NETx AUTOMATION

All-in-one

Building management software for medium-sized and enterprise building automation projects

NETx BMS Platform

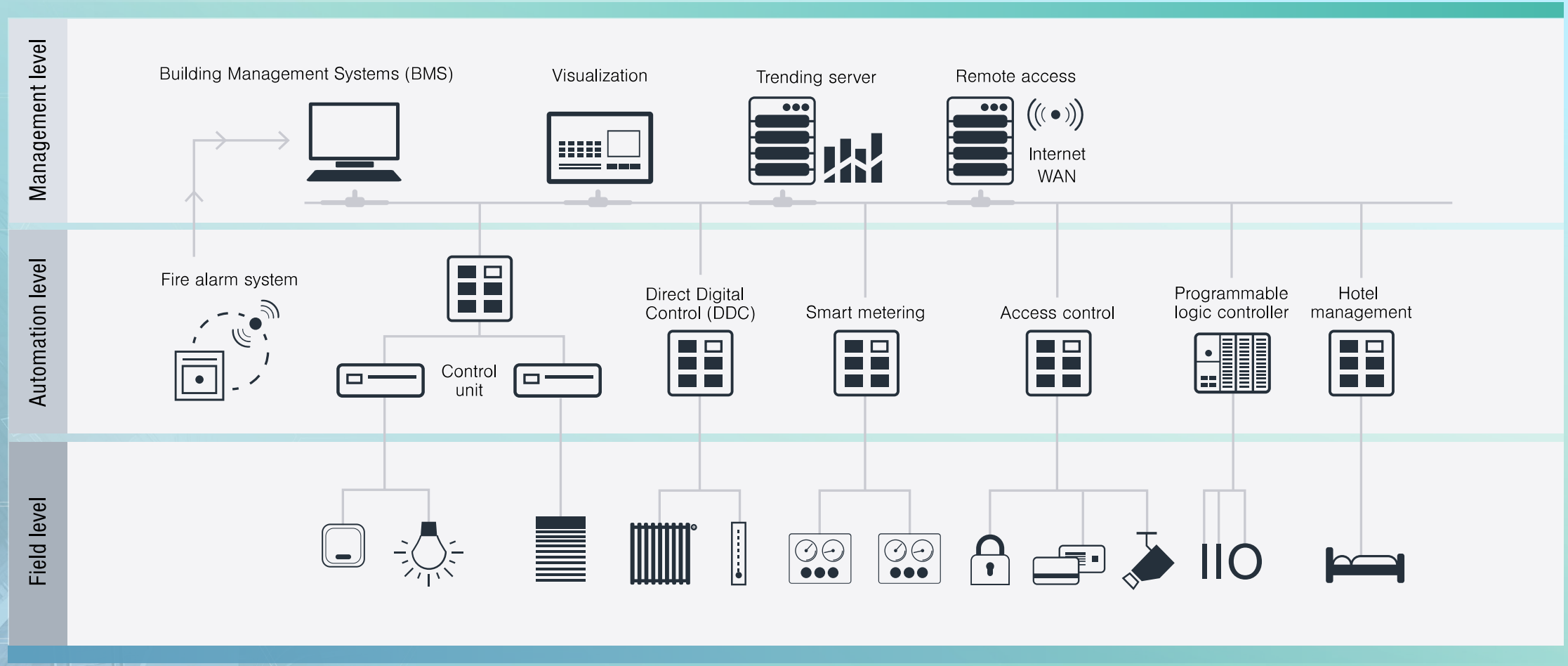
Motivation

Building automation systems are heterogeneous

Many different technologies are used

Each technology has its characteristics and its own way to represent and process control data

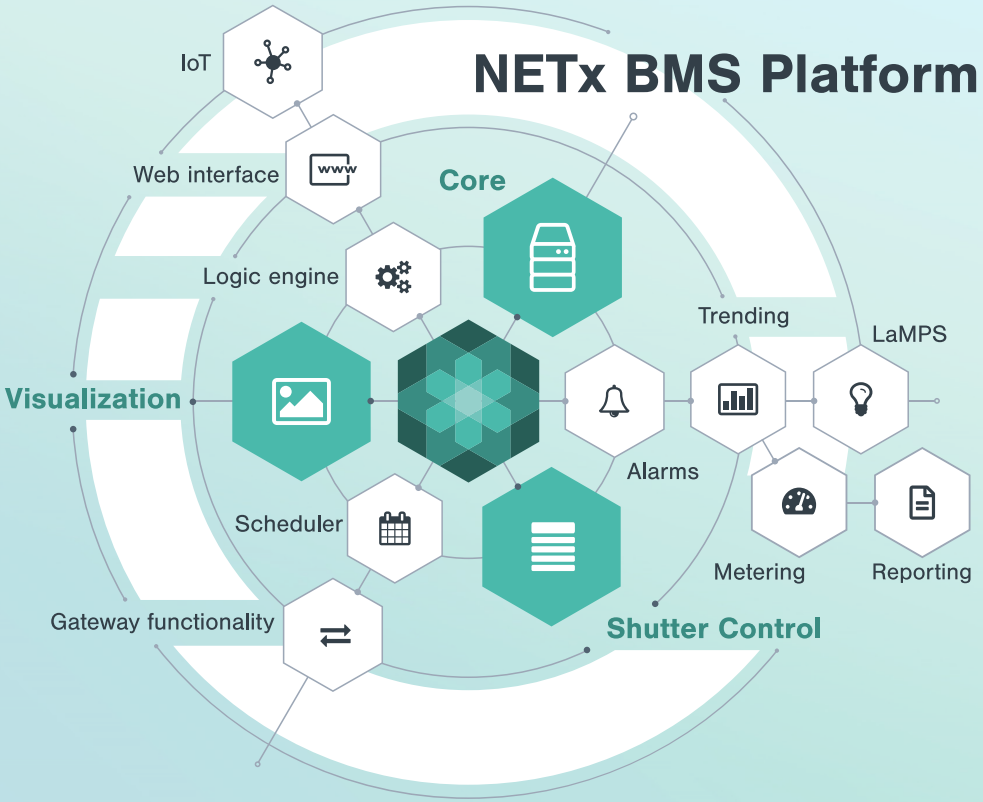
Building automation



Building automation

Building automation

NETx BMS Platform



Software solution for building management

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Multi-protocol gateway	Providing building management functions	User management
Support for different systems and technologies	Alarm management, trending, scheduling, logic engine	Central user management with different backends (e.g. AD authentication)
Visualization	**Web interface**	**Add-ons**
Web and PC based visualization clients	Managing BMS functions	KNX/DALI management, automatic shading control

System requirements

Operating system - Windows based operating system required

Windows 10 / Windows 11	Windows Server 2016 / Windows Server 2019 / Windows Server 2022

For maintainable systems we strongly recommend at least Windows 10 or Windows Server 2016 (or higher), except NETx KNX OPC Server 3.5.
Our products basically also run on older Windows versions down to Windows 7 and Windows Server 2008. However, due to limited future support for these operating systems by Microsoft we will not be able to provide full support for our software running on these systems.

Hardware

Any device that supports Microsoft Windows can be used	Use of virtualization environments possible
Requirements depend on project size (small embedded device up to server systems)	VMWare, Virtualbox, Hyper-V, ...

Licensing

License

Number of data points

Integrated data points from field level like KNX group addresses, BACnet objects, Modbus registers, SNMP data points, ...

Number of visualization clients

Web and/or PC based clients

Optional: additional license fees for special modules and interfaces

- **Hotel management interfaces Fidelio/Opera or Protel**
  Fix fee + 5 data points for each room
- **Door lock interfaces VingCard, Salto, Kaba**
  Fix fee + 5 data points for each door lock
- **NETx LaMPS**
  Fix fee + 1 data point for each DALI ballast
- **NETx Shutter Control**
  Project specific fee
- **NETx Metering Module**
  Fix fee + 10 data points for each measurement value
- **NETx mySmartSuite**
  sufficent number of NETx visualization clients required
- **and more**

Licensing process

Hardlock

USB Dongle hardware independent

Softlock

Unlock code dependent on hardware and operating system

Components

Core	Visualization	LaMPS	Shutter Control	mySmartSuite	Add-ons
• Gateway functionality • Alarm management • Trending • Reporting • Scheduler • Logic engine • Metering • GRMS	• Visualization for small, medium and large projects • PC and web-based clients • Any number of clients possible	• Lighting management • DALI management	• Automatic shading system • Complex buildings • Inclusion of weather data • 3D design and simulation • Add-on for BMS Server	• Overview of all rooms • Guest information • Check in and check out information • Room status • Message processing	Functions
Web interface • Alarm management • Trending • Scheduler • Explorer • Actions & Conditions	**Web interface** • Visualization	**Web interface** • LaMPS app	**Web interface** • Shutter Control app	**Web interface** • mySmartSuite app	Web Manager apps
• KNX • BACnet • Modbus • OPC (DA/UA) • SNMP • Helvar • Fidelio/Opera • Infor • Protel • RMS Cloud • CharPMS • VingCard • Salto • Kaba	• Universal XIO interface • HTTP Server and other web service gateways	• 3rd party BACnet, oBIX, MQTT and OPC (DA/UA) clients • 3rd party web service clients	**Hardware gateways:** • Dali • EnOcean • M-Bus • DMX		Interfaces

BMS functions

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Multi-protocol gateway

Bidirectional data and information change between different protocols and technologies

Alarm management

Monitor the building automation system and report unexpected behavior

Trending

Store past data point values for analysis

Reporting

Management of reports from trend data and historical data point values as well as data from other BMS functions

Scheduler

Definition of time-based events to change data point values or trigger actions

Logic-Engine

Add control functionality using graphical function block programming or scripts

Visualization

Sophisticated visualization engine for web and PC based visualization clients

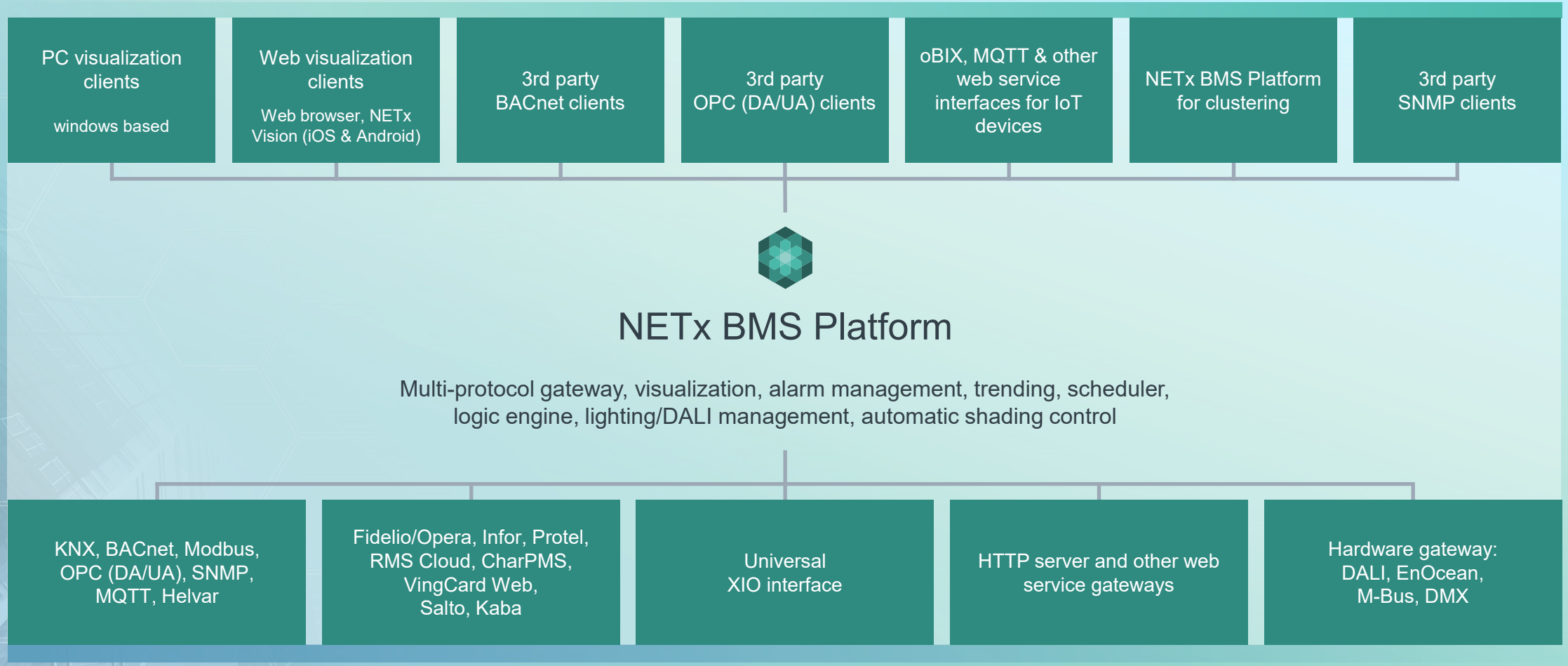
Metering

Monitor, analyze and process data from smart meters

Enhances features

Lighting/DALI management	Automatic shading control
NETx LaMPS	**NETx Shutter Control**
Easy management of KNX/DALI gateways	Automatic shading of complex buildings

NETx BMS Platform



Interfaces to field level

Open and standard protocols	Hotel management system	Door lock systems
KNX, BACnet, Modbus, SNMP, OPC (DA/UA), MQTT, Helvar	Fidelio/Opera, Protel, Infor, RMS Cloud, VHP, CharPMS	VingCard Web, Kaba, Salto
HTTP Server and other Web Service Gateways	Develop your own interface	Customer specific interface on request

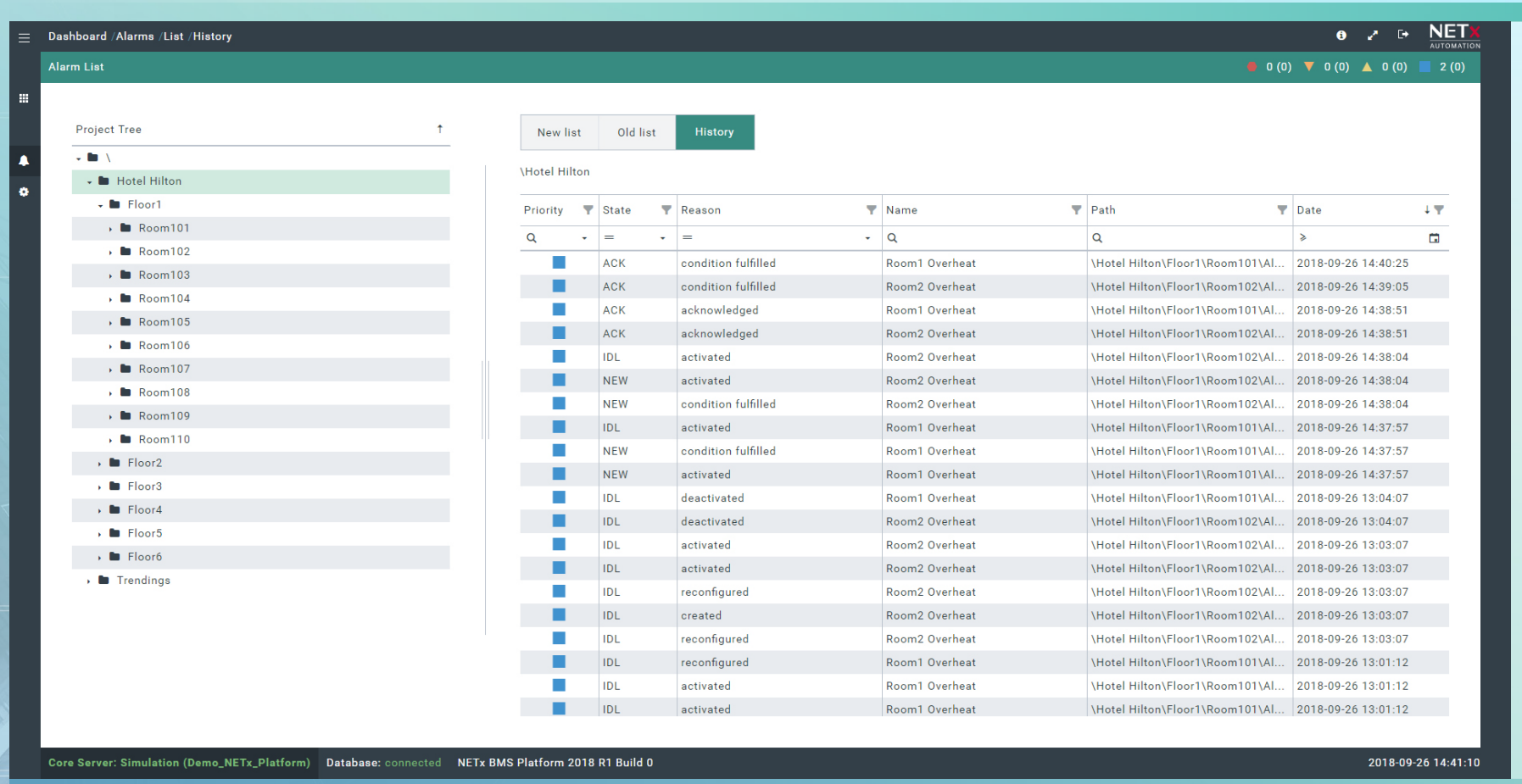
Interfaces to management level

OPC	BACnet	oBIX and other Web Service interfaces for IoT
OPC DA 2.0 and OPC UA	BACnet/IP server	oBIX 1.1 and KNX Web Services
MQTT	Web interface	VNET
Communication to one or more MQTT brokers	Web Manager and Web Visualization	Secure connection to PC based visualization

Integration of 3rd party systems

Integration of OPC clients	Integration of BACnet clients	Integration of OPC servers
3rd party clients	3rd party BMS systems from Siemens, Schneider Electric, Honeywell, Sauter	Fire detection systems, elevators, etc. with different proprietary systems

Alarm management



Definition of alarm conditions to detect unexpected system behavior

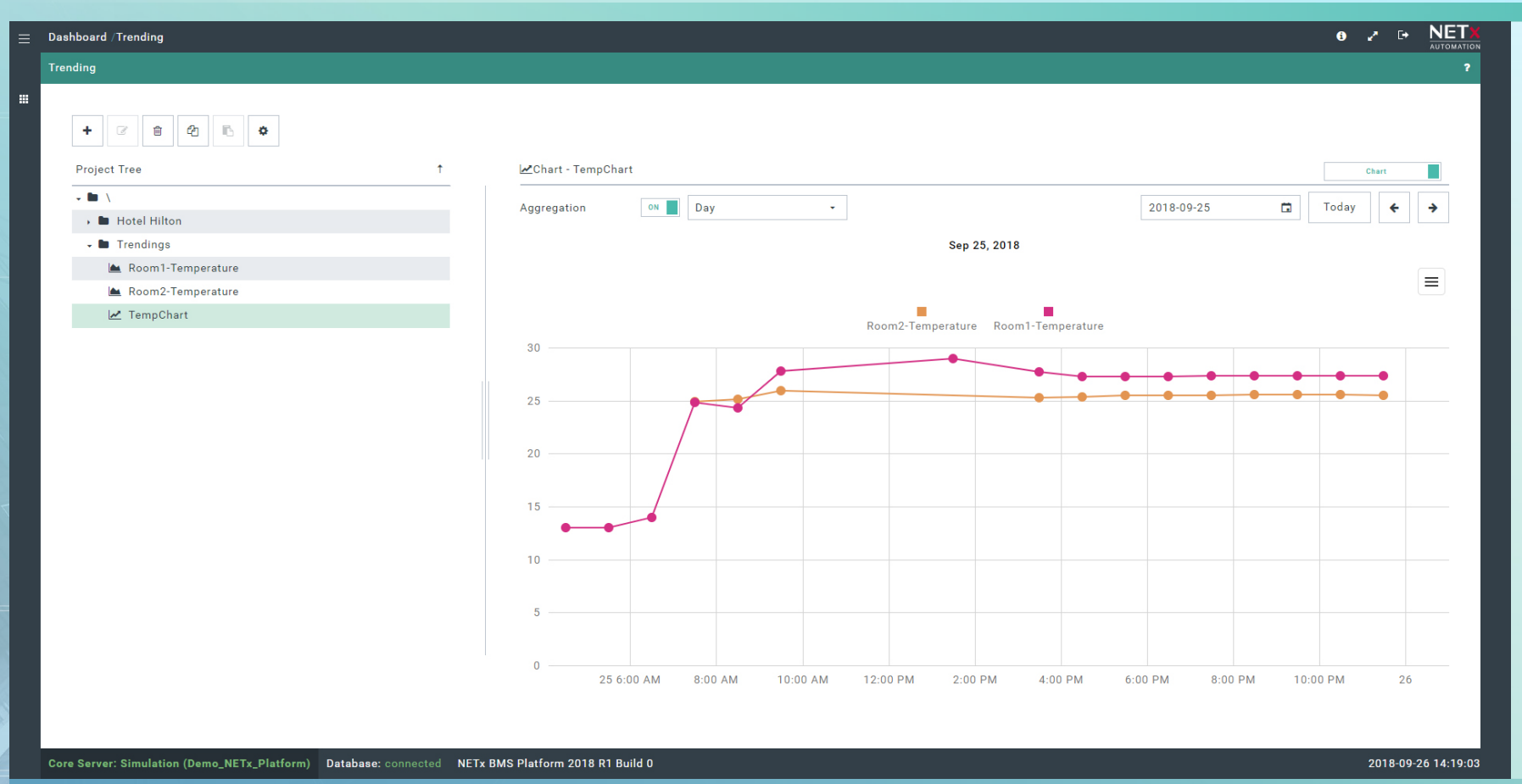
Triggering of alarm actions like notifications (e.g. e mail, twitter, ...) or changing data points

Alarm lists via web interface according to VDI/VDE 3699

Alarm history

Alarm logs stored in SQL database

Trending



Past values of data points can be stored in SQL database

Multiple database backends (MS SQL, MySQL)

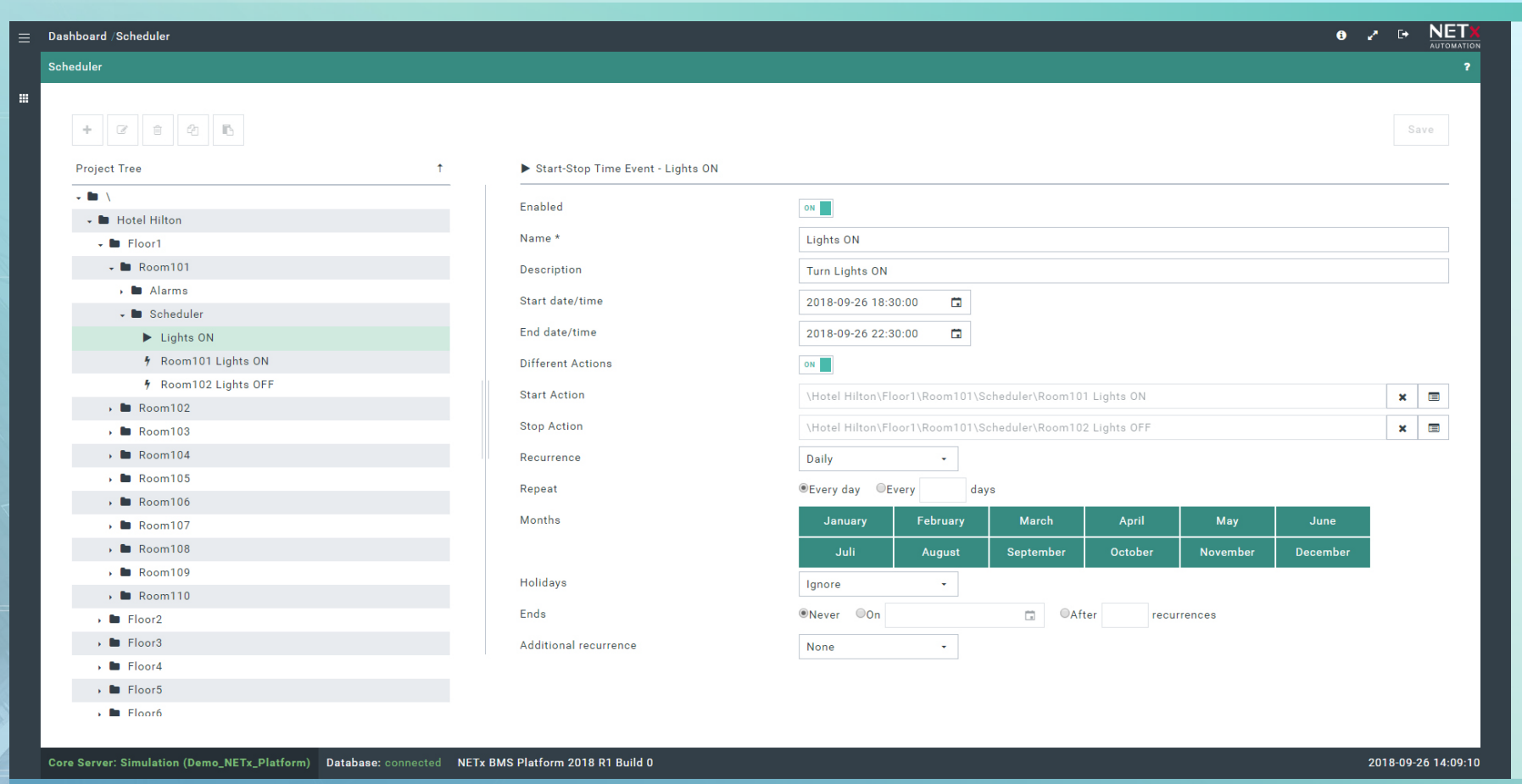
Different trending types like change-of-value (COV), sampling, averages, ...

Define the amount of data via max data age

Pre and post processing of values

Presentation via charts and tables within web interface

Scheduler

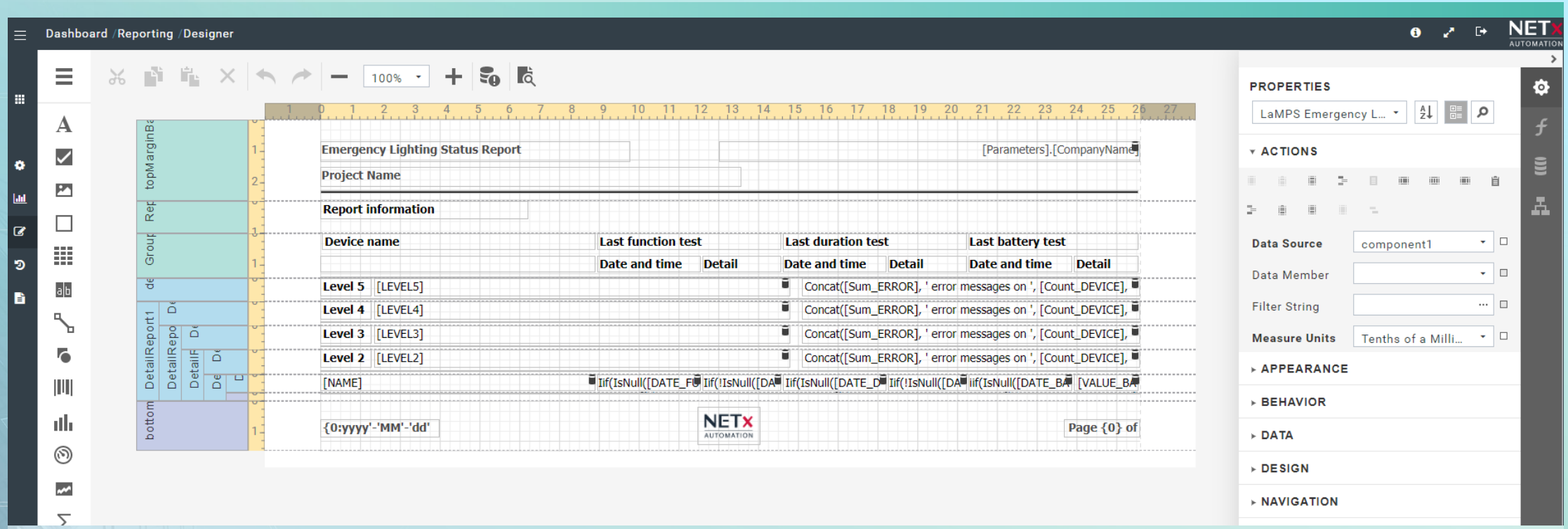


Time based events to trigger actions (timers, start stop event, cyclic event) and conditional events

Definition of recurrence

Event program list and calendar view within web interface

Reporting



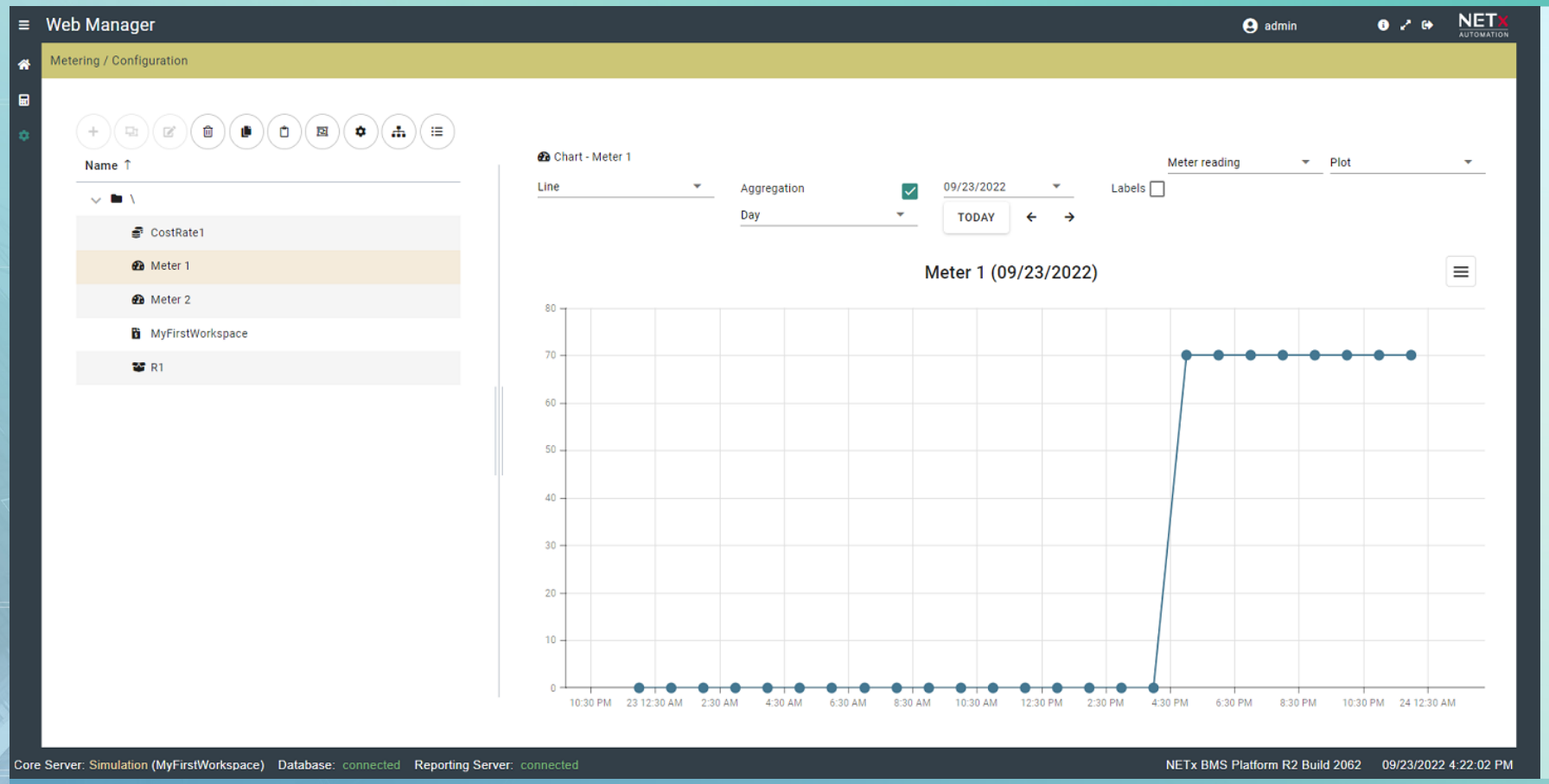
Management of reports from trend data and historical data point values

Predefined templates for alarm/trend reports and DALI test results

Automatic regular report generation possible

Includes a reporting designer for your own templates and designs

Metering



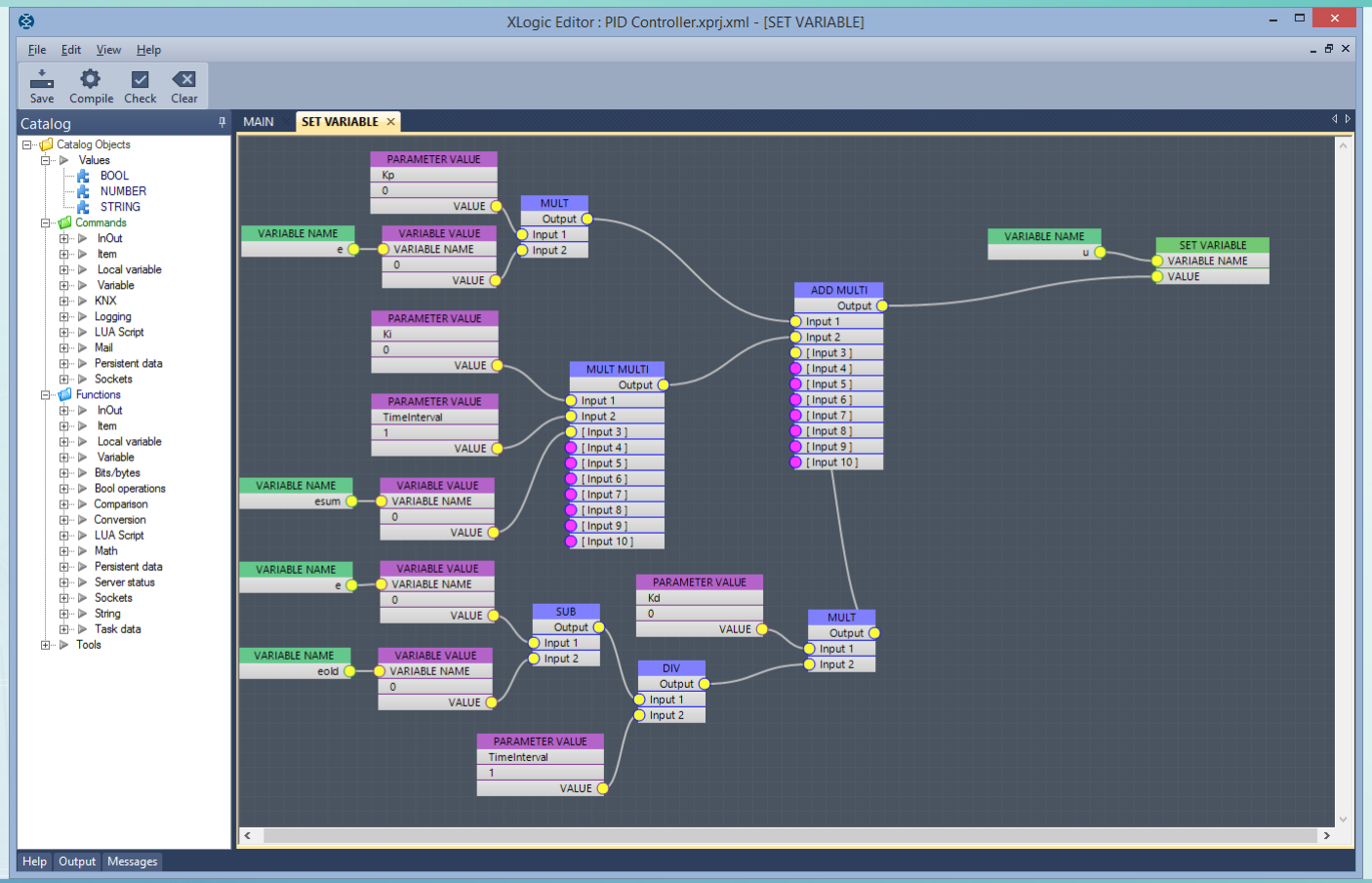
Any smart meter (KNX, BACnet, Modbus, M-Bus, ...) from different sources (electricity, water, air, heating, ...) can be used

All calculated consumption values (hourly, daily, weekly, monthly, yearly) are provided as normal data points

- Inclusion of other trend values in calculation diagrams possible
- Data points that affect the consumption of energy resources (e.g. temperature values) can be used as comparison values

- Results can be presented online in our web interface as tables or chart elements
- Report export to PDF, Excel, etc.

Logic engine



Adding control functions that are missing within the field devices

Adding control functions that are distributed across devices that use different technologies

XLogic editor: graphical functional block programming

LUA scripts: script engine

Visualization - features

Versatile

- Web and/or PC based visualization clients can be used
- No difference between web and PC based visualization

Unlimited

- No limit on the number of used graphical elements and pages
- Licensing is done via BMS Platform

Scalable

- Fast creation of large visualization projects
- Enhanced concepts like variables and templates

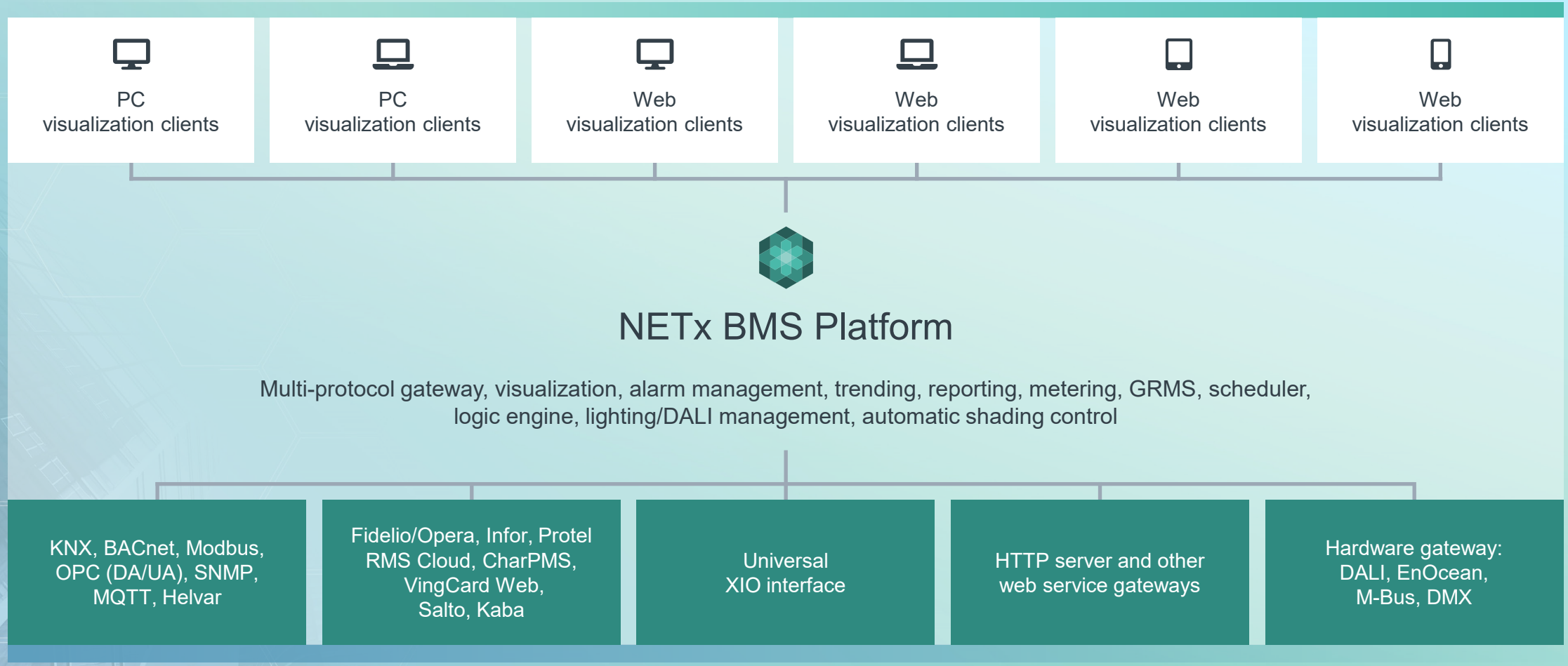
Customizable

- User-defined look and file
- Enhanced elements like multi-state elements, vector graphic and web based content

Ubiquitous

- Independent of used technology and protocols
- KNX, BACnet, Modbus, SNMP, ... in one single visualization

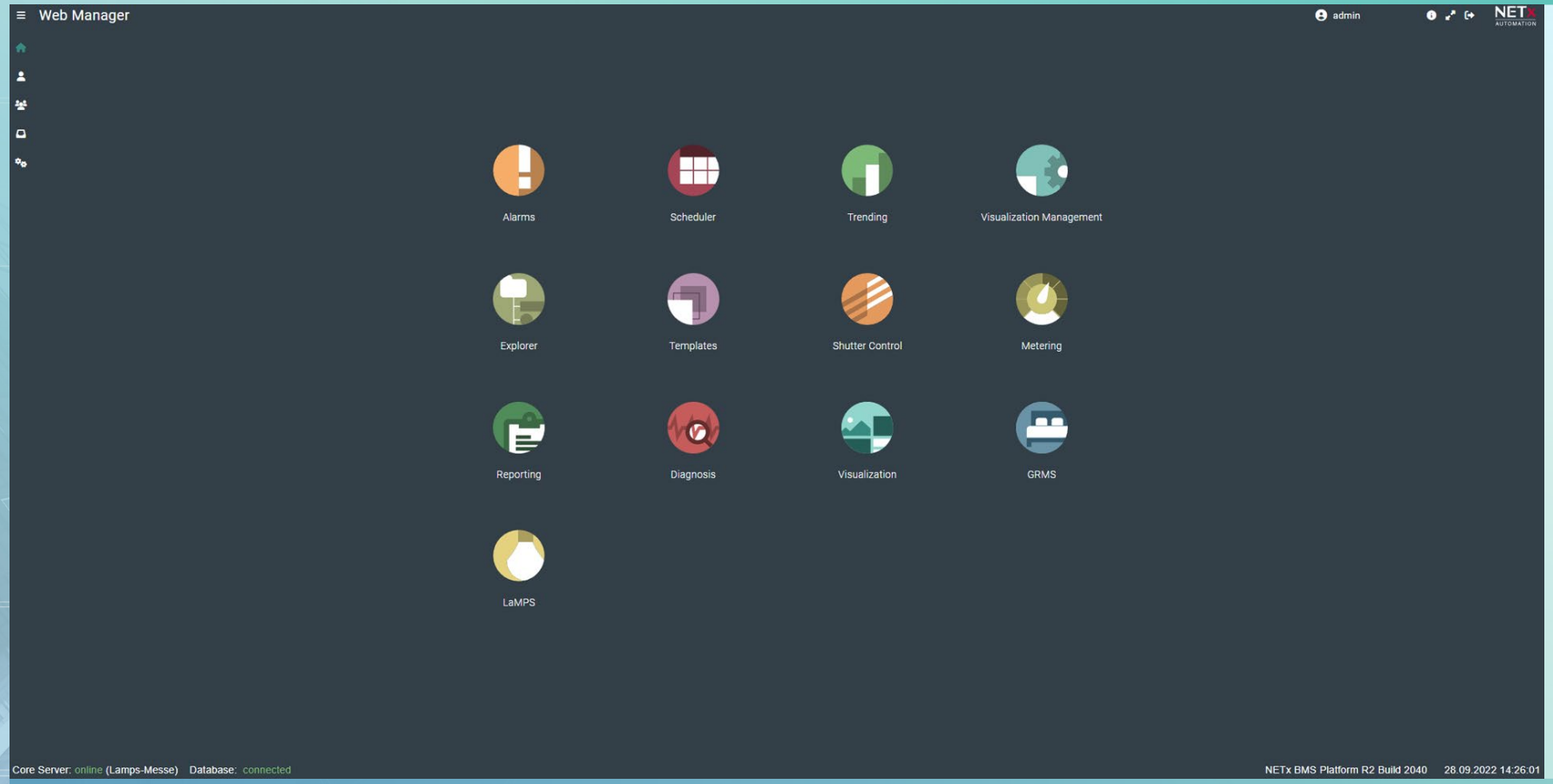
Visualization - architecture



Visualization – functions

Control elements	Vector graphic	Auto scaling	Multiple views
Label, buttons, analog elements (sliders, gauges, ...), link area, multi-state elements, ...	Support of SVG and AutoCAD drawings (DWG, DXF, ...)	PC and web based visualization is automatically scaled to the current screen resolution	Support of multiple views for using multiple screens, browser tabs or floating window elements
Variables	BMS functions	User administration	Usability
Fast creation of large visualizations using project, page, layer, block and group variables. Reuse of pages and groups	Show graphical interface of BMS functions like alarm lists, calendars, trending charts and tables	Use of central user management of BMS Platform and defining different access rights	Easy to use editor for creating visualization projects

Web Manager



Web based interface to manage BMS functions

Access by any client with web browser via secure connection (TLS secured https)

User management

Sophisticated user management and access permissions

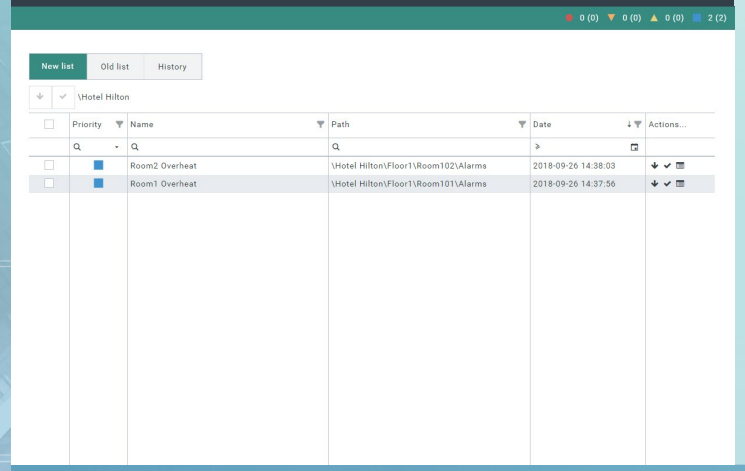
Web Manager Apps

Use of central user management of BMS Platform and defining different access rights

Web Manager apps

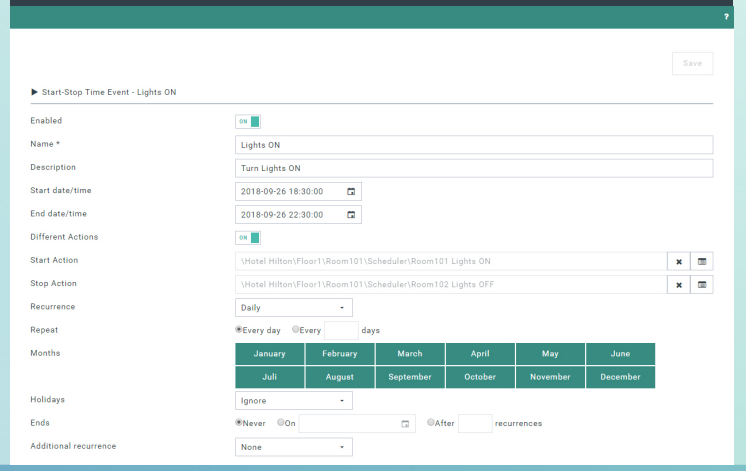
Alarms

Configuration of alarms –
showing alarm lists and alarm history



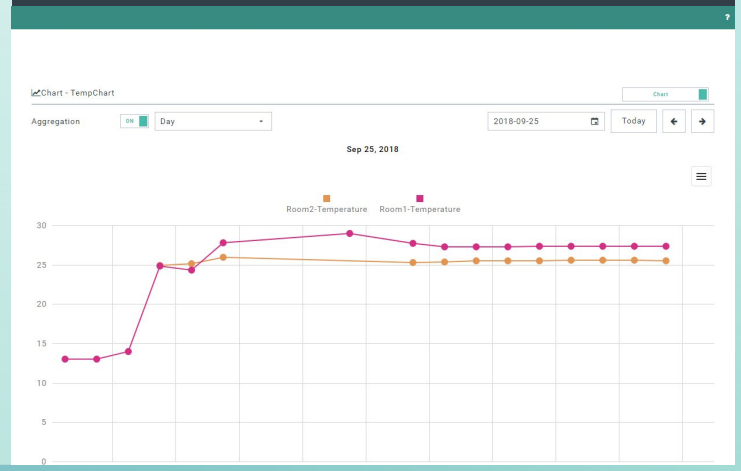
Scheduler

Config. of time based and conditional events
- shown event lists and calendar views



Trending

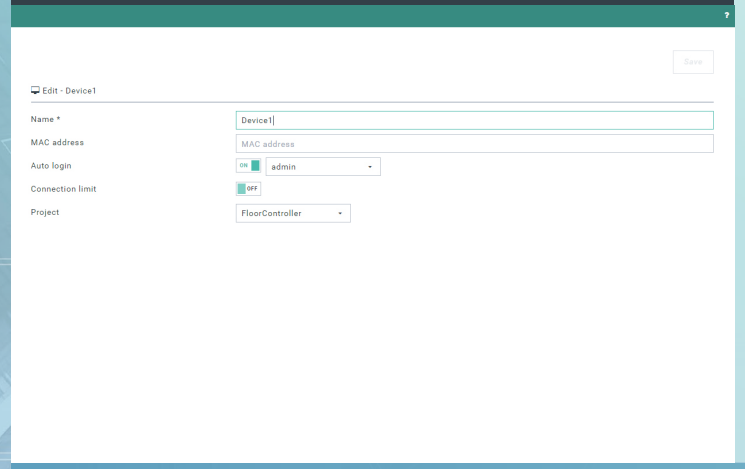
Configuration of trends and charts –
showing charts and tables



Web Manager apps

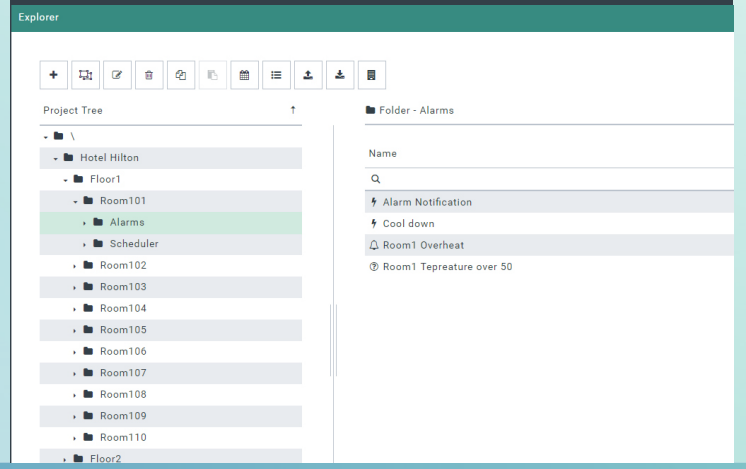
Visualization Manager

Managing visualization projects, devices, connections and user permissions



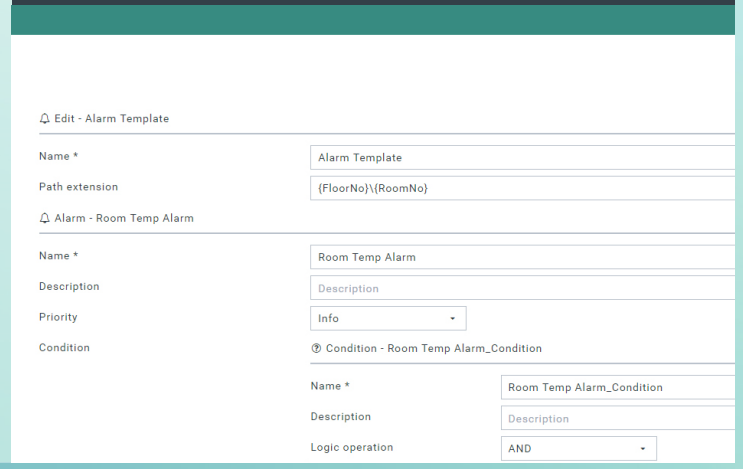
Explorer

”Master App” for doing all things at single place



Templates

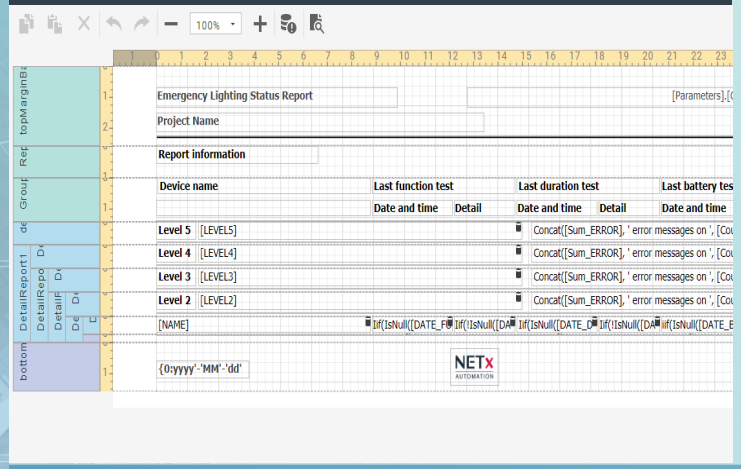
Sophisticated app to create multiple definitions (e.g. alarms) with a view clicks



Web Manager apps

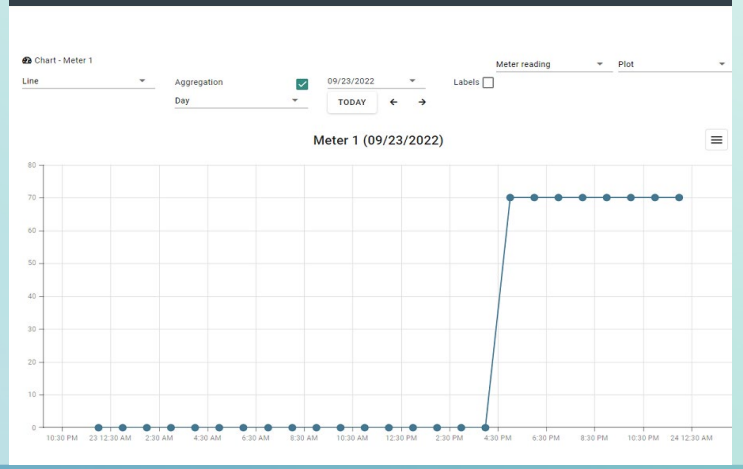
Reporting

Management of reports from trend data and historical data point values as well as data from other BMS functions



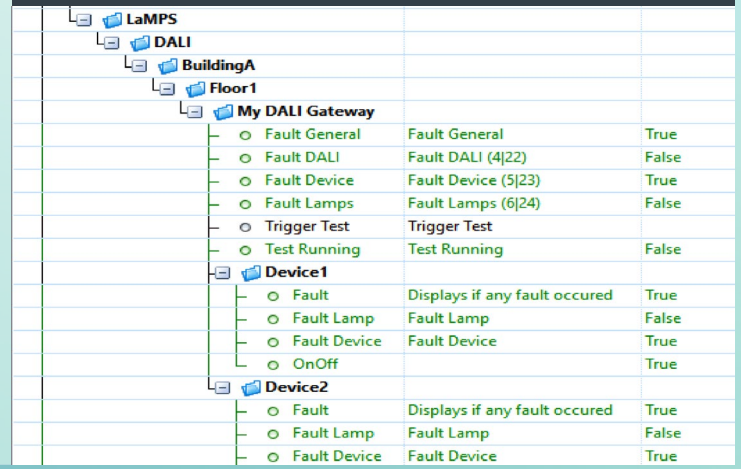
Metering

Monitor, analyze and process data from smart meters



LaMPS

Manufacturer-independent representation of DALI gateways and devices



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