STEBATEC®
Measure - Control - Regulate

Project report

Measuring and process control equipment in the Gotthard base tunnel

Customer: Consorzio TAT Tunnel Alptransit Ticino

Requirement

When ready, the Gotthard base tunnel will be the world's longest railway tunnel. After a successful initial installation phase in 2006, additional installations for measuring the flows of water from the construction site and the entering well water are required in the section from Faido towards Sedrun in 2009.

In the Faido - Sedrun section, the water flows in the drainage ducts after the Piora syncline and in the Borel zone are to be measured, the measuring data transferred to the tunnel portal by a suitable data transmission system and processed automatically by customized computer software so that the measuring results can be submitted to the supervisory authorities and the geologists as fully analyzed data sets.

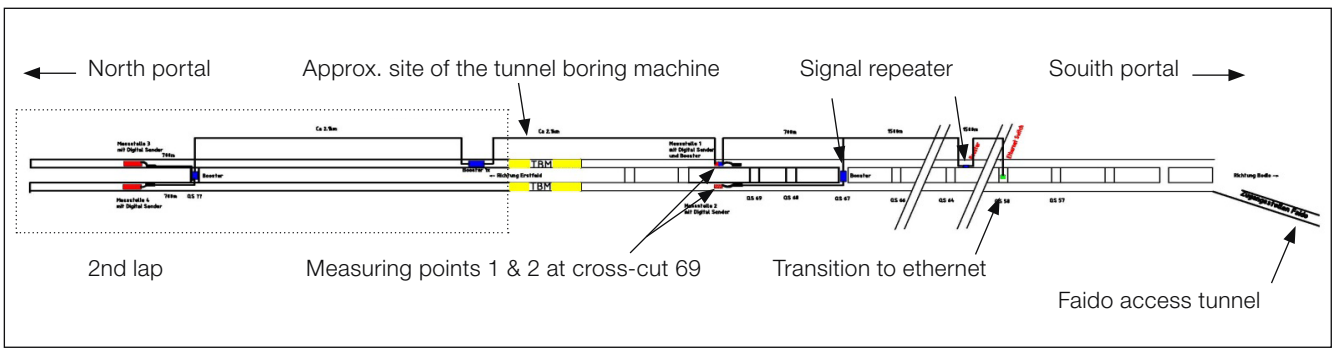
Implementation

One "Stationary" STEBATEC flow metering system DN 250 each was installed in the parallel tubes on a level of totally two cross cuts. The selected measuring technology ensures the required measuring accuracy of 1% (of the current measuring value) and operates reliably in continuous mode despite the rough tunnel environment, the load of cement and surfactants in the water.

Data is transferred (also part of the STEBATEC contract) by a proven digital bus system via available telephone cables installed through the full length of the tunnel.

A customized software solution based on the modular STEBATEC- PLS "ARAbella" makes it possible to assess, print out or export the data in the application to Excel at any time.

The fact that the PC with the records in the control center is situated far from the actual site in the tunnel, access to the data is easy and possible at any time.



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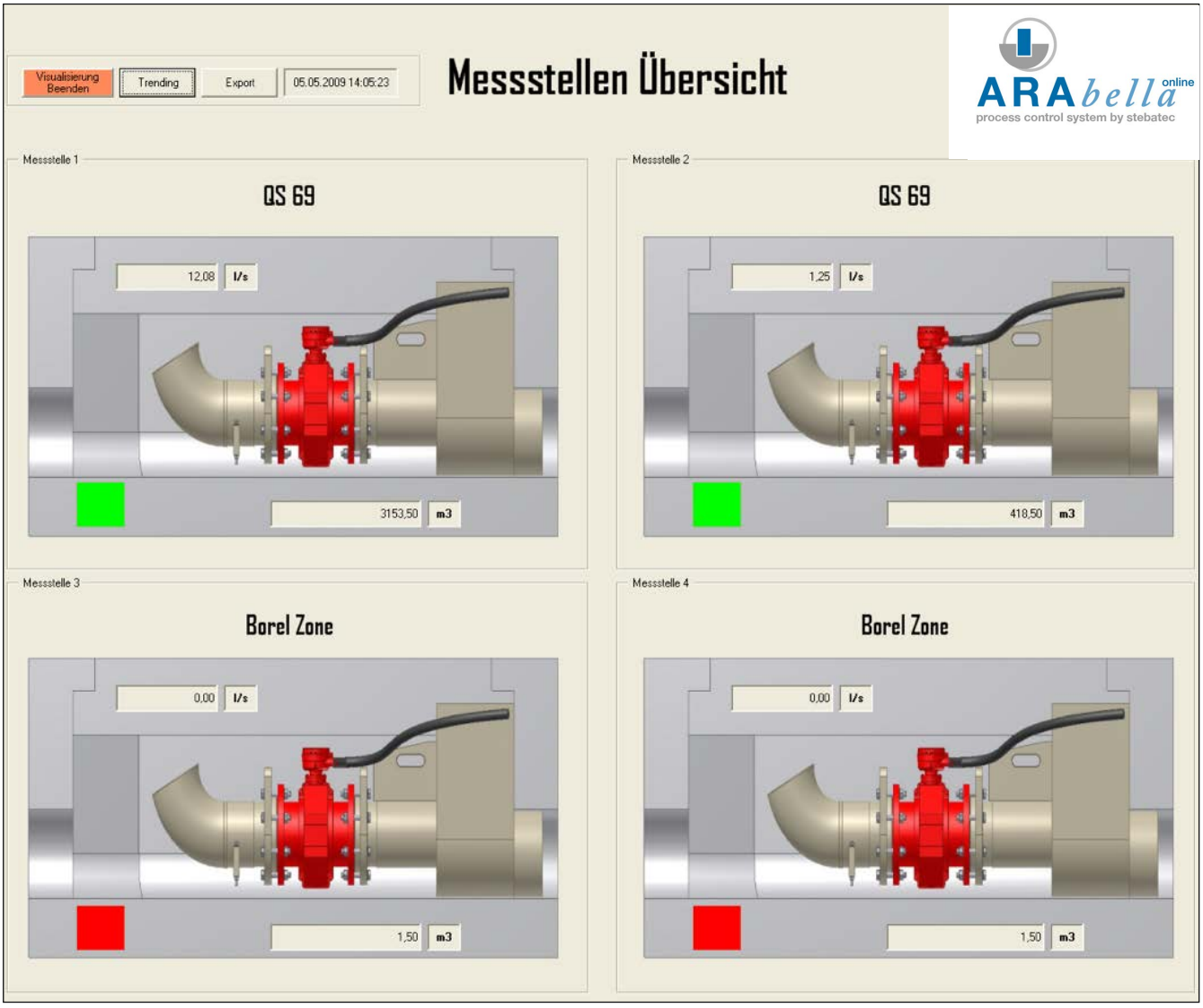
Data software of the “ARAbella“ process control system by STEBATEC

ARAbella online
process control system by stebatec

The modular process control and visualization system analyzes measuring data automatically and outputs the results in a measuring report. This saves the customer time otherwise consumed by laborious data processes and ensures that data is presented in a uniform format. In addition, “ARAbella“ ensures the constant monitoring of operating states, can trigger an alarm when limits are exceeded and control processes as required.



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