risks and conditions of all trunk mains greater than 800mm across Taiwan and planning DMAs for several cities.

In addition to providing services locally, his team has worked with partners to export expertise to other geographies or assisted international companies with creating potential collaboration opportunities with the local authorities. His team is welcoming partners to explore possible water-related opportunities in different Asian countries.

Abstract

Looking Back to Move Forward: Two Decades Journey of Addressing Water Loss in Taipei City

The Taipei Water Department (TWD) is Taiwan's second-largest water-supplying business unit. Since 2006, TWD has been implementing the "Water Supply Network Improvement and Management Program" (The Long-term Program) to reduce pipe leakage to achieve a leakage percentage of 10% by 2025. The percentage of leakage has decreased from 26.99% in 2006 to 11.20% in 2022, marking a 15.79% reduction over the past 17 years. TWD has adopted four main strategies for leakage control: "Pipe replacement," "Pressure management," "Active leakage control," and "Speed and quality of repairs." For pipe replacement, TWD utilizes their 800+district metered area (DMA) and a web-based intelligent management system to target high NRW DMAs and replace all distribution pipes with ductile iron pipe (DIP) and all service pipes with corrugated stainless steel pipe (SSP) in DMAs. As part of active leakage control, TWD has installed noise loggers in DMAs for leakage detection since 2017, and assessment of DMA revenue water percentage is carried out at different frequencies based on the ranks of leak recurrence risk.

Regarding speed and quality, TWD has been committed to repairing 95% of reported leaks within one day and 100% within three days since 2017. Regarding pressure management, TWD has combined the variable speed driver (VSD) with an endpoint-pressure feedback control system to meet customer water demand with lower and more stable water pressure, aiming to simultaneously reduce energy consumption and potential leakage. In the future, TWD will look at more digital tools, including those powered by AI, to continue strengthening the long-term maintenance and management of the open network and go forward to meet the 7% leakage rate in the next decade.

Tony Gwynne,
Leakage Solutions Sales Director,
Ovarro

Biography

Tony Gwynne – Ovarro Global Leakage Solutions Director with 30 years of experience in Water Distribution, NRW, performance management and process improvements. Expertise in Non-revenue water projects across the UK and International markets. Tony has been with Ovarro since November 2020 bringing his knowledge into new solutions to reduce clients water losses through new technology and now the new Ovarro AI platforms to enhance our customer outputs.

Our aim at Ovarro is to support a sustainable future for the global water security through our innovation and technology.

Abstract

Utilising Cloud Automation to Rapidly Locate Leaks in Water Networks

A new solution from Ovarro marks a significant improvement in the identification of Points Of Interest (POIs) – locations in a water distribution network that are potentially leaks and are worth investigating. Correlation of pipeline audio samples has long been proven to be an effective method of identifying POIs. As interest in this solution grows, so to does the work required to deploy, collect and analyse the resulting data. Ovarro's new solution automates deployment planning, simplifies the deployment and data recovery processes, and automates the analysis of thousands of audio correlations to extract POI's where the confidence of a leak being found exceeds 85%. This extrapolates to a false positive rate less than half the industry standard, meaning that leaks are found faster, with less effort, and less time wasted in the field.

David Crotty,
Head of International Sales – East,
HWM Global

Biography

David (Dave) has 28 years experience in the water industry, with 20 of those years working in South-East Asia, residing in Hong Kong, Malaysia and Indonesia. Latterly as the International Sales and Business Development Manager for Halma Water Management, he has spent time in United States as the head of the HWM operation in the US, before taking up his current role as Head of International Sales – East.

Following graduation as an Electronics Engineer, he spent the early part of his career designing and developing electronic equipment for oil and gas, moving on to the UK Nuclear industry and finally into Water with HWM in a commercial role.

He moved to Southeast Asia to cement HWM's presence in the region. Establishing and maintaining an effective group of distributors in the region.

Over the past 28 years David has developed in-depth knowledge and experience in leak detection, pressure management and network monitoring.

Abstract

Machine Learning and Leak Detection

For over 30 years acoustic leak noise loggers have been used as a primary tool for leak detection. The ability to 'listen' for leaks at the optimal time with objective consistent results has undeniably assisted water utilities in finding more leaks more quickly. Early leak noise loggers offered limited information generally giving only an indication of how loud the leak was and how consistent the noise. While this information is extremely valuable even today, it took experience from the analyst and the unique abilities of leak detection technicians to get the best values from this data.

As technologies developed so did the sophistication of leak detection noise loggers, the most important of these was the ability to deliver the data to the user remotely and the facility to record and transmit audio recordings of the leak. There are some obvious benefits of these developments primarily the ability to remotely listen to leak noise and correlate. However, it still takes intervention from an analyst to identify real leaks from false positives.

With the recent introduction of machine learning there is an exciting opportunity to derive further insights from the data these audio files provide. The presentation will explore currently available automatic analysis techniques and potentially where these technologies can be taken.

Loga Sunthri Veeraiah,

Senior Executive, ESG Unit of Strategic Planning Department,
National Water Services Commission (SPAN)

Biography

Loga Sunthri Veeraiah is currently a Senior Executive at the Strategic Planning Division, within the National Water Services Commission (SPAN) Malaysia. SPAN is a technical and economic regulatory body taking care of the provision of the water supply and sewerage services in Peninsular Malaysia and Federal Territories of Putrajaya and Labuan. Loga is part of the team which pioneers ESG activities for SPAN and the water services industry in ensuring that we leverage and cooperate towards green transitioning. This includes identifying suitable decarbonization strategies and ESG goals across the sector and concurrently translating these towards amplifying innovative and transformative water services industry. Loga leads the GHG accounting program for SPAN and industry through MGTC's Low Carbon Operating System (LCOS). Loga's other endeavors include technical knowledge on water services, climate resilience of water industry, risk assessment related activities, preparation and implementation of SPAN Water Safety Plan, dam water level monitoring and reporting, providing input for the various studies policies and studies such as Integrated River Basin management (IRBM) and Total Daily Maximum Load (TMDL).

Loga has more than 20 years of experience, with the last 8.5 years with SPAN as a regulator of the water services industry. She brings to the table experience on ESG, climate change, risk assessment and management for the water industry in Malaysia. Loga is actively involved in the International Water Regulators Forum (IWRF) of IWA since 2021. Loga completed her Bachelor of Engineering (Civil & Environmental) in UTM Malaysia and completed her post graduate degree on MSc in Sustainable Water Management program from the Newcastle University, in the UK.

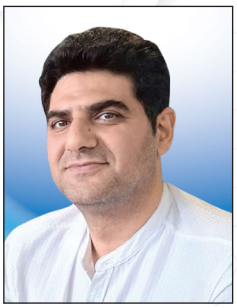
Abstract

GHG Emission Management of Water Services Industry with LCOS

Water is both the frontline and the first casualty of the emerging climate crisis. As stewards of Malaysia's most essential resource, SPAN and the water industry are uniquely positioned and urgently obligated to lead the way in safeguarding our future. SPAN aspires to support and accelerate the Malaysian National Net Zero Carbon Aspirations by 2050 and to be an industry lead in proactively promoting ESG principles and GHG management. The journey towards decarbonizing the water services industry is a multi-faceted pursuit that is not seen as an easy road within the industry in Malaysia. The Water Services Industry is an 'energy intensive' industry and therefore appropriate measures must be taken. The enablers and challenges faced by the water and wastewater operators are more geo-specific, involving multi-level boundaries and thorough scoping, different local sources and conditions, variable in terms of geography and users.

Climate resilience is emerging as a critical lens for future business success. Understanding the carbon emissions associated with each activity is essential for driving towards carbon efficient operations and for stimulating innovation in technology and operational practices or even alternative nature based, lower carbon intensity materials. The presentation outline are;

- Overview about the impacts of Climate Change to the Water Sector – providing some understanding on the projected hydroclimatic studies as well as risks and hazards to the water services.
- Provide a deeper understanding of the SPAN and the Water Services Industry – the boundaries, scopes and landscape of the industry in terms of GHG Management
- Current Initiative of SPAN and the Industry on GHG accounting and management using the Low Carbon Operating System (LCOS) of MGTC
- Current Challenges on Water Services Industry in managing GHG Emission



Abolfazl Khalafi,
Engineering Manager,
Excel Pipes Sdn. Bhd.

Biography

Abolfazl Khalafi is currently serving as an Engineering Manager at Excel Pipes Sdn. Bhd. Previously, he held the position of Design Manager at Anhar Jonoob Consulting Engineering company in Iran. He holds a master's degree in Environmental Engineering from University Putra Malaysia (UPM) and a master's degree in Agricultural Engineering, specializing in hydraulics, from Shahid Chamran University in Iran. Additionally, he is pursuing a Ph.D. in Environmental Engineering at University Putra Malaysia (UPM)."

Mr. Khalafi brings a wealth of experience in design and implementation of some of the seminal projects in Iran. He has more than 14 years of design experience for irrigation and drainage, water, and wastewater projects in Iran and Malaysia. Some of his projects include design of the main sewerage treatment plant for city of Panj Shahr, design of Abadan City's main water pumping station with a capacity of 2 m3/s, and complete design of potable water system for Dezful, a city of 700,000 people including main water pipelines, water networks, pumping stations and reservoirs. Abolfazl has had experience designing with all pipe materials in variety of applications including high pressure lines up to 40 bars.

Abstract

Sustainable Water Management: Reducing Non-Revenue Water and Carbon Footprint through Strategic Infrastructure Planning

Non-Revenue Water (NRW) presents a substantial challenge for water utilities, affecting financial stability, operational efficiency, and environmental sustainability through increased energy consumption and carbon emissions. Key contributors to NRW include hydraulic design, construction practices, material selection, and maintenance strategies. This paper investigates the pivotal role of hydraulic design and transient flow dynamics in mitigating NRW while extending the lifespan of water infrastructure, such as pipelines and pumps. By prolonging the life of these assets, utilities can achieve significant reductions in both operational costs and carbon footprint.

The paper emphasizes the importance of selecting materials and designing systems that can withstand pressure surges, thereby reducing energy consumption and preventing undue stress on pumping systems. Using case studies, it demonstrates how strategically chosen materials with higher resistance to transient pressure surges can minimize pipeline fatigue, prevent bursts and leaks, and enhance pump efficiency. This holistic approach to managing transient flows and infrastructure stresses provides a pathway to more sustainable water management.

Furthermore, this study explores the impact of different pipe materials, particularly in terms of their energy consumption over time and carbon footprint, highlighting how material selection not only influences pipeline durability but also the long-term efficiency and sustainability of the water distribution network.

Moinak Banerjee,
Cofounder & CTO,
Solinas Integrity

Biography

Moinak Banerjee is a Cofounder and CTO at Solinas Integrity, a startup that creates robotic solutions for pipeline diagnostics and septic tank cleaning to reduce water losses and eliminate manual scavenging. He has a passion for Entrepreneurship that has propelled him to build a start-up that solves the existing problems in India by using futuristic technologies.

He holds a master's degree in Machine Design from KTH Stockholm. He has been involved in several projects from European Space Agency, Scania AB, and a few start-ups where he developed various innovative design solutions and filed patents. He has also worked as a Design Engineer in Scania R&D, Stockholm. The Chief Minister of Tamil Nadu has awarded him for his work in Water sector and has also featured in popular newspapers and online magazines like The Hindu,Times of India, Shark Tank, Yourstory etc.

Abstract

Robotic Leak Detection and Conditional Assessment of Small Diameter Pipelines

The demand for pipeline monitoring systems can be attributed to the increasing number of leakages in water pipelines, especially in the distribution channels due to inefficient management of the water assets. Currently, reactive measures are opted for instead of preventive measures, as very few technology solutions are available in the water pipeline management sector, and even though they are available, there is no data-driven approach to solve the problems efficiently.The need for technological intervention to solve this problem is of unquestionable need. Solutions that could work in the segment can be indigenously developed to address the problem of water loss & contamination in pipelines via robotics and digitization. One solution, developed by Solinas, is a complete technology solution where a crawler robot collects internal pipeline data and a AI powered cloud based data analytics dashboard performs a conditional assessment of data, thereby helping the customers make data-driven decisions. The remotely operated, robotic vehicle carries several sensors and crawls inside the pipeline to conduct an endoscopy, identify various types of defects, and perform a conditional assessment of the pipeline. The smallest version of the crawler robot is named Endo 90 is Asia's 1st robot that can go into pipelines as small as 90mm. This has created a tremendous impact in several Indian cities and industries since water distribution networks are of sizes 90mm to 150mm.

Rafaelle Posadas,
Head, NRW Systems Management,
Maynilad Water Services Inc.

Biography

Rafaelle Quintos Posadas is a licensed civil engineer with 16 years of specialized experience in Non-Revenue Water (NRW) management. As the current Head of NRW Systems Management at Maynilad's Central NRW Management Division, he is pivotal in overseeing NRW software solutions and spearheading initiatives to reduce non-revenue water. His role encompasses managing and developing systems to enhance water network efficiency, evaluating NRW performance indicators, and integrating long-term NRW software solutions with Maynilad's existing infrastructure. Rafaelle also plays a crucial part in implementing Maynilad's NRW Program, ensuring that strategies align with the company's objectives for improved water management and sustainability. His extensive expertise and leadership are vital in advancing effective water resource management and optimizing performance.

Abstract

Enhancing Leak Detection Prioritization with Artificial Intelligence (AI): Maynilad's Experience in Using Artificial Intelligence for District Metered Area Diagnostics

Non-revenue water (NRW) represents a significant challenge in the water distribution sector, encompassing water that is produced but not billed to customers due to various factors such as leakage, theft, or administrative errors. Addressing NRW is crucial for optimizing resource utilization, reducing operational costs, and enhancing service delivery. Maynilad Water Services, Inc., a leading water utility in the Philippines, operates over 1600 District Metered Areas (DMAs), each representing a distinct segment of the distribution network where water loss must be meticulously managed.

To tackle the persistent issue of NRW, Maynilad has integrated advanced artificial intelligence (AI) technology into its diagnostic processes. This AI-driven software analyzes data from DMAs to identify and predict segments with a high likelihood of failure or leakage. By leveraging machine learning algorithms, the software enhances the precision of leak detection and localization, significantly improving operational efficiency. Based on Maynilad's experience with this technology, the average detection rate is approximately 2.0 leaks per kilometer, a notable improvement over conventional method.

The implementation of AI complements traditional diagnostic practices, providing a more granular and proactive approach to managing water loss. This advancement not only streamlines the detection process but also enables Maynilad to address issues more swiftly, thereby reducing NRW and optimizing the overall performance of the water distribution system.

Mathieu Peretti,
Asia Pacific Business Development Director,
LACROIX Group, Singapore

Biography

Mathieu Peretti is the Asia Pacific Business Development Director at LACROIX Environment, specializing in IoT and digital solutions for the water industry. Before LACROIX, he was the Asia Pacific Director at WiN MS, an aeronautics and defense company. Mathieu also played a pivotal role at AKKA Technologies in Switzerland, where he was instrumental in developing a new business model and managing a team of over 50 international engineers.

Throughout his career, Mathieu has led transformative initiatives, significantly improving partner process management and enhancing the deployment of technological solutions across culturally diverse networks. Guided by his professional philosophy to "understand before being understood," Mathieu emphasizes listening to customer needs and market demands, which has been pivotal in his strategic planning and leadership of multicultural teams.

His extensive background in electronic and network engineering, combined with expertise in strategic business development and channel partner development, has positioned him as a key figure in the industry, known for his strategic insight and ability to drive results in complex environments.

Abstract

Smart Water Networks: The Next Frontier in Water Efficiency, Resilience, and Security

As water utilities face increasing challenges from rising water demand, resource scarcity, regulatory pressure, and cybersecurity risks, integrating digital technology is crucial for creating resilient and efficient water networks. This keynote will demonstrate how Smart Water Networks, driven by **advanced and essential-only technology** from LACROIX, are transforming traditional water infrastructure through digital innovation to create a **positive impact**.

We will explore the role of Smart dataloggers and advanced RTUs in providing real-time visibility across water networks. Attendees will gain insights into how these tools enable utilities to monitor and manage water distribution dynamically, optimize operations, reduce Non-Revenue Water (NRW), and improve resilience. Through practical case studies, we will show how utilities leveraging LACROIX Sofrel solutions achieve gains in efficiency, strengthen security, and meet rigorous compliance standards.

In today's rapidly changing landscape, cybersecurity and regulatory compliance are increasingly critical. This presentation will cover how LACROIX's secure, scalable solutions meet these needs, safeguarding sensitive data and supporting adherence to evolving regulatory frameworks.

Looking to the future, we'll discuss how Smart Water Networks are crucial in fostering sustainability and environmental stewardship. These networks reduce resource wastage and enhance environmental resilience by enabling utilities to respond proactively to issues and mitigate water loss. LACROIX **eco-designed solutions**, position utilities to build a sustainable, secure future for water management. Join us as we explore the next frontier in water technology, discovering how Smart Water Networks play an essential role in shaping a resilient, environmentally responsible water sector.

Day 3 : 21 November 2024 (Thursday)

Taming Sari 3

Gary Wyeth

Secretary
IWA Water Loss Specialist Group
Wyeth Water Consultants

Biography

Mr Wyeth graduated from Portsmouth University in 1991 with a Master of Engineering Degree in Civil Engineering.

He has 30 years experience in the water industry, with 26 of those years whilst working in South-East Asia. During this period Mr Wyeth has gained member status of the CIWEM (UK), is a Chartered Engineer, has gained a Graduate Diploma in International Operational Management and is the current Secretary of the IWA Water Loss Specialist Group

Mr Wyeth Started his career as a network modeling engineer for Biwater International and through this built up an expertise in how water supply systems operate. He then moved into NRW management, with Thames Water International and Ranhill Water Systems, gaining further expertise in leakage control, DMZ design & implementation, system monitoring, customer metering and production metering.

He also established the APAC regional office for i20 Water, specialists in advanced pressure management, where he was APAC managing director for 4 years. He further improved his experience of pressure management whilst managing the regional office for Singer Valves, a manufacturer of pressure control valves.

He is currently the Managing Director of Wyeth Water Consultants a Malaysian based NRW Management Company.

Abstract

Importance of Reducing Carbon Emissions and how it relates to Real Loss

Interest in carbon reduction to combat climate change has been growing rapidly since the mid 2000's. In 2015, the Paris Accords were established to influence a societal change to a carbon neutral future. The Paris Accords specifically seek to limit the mean rise in global temperatures to below 2 degrees Celsius above pre-industrial levels, among other stated measures intended to benefit humanity in combatting climate change. These Accords are responsible for numerous policies and legislation enacted by the European Union and 193 other signatory member states to align financial incentives with a greener future. The financial incentives aim to inspire breakthroughs in technology for production of greener energy and/or direct reduction of carbon emitting practices. Reduction of carbon-emitting practices that accompany the production of useful items and services is as critical to carbon neutrality as production of greener and more sustainable energy.

Real Loss (leakage) is generally defined by the International Water Association (IWA) as leakage resulting from failed distribution system infrastructure. Unmanaged leakage is a problem that is already being addressed by various global entities. However, the carbon impact of that leakage has not been definitively established. Every unit of water distributed by a utility, results in the production of a certain amount of greenhouse gas emissions (carbon cost) due to the energy expended in the extraction, treatment, pumping and distribution of that unit of water. These emissions are known as Scope 2 emissions, which are indirect emissions an entity is responsible for as a result of purchasing carbon intensive electricity used in an entity's operations. Every unit of water lost to leakage results in carbon emissions that would otherwise be avoided if such leakage were reduced. In general, it is not economically viable for a utility to eliminate 100% of its leakage. However, utilities can, and should, strive to achieve the technical minimum that is possible. Excessive leakage provides no benefit for the utility or its customers and therefore, carbon emitted in the process is unnecessary. It can also be reasoned that for those utilities with renewable energy sources, excessive leakage represents a waste that could be otherwise used to further offset carbon-emitting energy sources.

Tom Crowder

Director
Crowder Consulting

Biography

Tom is a Chartered Manager with a strong technical understanding of water networks and high level of expertise in water loss management. He is a Director of Crowder Consulting, having worked full time for the company for 24 years.

In his director role, he is actively involved in developing new streams of work and building specialist service delivery teams. He is responsible for leading water loss consultancy projects, Netbase digital services projects, and leakage detection projects.

Tom is responsible for a multi-skilled specialist team delivering a range of water loss related services. He ensures that the team apply a very high standard of work and innovative approach that utilises cutting-edge technology.

Most recently, Tom has been helping to deliver NetAlytics our latest DMA targeting software, and NetOps our latest leakage detection management software across several clients.

Gillian Sowden

Director
Crowder Consulting

Biography

Gillian is a Chartered Civil Engineer graduating from Liverpool University in 1996 with a master's degree in civil and Structural Engineering. She has 28 years' experience in the water industry and has a broad range of technical knowledge in both clean water and wastewater sectors. She is a Chartered Engineer and Chartered Water and Environmental Manager CIWEM (UK).

As a Company Director at Crowder Consulting based in the United Kingdom she has actively involved in the development of technical solutions, Netbase software implementation and upgrade projects in Malaysia, Jamaica, Bahamas, and several Water Companies in the UK.

Working on engineering projects worldwide Gillian has developed knowledge on International Water Balance, NRW, metering, asset management, pipe rehabilitation, hydraulic modelling, and water management. She also has an extensive knowledge of corporate systems including Billing, GIS, Work and Asset Management, Scada and Telemetry systems working with experts to understand how the data can be used in Netbase for water management and offering advice in data cleansing and collection to provide enhanced analysis.

Abstract

Making Consumptions Dynamic & Water Balance Smarter

Many water utilities are rolling out smart meters with intra-day reading intervals to better understand demand in their water network. The benefits include helping customers to use less water, being able to quickly identify customer-side leaks and improving the accuracy of network leakage estimations.

As the coverage of smart meter data increases, so too do the range of analyses that can be applied to make the water balance smarter, e.g. smart meter consumptions and night use aggregated up to different area levels, as well as specific cohorts to simulate demand. This provides totalised area consumptions and customer side leakage, as well as intra-day demand profiles that can feed into the water balance analysis. The general idea of the smart water balance is to derive more representative consumption estimates, leveraging the smart meter data, the cohort analysis results of the smart meter data, as well as dynamic pressure adjustments.

Some key smart meter questions that need to be explored:

- What is the required level of smart metering to improve the accuracy of the water balance?
- What is the required frequency of data capture and retrieval to separate customer side leakage from network leakage?

Assuming these questions can be answered and the output from a cohort analysis can be confidently applied to simulate consumptions, the fundamental question remains: does the water balance continue to be a daily flow and night flow analysis, or do we move towards a mass balance using hourly/15min data?

Keshvinder Singh

Consultant Smart Water
Schneider Electric

Biography

Keshvinder Singh has dedicated 16 years to the water industry, accumulating extensive experience with major water utilities and technology firms.

He started in Air Selangor, Malaysia, where he was involved in the hydraulic modeling and water loss departments. In 2016, he relocated to Saudi Arabia to join Marafiq-Saur, a joint venture between Saudi Arabia's Marafiq and France's Saur, overseeing the water supply operations for Yanbu Industrial City.

In 2017, Keshvinder transitioned to Singapore, taking on the role of Consultant Project Delivery at AVEVA, before moving to Schneider Electric as a Consultant for Smart Water solutions in 2021.

Holding a Master's degree in water engineering, Keshvinder currently leads Schneider Electric's smart water initiatives, focusing on business development, pre-sales, project delivery, and after-sales support. He collaborates with water utilities to optimize return on investment through innovative smart water solutions. Additionally, Keshvinder chaired the APAC Research Group for SWAN Forum from 2017 to 2020 and is an active member of IWA, SWA, and MWA.

Abstract

Best Practices in Water Loss Management – For Improved Visibility and Reduced NRW

Water loss is the difference between system input volume and authorized consumption, consisting of apparent and real losses.

Figure 1 shows the water loss management lifecycle that is developed from the rich experience gathered over the years by observing the industry practices. The diagram can be divided into two broad groups of OPEX and CAPEX investments that make up the overall lifecycle.

Expanding on the above lifecycle, the above processes can be further detailed in a stepwise approach as shown below to better manage the leaks in the water network in a sustainable manner:

– OPEX Cycle: preliminary identification of leaks and their confirmation by running thru multiple analyses such as top-down and bottom-up calculations; prioritization and scheduling of ALC activities; issuing work orders; Supervising ALC activities and Leak Repair Jobs; Reviewing zone behavior post repair jobs

– CAPEX Cycle: planning of New Pressure Management Zones and choosing the best zones based on investment ROI

By using a big data platform for near real-time NRW calculations and management, a few of the salient benefits that can be achieved are:

- Single version of truth for the whole organization.
- A new, integrated solution built on existing data and IT for sharing information across the entire organization
- Quicker leaks and events detection by using AI improving response times and reducing leakage flows
- Reduction of costs of outsourced leak detection and repair works
- Assisting in prioritizing DMA for leak detection
- A drastically reduced leakage calculation and reporting times
- Achieving net zero goals

Marcus Chang

Sales Director APAC & Country Manager Malaysia
Kamstrup

Biography

Marcus is an engineer with a Master's degree in Environmental Engineering from Austin, Texas. He specializes in water and wastewater treatment processes and distribution/collection systems. He has engineering design experience where he worked on several water and wastewater projects across Texas. Coupled with a lifelong dedication in the water/wastewater industry, he also has more than 20 years' experience in exploring better solutions to solving NRW. At Kamstrup, Marcus helps utilities in developing viable strategies to adopt smart metering technology along with mastering the use of data to achieve NRW reduction goals.

Abstract

Enlightenment by leak detecting smart meters

A water utility's first steps into smart metering is typically built upon very basic expectations which is the root cause of unfruitful smart meter pilots. Kamstrup have recently deployed smart meters in several utilities in South East Asia and have brought enlightenment of the holistic benefits of a truly smart water meter. In this presentation, Kamstrup will share its experience in leak reduction, billing revenue protection, theft monitoring, and deployment of a superior radio technology.

Thomas Allen

Head of Digital Water
RSK Digital Water

Biography

Thomas Allen is a digital water leader with over a decade of experience delivering innovative solutions to the water industry. With a specialist background in smart water metering, Thomas began his career in the UK, overseeing data and operations for the country's first large-scale smart metering project. This involved managing and analysing data from over 400,000 connected smart meters, laying the groundwork for a deployment that has since surpassed 1 million meters. Thomas then relocated to Singapore to lead the nation's AMI demonstration project, which involved over 300,000 AMI water meters. He currently heads the RSK Digital Water team, providing strategic support to Hong Kong's smart metering programme.

Abstract

Navigating Your Next Smart Metering Step

With hundreds of options on how, what, and where to deploy smart water meters, how do utilities find the right combination for success, regardless of whether they've started or not?

This session provides insights into a metering playbook designed to help water utilities navigate the complexities of adopting smart technologies. Key decisions revolve around selecting the right meter type to ensure accurate and long-lasting performance, communication protocols to ensure optimal connectivity, and defining the project's benefit focus.

Equally important is data handling: balancing the volume and frequency of data collected, integration with existing systems, and implementing robust cybersecurity measures to protect sensitive information. This all hinges on correctly defining the desired outcomes from the start. Should smart metering aim to enhance leak detection, improve operational efficiency, or drive customer engagement? Why not achieve all three?

An interactive portion will demonstrate how smart metering data can be utilised for real-time water balance calculations, showing its potential to pinpoint losses and optimise water management strategies. Participants will engage with data scenarios to explore how smart meters contribute to reducing non-revenue water.

By the end of this session, participants will have a clear framework to make informed decisions and drive successful smart metering implementations tailored to their specific needs.

Mark Nicol

Director
Nicol Consulting Services Pte. Ltd.

Biography

Mark has 22-years of experience in the water industry, crossing multiple geographies, cultures, and levels of development. Having worked as a Network Engineer for Thames Water in the UK, Mark relocated to Malaysia in 2007 to join Ranhill Water Services as Network Modelling Manager, where he was responsible for establishing and leading the modelling department and delivering projects in Malaysia, India and Indonesia.

In 2011 Mark joined Mueller Water Products to lead the expansion of the recently acquired Echologics, initially in the Asia Pacific region and later also in the European and Latin American regions

In September 2023 Mark established Nicol Consulting Services which provides bespoke consulting services to connect innovative technology companies with end clients in the Asia Pacific region.

Mark has a BSc in Geography and a MSc in Surface Water Modelling and Management from the University of Reading, and an Executive MBA from Henley Business School.

Abstract

The Benefits of Remote Monitoring in Reducing NRW and Carbon Emissions

This session follows on from the previous session and delves deeper into the direct and indirect benefits of remote monitoring in addressing both Non-Revenue Water (NRW) and lowering carbon emissions. According to estimates, the water sector as a whole accounts for ~4% of the world's total electricity consumption, and is a significant contributor to climate change, producing approximately 1.2 billion tons of CO2 annually.

Remote monitoring technologies, which integrate advanced sensors, data analytics, and "real-time" communication, present an innovative solution to these challenges. Technological advancements have significantly reduced the cost of sensors, data transmission, and analytics, enabling the cost-effective deployment of remote monitoring systems in water networks. Permanent deployment of sensors on water networks has numerous benefits, including faster leak detection & pinpointing, identification and isolation of pressure transients, optimisation of pressure management schemes, and improved metering accuracy, resulting in significant reductions in NRW.

Additionally, remote monitoring provides valuable insights into the condition of water assets, helping utilities assess infrastructure health more accurately. This enables proactive asset management, where maintenance and pipe replacement can be prioritised based on data-driven assessments, reducing the risk of major failures and extending the lifespan of critical infrastructure.

In addition to minimizing water losses, remote monitoring also offers substantial environmental benefits. Early leak detection & repair reduces the energy required for water treatment and pumping, while the reduction in physical site inspections curbs vehicle emissions. By improving overall water management efficiency, these technologies contribute to lowering energy consumption, supporting efforts to reduce carbon footprints.

This paper will provide real-world examples of how remote monitoring systems have directly contributed to reducing NRW and CO2 emissions, highlighting its role as a critical tool for water conservation, operational efficiency, and environmental sustainability.

Frank van der Hulst

Co-founder & Chief Technology Officer
HULO

Biography

Frank van der Hulst is a seasoned expert in robotics and machine learning, with a career spanning over a decade. For the past eight years, he has been transforming the water industry, leading advancements in sensor technology and machine learning to extract actionable insights. Frank has also been instrumental in developing robots designed for water pipeline inspections and asset management, showcasing his commitment to improving infrastructure resilience. As a leader in the sector, he has consistently demonstrated how innovative technologies can drive value, particularly in leak detection and network management. Now the co-founder and CTO of HULO, Frank leads a cutting-edge startup that develops advanced analytics software for water utilities. His work empowers utilities to make data-driven decisions, optimising operations and enhancing the sustainability of water management. Frank's contributions are vital to the future of water resource management, blending technology and environmental stewardship.

Abstract

Integrated Solutions for Sustainable Water Loss Reduction: Real-Time Leak Detection and Prevention with Techimex & HULO (a Dutch Collaboration)

At this workshop, HULO and Techimex will showcase an innovative, collaborative approach to combating water loss. HULO specialises in continuous monitoring of all utility sensors to provide real-time insights and accurate leak localisation within water distribution networks. Once leaks are identified, Techimex steps in with advanced ground microphones and other equipment to pinpoint the leak locations precisely.

In addition to leak detection, Techimex and HULO will address leak prevention strategies, such as pressure management. By maintaining real-time operational oversight, HULO enables a proactive approach to managing network performance, ensuring the long-term health of the infrastructure and significantly reducing future water losses. This proven Dutch approach results in high reduction of NRW. Our combined expertise offers a comprehensive solution that addresses both the detection and prevention of leaks, moving towards a more sustainable management of water resources.

Technimex offers a solution to drastically reduce the NRW with real time pressure management. Understanding the hydraulic model of the DMA's or City allows us to anticipate on peak loads of the water network, recognize pipe breaks , recognize water consumption and water leakage , active pump and valve control.

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AFC Valves Malaysia Sdn Bhd, as part of AFC's global network, leads in innovative valve solutions across Southeast Asia. Strategically based in Shah Alam, Selangor, AFC Valves Malaysia serves as AFC's regional hub, combining manufacturing, R&D, logistics, and customer care to meet the diverse needs of clients in Malaysia, Singapore, Indonesia, Brunei, and Vietnam. The facility boasts a state-of-the-art assembly line managed by skilled engineers using advanced CAD technology, ensuring top-quality production. An in-house reliability testing lab upholds high standards through consistent product evaluation. The company's expansive warehouse offers a ready supply of valves, components, and parts to meet urgent demands. Customer support is at the core, with a dedicated care center for inquiries, and a technical advisory team offering customized valve solutions. Additionally, a specialized workshop provides repair and refurbishment services, reaffirming AFC Valves Malaysia's commitment to excellence and customer satisfaction.

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Asian Water has been an impartial, interesting and trusted source of information covering every country on Asia. Asian Water continues to be an unbeatable source of the very information that Asia's water professionals are keen to read about. Rapid economic growth and industrialization is making Asia, particularly Southeast Asia, one of the world's fastest growing markets for water and wastewater treatment technology. Investment in the water and wastewater sectors are rising in Asia which is home to the largest number of people in the world. There are vast opportunities waiting to be tapped here. In our support for environmental protection and preservation; and carbon footprint reduction, Asian Water encourages our readers to read our digital version of the magazine, www.asianwater.com.my

BIMAGE Consulting (M) Sdn. Bhd.

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BIMAGE Consulting is a technology base company who is specialised in the implementation of IR4.0 and digital transformation for the steel and construction industry.

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COSMOS Instruments Sdn. Bhd. **Booth No:** #07

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Cosmos Instruments Sdn Bhd, established in 2004, specializes in process control instrumentation, automation, and analytical solutions for water and wastewater industries. We are a certified partner of Siemens, a Channel Partner of Lacroix, and have strategic partnerships with HEDA, IFM, TackGPS, and Axioma. Our product range includes smart water networks, flow meters, and AI-driven water management tools aimed at reducing Non-Revenue Water (NRW). We are committed to delivering innovative solutions to optimize industrial and environmental processes across the ASEAN region.

Crowder Consulting | **Booth No:** #18

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Crowder Consulting are a UK-based company of consulting engineers and software developers that provide innovative solutions to support the management of water networks. We serve major water operators worldwide, helping them to reduce water losses and supporting their journey towards smart networks by offering:

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Cubiq Meters Sdn. Bhd. **Booth No:** #19

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We are pioneering innovation and sustainability in the water management industry through our innovative smart water solutions. Our technology not only enhances efficiency but also addresses critical issues such as reducing Non-Revenue Water (NRW) for water utility companies, minimizing physical and commercial water losses, optimizing operational efficiency, improving sustainable water management practices, and enhancing user experience.

EFAS Technologies, Inc. **Booth No:** #27

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EFAS Technologies is a software company headquartered in California, United States. By applying advanced technologies such as AI and Digital Twins, our solution - Global AI Leak Locator (GAILL) helps water utilities reduce Non-Revenue Water (NRW) and improve operational efficiency.

GAILL is designed to detect leaks within water pipelines, providing a non-invasive and cost-effective approach for water utilities. Beyond identifying leaks, GAILL also detects other anomalies, such as meter inaccuracies, ensuring comprehensive monitoring of the network. With 24/7 monitoring capabilities, GAILL serves as an ideal solution for maintaining pipeline integrity and optimizing water distribution networks.

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For over 40 years, FAST GmbH has manufactured solutions for monitoring, pre-locating, correlating, and pinpointing leakages in water transmission and distribution networks. Precise sensor technology and advanced algorithms developed by FAST allow the exact location of underground water leakages.

Gutermann AG | **Booth No:** #02

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Gutermann is a global technology leader and innovator in intelligent water loss management products and solutions. The product offering covers the full range of conventional acoustic leak detection technology, from smart handheld instruments to fully automatic, permanently installed correlating network monitoring systems based on IoT communication, enabling utilities to pinpoint leaks with the highest accuracy. Established in 1948 and still privately held, Gutermann is headquartered in Zug/Switzerland, with R&D and manufacturing facilities in in Germany, and own sales teams based in France, UK, USA and Australia as well as a comprehensive distribution network around the world.

HWM Global

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At Ovarro, we are committed to ensuring that everyone has access to clean water. Our innovative technology supports water authorities worldwide in addressing the critical challenges of water management and climate change. By enabling precise data collection and enhancing situational awareness, we deliver trusted insights that drive informed business decisions. Our solutions help optimise operations, reduce leakage, and minimise environmental impact, all while supporting organisations in controlling costs and extending the life of their assets. Through close collaboration with our partners, we champion sustainable practices that benefit industries and communities alike. Together, we are shaping a cleaner, more sustainable future for water management. Discover how Ovarro's advanced technologies—from leak detection to flow metering—can enhance your water and wastewater networks.

Ranhill Utilities Berhad

Booth No: #20

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Founded in 1973 as an engineering consulting company, Ranhill Utilities Berhad today owns and operates assets in the environment and energy sectors. We are aspiring to lift the quality of life by being in the forefront of nation building through sustainable environment and power solutions using innovative and clean technology.

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Ranhill aspires to meet the needs for an enhanced quality of life and a cleaner planet through innovation. Hence, the focus on the environment is driven by a motivation to be a force for good, to safeguard the future and to play a meaningful role in ensuring a liveable environment, while delivering a positive impact to society.

Water Systems Optimisation Sdn. Bhd. | **Booth No:** #05

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NRW Management and Consulting, Software Solutions. Waterframe Limited was established in 2005 to acquire the international business operations of Bristol Water, a privatised UK water utility. We haven't stopped since, and continue to deliver NRW reduction projects and NRW technical assistance expertise to our long list of clients.

YOKOGAWA Malaysia

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EVERYTHINGABOUTWATER

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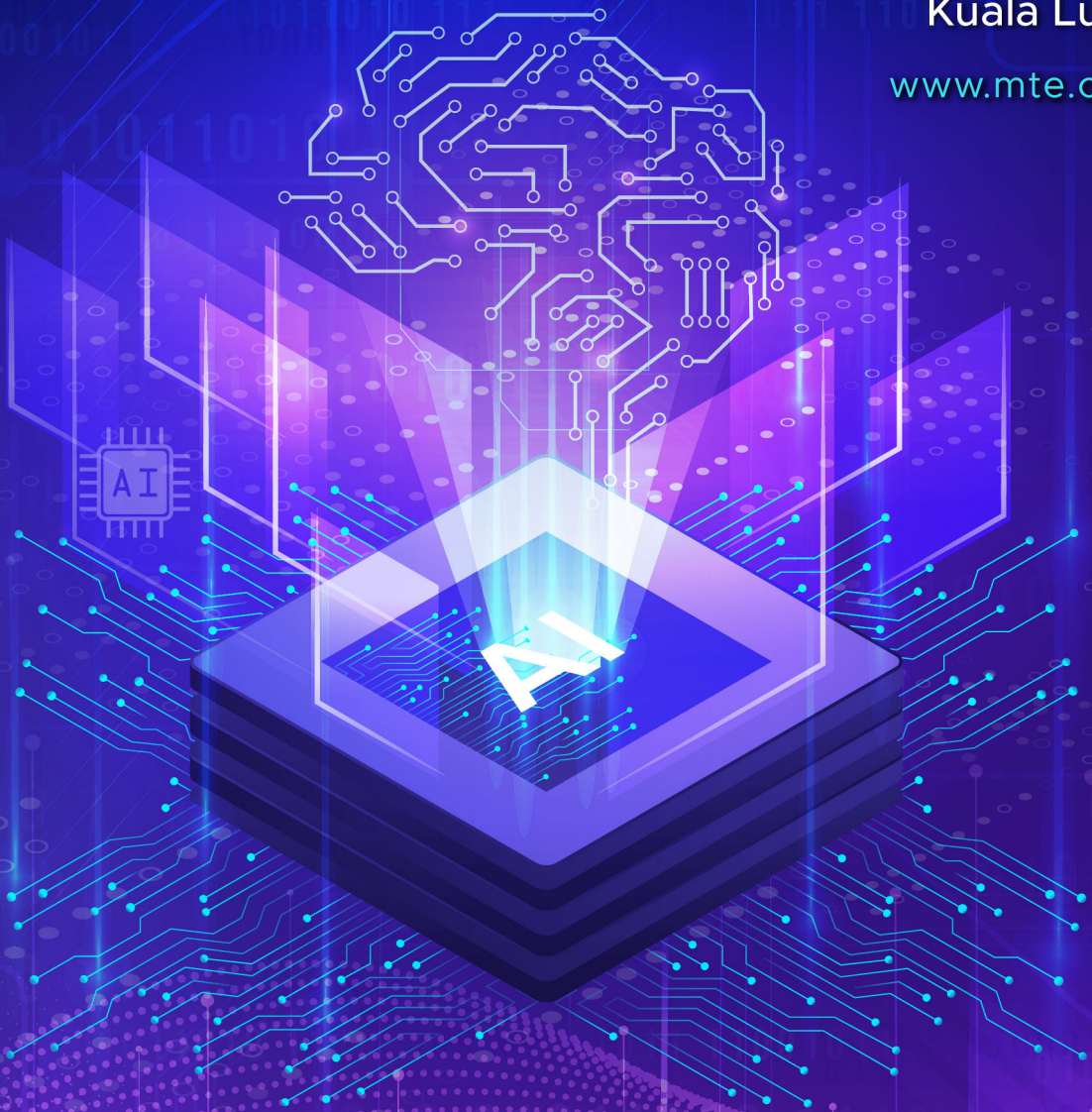

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