AQUADVANCED®
quality monitoring

Advanced solution for a real-time water quality monitoring in distribution networks

Suez
AQUADVANCED® Quality Monitoring is a modular solution capable of detecting water quality anomalies in the distribution network by integrating the entire data-to-information chain with advanced network sensing and data analytics.

The solution allows:

- **Real-time monitoring of water distribution networks** adapted to the specific needs of the water utility

- **Targeted monitoring of:**
  - **Sensitive facilities** such as nurseries, schools, hospitals or retirement homes
  - **Sporting, cultural or festive events**, via the installation of temporary reinforced surveillance devices at essential control points

- **Support the management of chlorine reduction projects** by monitoring the residuals in the various parts of the system
SUEZ presents AQUADVANCED® Quality Monitoring, the new addition to the SUEZ digital tools for real-time management of water operations, designed for the continuous supervision of water quality in distribution networks.

- A unique combination of operational expertise and technological innovation to continuously detect, locate and qualify water quality events on the distribution networks.

- This solution has been designed to support water utilities in their challenges for regulatory compliance and the implementation of Water Safety Plans.
securing drinking water networks by detecting quality anomalies at early stages

Improved risk management

- Immediate identification of accidental or malicious incidents: opening of fire hydrants, pollution, intrusions on the network, etc.
- Characterization and localization of the impact of incidents
- Taking into account the specific characteristics of a territory on a permanent or ad hoc basis: sensitive area, fragile resource, operational constraints, etc.

Regulatory compliance

- Towards a "0" non-compliance objective related to operations: bacterial pollution, particulate pollution related to work or interventions on networks, incidents on the production chain, etc.
- Support for the implementation of new regulatory requirements, in particular those introduced by the Water Safety Management Plans (WSMP)
- Identification of recurrent network anomalies such as backflow, red water, turbid water, unusual chlorine consumption, etc.

Operational excellence

- Overall improvement of the global water production process: modifications to the treatment plant, chlorine injection, THM elimination, etc.
- Continuous monitoring of the stability of the quality of water delivered over time.
- Reduction of perceived changes in tap water quality: taste, odour or colour.
from reliable measurement of parameters to valuable operational indicators

AQUADVANCED® Quality Monitoring relies on proven technologies that guarantee the accuracy and relevance of the information delivered to water network operators.

- Certified insertion probes measuring up to 7 physicochemical parameters: chlorine, pH, conductivity, temperature, UV254, turbidity, TOC
- Sensors for continual measurement of bacterial regrowth in the distribution network, which can be supplemented by a pathogen identification protocol.
- A stand-alone power supply unit (patented) installed in the water network to provide electricity to the equipment when no connection is available.
- The data collected and processed in real-time are made available in a SaaS application integrating all relevant data of the distribution network.
- The software solution is scalable and compatible with all SCADA systems on the market. It also makes it possible to integrate existing sensors in the water utility.
- Dashboard showing indicators for daily performance, as well as cartographic display of sensors and data (quality maps).
- Intelligent event detection by machine learning algorithms: detection of abnormal variations in water quality, overspeed, abnormal bacterial growth, coloration,...with map location of the area potentially impacted by the event.
- Advanced features by integrating a hydraulic model: map of water sources, area of influence of a reservoir, residence time.
a four-step approach

01 Identification of potential risks
   ▶ Preliminary study of the network configuration and the equipment in place, as well as assessment of the risks to be covered
   ▶ Selection of the physicochemical parameters to be monitored
   ▶ Identification of optimised placement points for sensor installation in addition to hydraulic sectorization

02 Deployment of sensors in the field
   ▶ Supply, installation and commissioning of selected equipment for monitoring parameters
   ▶ Maintenance and support
03 Data collection and analysis
- Real-time dashboard and water quality maps
- Detection, qualification and localisation of abnormal events by mathematical modelling and machine learning

04 Continuous improvement and transparency
- Periodic checks with operators to ensure a better understanding of the gathered and analysed data
- Customised and synthetic reports for a shared vision of water quality in the network