



AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE



• SCADA Success Story

• ITUMELENG MAEKO



Transformation in Water Rand Water

Achieving Situational Awareness for Critical
Infrastructure Resilience

AVEVA World Milan 2026
Presented by: Itumeleng Maeko



Rand Water Background

Africa's Largest Water Utility



Established: 1903

Population Served: Over 18 million people in the entire Gauteng Province

Vast Coverage: Extends across 4 provinces

Pipeline: Over 3600 km spanning over 18,000 km²

*= Portugal to Singapore
(13 countries)*



Zuikerbosch Augmentation (1954–Present)

Continuous Growth: Zuikerbosch Augmentation Since 1954



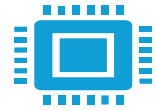
Today: Nominal capacity is
3,900 M³/d



Project Background



To incorporate the concept of **Situational awareness** to empower the process controllers with the relevant information at the point of use.



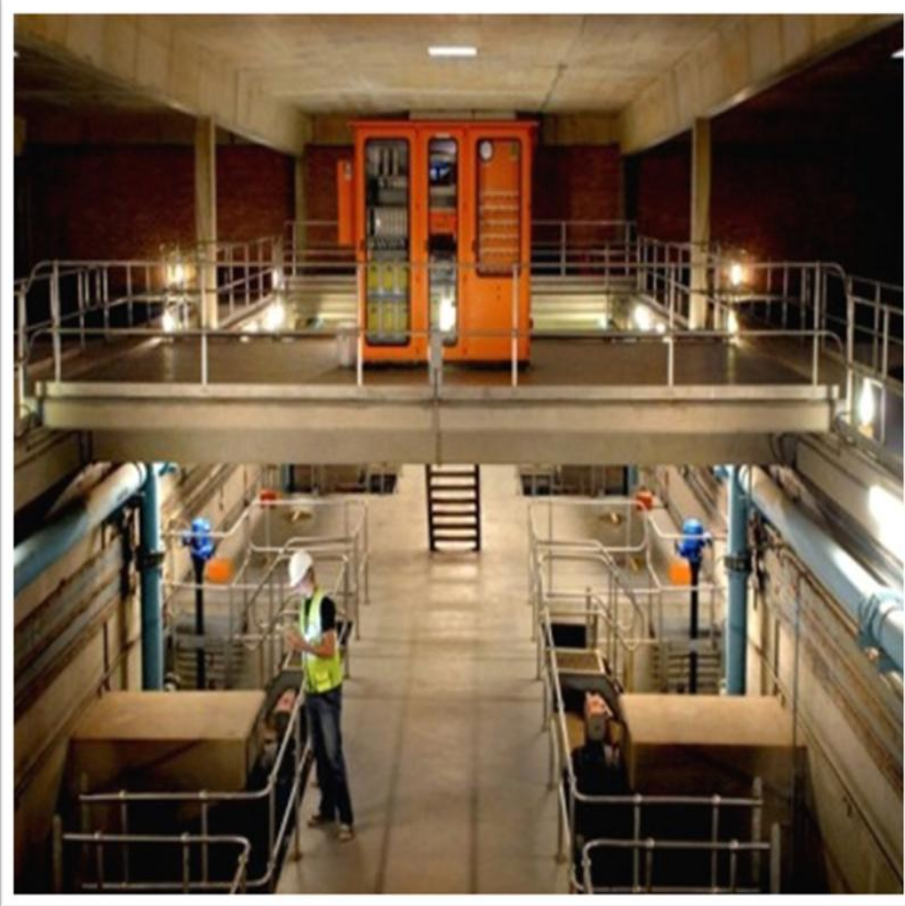
The journey was to see us upgrading to a **unified AVEVA System Platform 2023**, with more interactive images for the Process controllers.



To retrain the Process controllers to adapt to the new environment which was made easier by the user-friendly features of **AVEVA Insight**.



Operational Challenges



Data Rich, Information Poor



Cognitive Overload "Christmas Tree" mimics causing severe visual fatigue and distraction.



Reaction Latency Critical alarms lost in a sea of unnecessary color, delaying root-cause analysis.



Data Fragmentation Unreliable external apps leading to manual KPI recording errors.



Security Gaps Misalignment with stringent IEC 62443 cybersecurity standards.



Goal



IMPROVE
PRODUCTIVITY AND
MORALE OF THE
WORKFORCE.



REAL-TIME DATA TO ALL
RELEVANT
STAKEHOLDERS.



IMPROVE REACTION
TIME ON PLANT
FAILURES.



MONITORING OF PLANT
KPIs TO ENABLE
PROACTIVE
RESPONSE.



Goal Expanded

Holistic Integration: Empowering Proactive Responses



Advanced Visualisation: Empowering Rand Water with advanced visualisation of the entire network



Smart Integration : Introduction of smart OT sensors, coupled with telemetry and hydraulic and hydraulic network simulation ability.



Mobile Accessibility : Ensured information is available to engineers anywhere and anytime to make operational decisions



Accelerated Adoption : Reducing onboarding and training time via user-centric application interfaces.



THE SOLUTION



AVEVA System Platform 2023
with Situational Awareness



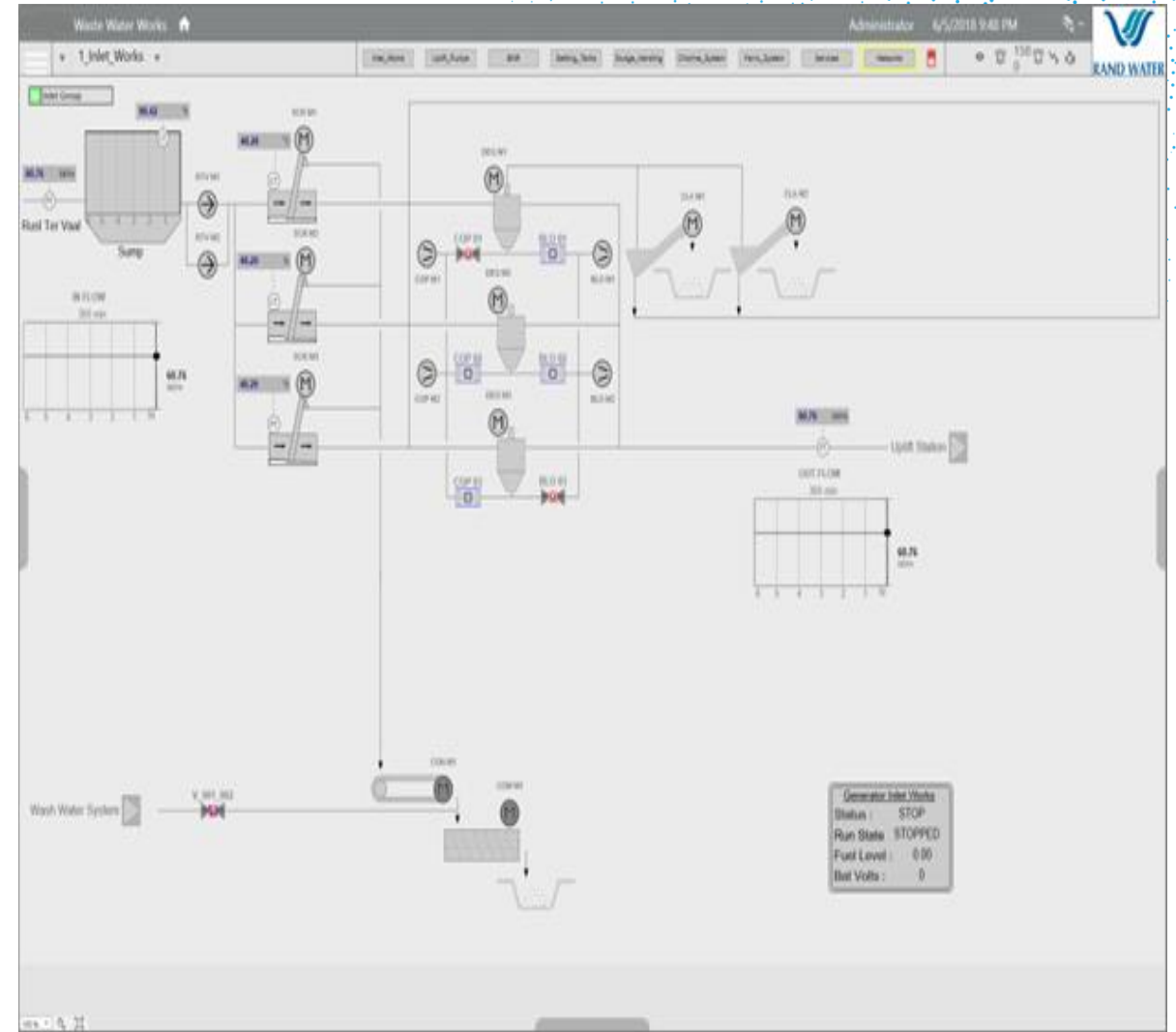
AVEVA Insight
Cloud-based Analytics & Visualization



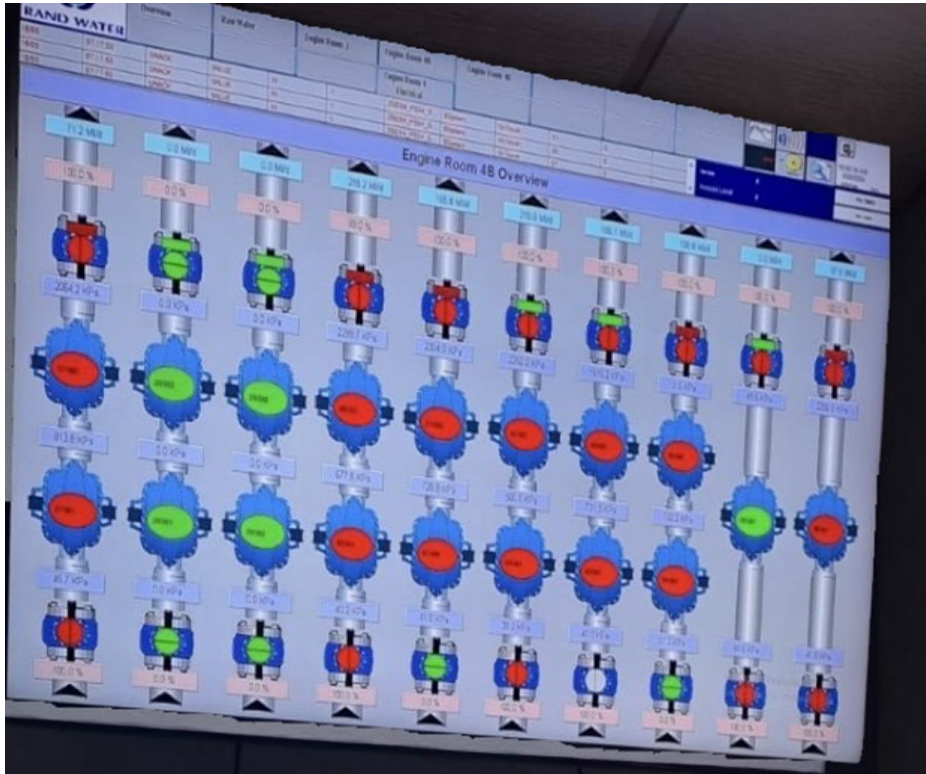
AVEVA Historian
High-Fidelity Industrial Data Storage



AVEVA Operations Reports
Automated KPI & Compliance Reporting



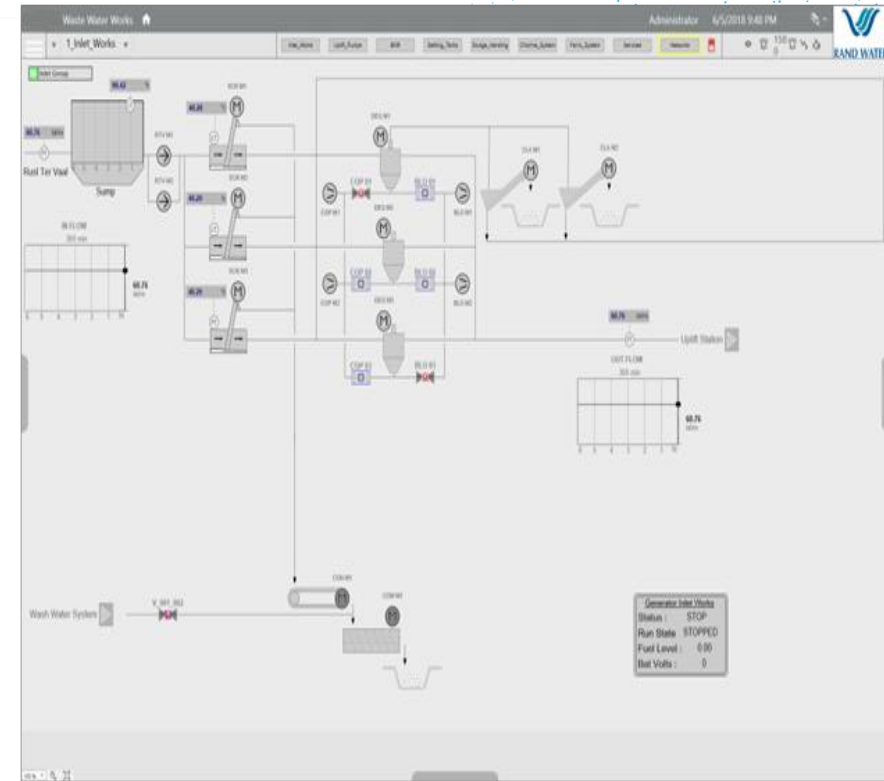
Visualizing the Transformation



BEFORE: LEGACY SYSTEM

Data Overload

Chaotic color schemes, animated 3D graphics, and scattered data points lead to reactive operations and alarm fatigue.



AFTER: AVEVA IMPLEMENTATION

Actionable Intelligence

ISA-101 compliant greyscale topology. Colors are strictly reserved for critical alarms, driving proactive, confident control.

Project Outcomes ...



Productivity & Ergonomics

The Shift: Eliminated visual distractions caused by legacy color palettes.

The Result: Significant gains in operator alertness, reducing cognitive fatigue.



Data Reliability & Access

Automated Precision: AVEVA Operations Reports eliminated human error in hourly KPI recording.

Executive Visibility: Custom AVEVA Insight dashboards deliver near timely metrics directly to leadership.

KEY ACHIEVEMENT



Reduction in Alarm Floods

KEY ACHIEVEMENT

70%

Automated Compliance Reporting

Project Outcomes ...continued



System Reliability

Proactive Maintenance: Holistic system intelligence enables rapid intervention before issues escalate.

Maximized Uptime: Rapid response capabilities have tangibly improved overall equipment reliability.



Workforce Engagement

Empowered Decisions: Providing teams with accurate, real-time values enables quicker problem resolution.

Optimized Reviews: Fostered highly data-driven engagements during daily plant performance reviews.

KEY ACHIEVEMENT



System Uptime Maintained

KEY ACHIEVEMENT

Zero

Information Silos



RAND WATER

Contents

Future Expansion

AVEVA Digital Twin:

- Simulate process changes without affecting live operations
- Process Optimization throughput
- Asset performance monitoring
- Operator Training process changes without affecting live Operator Training



The Rand Water Advantage

Transforming complex IOT and Control Systems data into actionable intelligence to secure the future of water distribution for millions. Autonomous process tuning (within defined safety limits) Integration with broader Industry 4.0 ecosystems

STRATEGIC OUTPUT ENABLED BY AVEVA

**Optimized Operations.
Reliable Supply.**



Thank you

