Water Industry Operators Association of Australia
Submission of Abstract

Platform

Title: Development and Success of a New AI System for the Reduction of Inflow, Infiltration, and Saltwater Ingress in Australian and New Zealand Wastewater Networks

Abstract:
Inflow, infiltration (I/I), and saltwater ingress into wastewater networks are critical issues in Australia and New Zealand, causing significant operational inefficiencies and environmental concerns. This paper presents a novel AI-based system designed to mitigate these issues by enhancing detection, prediction, and prevention measures within wastewater infrastructure. Utilizing a combination of machine learning algorithms, sensor integration, and data analytics, the proposed system optimizes the management of wastewater networks by identifying potential sources of I/I and saltwater ingress, predicting high-risk events, and providing actionable insights for preventive maintenance. A notable case study in Nambucca Heads, New South Wales, highlights the system's effectiveness, showcasing significant reductions in system overflows and saltwater-related damage. This paper discusses the system architecture, AI models employed, the impact of its deployment in Nambucca Heads, and the critical importance of sensor certifications like ATEX and MCERTS in ensuring reliability and accuracy.

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