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Plant asset management for smart field devices

SIMATIC PDM Maintenance Station

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Efficiently service and maintenance of intelligent field devices

Field devices are the eyes and ears of automation. The failure of a valve positioner, temperature, flow or pressure sensor can quickly lead to serious malfunction of the process. With SIMATIC PDM Maintenance Station Siemens offers the right solution for efficiently monitoring the condi- tion of smart field devices, irrespective of the automation and control systems used.

Applications:

- Stand-alone maintenance station for diagnostics and condition monitoring of field devices with EDD/DD/FDI technology

- Use as stand-alone maintenance station for small and medium-sized facilities (up to 500 field devices per maintenance station) in process and production automation (Additional MS's can be added to increase tag count.)

- Subsystem-specific use in large facilities

- Central data access point of field device status and parameter data for cloud based apps

- Permits simultaneous access from up to for 30 PDM web-clients users

No matter the architecture of the control system the maintenance station can access PROFIBUS, PROFINET and HART field devices and field components. HART field devices and field components can be connected via HART multiplexers or communicate via Wireless HART. The integration is based on the DD/EDD/FDI description technology for field devices.

Diagnostics, parameterization and condition data are cyclically read from the smart field devices and clearly displayed on an HMI. Field devices can be assigned to one of three groups for which a different cyclic readout of the parameter and status data can be accessed. Subsequent external storage can be configured as a file in XML format. Through the export function, the data collected can also be transmitted to enterprise asset management systems or cloud-based condition monitoring systems for further processing.

The specified NAMUR recommendations NE105, 107 and 129 are supported.

SIMATIC PDM is the basic module of the SIMATIC PDM Maintenance Station

SIMATIC PDM (process device manager) is a universal, non-proprietary tool for the configuration, parameterization, commissioning and monitoring of smart field devices.

SIMATIC PDM provides also the data and condition acquisition of the intelligent field devices for the SIMATIC PDM Maintenance Station.

The SIMATIC PDM Maintenance Station is the first choice when it comes to the servicing and maintenance of intelligent field devices and is employed in a wide range of industries, e.g. sewage treatment plants, biogas plants and painting lines in the automotive industry.

Consistent subsequent data processing

The information from SIMATIC PDM is prepared in the SIMATIC PDM MS and supplemented by functionalities such as overview or work progress lists; overview, segment and detail screens; condition logs; parameter data archiving; global and device-specific message lists as well as cyclic functions for reading and exporting field device infor- mation such as overview displays and progress lists.

In production facilities with SIMATIC automation stations, the SIMATIC PDM MS is directly connected to the plant bus. It thus communicates with the field devices of the subordi- nated fieldbus systems through the automa- tion stations. Even if it is not integrated into a SIMATIC project, it can utilize the existing infrastructure of a project. In addition, a separate network to the field devices can be set up if direct access is not possible.

Standardized display of messages

In it's recommendation NE 107, NAMUR has uniformly defined four status signals for all field devices including device failure, maintenance requirement, outside the specification- and function control. This enables identical condition visualization for all field devices that are based on the DD/EDD/FDI device description package – irrespective of device manufacturer. The SIMATIC MS cyclically and auto- nomously reads this information from the field devices and reports any maintenance requirements, requests or alarms based on the NAMUR standard. The maintenance staff is thus immediately informed and can act or respond in a timely manner.

Easy engineering

The engineering of the SIMATIC PDM Maintenance Station is simple to integrate and use. Network structures and field devices can be easily adopted from existing projects. Optionally, the SIMATIC PDM Maintenance Station can commutate to the field devices to be moni- tored in the quantity structure, as well as being enhanced, by the server/ client functionality of SIMATIC PDM.

Ready for the cloud

Field devices are becoming ever smarter, i.e. they themselves are able to provide more and more information and transmit it via bus systems to other components in the network. With the latest version of the SIMATIC PDM MS, field device data can be cyclically provided for transport into cloud-based applications.

This opens up the way for condition monitoring functions to be realized as cloud-based applications – independent of the automation system. The cyclical acquisition of data in the SIMATIC PDM MS results in long-term data series from which the applications can develop statements on the life cycle or intelligent preventive maintenance service strategies.

Highlights

- Same functions and user guidance as the SIMATIC PCS 7 Maintenance Station

- Possibility of data collection, analysis and further processing in the cloud

- Independent of the technological project and the automation system used

- Compact, flexible and expandable maintenance station

- Multiple maintenance stations per project possible

- Supports various communication types and gateways between bus systems, such as Ethernet, PROFINET, PROFIBUS DP/PA, HART

- Parameterization and detailed diagnostics of the field devices via integrated SIMATIC PDM

- One station can aggregate data of multiple automation projects