LEAK DETECTION
Data centralization and processing
www.topkapi-scada.com

Sectorization of the water networks optimizes the yield by reducing losses due to leaks or abnormal use. It consists in analyzing inlet and outlet flows in each portion of a network (DMA - District Metered Area) to find any unjustified differences between «what enters» and «what exits».

TRANSMITTERS

DMA is based on measurements made on the network, more particularly flow measurements.

As the measurement points are particularly scattered, DMS has known recent growth thanks to evolutions in teletransmitters offering the following qualities:

→ Long duration operation on batteries (no external power source required)
→ Capacity of teletransmission of information by GSM network (SMS mainly) or GPRS
→ Operation in severe environments.

DATA PROCESSING

The TOPKAPI supervision software perfectly meets all information acquisition and processing needs. Easy to implement, it requires no computer skills, while allowing to make all advanced calculations you wish to integrate to your application.

One of the major benefits of TOPKAPI for this type of application is its ability to run calculation operations on historical data in a simple way. Whereas most SCADA software focuses strictly on real-time processing and is unable to acquire data time-stamped at the source, TOPKAPI allows to use time-stamped data from several transmitters within a same calculation, and generate the appropriate graph trends.

TOPKAPI offers the following characteristics:

→ **Openness**

Offering communication interfaces with many devices (see www.topkapi-scada.com/en/software/protocols), it allows to choose the most effective and appropriate teletransmitters for your needs (measurement of flow, pressure, prelocaters, etc.).

→ **Acquisition capacities**

Acknowledged for many years for mastering remote communication, TOPKAPI offers native management of GSM, GPRS, PSTN modems.

For example, it provides automatic acquisition of data in SMS, on a same modem, of data transmitted by ABB, HYDREKA, IJINUS, PALMER, PERAX, PRIMAYER, RADCOM, SEBA, SEWERIN, SOFREL, TECHNOLOG, WAGAMET devices, or others [1].

→ Recording capacity

After processing and formatting your data using basic calculation formulas, TOPKAPI saves it in its own logs or in shared databases (Oracle, SQL Server, etc).

→ Alarm management

You very easily configure alarms suited to your operating conditions. For example, you decide that on a network segment, an alarm is generated if the result of inlet and outlet flows (consumption) does not drop overnight below a given threshold, in instant value or total volume over a time slot.
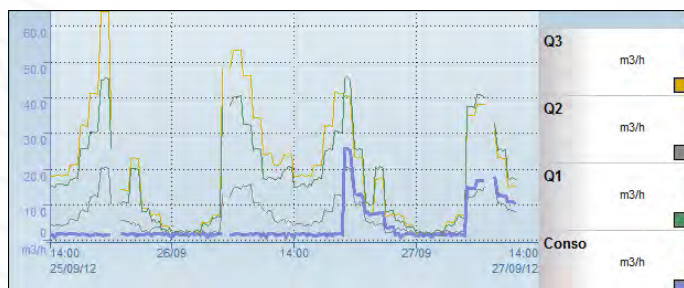
→ Powerful graph trend interface

It allows to work not only on saved values, but also on formulas freely modifiable in operation.

With its zoom and comparison functions, it allows for a fast visual overview

→ Integrated report manager

Thanks to its integrated report processing functions, TOPKAPI facilitates generation of summary reports. Availability of reports under Excel allows for easy layout customization.

→ WMS interfacing (Web Map Services)

Through its WMS interface, TOPKAPI connects with geographical information systems (GIS) servers to display network maps enriched with sectorization data. Network visualisation is hence complete, customizable, and mostly it requires no updating intervention over time.
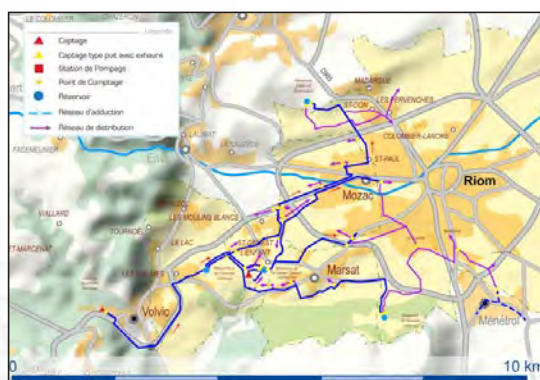
A FEW REFERENCES

→ Sectorization of the drinking water network in Barcelona: over 400 devices connected and over 100,000 tags on a hot backup system commissioned in 2000, 7 fixed operating stations, 5 floating client connections, web server without limitation of the number of connections.

See www.topkapi-scada.com/en/SCADA/sectorisation

→ TOPKAPI detects water leaks in over 200 towns or authorities, such as Buenos Aires, Algiers, Santiago, Paris, Lille, Macao, Djakarta, Bordeaux, Dijon, etc.

→ In Rouen (France), a TOPKAPI supervision handles all aspects related to water resource management, including sectorization.

See www.topkapi-scada.com/en/SCADA/Rouen-drinking-water-scada

→ Leaks tracking (Société Lyonnaise Des Eaux) — Article published in 01 Informatique - February 2008

See www.topkapi-scada.com/sites/default/files/documents/Info/2008-02-07_Chasse-aux-Fuites.pdf (French)
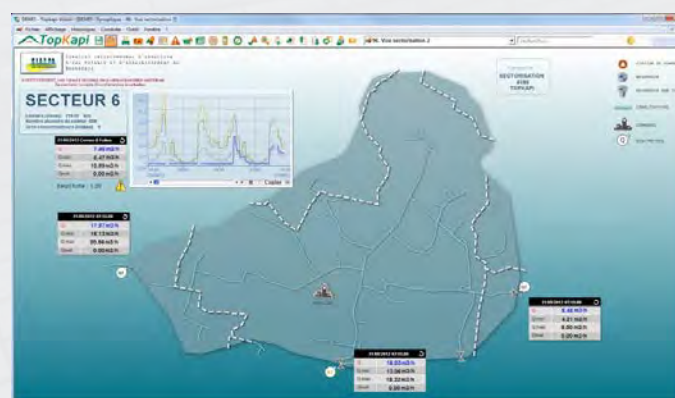
[1] *ABB (Aquamaster), GERRIS-SAPPEL WAGAMET (ORTOMAT), HYDREKA (Multilog, Octopus, Hydrins), IJINUS, PALMER (Permanet), PERAX (P16XT), PRIMAYER (Phocus, Xilog), RADCOM (Multilog), SEBA, SEWERIN (Sepem), SOFREL (CELLBOX, LS10, LS42), TECHNOLOG (Cello).*

AREAL