NETx AUTOMATION

KNX

BACnet

MQTT

Modbus

OPC (DA/UA)

Helvar

SNMP

Fidelio/Opera | Protel | Infor
RMS Cloud | CharPMS
VingCard Web | Kaba | Salto

DALI EnOcean
M-Bus DMX

Proprietary solutions

All-in-one

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

NETx LaMPS

Lighting/DALI management

Digital Addressable Lighting Interface (DALI)

Application specific protocol for lighting systems

Advanced features for lighting control

- Tests of lamps and ballasts
- Special functionality for emergency lighting

Pure field level protocol

- Mostly used in combination with system standards like KNX
- No standardized IP interface

KNX & DALI

KNX is the most common way to integrate DALI

Some KNX/DALI gateways have multiple channels

Up to 64 DALI devices can be connected to 1 channel

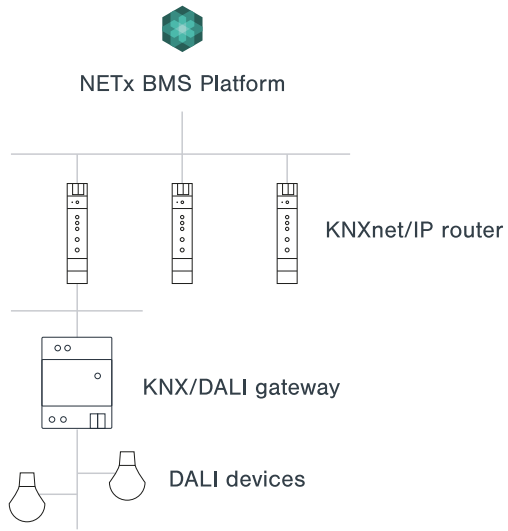
Using KNX, DALI can be connected to Building Management Systems (BMS)

Visualization, monitoring, maintenance of lighting control

KNX/DALI gateways are used to interconnect the DALI bus to KNX

DALI data and information are provided as KNX group objects

- Objects for lighting control (on/off, dimming, status, ...)
- Objects for maintenance (trigger tests, providing test results, ...)
- Objects for emergency lighting control (emergency status, emergency tests, ...)



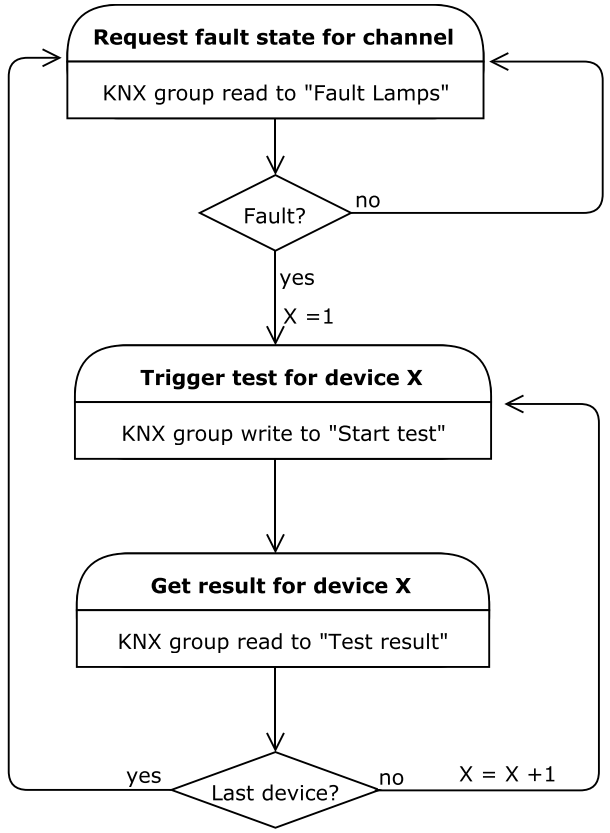
KNX/DALI gateways: challenges - KNX group object mapping for DALI

High number of functions and high number of devices per gateway would result in a high number of KNX group objects at the gateway

To avoid this, only parts of the functionality are available for each DALI device

- Group objects per DALI device: on/off, dimming, status, ...
- Group object per channel: trigger function tests, test results, ...

Stateful communication is required to get all information per device, e.g. DALI tests



KNX/DALI gateways: challenges - KNX data point types (DPTs) for DALI

Standard functions are available as standard DPTs (e.g. dimming)

Many KNX/DALI gateways use even non standardized DPTs

For enhanced functions like testing, complex DPTs are used, e.g. DPT_DALI_Control_Gear_Diagnostics

KNX/DALI gateways: challenges - manufacturer-specific implementation

There are many different manufactures for KNX/DALI gateways

Only standard functionality is common to all DALI gateways (on/off, dimming, ...)

Advanced features like DALI testing are manufacturer-specific

- Manufacturer-specific non standardized DPTs
- Manufacturer-specific, stateful communication logics are required

Time-consuming and complex task for integrators and electrical engineers

LaMPS Module for NETx BMS Platform

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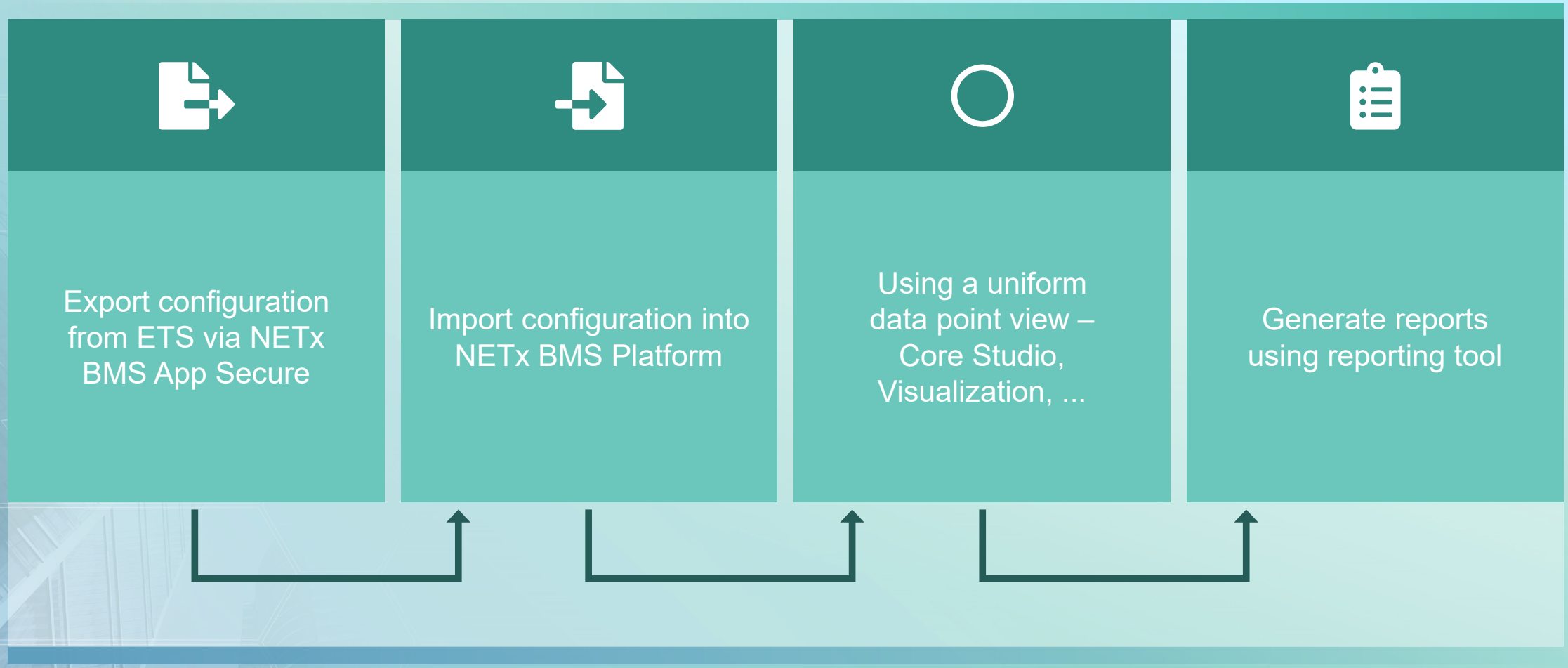
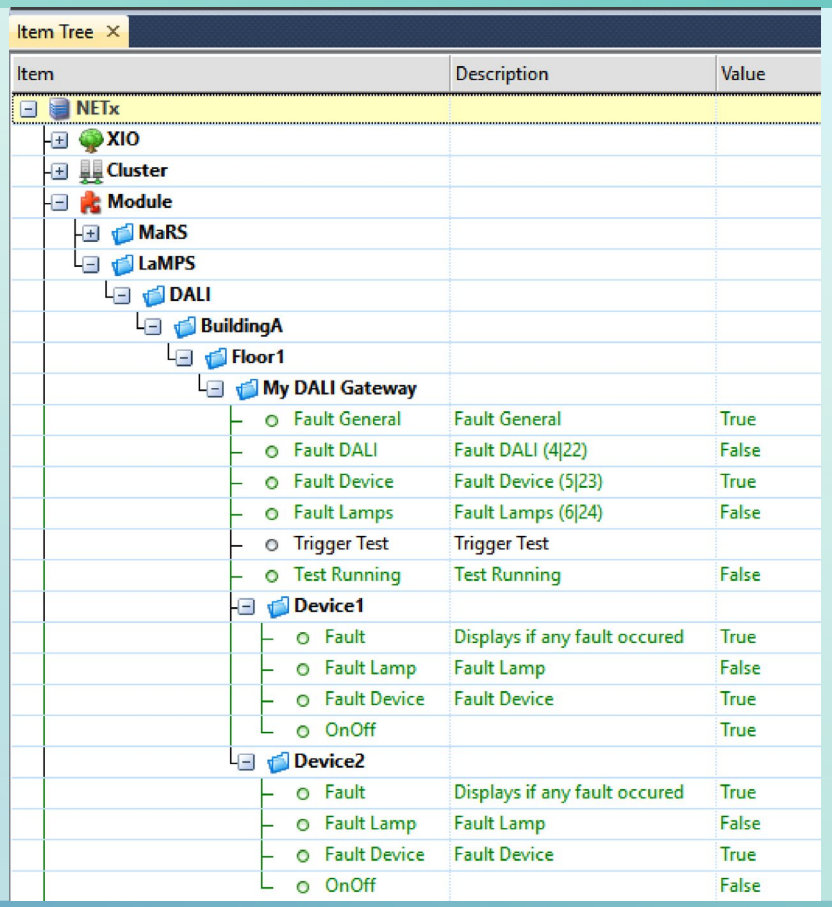
Extension module for NETx BMS Platform	Provides manufacturer-independent view of KNX/DALI gateways		Uniform data point view
Triggering DALI tests	Show common DALI errors and error for each device separately	Support for DALI emergency tests	Stores test results in SQL database
Reporting tool for generating customized reports	Automatic export from ETS using NETx BMS App Secure	Support for multiple KNX/DALI gateways: ABB, Gira, Hager, IPAS, Jung, MDT, Schneider, Siemens, Zennio, EAE, ...	

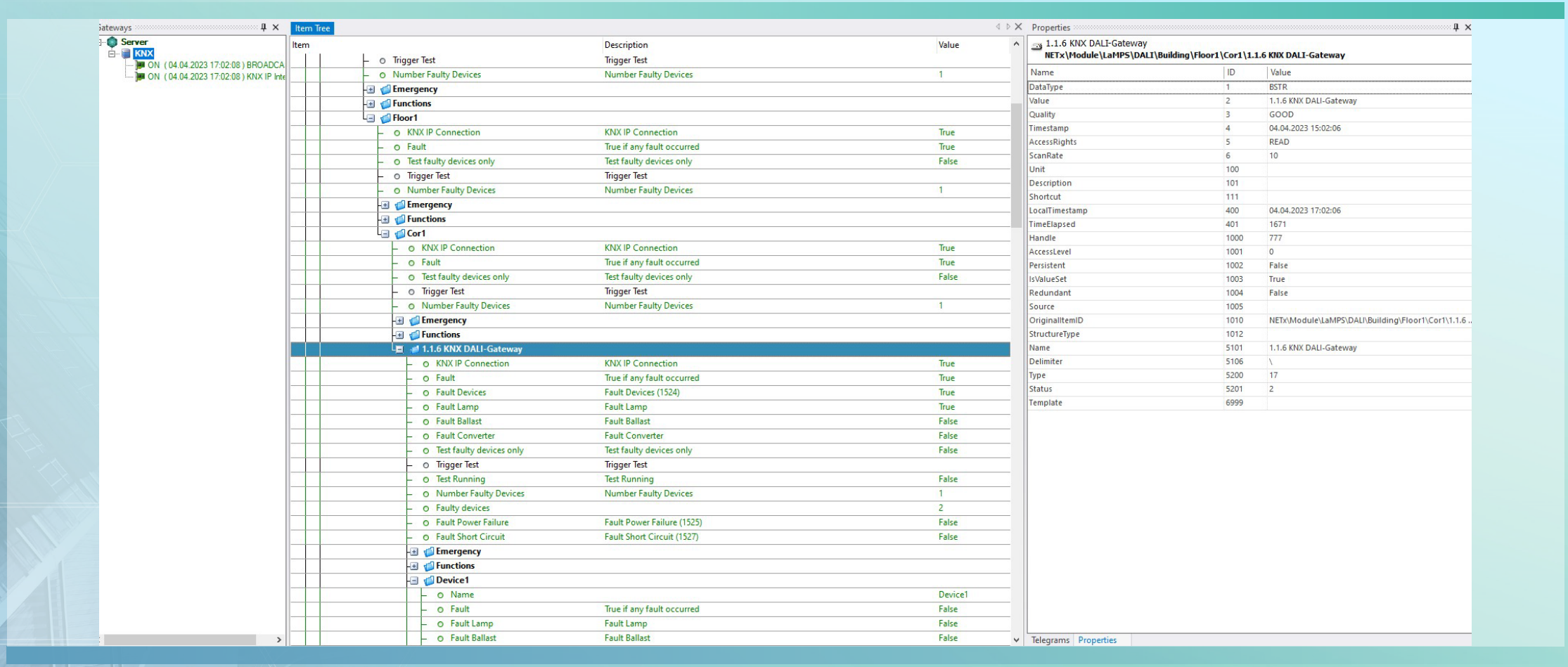
LaMPS Module: workflow



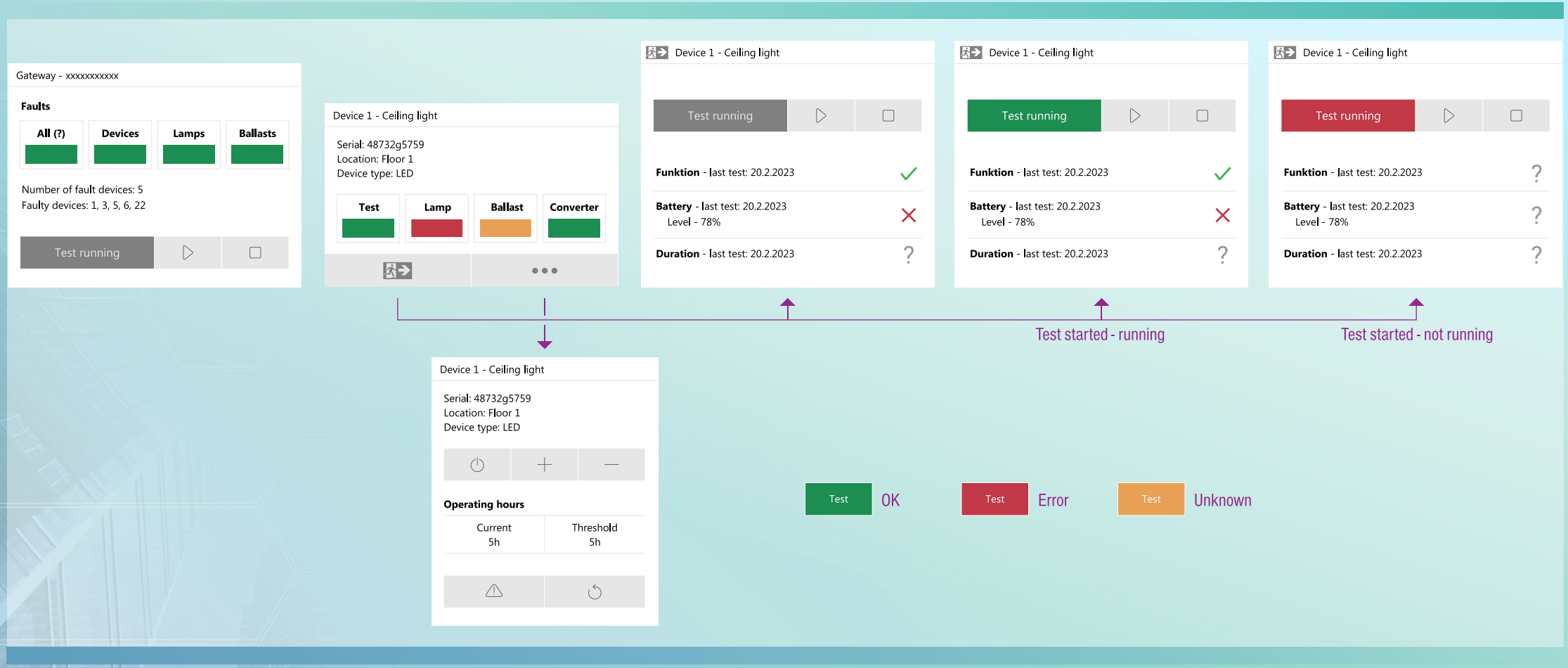
LaMPS Module: uniform data point view



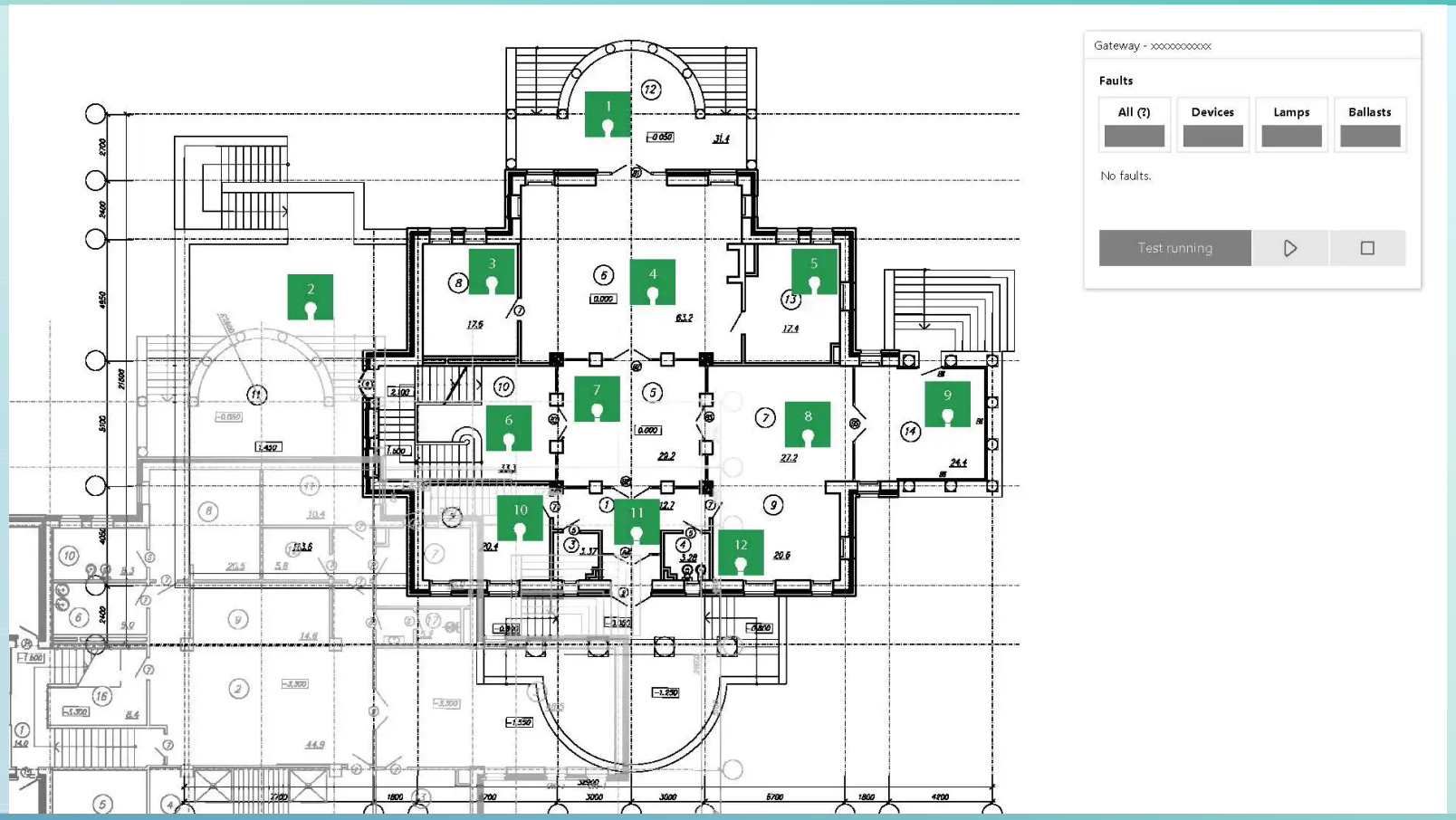
LaMPS Module: uniform data point view



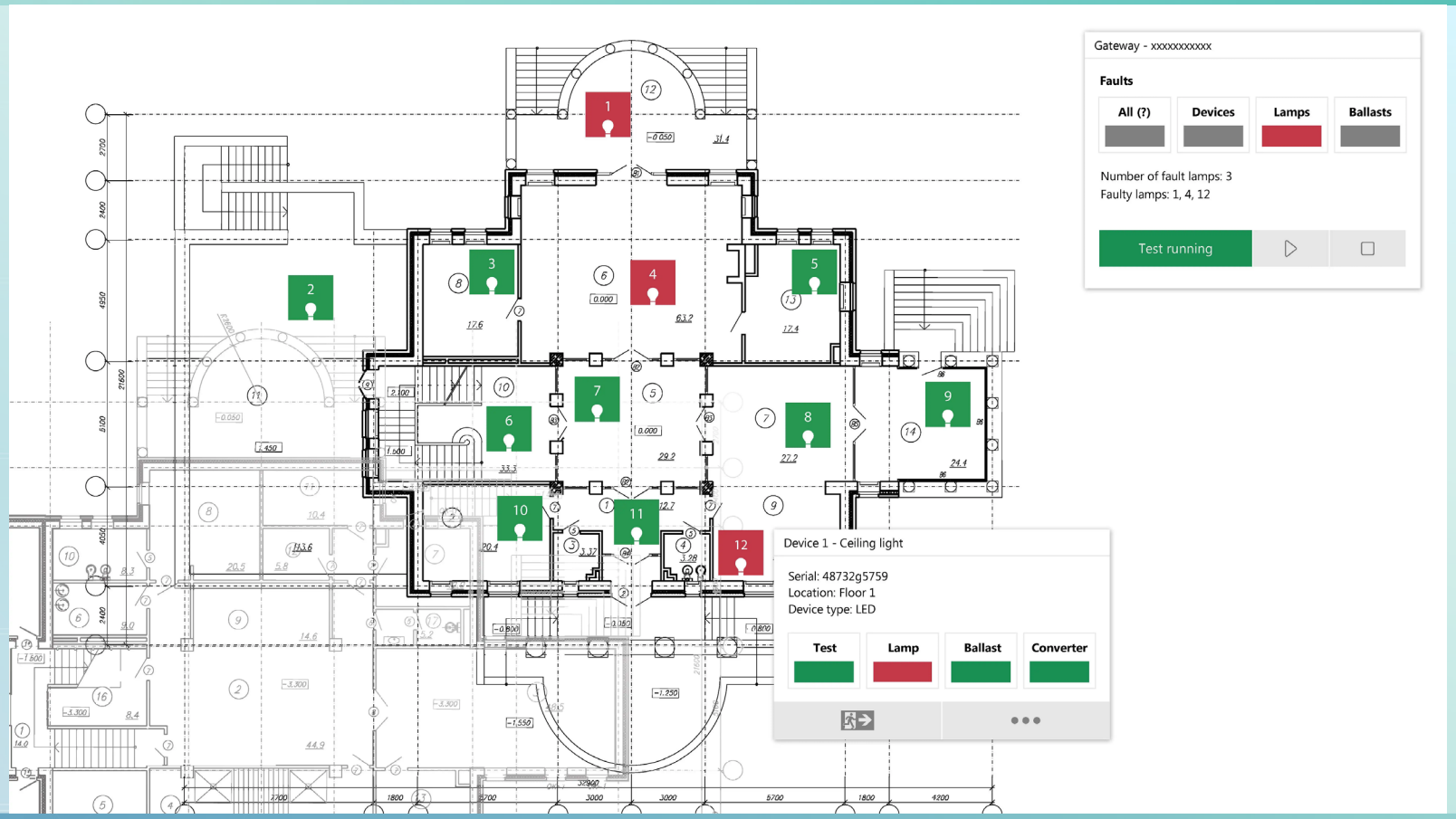
Interface


Gateway - xxxxxxxxxx
Faults
All (?)
Devices
Lamps
Ballasts
Number of fault devices: 5
Faulty devices: 1, 3, 5, 6, 22
Test running
Device 1 - Ceiling light
Serial: 48732g5759
Location: Floor 1
Device type: LED
Test
Lamp
Ballast
Converter
Device 1 - Ceiling light
Serial: 48732g5759
Location: Floor 1
Device type: LED
Operating hours
Current
5h
Threshold
5h
Device 1 - Ceiling light
Test running
Funktion - last test: 20.2.2023
Battery - last test: 20.2.2023
Level - 78%
Duration - last test: 20.2.2023
Device 1 - Ceiling light
Test running
Funktion - last test: 20.2.2023
Battery - last test: 20.2.2023
Level - 78%
Duration - last test: 20.2.2023
Device 1 - Ceiling light
Test running
Funktion - last test: 20.2.2023
Battery - last test: 20.2.2023
Level - 78%
Duration - last test: 20.2.2023
Test started - running
Test started - not running
Test
OK
Test
Error
Test
Unknown

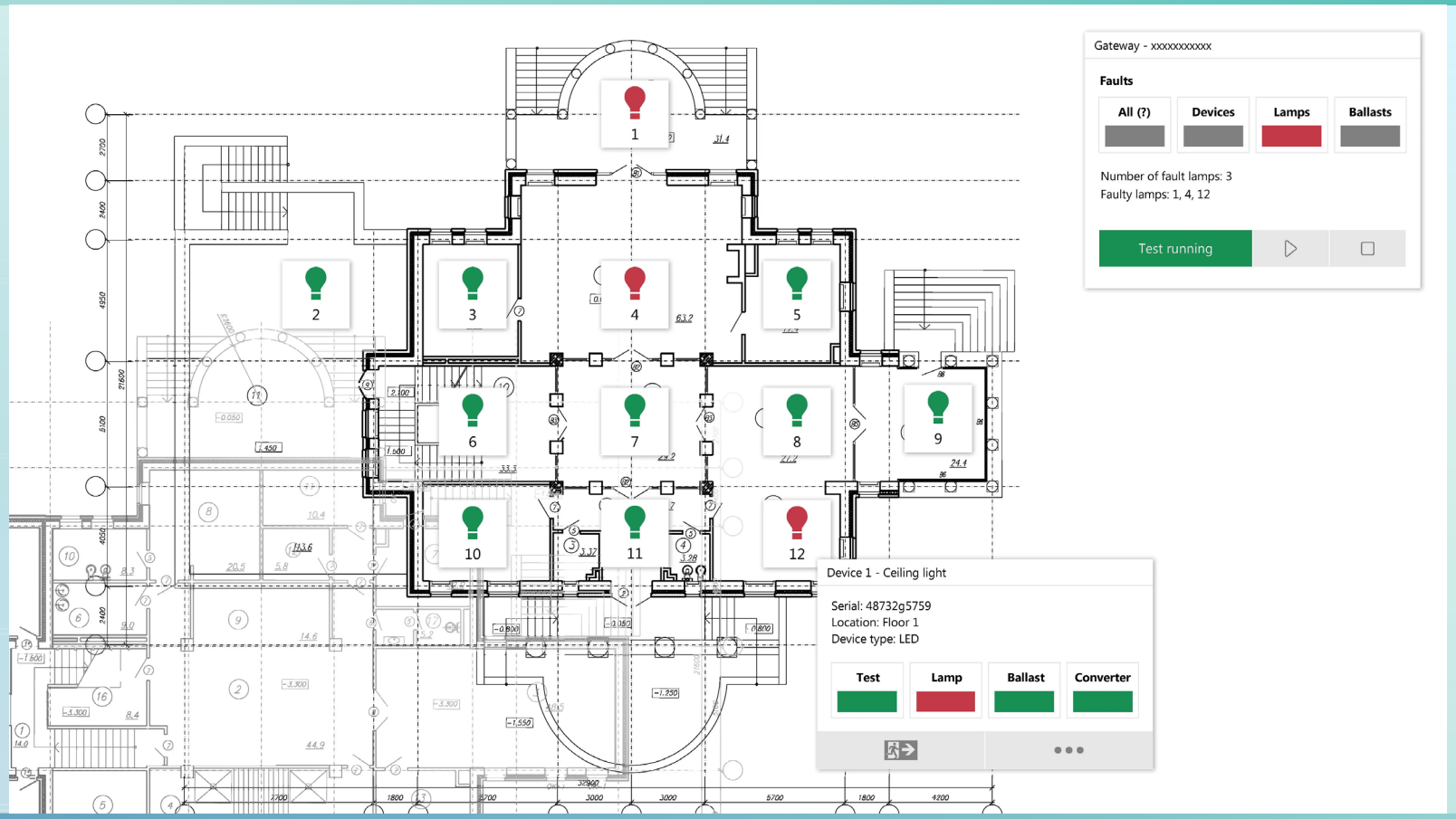
Interface


Gateway - xxxxxxxxxx
Faults
All (?)
Devices
Lamps
Ballasts
No faults.
Test running

Interface


Gateway - xxxxxxxxxx
Faults
All (?)
Devices
Lamps
Ballasts
Number of fault lamps: 3
Faulty lamps: 1, 4, 12
Test running
Device 1 - Ceiling light
Serial: 48732g5759
Location: Floor 1
Device type: LED
Test
Lamp
Ballast
Converter

Interface


1
2
3
4
5
6
7
8
9
10
11
12
Gateway - xxxxxxxxxx
Faults
All (?)
Devices
Lamps
Ballasts
Number of fault lamps: 3
Faulty lamps: 1, 4, 12
Test running
Device 1 - Ceiling light
Serial: 48732g5759
Location: Floor 1
Device type: LED
Test
Lamp
Ballast
Converter

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