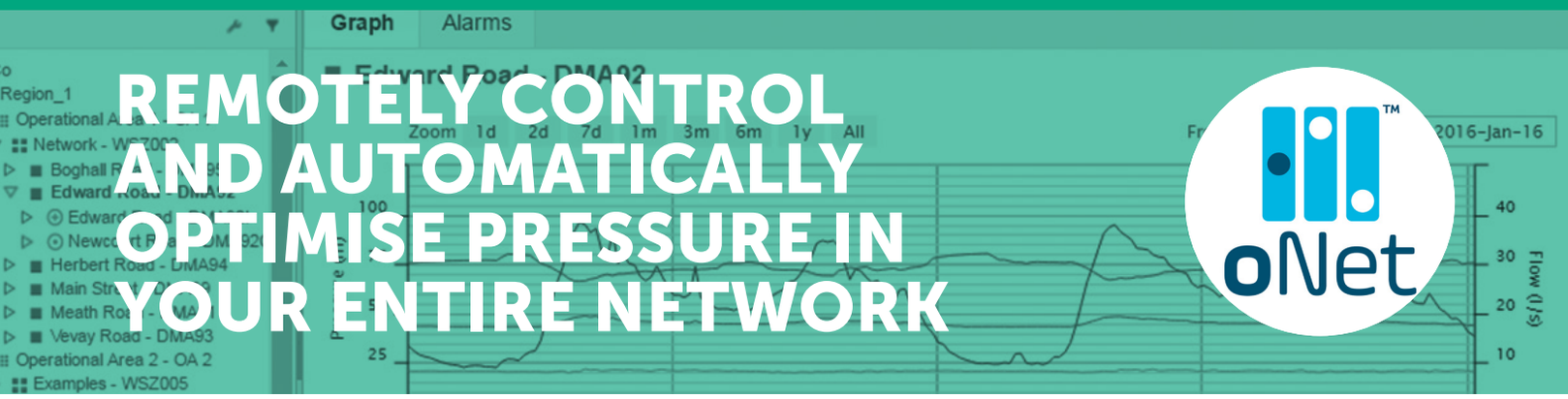
SOLUTIONS

oNet



REMOTELY CONTROL AND AUTOMATICALLY OPTIMISE PRESSURE IN YOUR ENTIRE NETWORK

ONET ENABLES REMOTE CONTROL AND AUTOMATIC OPTIMISATION OF PRESSURE AT PRVS AND PUMPS ACROSS YOUR ENTIRE NETWORK

REMOTE CONTROL:

You decide and set your control philosophy for PRVs and pumps

Fixed outlet pressure precisely controlled with minimum factor of safety

Schedule in advance for known variations: events, intermittent supply

Implement a control curve that you have manually calculated

AUTOMATIC OPTIMISATION:

oNet algorithms determine the optimal control philosophy for PRVs and pumps to achieve a minimum control point pressure

Adjust for flow-related headloss

Adapts to changes in demand over time; fire demand; seasonal, cultural and growth-related changes

MORE INFO

LEARN MORE ABOUT WHAT WE DO AT **WWW.i2OWATER.COM**

i2O'S CLIENTS USE ONET TO ACHIEVE A WIDE RANGE OF BUSINESS BENEFITS

Remote control and automatic optimisation of pressure calms the network and delivers a wide range of business benefits. The 3 main objectives that clients have are:

• LEAKAGE AND NON-REVENUE WATER REDUCTION

Guangdong Water in Southern China was facing high levels of Non-Revenue Water (NRW) and needed to find a way of quickly and effectively reducing leakage. oNet was first used in Changping, an industrial area with high levels of leakage and NRW. oNet ensured they could continuously reduce excess pressure in the network and therefore significantly reduce leakage whilst still delivering the network demands in a heavily industrialised area.

OUTCOME: 18% REDUCTION IN LEAKAGE AND 8% REDUCTION IN NRW

• ENERGY COST REDUCTION

Anglian Water scheduled a pilot site to demonstrate the potential of pump control and optimisation due to its burst history and leakage levels. The DMA has 36.5 Km of predominately cast iron pipe and serves a population of 6,245 including a hospital which is classed as a critical user. 2 variable speed drive pumps were fitted to enable control and optimisation and this cost was included in the calculation of the ROI. The distribution booster station outlet pressure was steadily reduced over a number of weeks to allow the i2O algorithm to learn the relationship between the flow and pressures; and to ensure minimal impact upon customers.

OUTCOME: 7 MONTH ROI - 49% ENERGY SAVING, 16% REDUCTION IN LEAKAGE, 65% REDUCTION IN BURST FREQUENCY, REDUCTION IN OPERATING COSTS FROM NO NEED FOR ACTIVE LEAKAGE CONTROL ACTIVITIES, 26% REDUCTION IN AVERAGE PRESSURES

• SCHEDULING FOR PREDICTABLE VARIANCES

The state of Selangor in Malaysia experienced severe water shortage in 2014 and was forced to embark on a water rationing programme across hundreds of DMAs. oNet was used to ensure that supply could be cut and restored reliably at fixed times and on specific days. At a difficult time the utility was able to make and keep commitments to customers without having to despatch large numbers of staff to site and do battle with Kuala Lumpur's infamous traffic jams.

OUTCOME: MINIMISATION OF THE NUMBER OF CUSTOMER COMPLAINTS

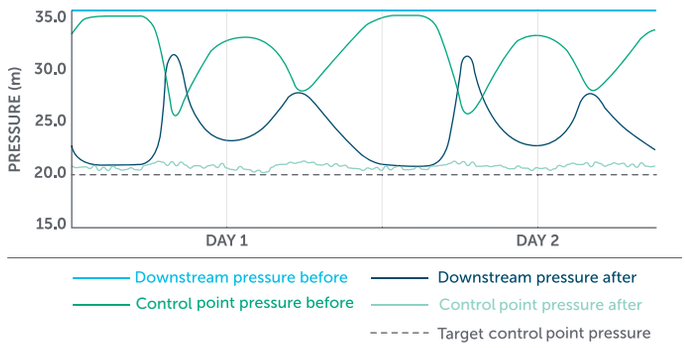
Additional oNet benefits include:

- **ASSET LIFE INCREASE**
- **OPERATING COST REDUCTION**
- **IMPROVED CUSTOMER SERVICE**
- **DROUGHT RISK MITIGATION**

HOW IT WORKS

DEPLOY AND CONFIGURE	DATA GATHERING	SELECT AND SET CONTROL PHILOSOPHY	CONTROL PRVS AND PUMPS
Install hardware	Flow	Set target pressure	Monitor
Configure devices	Downstream pressure	Set timings	
	Upstream pressure (PRV only)	Implement your own control curve or use i2O automatic optimisation	
	Control space pressure (PRV only)	Set alarms	
	Control point pressure		

AUTOMATIC OPTIMISATION



i2O's patented algorithm takes pressure and flow data and automatically determines the optimal control curve that should be applied. Any changes in supply, demand, headloss, etc. over time are incorporated automatically into an updated control curve without the need for any manual analysis or intervention.

HARDWARE

PRV MONITORING AND CONTROL

i2O's APV is fitted on a secondary pilot rail. A 3 pressure logger monitors upstream, downstream and control space pressure and flow and acts as the controller for the APV.

PUMP MONITORING AND CONTROL

i2O's Pump Optimiser monitors downstream pressure and flow and sends a pressure demand setpoint to a variable speed drive pump.

CONTROL POINT MONITORING

i2O's Logger monitors pressure at the control point.

WHY i2O?

i2O offers the highest level of quality at the lowest lifetime cost. It supports clients fully in their use of i2O solutions. i2O invests heavily in R&D, working with clients to improve existing solutions and bring new solutions to market. Key advantages of oNet:

ACCURATE AND SMOOTH CONTROL	• i2O is the only company using a dedicated pilot valve designed to continuously adjust pressure rather than actuating a pilot valve designed for occasional manual adjustment. • i2O uses open loop control which ensures that 'hunting' behaviour exhibited by closed loop systems is avoided, and that communication failures do not affect operations. • Rate and gradation of pressure changes can all be programmed in advance. • Protected by patents which are not licensed to third parties.
SCHEDULABLE CONTROL	• Any combination of control philosophies and target pressures can be scheduled easily in advance through a calendar interface.
SUITE OF SOLUTIONS	• Part of a suite of smart water network solutions that enable clients to maximise their investment in data logging, network monitoring and pressure control.

ALL OF i2O'S SOLUTIONS ARE AVAILABLE AS SAAS, SOME IN ENTERPRISE EDITIONS. CLIENTS REPEATEDLY CHOOSE SAAS FOR THREE MAIN REASONS:

THE FASTEST WAY TO DELIVER
- Works anywhere
- Easy to use
- Immediately available

NO HASSLE
- Guaranteed levels of service
- Seamless upgrades
- Zero infrastructure
- High levels of security

AFFORDABLE
- No significant up-front costs
- Simple annual fee
- Scalable

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i2O™ Calm water