Internet-Based Data Acquisition

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Automated long-term measurement and monitoring
for the development, testing and operation process of electromechanical systems
such as machines, vehicles or power quality of the public energy supply

An error warning before things go wrong is something one would wish to receive during testing and operating of electromechanical systems. Long-term measurements, for instance, in on-board vehicle testing scenarios, are key for obtaining important knowledge about the behavior in daily use under real operating conditions.

Automated real time information about critical conditions, and alarm notification of failures, will save costs which would otherwise be incurred by long downtimes and delays in procuring replacement parts. Long-term measurements provide reliable physical insights on the behavior of components or function groups. The data analysis returns data necessary for use in system optimization.

Automated remote monitoring of machine or vehicle components, as well as of power quality, can now be achieved quickly and easily with the help of intelligent measurement devices, networked to the Internet via commercial high-speed routes such as UMTS. Those applications make high demands for security and integrity on the data transfer and on the protected user access. The security requirements for protecting against infiltration into the internal networks of large corporations are an especially crucial matter.

The benefit from such internet-based long term measurements and monitoring is immense, particularly when notifications, alarms and complete, automatically created measurement reports can be sent in an immediate and timely fashion as either SMS or email.

This poster describes the technical fundamentals and requirements for an internet-based, long-term measurement and remote monitoring system in reference to an overall solution consisting of a measurement device, data transfer connection and IT infrastructure.