



Tigernix Water Reticulation Solution

Cohabiting Industry 4.0 Capabilities for
Reticulation Excellence

Introduction

Interoperable Reticulation Supervisory Schema

The Tigernix Reticulation System drags Industry 4.0-enabled cyber-physical integration to optimise water circulation across vast networks. By utilising an advanced, real-time data aggregation framework, it provides a comprehensive analysis of water flow, infrastructure integrity, and service demands. Tigernix system ensures operational efficiency, sustainability, and cost-effectiveness through the deployment of multi-mode data centralisation and a sophisticated omnichannel consolidation approach, supporting intelligent decision-making at every stage of the water allocation lifecycle.

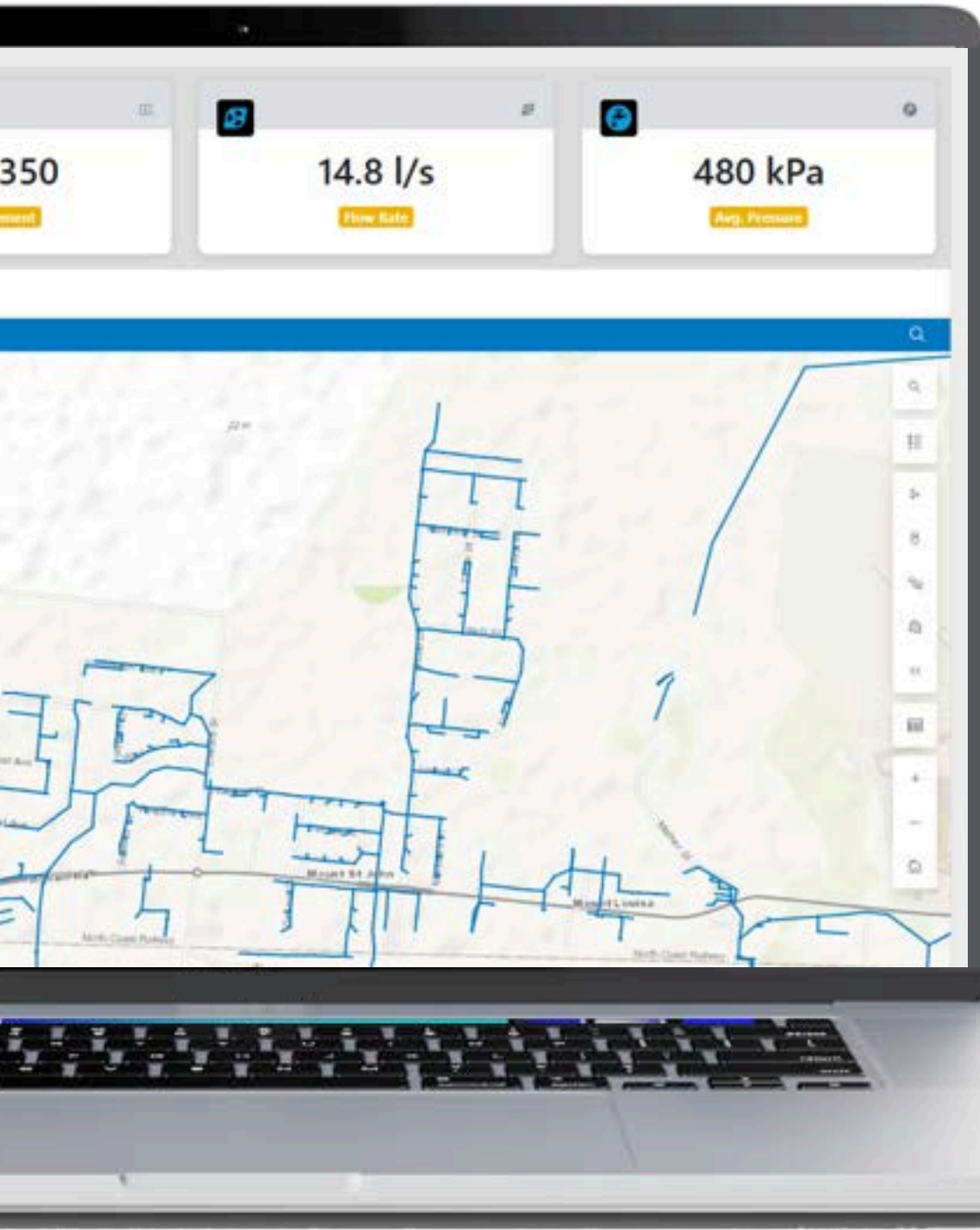


A Hyperlinked Water Reticulation Framework via Next-Gen Digital Powers

@ Tigernix Smart Water Solutions

Industry 4.0 Capabilities We Offer

- GIS
- IoT
- AR & VR
- Predictive & Prescriptive Analytics
- 5G
- Cloud Computing
- Robotic Automation
- Digital Twin
- Simulation
- Big Data



Why Choose Tigernix?

Coupling with Industry 4.0 technologies, the Tigernix Reticulation System crafts highly autonomous water reticulation networks capable of real-time self-optimisation. The solution employs AI-driven predictive analytics, IoT-fueled continuous monitoring, and digital twin simulations, facilitating improved infrastructure performance, reduced operational costs, and enhanced system resilience under the same digital-focused architecture. This unified approach empowers intelligent water management, ensuring sustainability and resource optimisation across large-scale, complex water reticulation frameworks.



A Hyperlinked Water Reticulation Framework via Next-Gen Digital Powers

Robust Features of Tigernix Reticulation Solution

Predictive Water Flow Intelligence

- ML-Driven Flow Prediction AI Engine
- HydroDynamic Forecasting Algorithms
- Smart Flow Pattern Analyser and Visualiser

IoT-Based Smart Flow Integrity Detection

- IoT-Integrated Leakage Detection System
- Smart Pressure Optimisation Module
- Predictive Pipeline Stress Analytics

Virtualised Infrastructure Modelling

- IoT Data Aggregation and Filtering Module
- Customisable Report Generators
- Big Data-Driven Analytics and Forecasting

AI-Driven Maintenance Scheduling

- Digital Twin Asset Simulation and Error-Detection
- System Performance Forecasting Engine
- Augmented Infrastructure Visualisation

AI-Driven Non-Revenue Loss Mitigation

- Anomaly Detection and Leak Prediction Hub
- Revenue Recovery Optimisation Protocols
- Dynamic Water Usage Analysis Mode

Advanced Financial Risk Analytics and Reporting

- AI-Powered Risk Forecasting Intelligence
- Pressure and Water Load Prediction Models
- Predictive Capital Investment Planner



Automated Maintenance
Schedulers



Smart Alert Systems



Interactive GIS Maps



Lifecycle Optimisation
Protocol Integration

System Capabilities

Advanced Predictive Data Synthesis

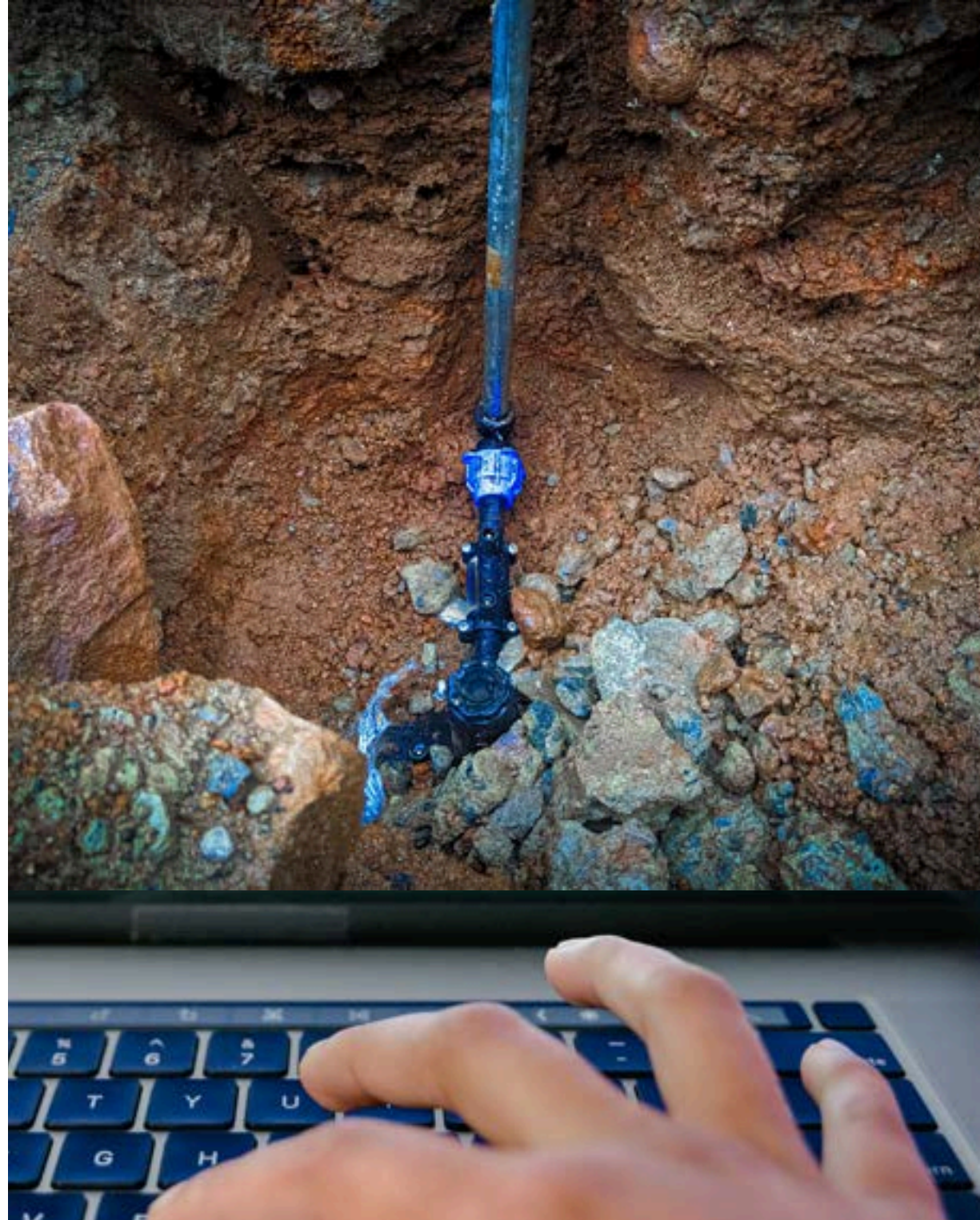
Deploys AI-driven algorithms to synthesise historical and real-time water system data, enabling predictive insights for asset performance, maintenance needs, and demand fluctuations across the reticulation network.

Remote-Operated Process Intelligence

We integrate IoT-enabled sensors with AI to remotely monitor and control water reticulation systems, optimising flow, pressure, and energy consumption while enhancing real-time operational decision-making.

Real-Time Water Purity Intelligence

Employs continuous, IoT-based water quality monitoring tools to provide real-time insights on contamination risks, pH levels, turbidity, and chemical composition, ensuring regulatory compliance and public health protection.





System Capabilities

Adaptive Resilience and Response Network

It utilises advanced analytics and automation to dynamically respond to environmental stressors, system failures, and emergencies, ensuring network resilience and continuity of water service during disruptions.

Predictive Financial Modelling Platform

Integrates operational and asset lifecycle data with financial models, forecasting capital expenditure, maintenance costs, and ROI, enabling strategic financial planning and budget optimisation for water reticulation infrastructure.

Smart NRW Loss Reduction Engine

Our product combines AI and sensor data to detect, diagnose, and prevent 'Non-Revenue Water' losses through intelligent monitoring of leakages, unbilled consumption, and system inefficiencies across the network.

System Capabilities

Advanced Hydraulic Performance Analyser

Deploys sophisticated hydraulic models and real-time data to assess network efficiency, optimising flow rates, pressure levels, and energy consumption while ensuring balanced system operations across the infrastructure.

Autonomous Maintenance Alerting Protocols

This is an AI-driven system that autonomously triggers maintenance alerts based on real-time diagnostics, predictive analytics, and equipment condition data, reducing downtime and enhancing proactive asset management.

Advanced Hydrodynamic Simulation Engine

Integrates high-fidelity simulations with real-world data to model water flow, pressure dynamics, and infrastructure stress, enabling optimised network planning, risk mitigation, and operational performance evaluation.





System Capabilities

Spatial Analytics and Infrastructure Mapping Suite

Combines GIS and advanced spatial analytics to visualise and map water reticulation infrastructure, optimising asset management, leak detection, and maintenance scheduling while improving network design and coverage.

Digital Twin Simulations for Infrastructure Monitoring

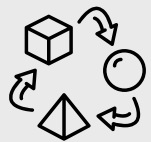
Tigernix solution can create dynamic virtual replicas of water networks to simulate, monitor, and optimise asset behaviour, enhancing predictive maintenance, operational decision-making and system performance in real time.

Predictive Asset Health Monitoring Framework

Utilises machine learning and IoT-based sensors to continuously evaluate asset health, predicting failures and optimising maintenance schedules, ensuring asset longevity, reliability, and cost-effective management.

Key Challenges & Solutions

Gain a consolidated, scalable and intuitive instant view of your water main systems using our smart dashboards. Tigernix Reticulation Asset Solution inherits premium parametric monitoring tools that allow your reticulation asset managers to compare and contrast the actual and desired performance levels of your reticulation infrastructure.



Self-Adaptive Hydraulic Pressure Management

An outdated water reticulation system struggled with inconsistent pressure levels, leading to inefficiencies and system failures. Since Tigernix platform is powered by AI-driven self-adaptive pressure management, it dynamically adjusts pressure, optimising flow and preventing infrastructure stress while maintaining consistent system performance.



Continuous Network Surveillance with Quick Update

Legacy systems faced delayed and reactive monitoring, resulting in unaddressed issues and downtime. Our Industry 4.0's real-time surveillance platform, with 30-second updates, enables proactive detection of anomalies, reducing response times, enhancing decision-making, and maintaining optimal network operations at all times.



Key Challenges & Solutions

The ever-ongoing task of renewing, maintaining and replacing water service pipeline networks can now be simple, faster and accurate. Unlock smart reticulation management efforts with Tigernix- the best Smart Water Management System Solution Enabler you can ever come across. Harness Tigernix Reticulation Solution to exploit a smart and modern solution for all challenges, drawbacks and limitations in maintaining expansive and failure-prone reticulation networks.



Distributed Ledger for Financial Procurement Accuracy

Since traditional procurement methods were prone to errors, fraud, and transparency issues, we introduced this Industry 4.0 blockchain-based distributed ledger system to ensure transparent, immutable financial records, automate procurement processes, reduce errors, and integrate with smart financial protocols.



15-Year Asset Lifespan Management Assurance

Industry 4.0 integration of IoT sensors and AI algorithms continuously monitors asset conditions, predicting wear and tear with high accuracy. This intelligent approach ensures timely interventions, extends asset longevity, and reduces unexpected failures, thereby assuring a 15-year operational lifespan.

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