

The logo for SW/M, featuring the letters 'SW' in black and 'M' in black with a green diagonal line through it.

Dispo-Info 3
U4/5

A photograph of a control room for a subway system. The room is filled with multiple computer monitors on desks. Some monitors display subway maps with colored lines and stations, while others show data tables or graphs. A person's hand is visible on a mouse. A sign above the monitors reads 'Dispo-Info 3 U4/5'. The room has a modern, industrial feel with overhead lighting.

Automated data backup for the Munich Subway System

The Munich Subway System is the most important rail bound public mass transit system next to the tram system of the state capital Munich. The control center supervises the different subsections of 100 stations. MDT AutoSave Change Management System was installed to optimize the data backup and version control process.

Background

Since opening Munich's first subway line more than 46 years ago, a network of over 100 km (62 miles) of routes and 100 stations was established. The subway system is operated by the Münchner Verkehrsgesellschaft (MVG), a subsidiary of Stadtwerke München (SWM), the municipal works company. The MVG is the largest partner within the Munich Transport and Tariff Association (MVV). In 2015, the subway brought 398 million passengers to their destinations.

"Commands and reports from each station are delivered to the central subway control center," explained Ralf Loderer, staff member of the department for telematics and IT-Systems and co-responsible for the telecontrol substations of the subway. At the control center an infrastructure control system ensures that all data of the station's subsections is collected, processed and visualized.

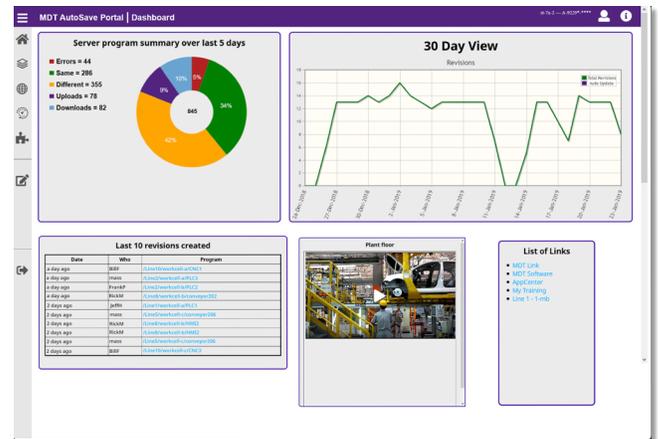
"The stations are under surveillance 24 hours a day, 365 days a year by six staff members at the subway control center and one staff member at the network control center," adds R. Loderer. Data includes reports about tunnel lighting, gate control systems, clock control system, water pumps for the drainage system, the AC system and also ticket machines. For example, "If a fire extinguisher is taken from an emergency phone unit, a signal will be automatically sent to the control center," explains R. Loderer.

At each station, a telecontrol station collects and transfers the data. The 105 telecontrol stations (from 100 stations and the central control center) are based on a Schneider Electric PLC-CPU. The data is transmitted via a modem and ethernet connection. Stadtwerke München (SWM), the municipal works company, uses its own network which connects the stations via a redundant fiber optic network.

Solution

R. Loderer explains that the subsections are not static factors: "Everything changes all the time. New subsections are added, others are eliminated or changed." Additionally, the subsections are never identical in different stations. "Even if subsections/trades have the same task, each program is parametrized differently." This calls for special requirements in regard to data backup. Until recently, maintaining data backups was a manual process. Stored data from all stations' subsections were saved on a central server by personnel.

At SWM, the decision was made to automate the backup process. "After an extensive market analysis, we made the decision to implement the AutoSave Change Management System by MDT," said R. Loderer. MDT AutoSave, which is distributed by AutoSiS in Germany, provides one central archive for all changes. In case of a device failure, a current copy of the logic and the application files are always accessible and the plant operations are reestablished right away.



MDT AutoSave Portal Dashboard

Another advantage is the cooperation between MDT AutoSave with Schneider Electric products. “This makes working together easy”, R. Loderer concludes. MDT AutoSave integrates directly with Schneider Electric’s editor software to provide program backup and comparison. MDT AutoSave also supports automation devices from Siemens, Mitsubishi Electric and many others .



Results

“AutoSave now runs the backup automatically on a daily basis and stores it when changes were made”, said R. Loderer. “All data is easily found in time oriented folders.” The metadata is located in the SQL database. The AutoSave data can be combined with real time reports.

Prior versions of program logic are easily accessed within AutoSave. This enables comparison or quick recovery from common issues related to programming changes, protecting employees and riders from errors. Usage of AutoSave is not limited to PLC devices as it supports any PC-based application and more automation devices than any other change management software in the industry, including PLC, robots, CNC, welders, drives, HMI, workstations, project files and documents.

MDT AUTOSAVE

Since 1987, MDT has enabled global industry leaders to gain control of escalating automation challenges through effective management of device programs. MDT AutoSave software products effectively control program versions and minimize downtime of automation devices resulting in a secure, controlled automation environment. AutoSave supports the most comprehensive range of devices and editors in the industry from Schneider Electric, Siemens, Mitsubishi, GE, Rockwell Automation and others. For more information on MDT and AutoSave, visit www.MDT-Software.com.