



NETWORK MANAGEMENT

DATA DELIVERY

LEAK DETECTION

LEAK LOCATION

technology guide

for water network management
and leakage control

INNOVATION

Design and manufacture

Primayer has a proactive design team which continually pioneers new products and systems maintaining Primayer as a leading provider of technology for the water industry.

Our manufacturing facility adheres to the highest standards of best practice at all stages of the manufacturing and quality control process.

Quality assurance

We are committed to the highest standards with accreditation to ISO 9001 Quality Management System and ISO 14001 for an effective Environmental Management System. This is an investment for the long term benefit of our business and our customers.

After sales

Our Customer Support team provides a rapid support and advice service for all our customers. Repair and calibration services are available at each Primayer office and also from a number of Service Centres situated around the world.

A variety of training programmes are available to assist engineers and practitioners. The training courses can be 'tailor-made' to suit individual needs.

Environmental

Primayer's core business is to facilitate the reduction of wastage and to increase the provision of water, a vital resource for life. Our environmental credentials are fundamental to our success and that of our customers.

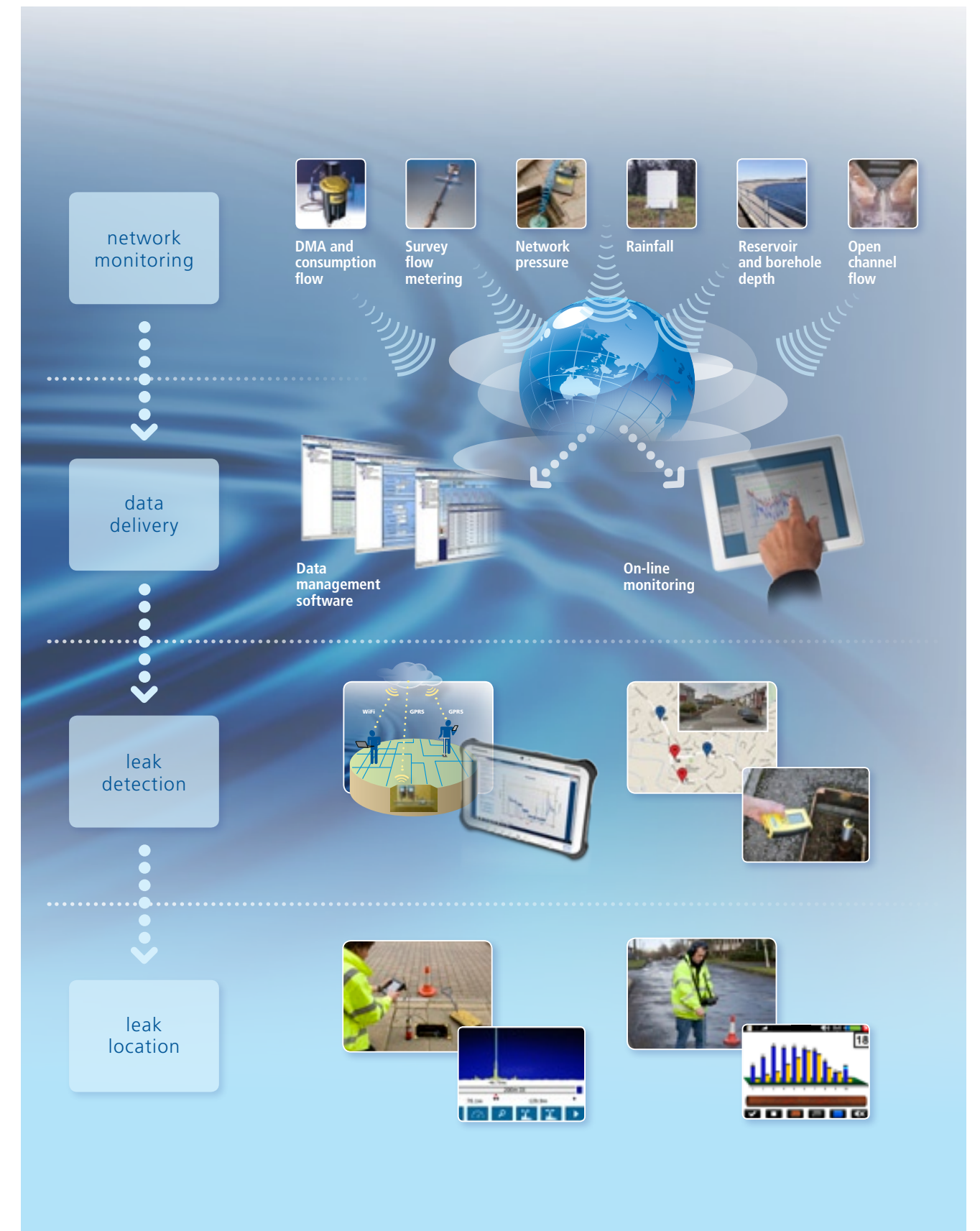
Taking every opportunity to have a positive impact on the environment is becoming more and more important, and this is influencing the way that our customers and partners approach a particular project.



Primayer instruments utilise innovative technologies to form an integrated approach to water system management. We offer a wide choice of products to meet both routine and complex applications. Our commitment is to the future needs of our customers.

TECHNOLOGY

The global increase in the demand for drinking water, coupled to increased urbanisation, unpredictable climate and environmental concerns form the challenge for water supply. Primayer, with innovation at its core, is rising to meet this challenge through the monitoring and leakage control technologies illustrated below.



Remote Data Logging



XiLog+

Data logger with 3G, GPRS and SMS communications

- 1, 2, 3 and 9 channel models (with internal pressure transducer options)
- Data transmission from every 15 minutes up to daily send
- High performance 'below-ground' antenna
- Wide range of clean and waste water sensors with high accuracy
- Powered for 5 years (dependent upon usage)
- 2 Gbyte memory for rapid logging and logs at multiple intervals



XiLog+Mini

With external antenna for installation into small chambers.



XiLog+

XiLogeco

Data logger powered by water pressure

- Regular 15 minute data transmission
- Environmentally friendly
- Minimises site visits
- PRV performance monitoring
- District/zone flow monitoring
- Boundary valve monitoring



XAP Display

Portable USB display for use with all PrimeLog+ and XiLog+ data loggers, shows current values for each channel and minimum daily flow value.

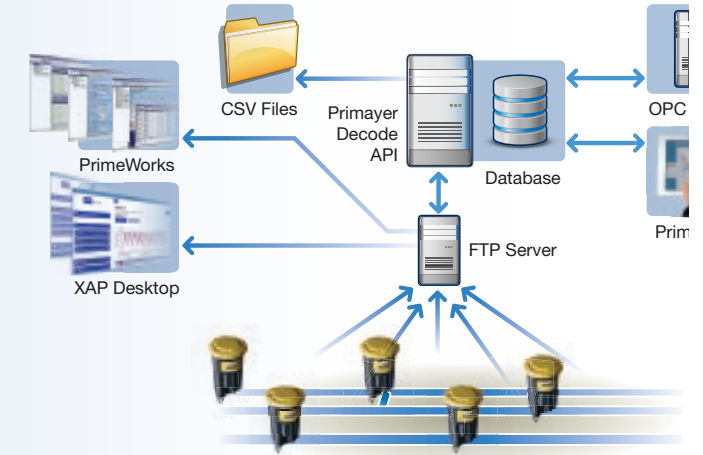


Data Delivery

XiLog+ Data Connectivity

XiLog+ loggers deliver GPRS data onto an FTP server which may be hosted by Primayer or by the end-user.

The Decode Application software delivers data direct to CSV format files or to an SQL Database for access by other systems (SQL license is supplied by others).



Network hydraulic data available on Google Map*

PrimeWeb

PrimeWeb

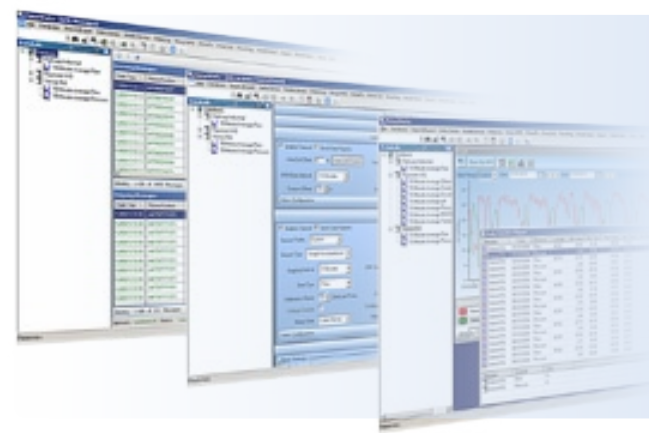
On-line network monitoring and leak alarm system

- Remote access to observe changes in network conditions, water usage, nightlines, etc.
- Immediate leak alarms enable rapid leak detection
- Newly installed logger data automatically displayed
- XiLog+ and Phocus data / alarms on Google Maps* and 'Street-view' available at logger location
- Data on any device with internet access
- Efficient management of areas with high leakage

PrimeWorks

Water data management software

- Comprehensive graphing and reporting
- Extensive database control
- Data import/export
- Auto-export of data
- Interfaces with corporate systems
- Daily statistics



XAP Desktop

XiLog And PrimeLog programming and reporting for water supply and distribution applications

- Data readback from PrimeLog+ / XiLog+
- Multiple logger programming/readback via USB batch function
- Receive SMS messages
- Download FTP data
- Graphical data display
- Tabular data reporting
- Statistics information
- Data export in .CSV format



*Google maps courtesy of Google.

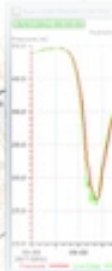
NETWORK MANAGEMENT

Local Data Logging

PrimeLog

Portable data logger for water distribution and network surveys

- Compatible with all common flowmeters
- High accuracy +/-0.1% pressure measurement
- High speed USB communication
- Logs minimum, maximum and average values
- Battery life 5 years (in most applications)
- Small, robust and waterproof to IP68



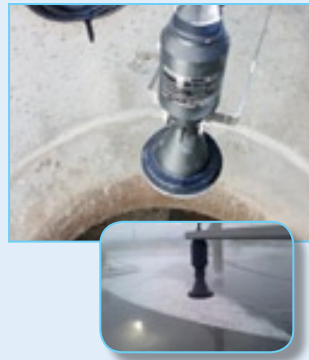
Sensors (for use with XiLog+ and PrimeLog+)

Level measurement using ultrasonic sensor *



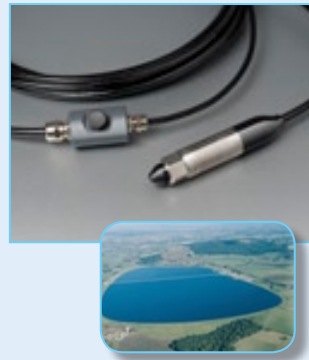
Ultrasonic pulses are reflected by the surface and received at the sensor. A common application is for depth v flow-rate determination on weirs or monitoring sewer overflows at times of excessive rainfall.

Level measurement using radar sensor *



Sensor uses pulsed microwaves enabling high accuracy level measurement over wide range; unaffected by humidity, surface foam etc. which can create false echoes.

Depth measurement using silicon pressure transducer



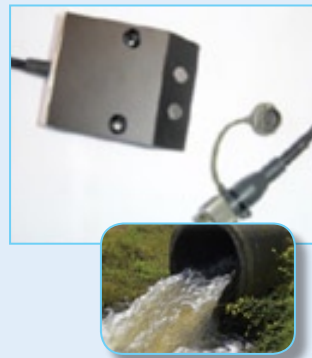
Solid state pressure transducer fitted with vent chamber. Typical applications include reservoir, borehole and river depth measurement.

Open channel flow – Doppler sensor *



The Doppler method uses a continuous, ultrasonic signal sent into the water at a known angle to measure the flow velocity. Moving particles generate a frequency shift proportional to the velocity of the particles.

Overflow sensor



The overflow sensor is self-powered and, when submerged, indicates presence of water. The system measures the time an overflow occurs. The sensor has a designed profile to avoid sediment build up.

Water meters



Pulse units are available for all major clean water supply meters.

Rain gauge



A raingauge can give first indication of increased surface water entering the sewer network. This provides information to treatment works upon predicted increased water volumes.

Pump operation



The current clamp detects when a pump is taking electric power; thus monitoring the functioning time of the pump. The volume of water pumped is calculated from the pump run-time.

*This sensor for use with XiLog+ and XiLogEco only

NETWORK MANAGEMENT

Flowmeters

PrimeProbe3

Rugged electromagnetic insertion flowmeter

- Insertion lengths available for use in pipe diameters 80mm to over 2000mm
- Velocity measurement down to 20mm/sec
- Very rugged and for use up to 25 Bar operating pressure
- No interruption to supply at installation
- Battery life 4.8 years (at sampling every 15 seconds)
- Measures flow in low conductivity water
- Velocity profile software available for optimum performance

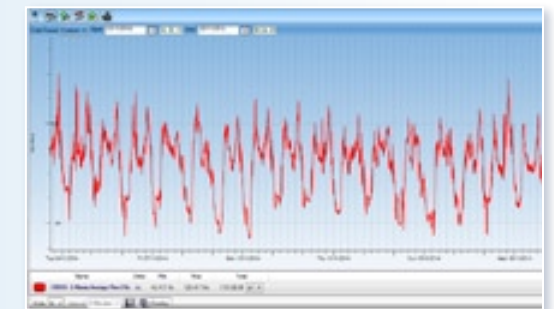
PrimeProbe3



PrimeFlo-T

Compact ultrasonic meter for flow surveys

- Survey application with 24 hour battery life
- Operation on pipe sizes from 25 – 2500mm (one pair of sensors)
- Non-invasive sensors, providing;
 - no flow disturbance
 - no process interruption
 - no water contact
- Easy set-up and installation



PrimeFlo-3

Ultrasonic flowmeter with remote GPRS communications and long battery life for semi-permanent installation

- Operation on pipe sizes from 25 to 2500mm (one pair of sensors only)
- Battery life up to 3 months (dependent upon sampling)
- Integral data logger with GPRS and SMS remote communications
- Rugged IP67 housing and sensors
- On-line data availability via PrimeWeb
- Easy installation with non-invasive measurement
- Optional integral wall-thickness gauge



LEAKAGE CONTROL

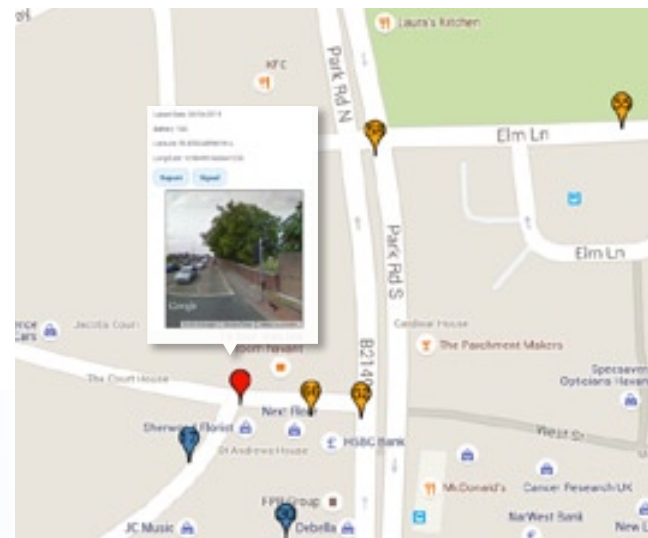
Detection - Acoustic Logging



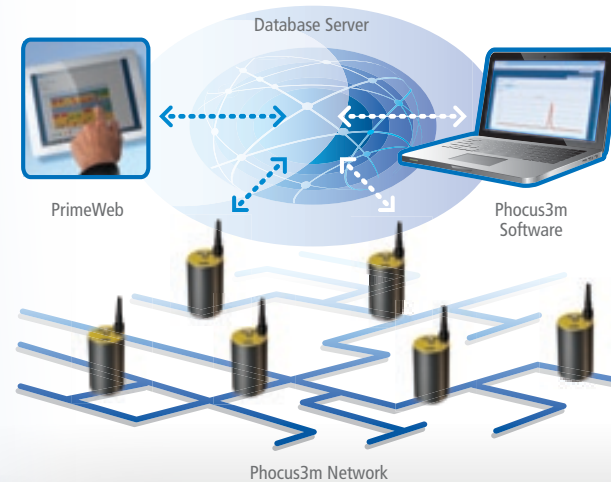
Phocus3

Advanced wireless noise logger for leak detection

- Rapid overnight identification of leaks
- Phocus noise algorithm to reduce incidence of un-detected leaks
- Leak listening
 - real time (whilst on site)
 - recorded to aid remote leak identification
- GPS coordinates stored in logger
- Small size
- Two models available:
 - local IR contact (lift + shift operation)
 - radio contact (greater range for permanent installation)



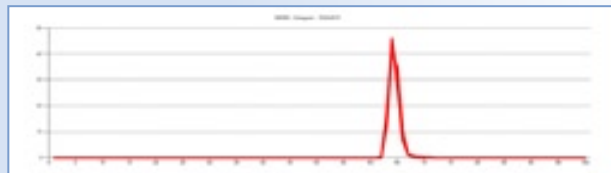
Phocus3m connectivity and data retrieval



Phocus3m

Remote leak detection utilising GPRS/3G communications

- Remote identification to reduce leak run-time and improve efficiency
- PrimeWeb map based data available using a web browser
- No infrastructure above ground required
- One, small, low cost logger per installation
- Leak confirmation
 - Audio files available for remote listening to confirm presence of leak noise
 - Evaluation of daily leak noise histogram
- Embedded roaming SIM for optimum network communications



Histogram display aids leak confirmation

PrimeWeb

PrimeWeb for online leak data and alarms.



Status report for deployed loggers



LEAKAGE CONTROL

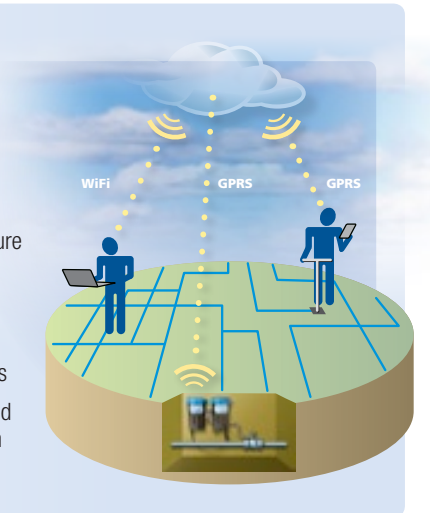
Detection - Step Testing



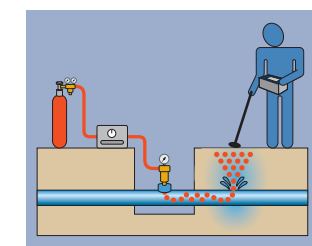
Xstream

Live data streaming for step testing, PRV commissioning, network re-zoning

- Real-time flow and pressure data viewed on internet browser
- Single user operation
- No radio range restrictions
- Annotate valve closure and other operations on graph



Location



PrimeTrace

Leak location using hydrogen tracer gas

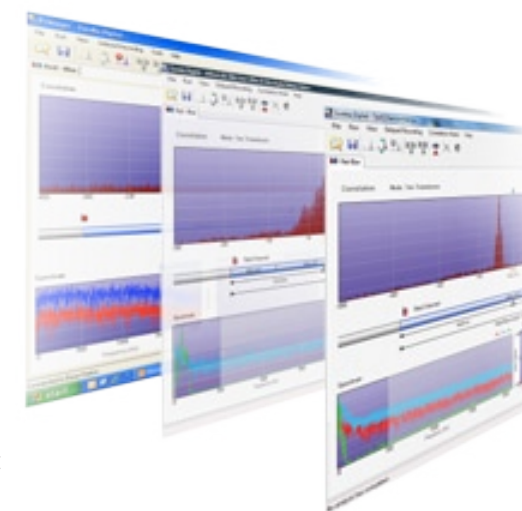
- Semiconductor sensor with resolution of 0.1ppm
- Incorporates powerful pump to aid tracer gas detection
- Compact, user friendly design
- Specialised probes for different applications
- Self-test feature to check sensitivity
- Injection box enables optimum control of gas injection with differing pipe sizes, pressures and flowrates



Eureka Digital

Digital leak location correlator

- Optimum performance in difficult leak detection situations
- Operation not limited by radio range
- Re-analysis of digitally recorded sound
- Optional direct transmitter connection to pipe (street-work friendly)
- Three sensor input option for automatic velocity measurement
- Flexible operation



Eureka DIGITAL

LEAKAGE CONTROL

Location - Leak Noise Correlation

Eureka3

Innovative leak location correlator

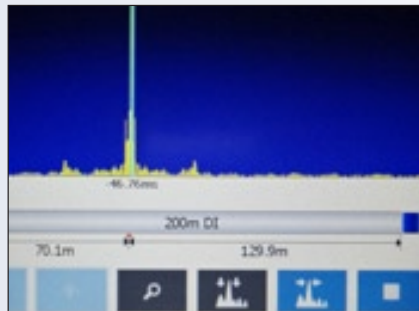
- 16-bit digital correlation processing
- Interactive pipe model, correlation and coherence spectrum displays
- Velocity correction function
- Optional direct transmitter connection to pipe (street working friendly)
- Post-processing analysis using powerful *Enigma*® software
- Compact, with in-case battery charging



Eureka3



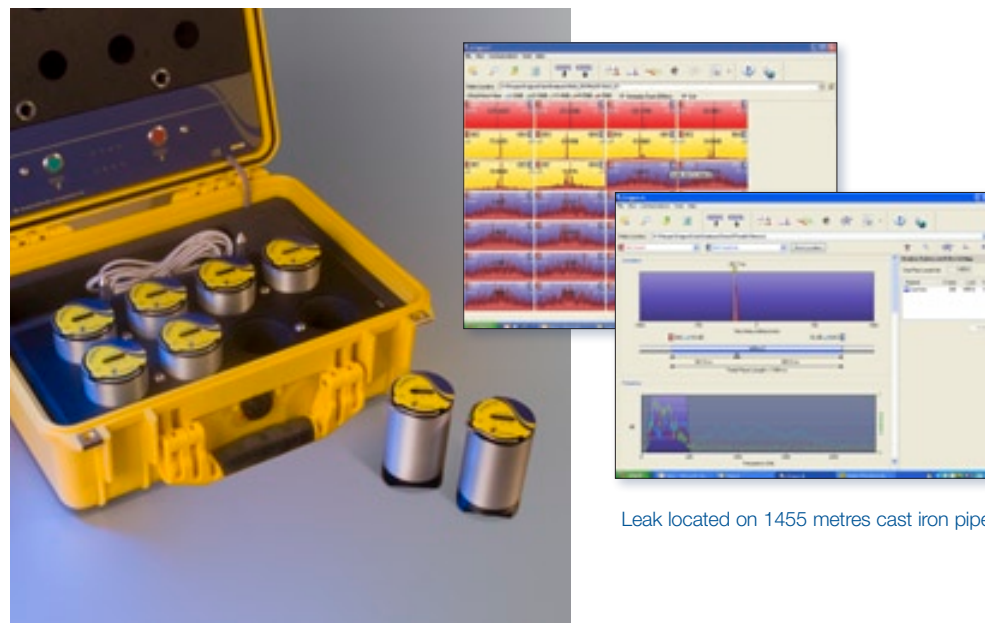
Clear correlation display of leak position



Enigma

Multi-point correlation system for optimum leak location

- Operation at night for optimum performance - but avoids costly night working
- Three sound samples to separate consumer use from leakage
- Can find multiple leaks
- Latest 24-bit digital processing
- Advanced correlation, coherence and filtering



Leak located on 1455 metres cast iron pipe

LEAKAGE CONTROL

Location - Leak Listening



Mikron3

Flexible technology for acoustic leak location

- High quality piezo sensors for optimum sound quality
- Wireless sensor communications for reduced airborne noise pick-up
- Choice of sensors;
 - Ground microphone
 - Listening rod
 - Accelerometer
- Dynamic listen control
- Choice of three processors;
 - Mini
 - Pro
 - PrimeTouch App
- In-case battery charging



PrimeTouch App's

Leak location applications on one platform:

- Eureka3
- Enigma
- Mikron3



Hykron

Leak listening system



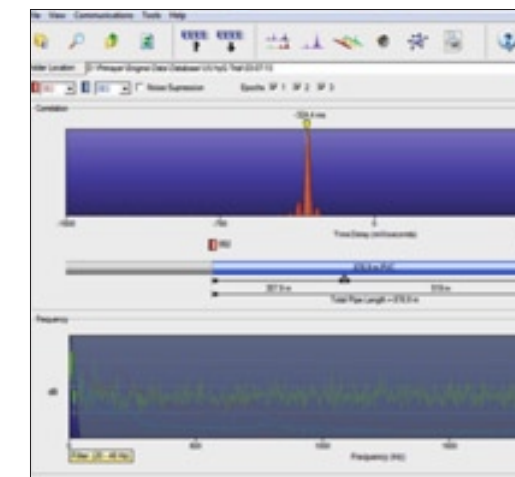
- High acoustic sensitivity
- Easy operation
- Low cost
- Durable construction
- Alkaline battery with easy field replacement

Location - Trunk Main Leakage

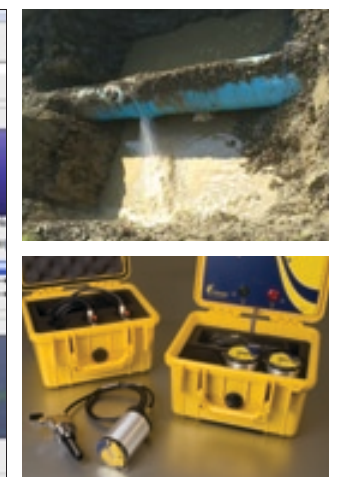
Enigma-hyQ

Optimized for leak location on large diameter pipes and over longer distances

- High sensitivity hydrophon directly detects pressure wave in the water
- Narrow band filtering technique
- No radio range limitation
- Records acoustic data at night - but avoids costly night working
- Auto-velocity determination
- Unwanted noise suppression

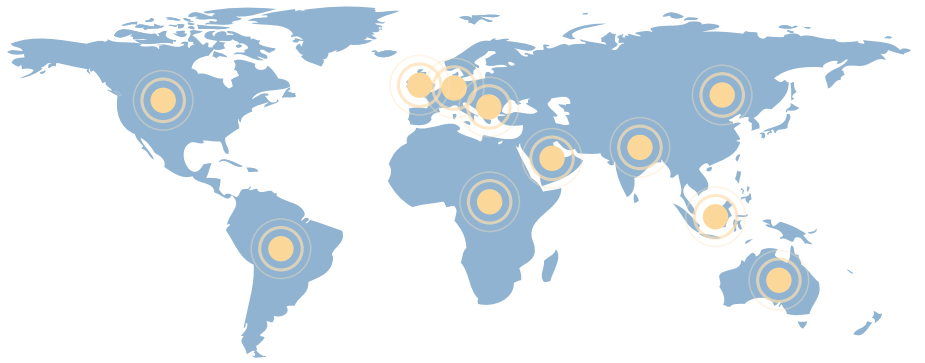


Leak located on 500mm PVC main over 876 metres



GLOBAL PRESENCE

Primayer has modern design and manufacturing facilities in the United Kingdom plus additional sales and support facilities located in France, Malaysia and India. We also have distributors in over 40 countries worldwide employing highly experienced personnel.



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Institute
of water



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water network management and leakage control



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