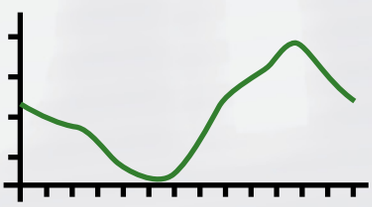
Automation Services

LOYTEC electronics GmbH

Alarming

Scheduling

Trending



networks under control

AST Alarming, Scheduling, Trending

Overview

Alarming, Scheduling, and Trending (AST) functions are significant for Building Automation applications. LOYTEC's approach is driven by the market demand for dependable open systems that must be easy to install, configure, maintain, and operate. AST integrates seamlessly into multi-vendor systems based on CEA-709 (LonMark® system) and BACnet®, guaranteeing openness and vendor independence.

Supported by the infrastructure device L-GATE as well as the L-INX and L-VIS product families, AST functions are made available in a building network wherever they are needed. The distributed architecture significantly increases system availability because single failures only effect limited areas of the entire system and the unaffected areas keep working normally.

Alarming

Alarming includes alarm servers and clients. An alarm client retrieves the alarm list from the alarm server and acknowledges active alarms.

In LonMark Systems, alarming is implemented in the node object and an alarm is notified through a Network Variable of type SNVT_Alarm2. L-Gate, L-INX, and L-VIS can handle this alarm notification and acknowledge the alarm.

In BACnet Systems, alarming is implemented using the intrinsic reporting feature.

In addition to the mechanisms provided by LonMark and BACnet Systems the L-GATE, L-INX, and L-VIS products can send out alarm notifications by e-mail. The L-VIS supports local alarming by setting up local alarm conditions.

Scheduling

The powerful scheduling service provides the same look and feel for the user independent from whether a BACnet or LonMark System is used.

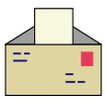
In LonMark Systems, Network Variables and even Configuration Properties can be scheduled. Based on the LonMark scheduler profile, local schedules and remote schedules located on 3rd party devices can be accessed by the L-GATE, L-INX or L-VIS over the network. Using e.g. the L-VIS, a remote schedule on a third party device can easily be accessed and changed through the GUI.

In BACnet Systems, the L-GATE, L-INX and L-VIS devices behave like any other BACnet device implementing the standard BACnet scheduling service.

Trending

L-GATE, L-INX, and L-VIS support local trending of data points. Used in LonMark Systems, any Network Variable can be trended. Through the L-GATE e.g. , Network Variables on the CEA-709 side can be trended in a BACnet trend log object to be easily accessed by a BACnet building workstation. In parallel logged information is available through CSV file export for third party applications.

Distributed Automation Services



Notify

The L-GATE, L-INX and L-VIS devices feature an event-driven e-mail notification. An e-mail notification is either triggered by an alarm or operating state like e.g. a specific status or an exceeded high-limit or by a certain time. It is also possible to allow e-mail notification only in a defined timeframe e.g. after closing hour.

The text content of the e-mail body can be individually formulated. Data points can be inserted into the text to inform about the status of the data points at the time the e-mail was sent.

Further more a system log file (*.txt) and trend log files (*.csv) can be attached to an e-mail notification e.g. to inform about energy consumptions on a weekly base or to provide historical data related to an alarm condition.

Configuration

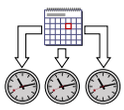
Powerful configuration tools are supplied with L-VIS, L-INX, and L-GATE for configuration at device level. These tools can either be used as stand-alone configuration tools or as LNS Plug-Ins. In addition, L-GATE and L-INX support AST configuration through the built-in Web server.

Together with NLFacilities, the AST implementation delivers its full strength and power for LonMark systems. AST being fully supported within the NLFacilities Modeler and Designer enables the user to build, configure and download distributed automation functions. The combination of AST with NLFacilities results in extremely short integration times, reusability of pre-made and pre-tested system setups, and convenience when it comes to system wide changes of a predefined setup.

CEA-709 BACnet

The protocol independent AST approach shows its full power when it comes to CEA-709 / BACnet integrations. Through the implementation on the L-Gate, AST functions can be mapped automatically between BACnet and CEA-709 networks. This is especially true for scheduling which is fully transparent between a LonMark scheduler and a BACnet scheduler if they are mapped through L-Gate. A BACnet scheduler can transparently schedule network variables in a LonMark system and vice versa.

Integration of AST functions between LonMark systems and BACnet has never been easier.



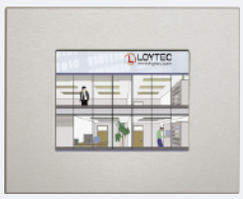
System-wide changes

Changing schedules in a system is the daily business of the building manager. Most of such changes are system-wide changes where multiple schedules are affected by just one change (e.g. make the following day a holiday).

The AST concept guarantees that such changes are automatically distributed and updated between the affected devices. This results in consistent settings in the affected devices. There is no need to touch every single device separately.

Products

L-VIS Touch Display



LVIS-3E100 (CEA-709) and LVIS-ME200 (BACnet) are extremely flexible graphical user interfaces with an unprecedented range of functions. Any information from a CEA-709 or BACnet network can be displayed or controlled by the high resolution touch display. The graphical interface can easily be adapted by using customized images or graphics in common file formats such as JPG, BMP, TIF, and even animated GIF. Any Information can be displayed in various ways. Dynamic information is shown in the form of numeric values, changing icons, bar graphs, or text.

L-GATE CEA-709 / BACnet Gateway

The LGATE-900 is a CEA-709 / BACnet gateway which maps CEA-709 Network Variables (NVs) to standard BACnet server objects. Analog, binary, and multistate BACnet objects (input/output) are mapped to NVs based on the CEN/TS 15231:2005 standard. BACnet properties are automatically configured with default values from the SNVT self-description. Scalar NVs are mapped to one BACnet object each. Structured NVs are mapped to several BACnet objects, one for each member (members can be selected individually). Each LGATE-900 can handle up to 750 BACnet Objects.

LINX-100/-101/-200 Automation Server

The LINX-100/-101/-200 Automation Servers implement state-of-the-art connectivity functions for integrating LonMark systems (LINX-100/-101) and BACnet networks (LINX-200). LINX-100/-101/-200 feature an embedded visualization to host customized pages, a complete set of automation functions, and an embedded OPC-Server (OPC XML/DA) supporting up to 1000 OPC data points. This allows to provide data access through WEB Services to connect to SCADA or ERP systems. An OPC-bridge software (LOPC-BR800) is available allowing access for OPC-Clients supporting OPC COM/DCOM only.

The graphical user interface LWEB-800 (.NET Application) allows to visualize and control data in dynamic pages provided by one or multiple LINX-100/101/200.

LINX-110 Automation Server

The LINX-110 Automation Server can manage any kind of application in a CEA-709 network. The device is programmed with the L-LOGICAD programming tool which is based on the IEC 61131-3 standard. The powerful logic can handle up to 1000 network variables (NVs) and up to 1000 address table entries to exchange data with a wide range of external controllers or I/O modules. LINX-110 features the complete set of automation functions.

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