ecowaterOS to bring the biggest changes to water management in a century

From river management to wastewater management. From sensors to stakeholders. Delivering safe water.

A transformational platform for all water stakeholders

ecowaterOS is a new operating system designed to power the next generation of water management technologies. It's an always-connected platform, delivering real and near-time data on water state from sensors to stakeholders in a usable, understandable and contextually aware fashion, while also unlocking millions of completely new data points to unearth new and better ways to manage water issues.

Designed by science data and AI company, Rinocloud, in conjunction with worldwide development partners, Nimbus embedded systems and communications research institute, water treatment and monitoring solutions provider Modern Water, Water treatment specialist, Cellulac, and asset and incident management software developer Acumen Software, ecoWaterOS solves the following:

- The difficulties with current solutions that can be hard to understand; [1]
- That may contain information that is often out of date, and;
- That are often proprietary [2], doing little to encourage and support joined up thinking

Outlining the thinking behind ecowaterOS, its developers and partners, said: "ecoWaterOS is a smart solution platform to support SMEs and developers in creating the next generation of digital water internet services. Its designed as the main ecosystem for smart water initiatives for cross-domain data exchange/cooperation. Little progress has been made on developing specific water-related applications due to fragmentation in the water sector. It is restrained by licensed proprietary platforms and it lags behind other sectors regarding interoperability, standardisation, cross-domain cooperation and data exchange. ecowaterOS is designed specifically for the water sector with open source, interoperable and standardised interfaces for both water sector end-users (cities, water utilities, water authorities, citizens and consumers), and solution providers (private utilities, SMEs, developers)."

Many of the current water management technologies have evolved very slowly over decades and have been adapted from other sectors [3], based on historical observations of:

- Climate data
- Hydrological data
- Consumption trends
- Statistical analysis
- And interpretations of the data

What we know, what we do, where we go, and how we operate in the water management sector is unique, with unique problems. In addition, data from these systems is usually presented in a way that's entirely counter-intuitive [4].

The water sector has a wave of new companies [5], delivering innovation in everything from hardware sensors to AI based catchment management. Although passionate about preserving and cleaning the planet's most fundamental asset, transformative improvement is still held back by the same flawed system of having to fit new technology into old creaking infrastructures [6].

ecoWaterOS is designed with modern plug and play infrastructure [7], with open systems and interoperability at its core, and water management software and hardware from many suppliers being deployed.

Very few of the systems used in river management talk to each other. Information is siloed [8]. That's because the infrastructure and comms are old. ecoWaterOS brings latest generation comms infrastructure and firmware platforms that allow hardware and software systems to integrate seamlessly.

The platform uses AI and Machine-Learning to improve data from multiple sources, including user-generated data. All of this is displayed in intuitive interfaces built on key features such as next-generation maps, hydrology, weather, etc.

A dynamic system, it is designed to continuously evolve, improve and learn. ecowaterOS over-the-air updates keep stakeholders constantly up to date with web applications, adapted for each group. Over time, the system continues to increase in value, delivering richer and dynamic information.

According to the team behind ecowaterOS: " This platform delivers integrated water management and brings together multiple new technologies to create efficient water and environmental protection. We see this as a game-changer, something which has been needed for some time, but is only possible now with modern, smart technology."

The promise of connected-water monitoring and management [9], through this new platform, has broader positive consequences for the environment. It also allows better research to find even newer ways to solve problems and provides a myriad of new tools and research resources to stakeholders such as research institutes, municipalities and environmental bodies.

ecoWaterOS uses its live updates to ensure that sensitive areas and marine wildlife can be identified and managed, while allowing carbon footprints to be measured and offset.

Within ecoWaterOS, a 'citizen-science' system [10] allows river users to collect environmental data, which is delivered to research agencies and national or regional organisations as part of research campaigns, as well as back to other users of ecowaterOS.

It also provides data into key initiatives and programmes run by research groups and environmental agencies focusing on delivering a new water-based knowledge for data-driven decision making. In addition, ecowaterOS runs research and crowd-sourced data experiments for a variety of scientists at various times of the year. This engages stakeholders and also adds to the knowledge of water ecosystems.

Major regional and global bodies, authorities and institutions are now working together to see ecowaterOS adopted as industry standard in order to deliver better, safer, and more responsible water management.

The first stage of research and development, prototyping and testing has completed successfully. This is the start of the next stage where the platform is being fully released to potential partners. To become part of the development program, Simply click on the button below to share your details and we will make contact.

Rinocloud

Rinocloud limited is a subsidiary of Integumen plc. It is a science data and AI company that provides data management and analysis for conglomorates working in cosmetics, medical, pharmaceutical and environmental sectors. It developed the Hydrolight Remote Automated Water Test to identify contaminants in water in real time including e coli bacteria in contaminated water.

Cellulac

Cellulac has developed and acquired, scientifically proven and commercially scaled solvent free production of bio-based chemicals. Installed in ethanol, dairy and brewing facilities mitigating the high cost of capital, reducing operational costs and improves net margins by adding complementary products. These unique low-pressure, low-temperature, wet extraction solutions use less energy, drastically cutting costs, CO_2 emissions and solvents for oil and biodegradable plastic ingredients.

Modern Water plc

Modern Water is a listed Water Technology Group that was established in 2006 by to develop and commercialise IP and technologies related to the treatment of water. It has spent £20m over last 12 years developing a portfolio of over 100 patents and cutting-edge technology focussed on monitoring of contaminated water and making the treatment and recycling of water more efficient. Sale of high-end water testing equipment and related ongoing consumables with tests performed by its key product are written into environmental legislation in 6 markets.

Nimbus Research Institute

The NIMBUS Research Centre is at the forefront of cyber-physical systems (CPS) and Internet of Things (IoT) research, innovation and learning. It has research groups in the areas of Smart Systems Integration, Adaptive Wireless Systems and Augmented Materials . It has internal research links with the Department of Mechanical and Manufacturing Engineering and Department of Computing and strong external collaborative research links with Tyndall National Institute, University College Cork, the Environmental Research Institute, Trinity College Dublin and University College Dublin.

Acumen Software

Acumen is a consultancy and asset management & workforce management software solutions provider established in 2006. It provides mobile software solutions for asset management and workforce management to organisations with dispersed and distributed assets, taking complex arrays of scenarios and providing a simple mobile management solution in response. It operates across several major industries including local government, utilities, transport and environment.

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