

TECHNIDATA ENVINET



TechniData ENVINET

Measuring networks for monitoring radioactivity and air quality and managing water supplies.

SOLUTION BRIEF

TechniData ENVINET (Environmental Network Solutions) helps plant operators, public authorities and water suppliers to monitor radioactivity at nuclear power plants and across country-wide measuring systems, but also to check air quality and supplies of drinking water. These measuring networks automatically collect and evaluate measurement data, display it in graphic form and support the appropriate follow-up measures – quickly, accurately and cost-effectively.

TECHNIDATA ENVINET

Authorities and nuclear power plants have a responsibility to protect people and the environment against radiation emissions. To do so, they need reliable and automatic measuring networks with a broad range of evaluation and display functions that simultaneously reduce their operating costs. With ENVINET from TechniData, that's exactly what they get. These radioactivity measuring networks collect the measurement data and send it to the central measuring network, where it is evaluated and displayed in a user-friendly manner to support decisions about appropriate follow-up measures.

TechniData has also set up worldwide measuring networks for monitoring air quality. These deliver continuous measurements of air quality parameters and make the data available to authorities and the public sector, e.g. via Internet portals. The air measuring networks are also used to monitor emissions.

In some parts of the world, of course, drinking water supplies cannot be taken for granted. Not only does the water have to be available and treated, it also has to be supplied with a minimum of loss. TechniData therefore provides water suppliers with solutions that support automatic monitoring and control of water distribution systems. TechniData ENVINET enables them to safeguard the supply of water to the population, reduce wastage of valuable water and lower operating and maintenance costs.

TechniData ENVINET also enables energy suppliers, water suppliers and regulatory authorities to fulfill their obligations towards the public and to profit from a reliable and flexible online monitoring system.

TECHNIDATA ENVINET – MEASURING NETWORKS FOR:

- Monitoring radioactivity
- Monitoring air quality
- Managing water supplies

ONE SYSTEM – MANY APPLICATIONS

TechniData ENVINET covers a broad range of applications, although the underlying systems are largely similar. The measuring stations use sensors to collect the data. Radioactivity is usually monitored using gamma detectors, while air quality is read by means of analyzers that measure the individual air quality parameters. Drinking water is measured by pressure, flow or level sensors. All measuring stations use the ENVILOG data logger, which supplies them with power, processes the measurement data and sends it to the monitoring network center. Both wired (e.g. the telephone network) and wireless (e.g. GSM) technology can be used for data communication.

The measuring network center is the hub of a measuring network. It is used to manage the measurement data and control the network. The system uses standardized NMC (Network Management Centre) software to check the plausibility of the received data before evaluating and archiving it. NMC offers the user a variety of functions for depicting the measurement data in graphic form, e.g. as line diagrams or electronic maps. This is enabled by a geographic information system (GIS) integrated in the software. The maps provide a clear picture of the entire measuring network and all its stations. Different measurement values are represented by different colors that display the status of a measuring station, such as "Alarm", "In operation" or "Maintenance".

NMC enables users not only to tele-diagnose the measuring station but also to configure it remotely. They can set alarm thresholds, technical parameters and system warning messages from the measuring network center, e.g. in the event of the data logger door being opened without authorization. The administrator can also use the NMC to manage user authorizations and control whether a user has read-only access or permission to make settings. NMC has a modular structure that makes it easy to upgrade the measuring network. The software is not operating-system-specific and is based on the latest technology, such as Java and Corba. It supports various interfaces, protocols and services, which make it easy to exchange data between the measuring network centers of different authorities. NMC is web-enabled and measurement data can be made available to the population e.g. on the Internet.

RADIOACTIVITY MONITORING

TechniData has already set up many measuring networks worldwide for monitoring radioactivity. These include networks for wide-area monitoring, and ring networks for monitoring nuclear power plants. TechniData develops and produces measuring stations to meet a host of different requirements. As well as permanently

installed measuring stations, these also include self-sustaining stations that do not require power or telephone lines, thereby increasing flexibility. These are powered by batteries and solar cells and send the measurement data via wireless technology, e.g. mobile communication networks. The measuring stations record radioactivity and meteorological data, such as rainfall, wind and temperature. These readings are required to predict the geographic and temporal propagation of the radioactivity and to classify the measurement values correctly. In the event of rain, for example, the measurement values might increase because of the dissolution of natural radioactive nuclides from the atmosphere.

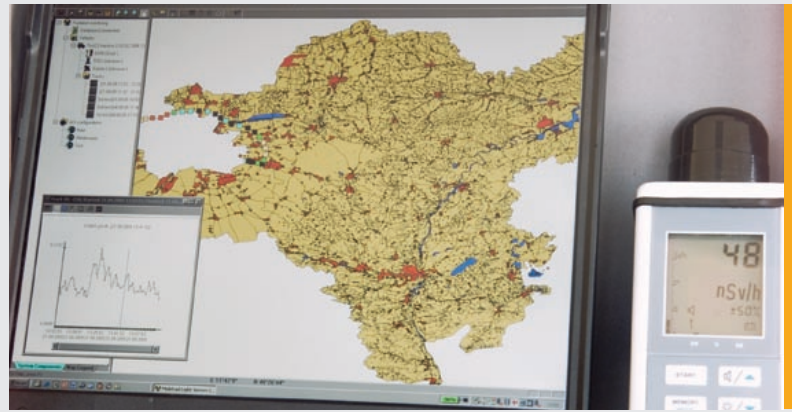
The ENVINET range also includes mobile measuring systems for use in the event of incidents. The MobRad measuring system designed for this contains a portable measuring sensor and a laptop which measure and evaluate radioactivity during the journey. The measuring vehicles can also be fitted with additional analysis equipment, e.g. for soil sampling. An integrated GIS displays the radioactivity profile across the area being traveled through.

MONITORING OF AIR QUALITY

Many local and national authorities have been using ENVINET for many years for air quality monitoring to protect the population and inform the public. The often-discussed topic of particulate matter emphasizes the need for high-performance air measuring networks. The measuring stations used at ENVINET measure the concentration of particulate matter and other elements in the air, such as carbon monoxide, ozone, nitrogen oxides or sulfur dioxide. They also record meteorological parameters. The central system receives the measurement data and evaluates it. A special service that engenders trust among the general population is the fact that they can call up the measurement data at any time on the Internet. This is enabled by Internet portals that display the required data in tabular or graphic form at the click of a mouse.

DRINKING WATER MANAGEMENT

The pipelines in the water supply networks for large towns and regions can easily span several hundred kilometers, so it is little wonder that supplying water at a constant pressure over an entire area represents something of a challenge. On the one hand, it is difficult to pinpoint leaks and on the other, an intricate system of water pressure management is called for, often using pumps. This is where ENVINET can help. The system checks the water pressure in the different pressure zones, the flow rates and the water level in reservoirs and enables central control of all the components found in the system. Sensors fitted to various parts of the pipeline system and in reservoirs capture the data and send it to the central measuring network via the data logger. The NMC software evalu-



ates this data and displays it in graphs. From their PC in the network center, the users see the pipeline system with all the measuring points, pumps, sliders and valves on a digital map. This shows up any leaks, and allows targeted control and maintenance measures to be implemented.

ENVINET helps to save costs – it enables leaks to be located more easily and allows drinking water savings of up to 50 percent. This pays off in particular in countries with scarce drinking water resources and high water prices.

FURTHER INFORMATION

If you want to find out more about setting up a reliable and effective measuring network with TechniData ENVINET, contact us on +49 (0) 75 44 9 70-0 or visit www.technidata.de or www.technidata-america.com.

The benefits of TechniData ENVINET at a glance:

- Automatic collection, evaluation and display of radioactivity and air quality monitoring and water supply management
- Full-service measuring networks from a single source, including consulting, hardware and software, training and operation
- Reliable standard solutions that allow flexible configuration
- The measuring network can be extended easily at any time
- Cost savings thanks to high degree of automation
- User-friendly interface with various options for displaying results in graphic form
- Flexible data exchange internally and with authorities
- Web-enabled: Public portals create transparency and trust

TechniData ENVINET – used successfully in worldwide applications for many years

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