SIEMENS

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DESIGO™

SX OPEN V3

Integration of 3rd party devices and subsystems into Desigo system

- **Software-based integration platform for to connect third-party systems, including OPC systems, to a BACnet network e.g. Desigo system**
- **SX Open provides 1..n free configurable BACnet Server,1 BACnet TrendServer and 1 BACnet Client**
- **SX OPC client as a predefined application for 3rd party integration via a standardized OPC interface**
- **SX API Base for individual development of specific Subsystem 3rd Clients for systems, protocols or other drivers**

Functions

SX Open is a configurable 3rd party system – BACnet/IP gateway. Using this gateway, both Desigo PX automation stations (peer-to-peer) and the Desigo Insight management station have access to integrated (3rd party) data points over the IP network. It is possible to define BACnet servers to map 3rd party datapoints on BACnet objects including alarming (e.g. High/Low Limits) and processing like, trend logging and time scheduling. SX OPEN is ideal for the integration of any size of data points.

SX OPC: OPC – BACnet Gateway

SX OPC is a predefined application to map third-party device or system values available via an OPC interface to the equivalent BACnet objects and their properties.

Mapping signals and functions

Mapping works in both directions, i.e. commands can flow from BACnet to OPC and vice versa. To map the OPC items to BACnet objects/BACnet properties an Excel table must be configured.
A special characteristic is that the OPC values can be manipulated by means of function blocks before mapping to BACnet. This can be used for data conversion (signal mapping) or for value calculation (function mapping). The functions are created within a dedicated tool, using arithmetic and logic operations, and are available in the provided library file.

Alarm & Event

SX Open supports the system functions Alarm and Event. As with Desigo, the properties can be configured in different ways:

- NotificationClass (alarm function and alarm class)
- BACnet Reliability, BACnet Event Enable
- High/Low Limit, Alarm Values, Fault Values

It is possible to suppress alarm bursts for each subsystem and device.

Trend

SX Open supports the system function BACnet Trend. Trending is implemented as a relatively autonomous function using a trend server with its own data management and operates as an independent BACnet client to the referenced SX Open objects.

Schedule

SX Open supports the system function BACnet Schedule Schedule Objects can be defined for commanding mapped data points. For schedule exceptions Calendar objects can be also created.

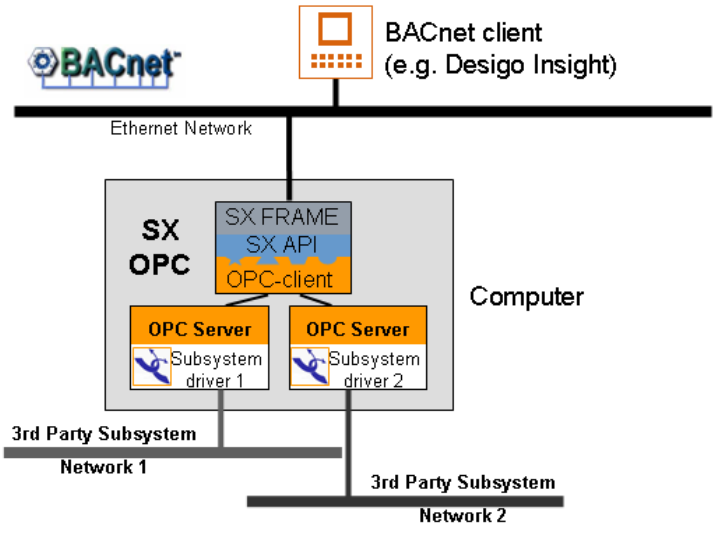
OPC Data Access

Data is exchanged between the OPC server and an SX OPC client via the standardized Data Access interface (OPC DA specification). The OPC objects ("Items") are addressable by name, and consist of a value, a quality and a time stamp. SX OPC maps the value to suitable BACnet objects/properties. Additionally the OPC-quality can be mapped on the BACnet reliability.
SX OPC supports versions DA V2.x and V3.0.

SX-API:3rd-Client - BACnet Gateway

SX API is Base software with "Application Programming Interface" (API) for individual development of any application, using Microsoft® Visual Studio. With it further 3rd systems, protocols and drivers can be integrated.

Topology



Hardware

A standard off-the-shelf PC can be used as hardware platform. Though, for installation into a control panel a model suitable for industrial applications, in the form of an IPC (Industrial PC), is recommended.

The selected PC configuration has a substantial influence on the performance of SX OPEN, which basically depends on the amount of data, the time taken to react to changes in the data, and other installed software, such as the (3rd party) OPC server.

Minimum hardware requirements:

- Processor ca. 1,3GHz
- RAM 2GB
- HDD 1.5 GB (min. 10 MB free disk space)
- Network interface card

With particularly demanding requirements, more powerful PC hardware (e.g. higher RAM) must be used.

Software

SX Open runs on following Microsoft operating systems:

- Windows7
- Windows 8.1
- Windows Server 2008 R2 Standard (64-Bit)
- Windows Server 2012 R2 Standard (64-Bit)

SX Configurator requires Microsoft Excel:

- Excel 2003 + SP3
- Excel 2007
- Excel 2010

Microsoft .NET Framework 4 is a prerequisite.

For OPC-server remote applications, it is strongly recommended to use an OPC tunneller from the following companies:

Softing AG: http://www.softing.com
Matrikon Inc.: http://www.matrikonopc.com

SX OPEN is not free of charge and does require a license. Licenses for Windows, Excel and OPC tunneller are not included in the product price and must be obtained independently.

Engineering

Using a predefined Microsoft Excel tool, the SXConfigurator, the OPC items are mapped and configured on BACnet objects/properties. The SX Configurator generates a XML file for importing into Desigo Insight management station.

SX Open Engineering: For details refer to documents CM110700 and CM110702.

Types

Type	Description
SX OPC	Software application for OPC
SX API	Base for individual development of a client application

Ordering

SX OPC is available in three different license models, graded according to the number of BACnet I/O and Value Objects used for:

- Max. 200 data points
- Max. 2’000 data points
- Max. 5’000 data points
- Max. 20’000 data points

For ordering, licensing and download information, please refer to your local sales office

Related documents

Type	Document No.
SX OPEN Engineering Guideline	CM110700
SX OPEN SXConfigurator User Manual	CM110702
BACnet Protocol Implementation Conformance Statements (PICS)	CM110665

Key data

SX OPC-applications	1 SX OPC application per PC possible
OPC Data Access DA	Supported versions: DA V2.x und V3.0
OPC-items / BACnet-objects	Max. 20’000
Alarm texts	Max. 2’000
BACnet Trend Log-objects	Max. 1’000
BACnet PTP connections	Max. 1’000
OPC Server	Max. 10
Remote BACnet Device (BACnet Client)	Max. 50