



monitor

Save water, save time,
profile your demands

baseform

The Monitor software

Real-time monitoring and analysis of water supply networks

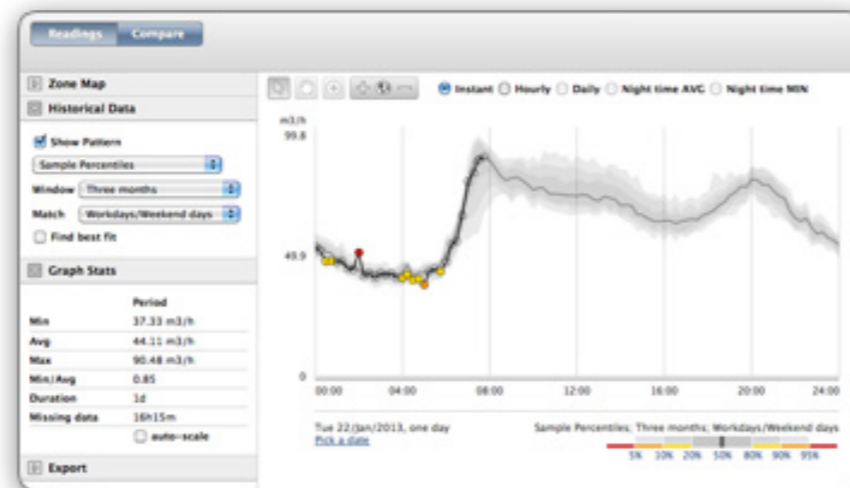
Improving the efficiency of water supply systems through the control of non-revenue water is a chief concern of utilities worldwide. Monitor continuously analyzes water metering data, automatically detecting abnormal readings that may be due to leaks, pipe breaks, meter or transmission malfunctions, or other system events. Based on reliable statistical methods and advanced technology solutions, Monitor profiles each of your metering zones' consumption patterns, establishing a strong basis for detecting any deviation. Monitor has a measurable ROI on the operation of a water utility, namely in reducing response times, in actively detecting leaks and pipe bursts, in analyzing consumption and network information, and in managing system operation.

Consumption patterns

Reliably profiling water consumption is a central feature of the software. Consumption patterns are very specific to each metered sector and reflect daily, weekly and seasonal human behaviors. Water demand is highly influenced by social-demographics, land use, distance to workplace, industrial and commercial activity, network condition and operation, service pressure, weather conditions and many other factors.

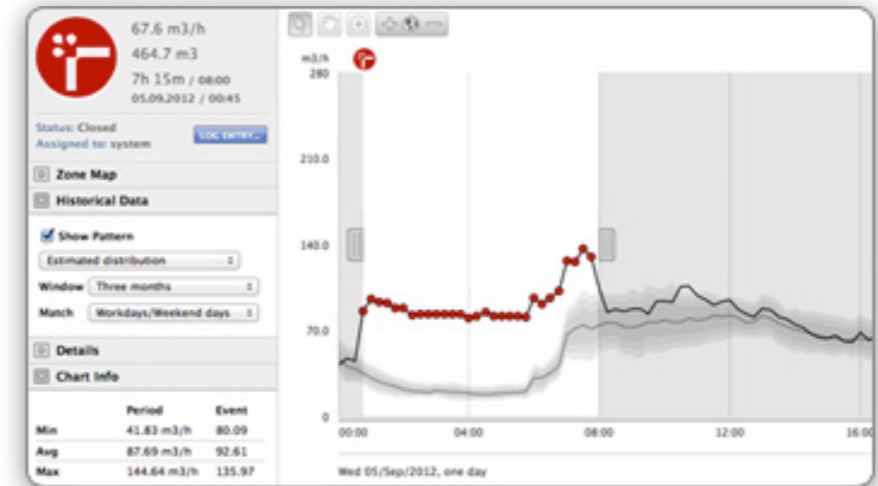
Monitor systematically analyzes metered sector data, deriving and dynamically updating their consumption patterns. These patterns are an essential tool in reducing uncertainty:

in **leakage control**, by establishing the normality from where abnormal events can be singled out, and by improving night-flow estimates as well as their trends;
in **operational optimization**, by providing the most reliable demand profile estimates for hydraulic simulation models, used e.g. in pump scheduling or pressure optimization;
in system **planning and rehabilitation**, by building realistic scenarios that improve the chances of your plans being matched by reality.



Events

Detected deviations to normal network behavior allow Monitor to find and classify time windows, or events, that may translate leaks, pipe breaks, abnormal consumption or a variety of network issues.



Faster detection times and the optimization of the detection processes' quality mean that the consequences of abnormal events can be effectively foreseen and counteracted, and translate in measurable return on investment. However, automating the detection of abnormal events is just a first step in using Monitor. For each event, the software provides the most precise estimates available for the water volume differential between expected normal behavior and that which took place. Each event sets in motion a simple and adaptable workflow that can be made to connect to the customer management system, the work orders system, GIS, and other operational systems. The generation of events, the immediate notification of field crews and maintenance staff, and their operational support are integrated into Monitor with full feedback, allowing for optimization of efforts and increasing the reliability of the alert process.

Who is it for?

Monitor is aimed at water utilities with installed SCADA, network monitoring systems, large consumer telemetry, or household smart meters.

The software is particularly useful for utilities who are in the process of implementing leakage control programmes and who have installed or plan to install network monitoring, enabling significant efficiency gains and accountability of results without extra capital investment.

The software is aimed at a wide range of users within the utility, namely:

- operations
- engineering
- customer relations
- network modeling
- planning and management

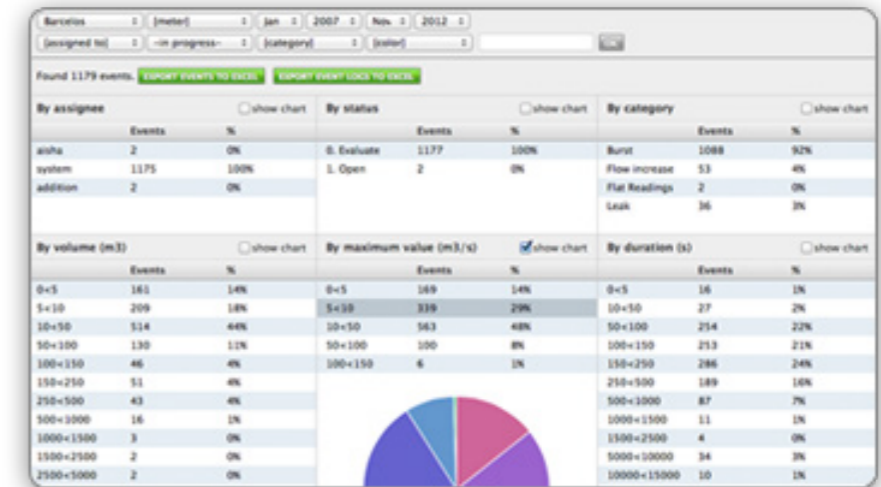
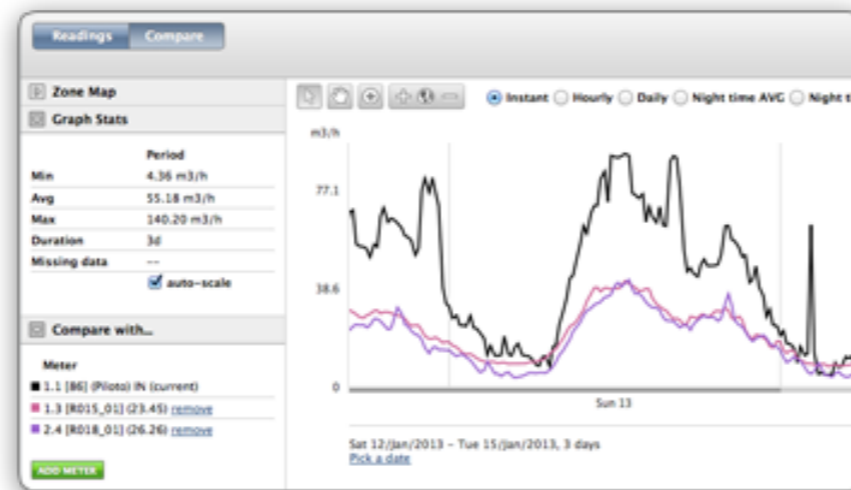
Data Exploration

Monitor includes a set of easy-to-use tools designed to assist water professionals in analyzing and understanding the data collected.

These tools are a significant advantage for planning and network modeling staff, but they can also play a pivotal role in managing daily operations, by placing a given reading or event in the full context of the metered sector's expected behavior, in all its dimensions.

The software allows for a full depiction of the global system state as well as each of the metered sectors, both through interactive mapping and through a flexible dashboard where readings are pitched against daily, weekly, monthly and annual patterns.

Selecting a given meter or metered area, a rich interactive graphical environment displays instantaneous readings or hourly, daily and night-flow totals, overlaid on consumption patterns. The time dimension can be navigated in any direction, or zoomed in and out at will, limited only by the available records. Two or more meters to be easily overlaid and compared at any time.



Transparency = control

Monitor is transparent in the statistical methods and algorithms it uses in cleaning, validating and normalizing the data, in building consumption patterns and in detecting events.

All data collected or generated by the software are stored and fully available. The user can import or export all information at any time: readings, events, patterns and workflows.

Full reporting functionality allows for the exploration and export of detailed information about registered events, by meter, sector, duration, volume or peak flow, among other options.

Multi-system

In utilities that manage multiple systems, or in groups of utilities under a common management umbrella, the ability to use a single integration platform is a major advantage, not just in coordinating and streamlining operations, but also as a basis for benchmarking and continuous improvement practices. Monitor can manage any number of systems simultaneously, collecting data from a variety of different sources and enabling segregated or integrated management at will.



Web-GIS

Monitor includes a native geographical information system (GIS) accessible from any internet browser. Although not a prerequisite for Monitor, visualizing the exact area monitored, the network, metering points and network repair/ work order locations, is a rich and effective means of accessing or recording information, and a faster means of perceiving issues and devising solutions.

Dynamic network maps can be produced and overlaid on online cartography (Google Maps, Bing, Mapbox, ESRI, among others) or the utility's own maps.

Secure

Monitor is a cloud-based software, running on extremely reliable servers. Each utility gets a separate, private instance of the software, in a closed, secured and auditable environment.

A Monitor Agent is a small multi-platform satellite module that is installed in a computer belonging to the utility or the entity responsible for the monitoring databases (SCADA or other telemetry system), enabling encrypted transmission to the online platform.

Agent management, configuration and even the source code is fully made available for validation by the utility. Monitor enables user differentiation in functionality and scope, with full control over what each user may see and do. A full user log is permanently kept.

Requisites

Monitor has next-gen features that make it particularly easy to use and master by a wide range of professionals, as well as maximizing its compatibility and accessibility. Monitor is multi-user and accessible from a simple Internet browser, in any computer, smartphone or tablet, namely using mobile web communications.

Supported by professional reliability

The Monitor software is distributed through the baseform.org platform by Lisbon-based Addition, combining a long-running experience in the development of cutting-edge professional software with a unique network of R&D leaders, such as LNEC and the Technical University of Lisbon (IST), and a growing number of water utilities, in Portugal and internationally.

Configuring and calibrating the software, as well as training and round-the-clock support are essential parts of the Monitor solutions on offer. We make available an experienced team, as well as a network of partners, devoted to technically supporting each implementation of Monitor.

Where to begin?

Contact us

We are available at any time to demo the application — in person or through a webcast — and to discuss how can it be of best use to your organization.

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