



Early warning system monitors Bratislava's water supply

Ground water monitoring

s::can's event detection system monitors the groundwater quality of 176 raw water sources 24 hours a day.



Bratislava Water Company (BVS)

Parameters monitored:

- NO₃
- TOC
- SAC254
- Conductivity
- Temperature

Facts & Figures

Company:
Bratislava Water Company

Location:
Bratislava (Slovakia)

Application:
Drinking Water

s::can Partner:
ECM ECO Monitoring

Key Products installed:
spectro::lyser
moni::tool

Background

Bratislava Water Company (BVS) is responsible for the operation of water and wastewater systems of Bratislava, the capital of the Slovak Republic, supplying safe drinking water to a population of over 600 000.

Drinking water is produced in seven central water treatment facilities from 176 raw (ground)water sources with an overall capacity of over 6 300 l/s. Given the high quality of the raw water for most of the sources the only treatment is chlorination to prevent microbiological growth during distribution. To ensure that a possible contamination of one of the sources does not potentially compromise the overall high water quality, BVS was looking for a system that could monitor the various water sources coupled with a robust event detection system with the ability to send an alarm in case of an event.

s::can's solution

To be able to measure a wide variety of parameters simultaneously s::can's submersible UV spectro::lyser™ was installed. The spectro::lyser™ measures the entire absorption spectrum and is used by many drinking water providers all over the world as a key component in their raw water monitoring. The measured parameters include TSS, turbidity, NO₃-N, COD, BOD, TOC, DOC, UV254, color, BTX, O₃, H₂S, AOC, temperature and pressure, depending on the application.

The system was installed in combination with a decentralized event detection system based on s::can's moni::tool, that continuously analyzes four spectral alarm parameters to detect changes resulting from untypical, possibly harmful, water

quality events. These parameters are trained through data from the monitoring sites and then respond to deviations from the water quality observed during the training.

An on-site evaluation of the s::can event detection system showed that the trained spectral alarm system on the spectro::lyser™ in Bratislava is able to detect contaminations down to 100 µg/L TOC, 25 µg/L carbendazim, 100 µg/L benzene and 50 µg/L Saxitoxin.

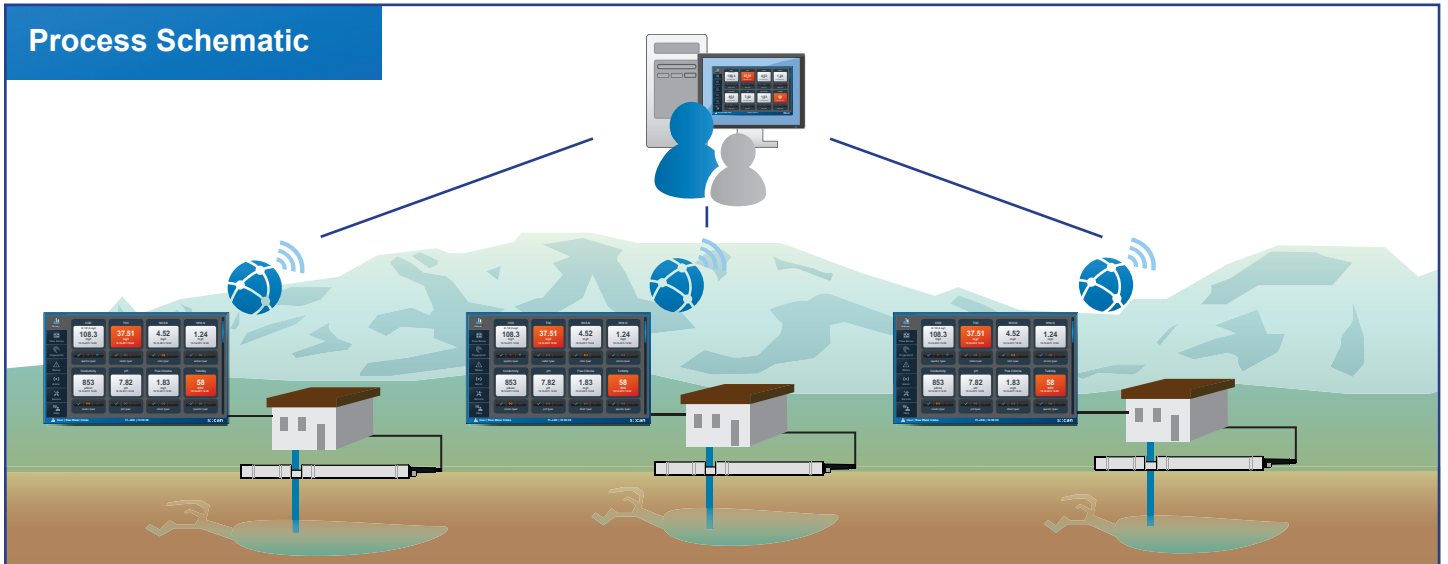
s::can's spectro::lyser is a powerful tool for monitoring of drinking water quality, combining a cost-effective monitoring capability with a powerful event detection system.



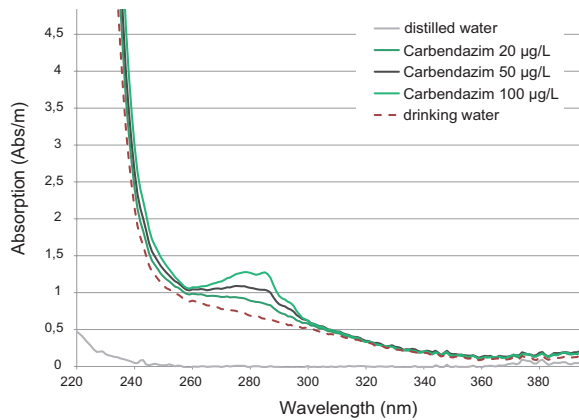
“We were impressed by the performance of s::can's spectro::lyser. The event detection system has proven to be a key asset in our operations.”

Dipl. Ing. Alena Trančíková
(Head of Water Quality & Environmental Department)

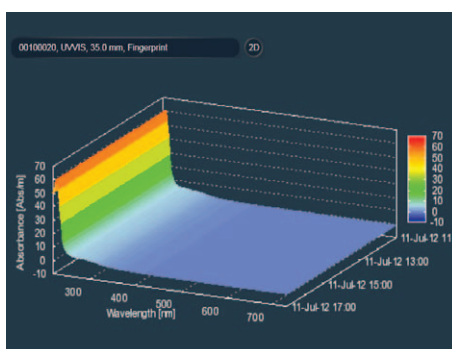
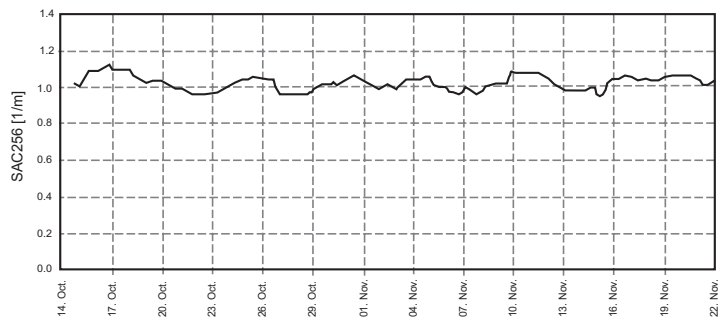
Process Schematic



Absorbance spectra for Carbendazim measured with the spectro::lyser during the spike tests



Long term SAC 256 measurement with the spectro::lyser



s::can's event detection system continuously analyzes the spectral fingerprint to detect changes in the water composition. The system responds to deviations of parameters compared to the original fingerprint. It combines Static Alarms, Dynamic Alarms, Pattern Recognition and Spectral Alarms.

moni::tool incorporates an advanced learning system for its alarms that includes user feedback and gradual composition changes (e.g. seasonal variations).

moni::tool is a revolutionary new platform for the management of measuring stations, online probes and analyzers. Whether it is installed in a large monitoring network or as a standalone station, moni::tool's intuitive software and state of the art features are an essential backbone for sensor and station management.

By monitoring the raw water sources in Bratislava s::can helps to protect the health and safety of the population.

s::can is the world technology leader for submersible online spectrometer probes, water protection systems and event detection software.

More than 7000 s::can monitoring systems are in use worldwide for drinking-, environmental-, waste-, and industrial water applications.