RAPIX COMMISSIONING 2

USING RAPIX INTEGRATOR

18 MAY 2022

COURSE PURPOSE

Advanced RAPIX Commissioning.

This will help you to understand:

- The RAPIX Integrator Software
  - Zone Controllers
  - Zones
  - Scenes
  - Operating Properties and Flags
  - Schedules
  - Floor Plans

COURSE PURPOSE

Pre-requisites.

It is recommended that you have already completed:

- DALI Basics;
- RAPIX Introduction;
- RAPIX Commissioning 1 - RAPIX Addressing.

RAPIX INTEGRATOR

RAPIX INTEGRATOR

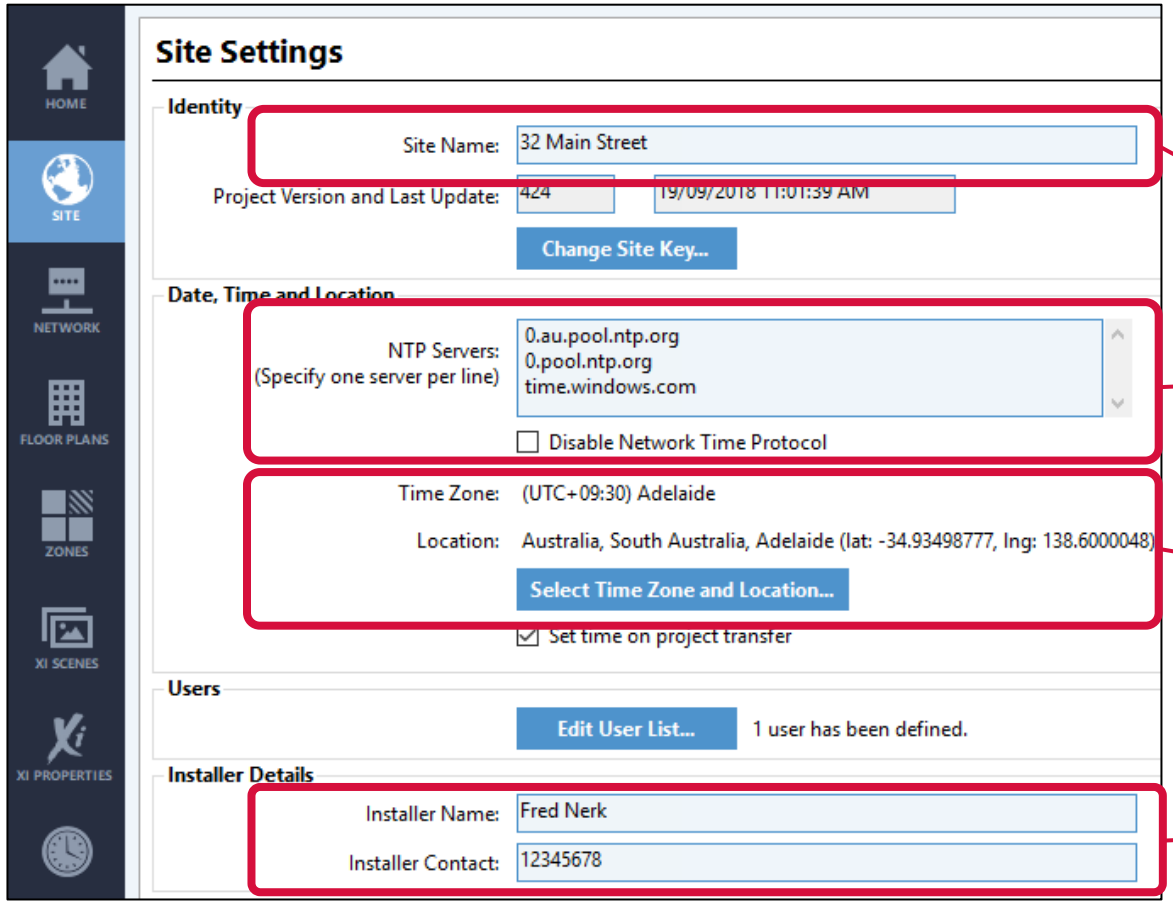
RAPIX Integrator

- Provides all functions of RAPIX Addressing:
  - Addressing devices;
  - Configuring DALI Devices;
  - Configuring eHubs;
  - **See the “RAPIX Commissioning 1 - RAPIX Addressing” presentation for details.**
- In addition:
  - Support for Zone Controllers;
  - Multi-Line Zones and Scenes;
  - Operating Properties and Flags;
  - Scheduling;
  - Logic;
  - Floor Plans.

PROJECT

PROJECT

- A RAPIX Integrator “Project” normally corresponds to a building site
- Site Settings:



Site name or address

NTP Options
(for synchronizing the time)

Time-zone and location
(for calculating local time, sunrise and sunset)

Installer contact details
(important)

PROJECT

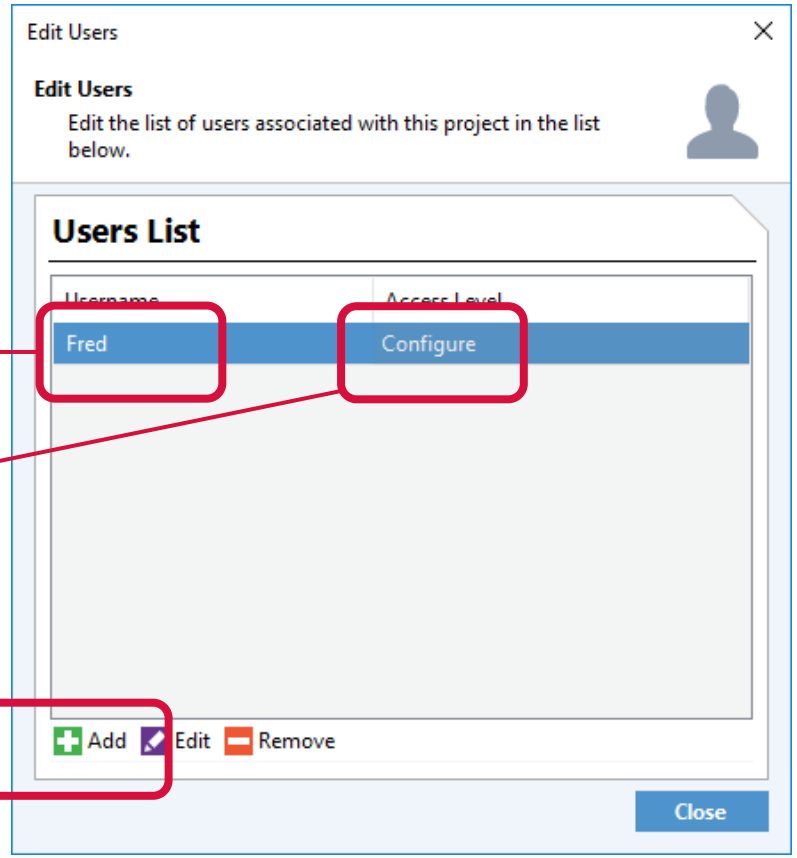
- Site Settings:
  - Users
    - Provides secure access to third-party systems
    - See the “RAPIX Security” presentation for details

1. Click to view, add or edit the users

2. User Name

Access Level
- View
- Control
- Configure

3. Click to add new user



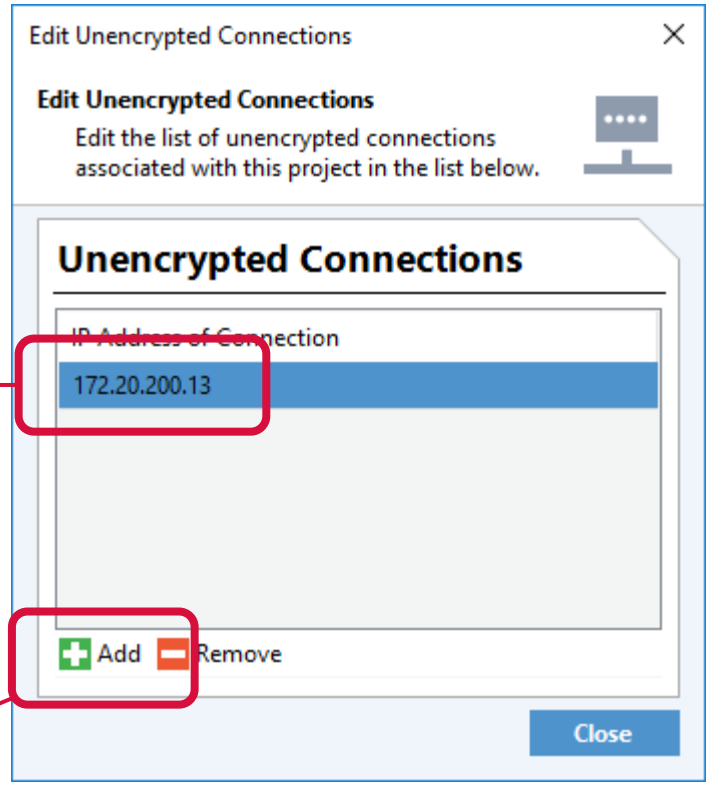
PROJECT

- Site Settings:
  - Unencrypted Connections
    - Provides access to third-party systems
    - See the “RAPIX Security” presentation for details.

1. Click to view, add or edit the connections

2. Address of connecting device

3. Click to add new connection

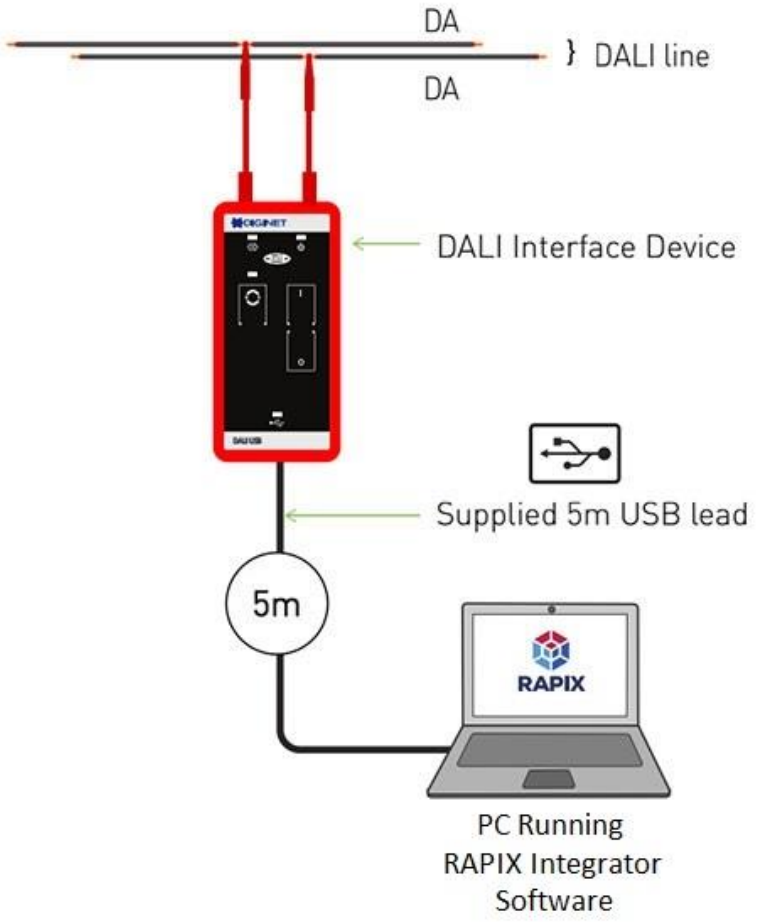


CONNECTING TO DALI

CONNECTING TO DALI

Connecting with USB Interface

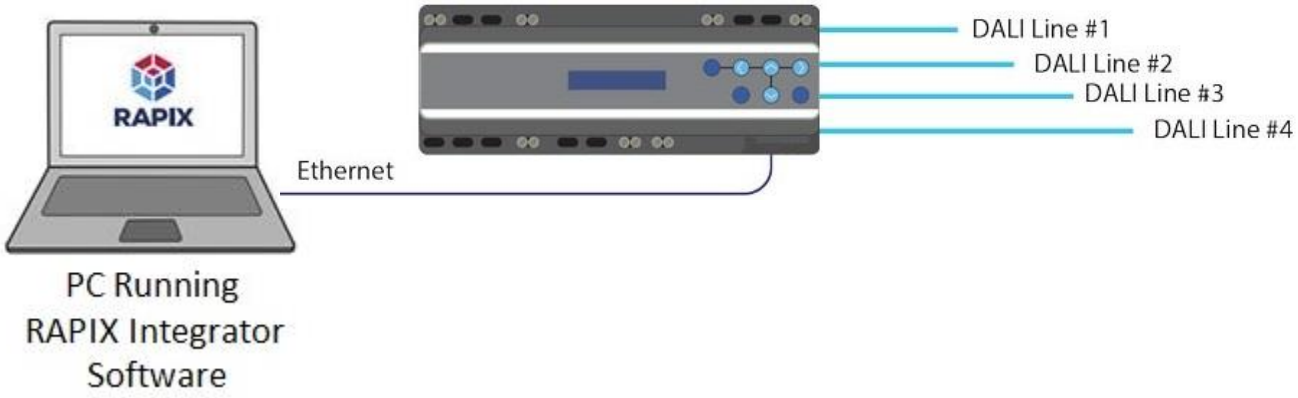
- Connect to each DALI Line in turn
- Does not need infrastructure installed
  - **Not Required:** Zone Controllers
  - **Not Required:** Ethernet switches.



CONNECTING TO DALI

Connecting with a single Zone Controller

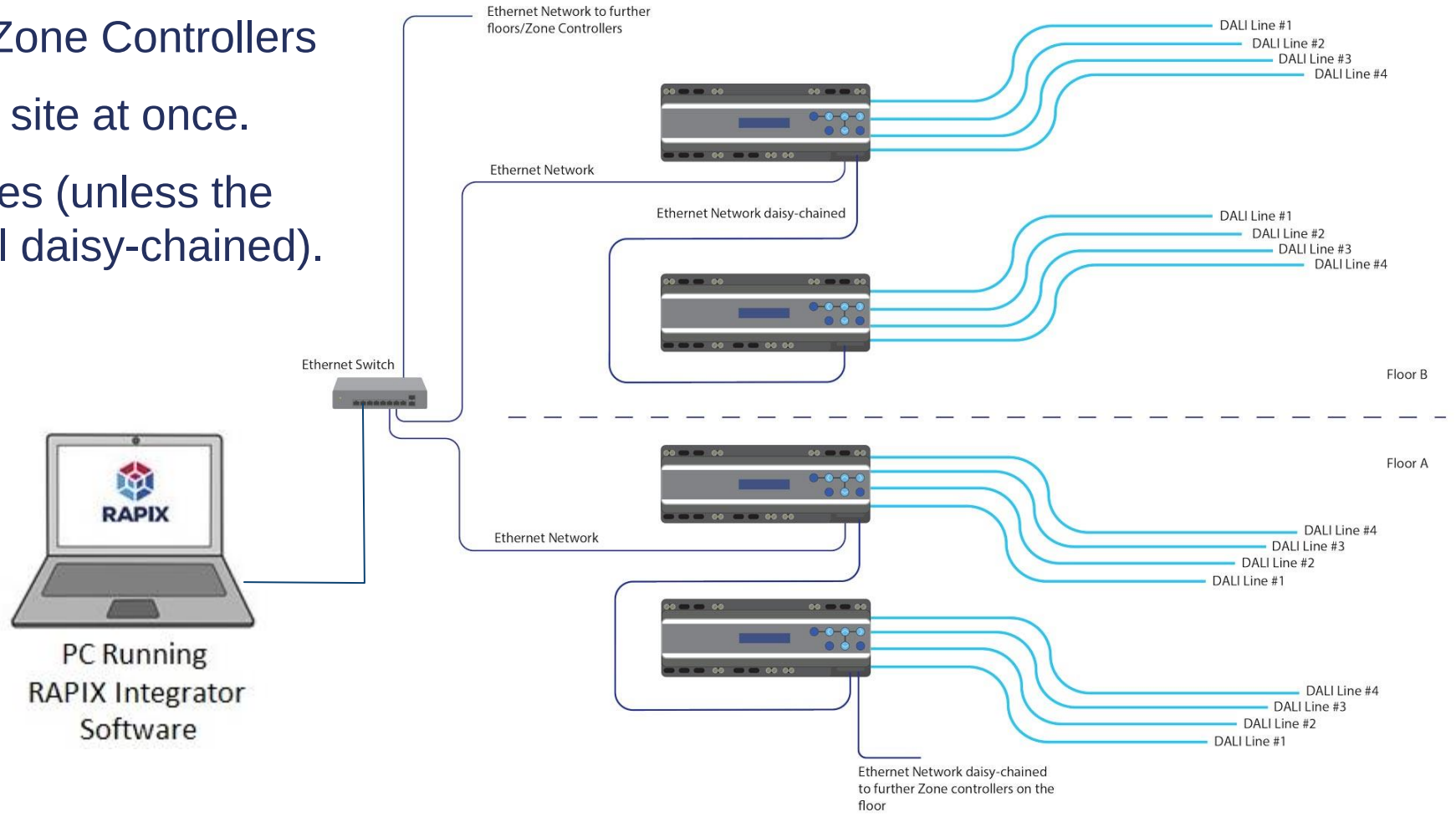
- Can do 4 DALI Lines at once
- Does not need networking infrastructure installed
  - **Not Required:** Ethernet switches.



CONNECTING TO DALI

Connecting with multiple Zone Controllers

- Can commission entire site at once.
- **Needs** Ethernet switches (unless the Zone Controllers are all daisy-chained).



ZONE CONTROLLERS

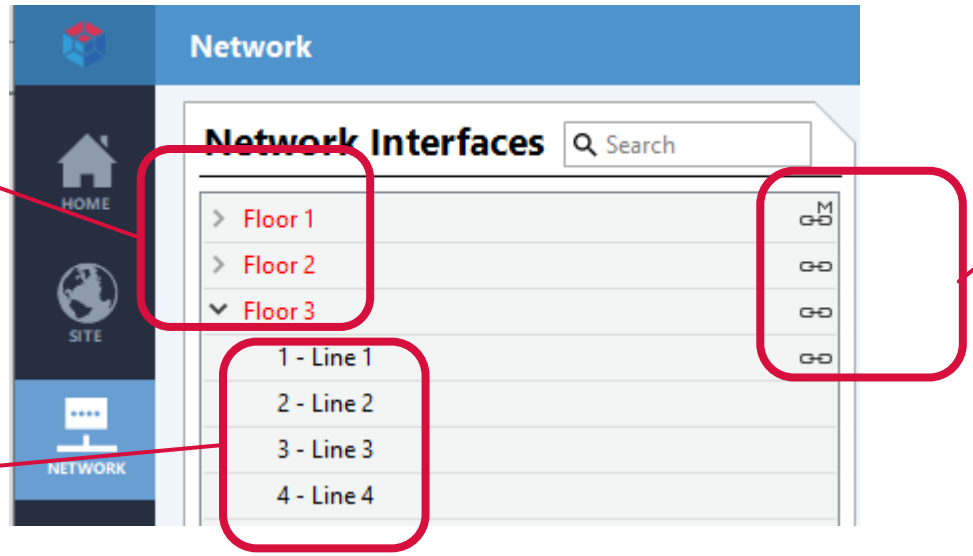
ZONE CONTROLLERS

- Zone Controllers perform a variety of functions:
  - Connecting DALI Lines into a single virtual network;
  - Provide an interface between RAPIX Integrator and the DALI Lines;
  - Scheduling;
  - Script (logic) execution;
  - Logging
    - See the “RAPIX Testing and Debugging” presentation for details;
  - Allows 3rd party to connect to RAPIX to control and monitor lights.

ZONE CONTROLLERS

Zone Controllers

DALI Lines



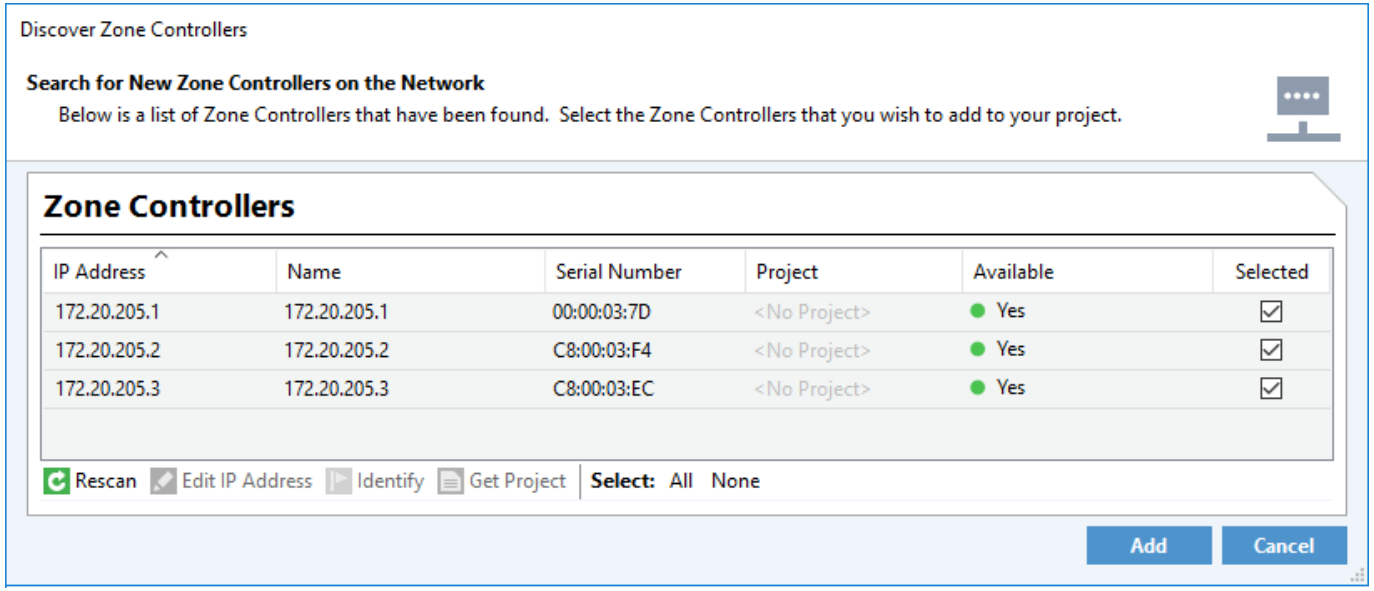
Connection Status

- Link icon shows that there is a connection
- M indicates “Master” Zone Controller

ZONE CONTROLLERS

Adding Zone Controllers to a project:

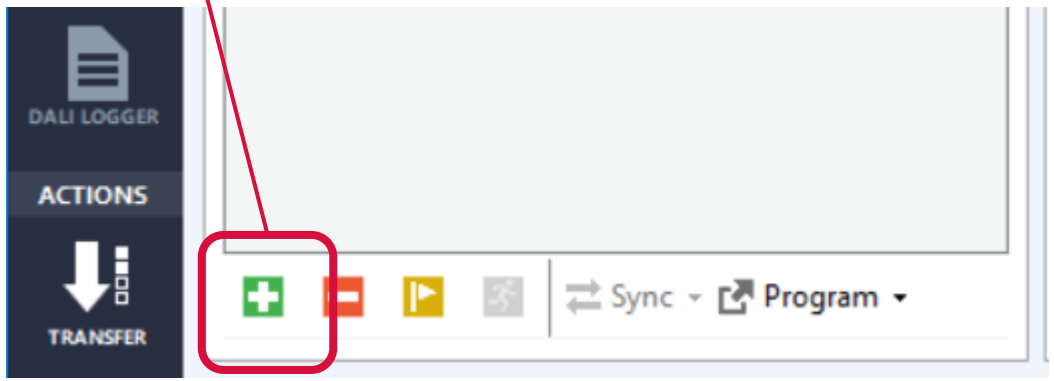
- RAPIX Integrator scans for Controllers on the local network when creating a new Project.
- Click **Add** to add selected Controllers to the Project
  - Can only add Controllers that do not have a project in them.



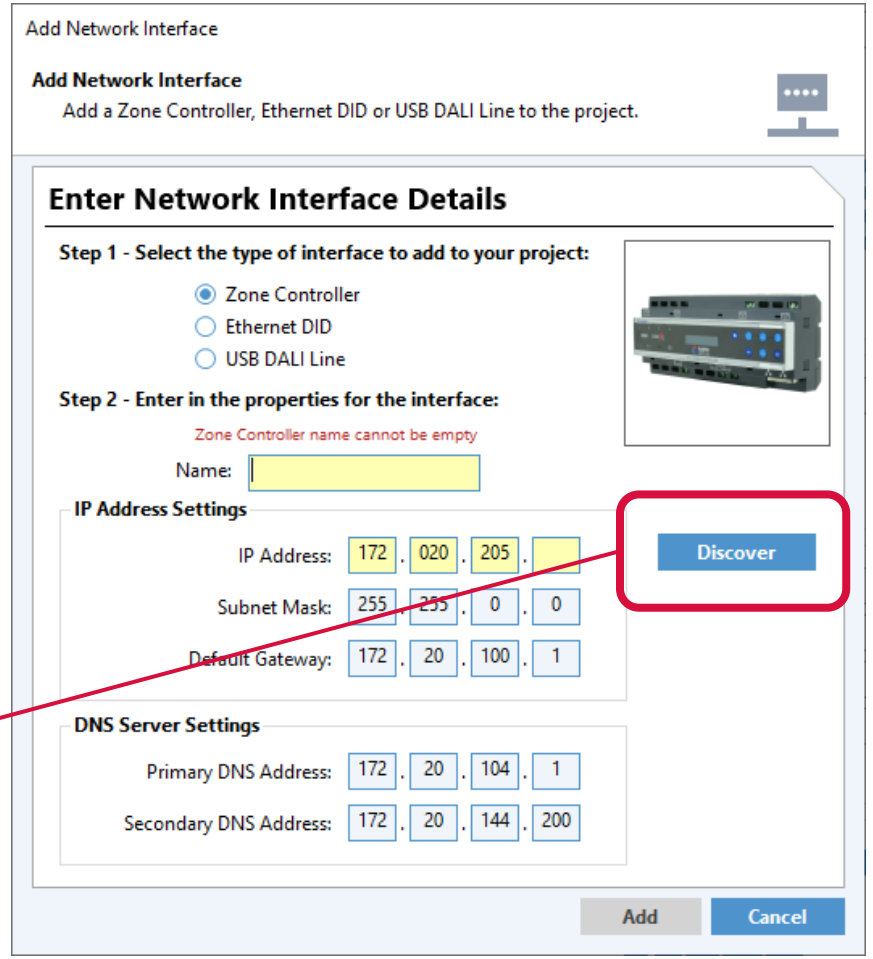
ZONE CONTROLLERS

Manually adding Zone Controllers to a project:

- 1. Click on the **Add** button



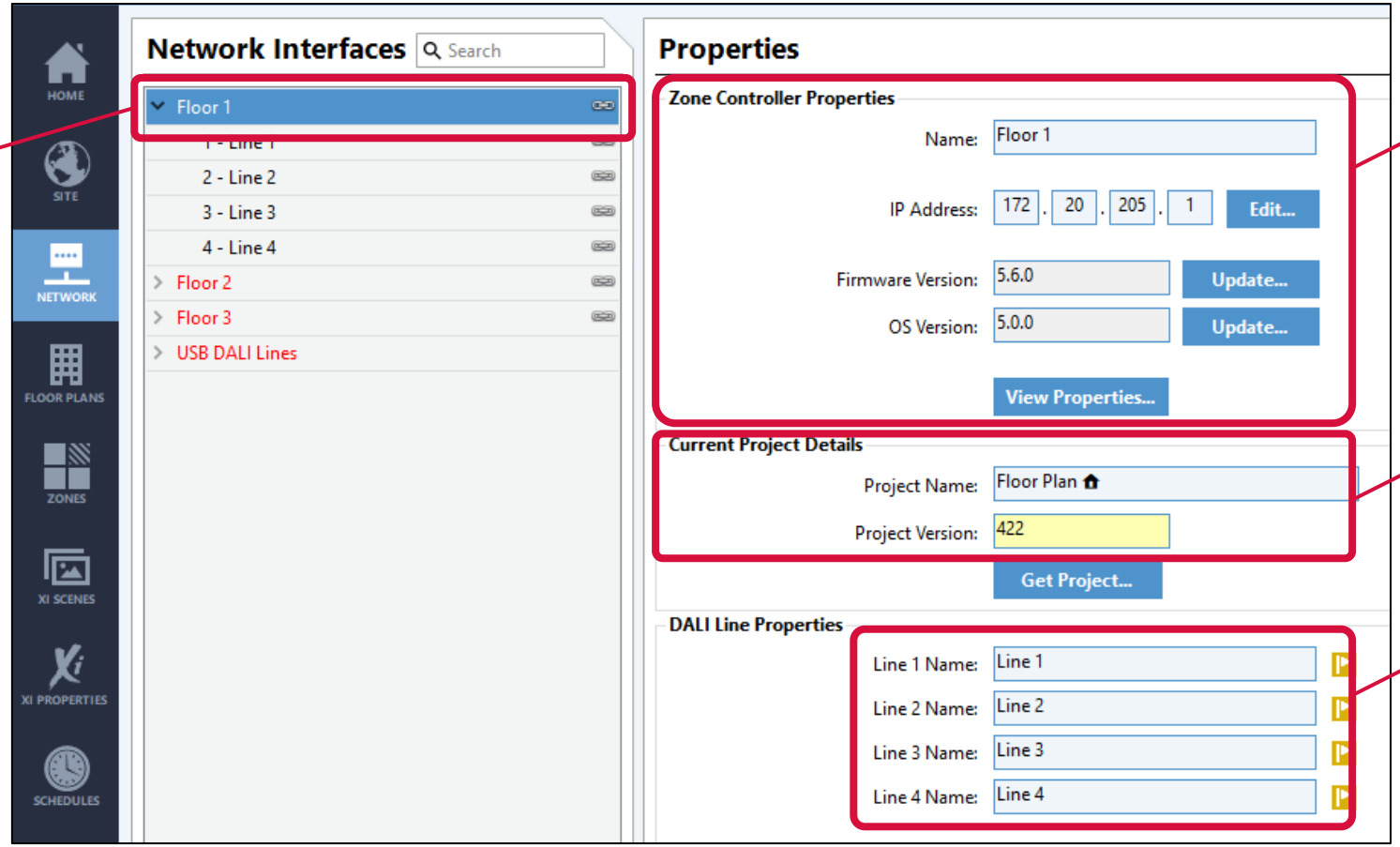
- 2. Enter details; or
  - Click on **Discover** button to scan for Controllers.



ZONE CONTROLLERS

Zone Controller Properties

Select Zone Controller



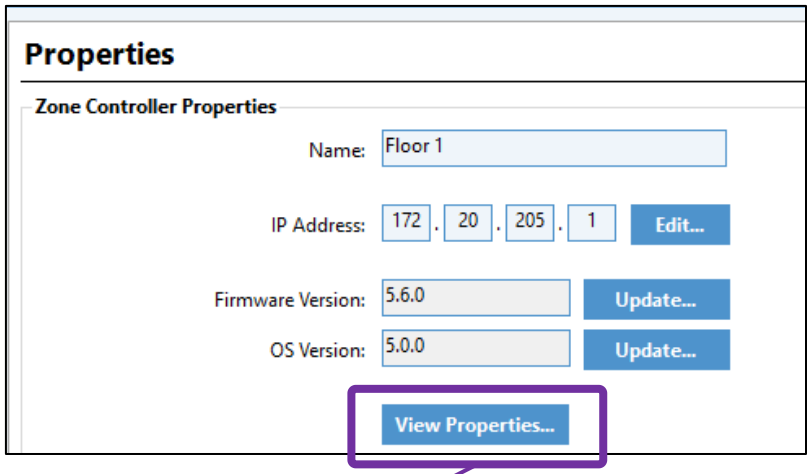
Selected Zone Controller basic properties

Selected Zone Controller project details

DALI Line names

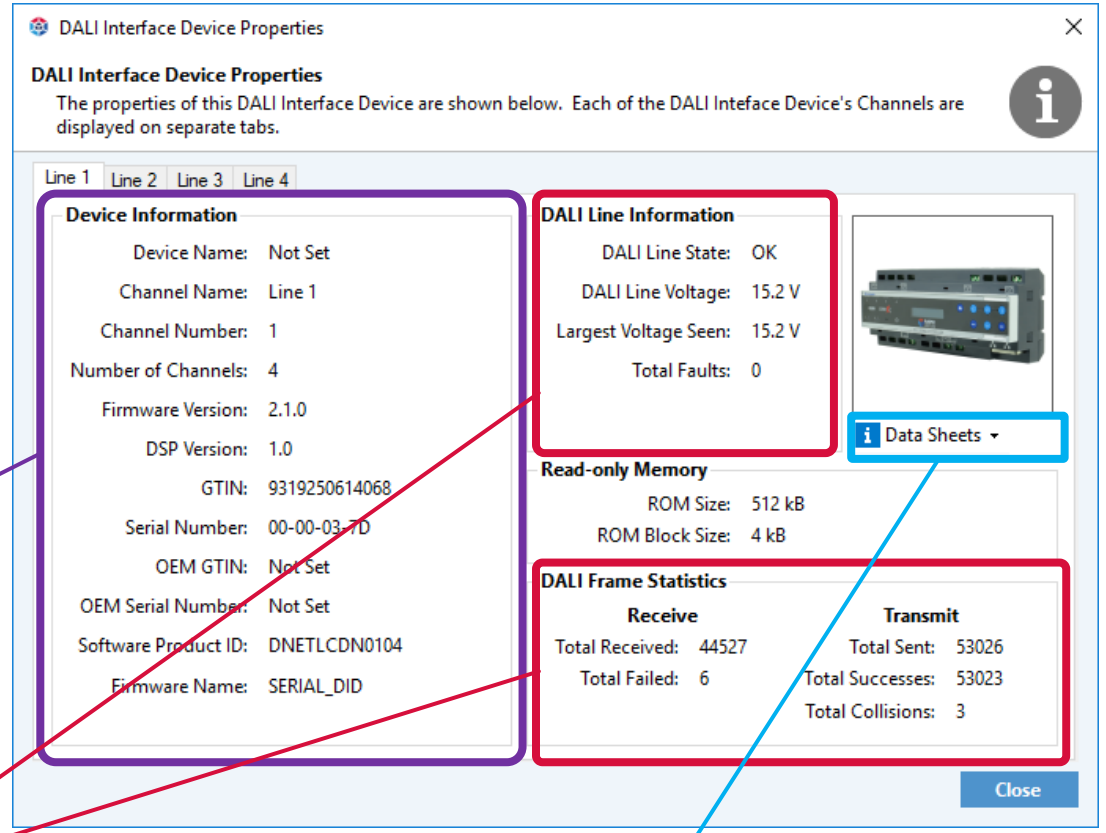
ZONE CONTROLLERS

Zone Controller Properties



Click for additional details

DALI Interface details



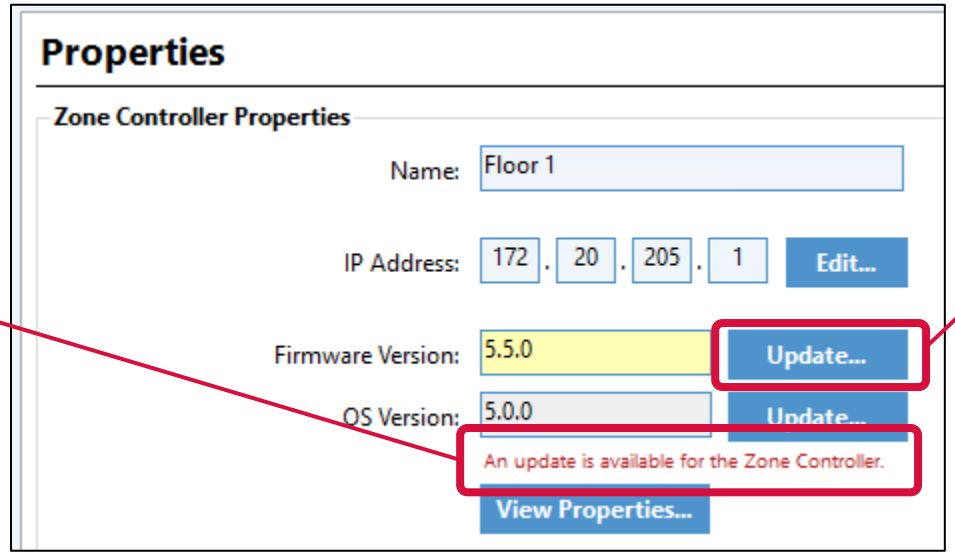
DALI Line details

Data sheets

ZONE CONTROLLERS

Updating Zone Controller firmware

1. Message will show that Zone Controller needs an update



2. Click on **Update**

3. Select firmware file

4. Wait for Controller to update and re-boot

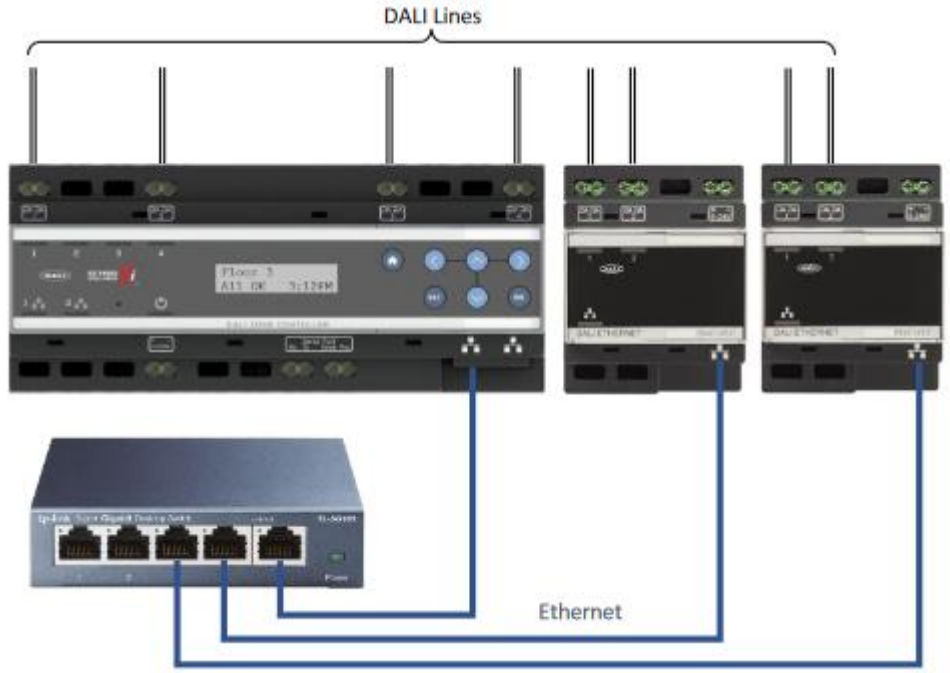
EDIDS

ADDING EXTRA DALI LINES

EDIDS

EDID

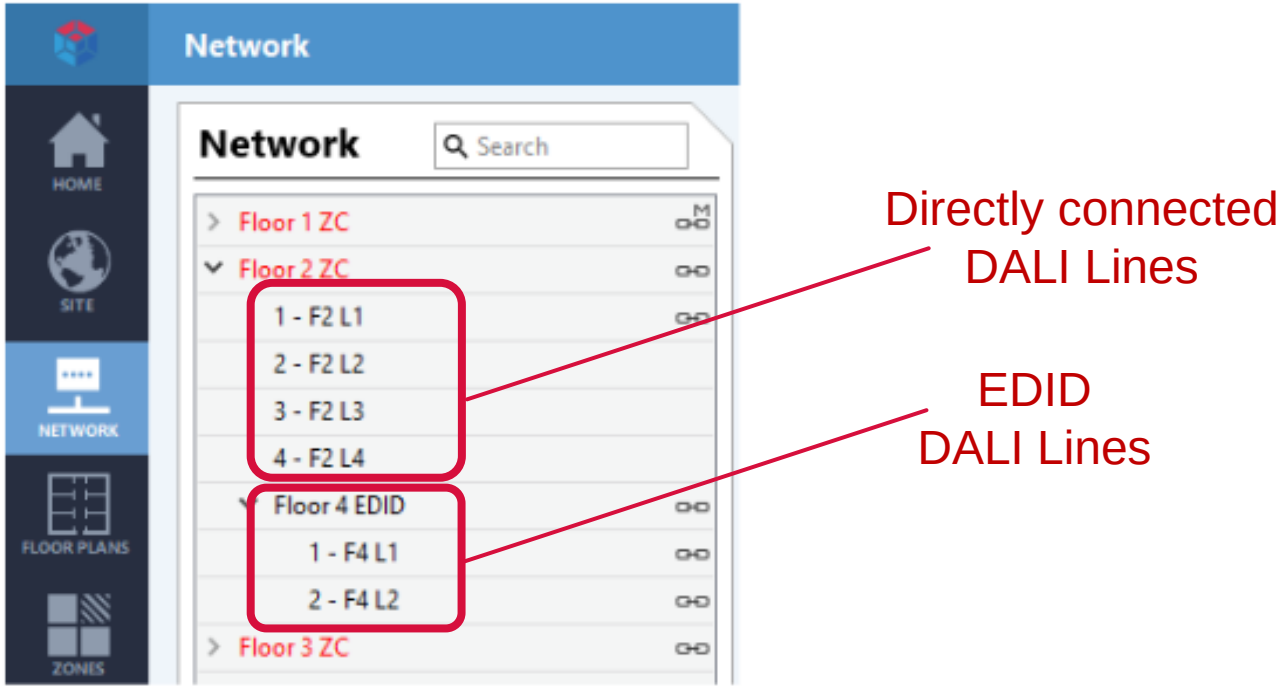
- Ethernet Dali Interface Device
- Interface to two DALI Lines
- Zone Controller can connect to two EDIDs
  - Enables use of up to 8 DALI Lines



EDIDS

Refer to Application Note for details

https://ozuno.com/wp-content/uploads/APN-RAPIX-020-Using-the-Ethernet-Interface-with-RAPIX-Zone-Controller.pdf



EXERCISE 1

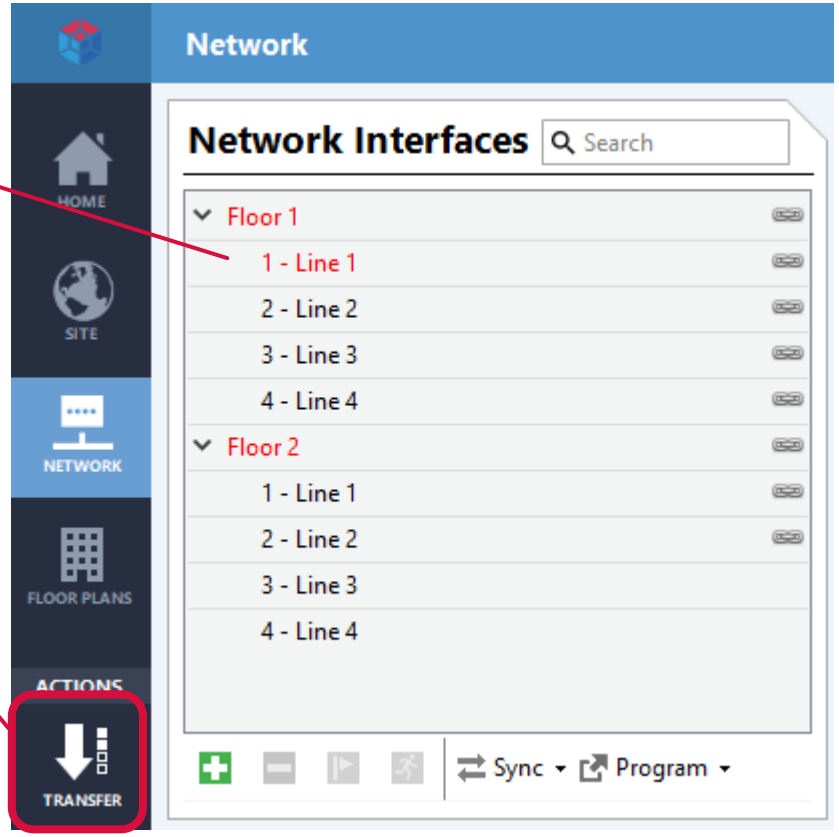
CREATING A PROJECT

PROJECT SYNCHRONISATION

PROJECT SYNCHRONISATION

- Red text shows that there is something different between database and live device.

- Click **Transfer** button to update devices
  1. Option to sync DALI Devices
  2. Transfer project to Zone Controllers.



RAPIX ZONES

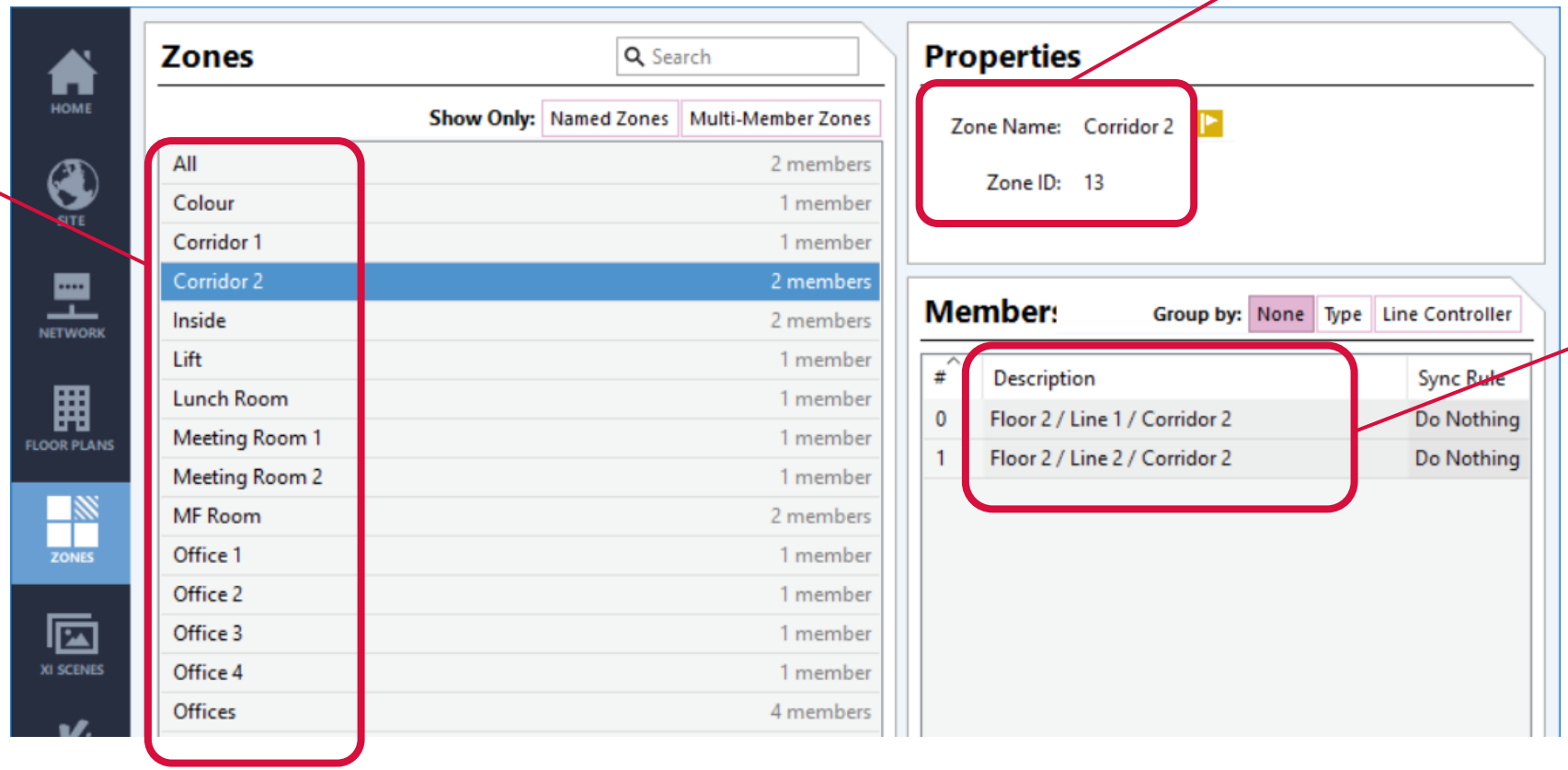
RAPIX ZONES

RAPIX Zones

- No standard DALI limitations:
  - Any number of Zones;
  - Any number of devices, Groups or Lines;
  - Can span DALI Lines.
- See RAPIX Introduction presentation for full details.

RAPIX ZONES

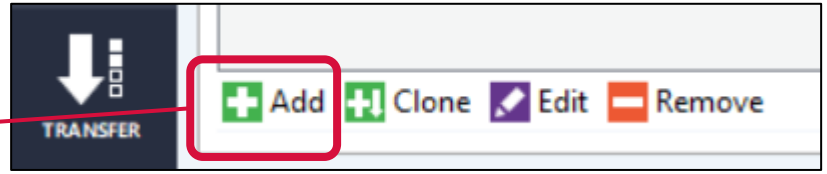
RAPIX Zone Editor

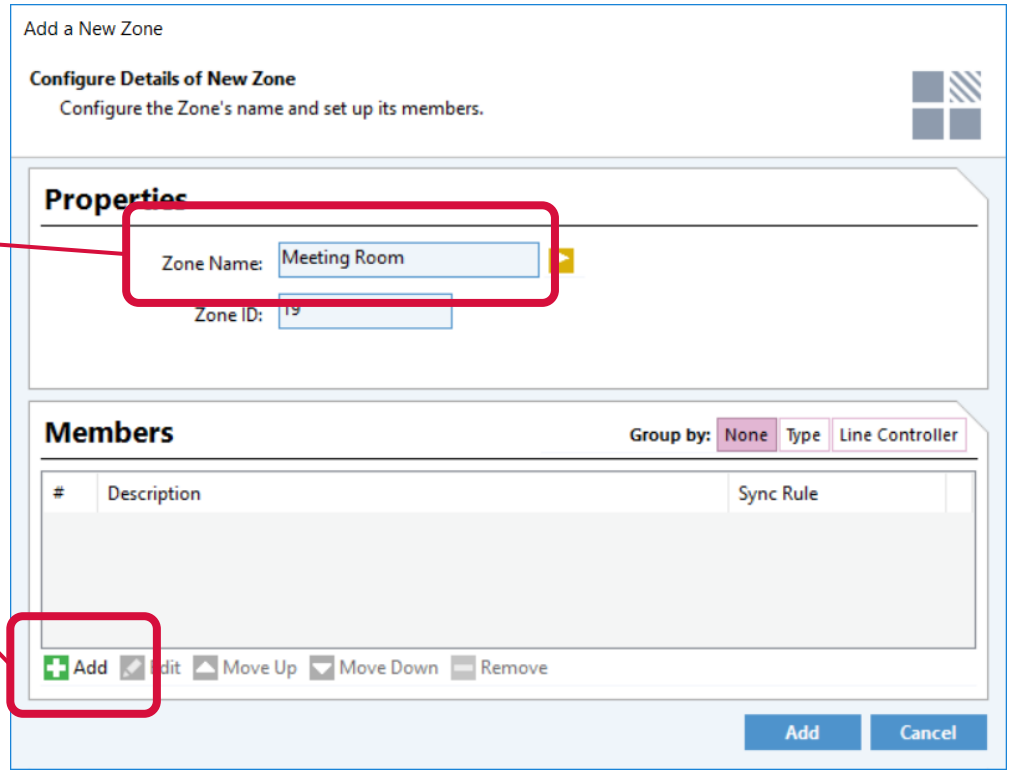


RAPIX ZONES

Adding RAPIX Zones

- 1. Click the **Add** button
  - Can also **Clone** an existing Zone
- 2. Enter a name
- 3. Click **Add** to add Zone members

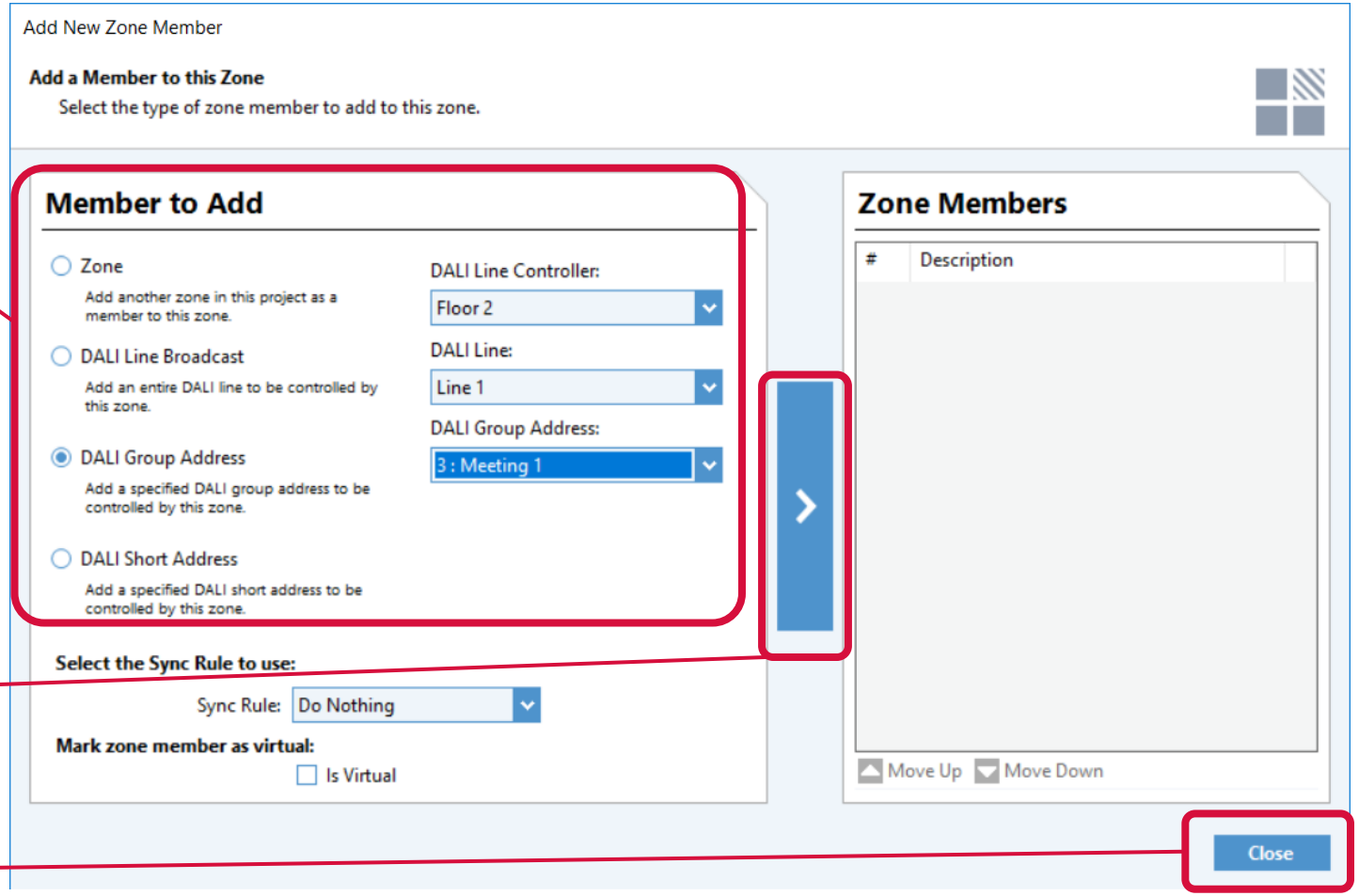




RAPIX ZONES

Adding RAPIX Zones

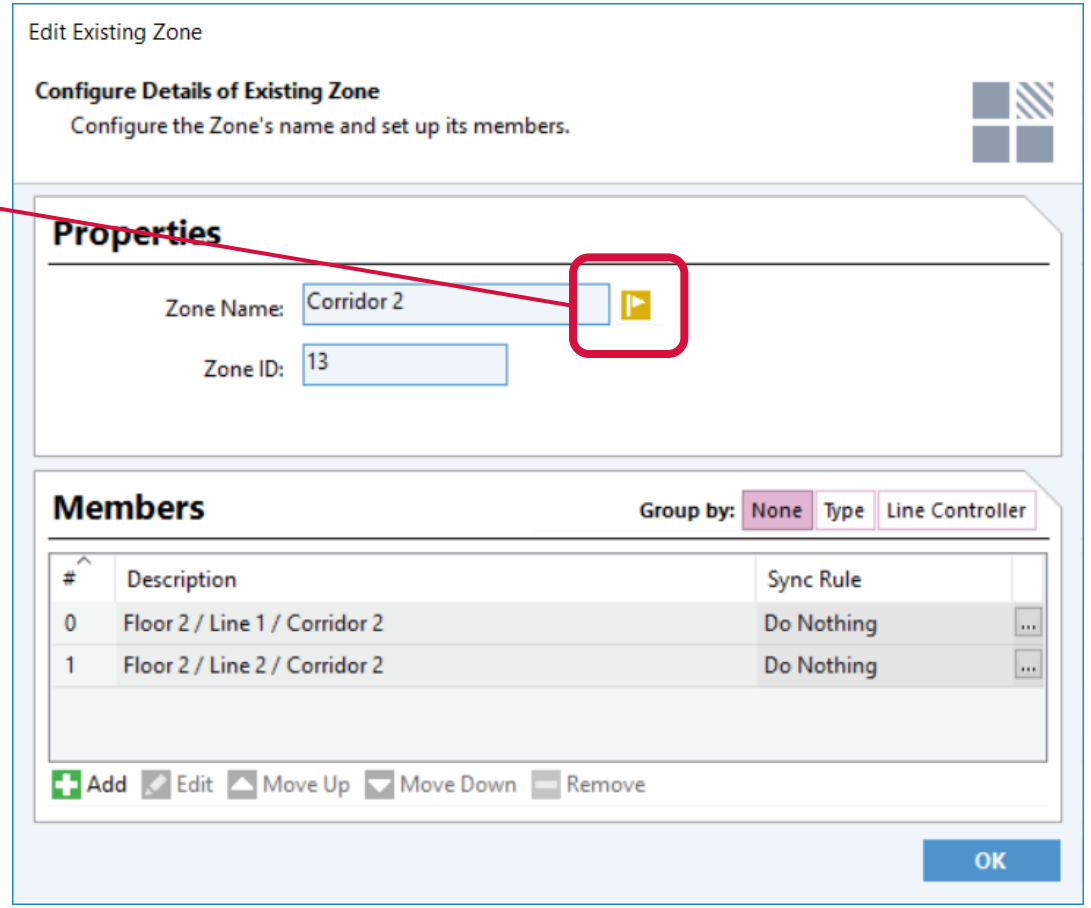
- 4. Select Zone member to add
  - Sub-Zone
  - DALI Line
  - DALI Group
  - DALI Short Address
- 5. Click Arrow to add member
- 6. Repeat as required
- 7. Click **Close** when complete.



RAPIX ZONES

RAPIX Zones – Testing

1. Click the identify button
2. All Zone members will flash.



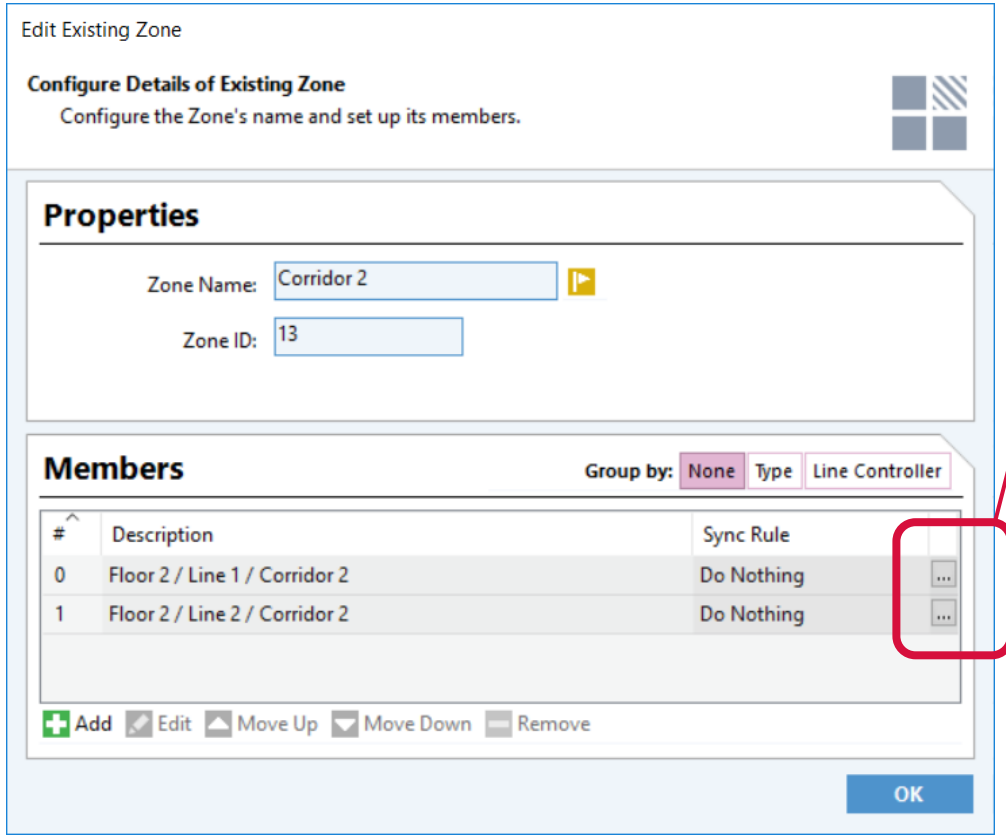
RAPIX ZONES

RAPIX Zones

- Synchronisation Rules:
  - Allows RAPIX Zone to be controlled by a non-RAPIX device
  - Device controls a single address;
  - Zone Controller synchronises the rest of the Zone:
    - All DALI Commands; or
    - Selected DALI Commands (e.g. RECALL MAX, OFF)
  - **Not needed very often.**

RAPIX ZONES

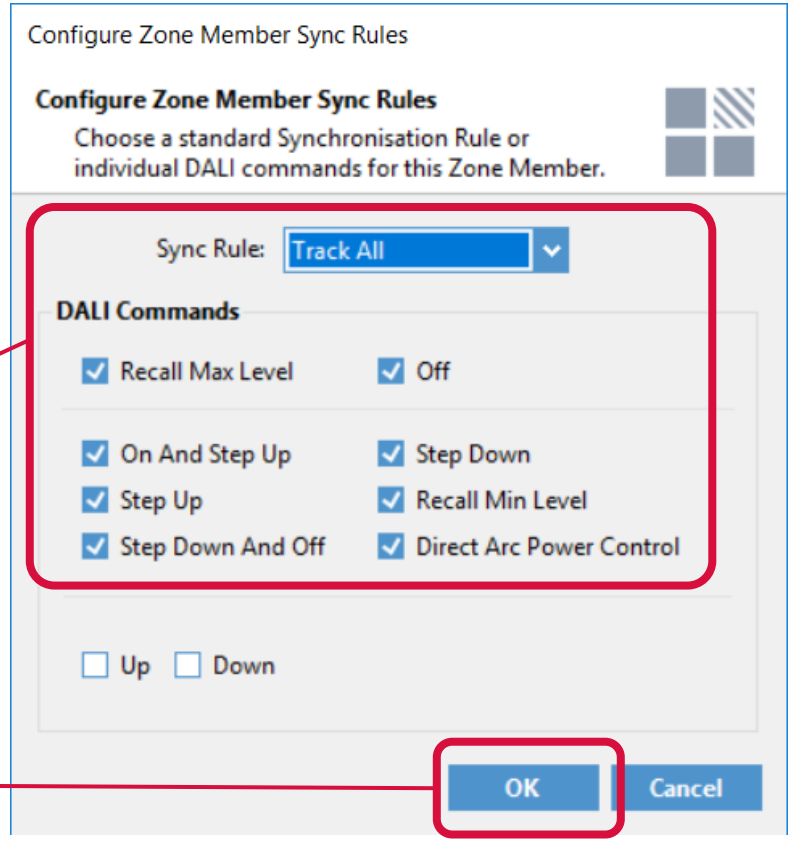
RAPIX Zones – Sync Rules



1. Click to add sync rule

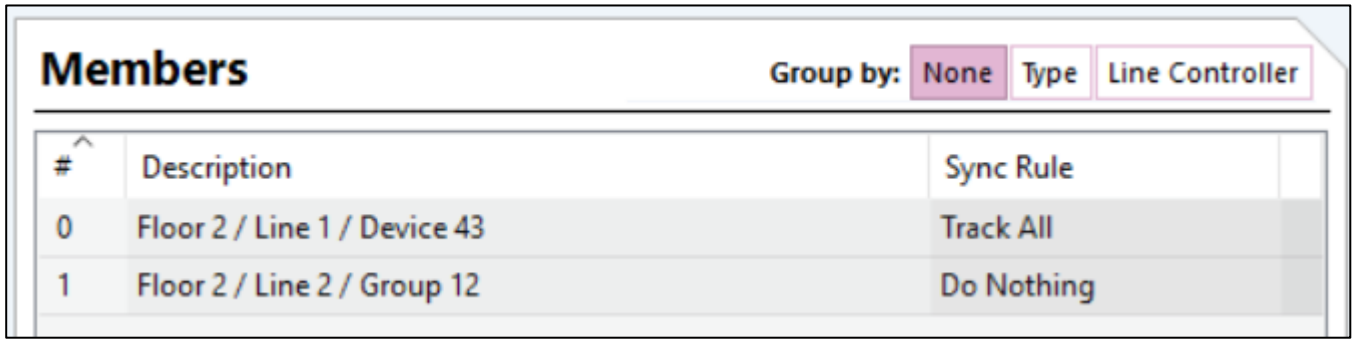
2. Select sync rule

3. Click OK



RAPIX ZONES

- Sync Rule Example
  - When the Zone Controller sees any DALI Command for Line 1 / Short Address 43, it will send the same DALI Command to Line 2 / Group 12.

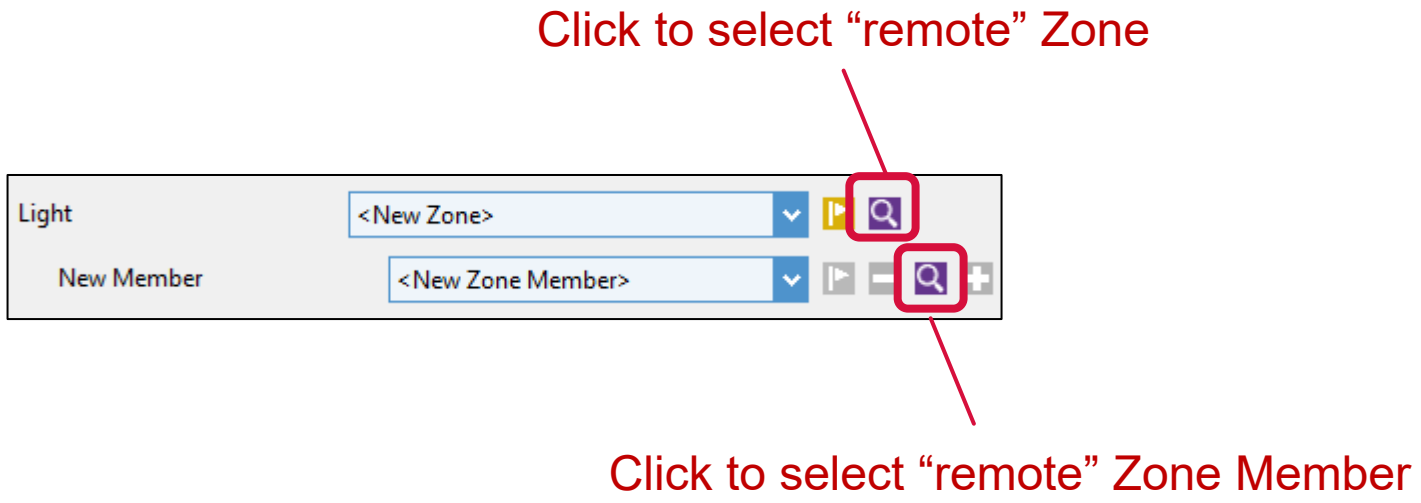


Members Group by: None | Type | Line Controller

#	Description	Sync Rule
0	Floor 2 / Line 1 / Device 43	Track All
1	Floor 2 / Line 2 / Group 12	Do Nothing

RAPIX ZONES

Using RAPIX Zones in eHub Templates



A “local” Zone or member is on the same DALI Line as the eHub.

A “remote” Zone or member is on a different DALI Line than the eHub.

RAPIX SCENES

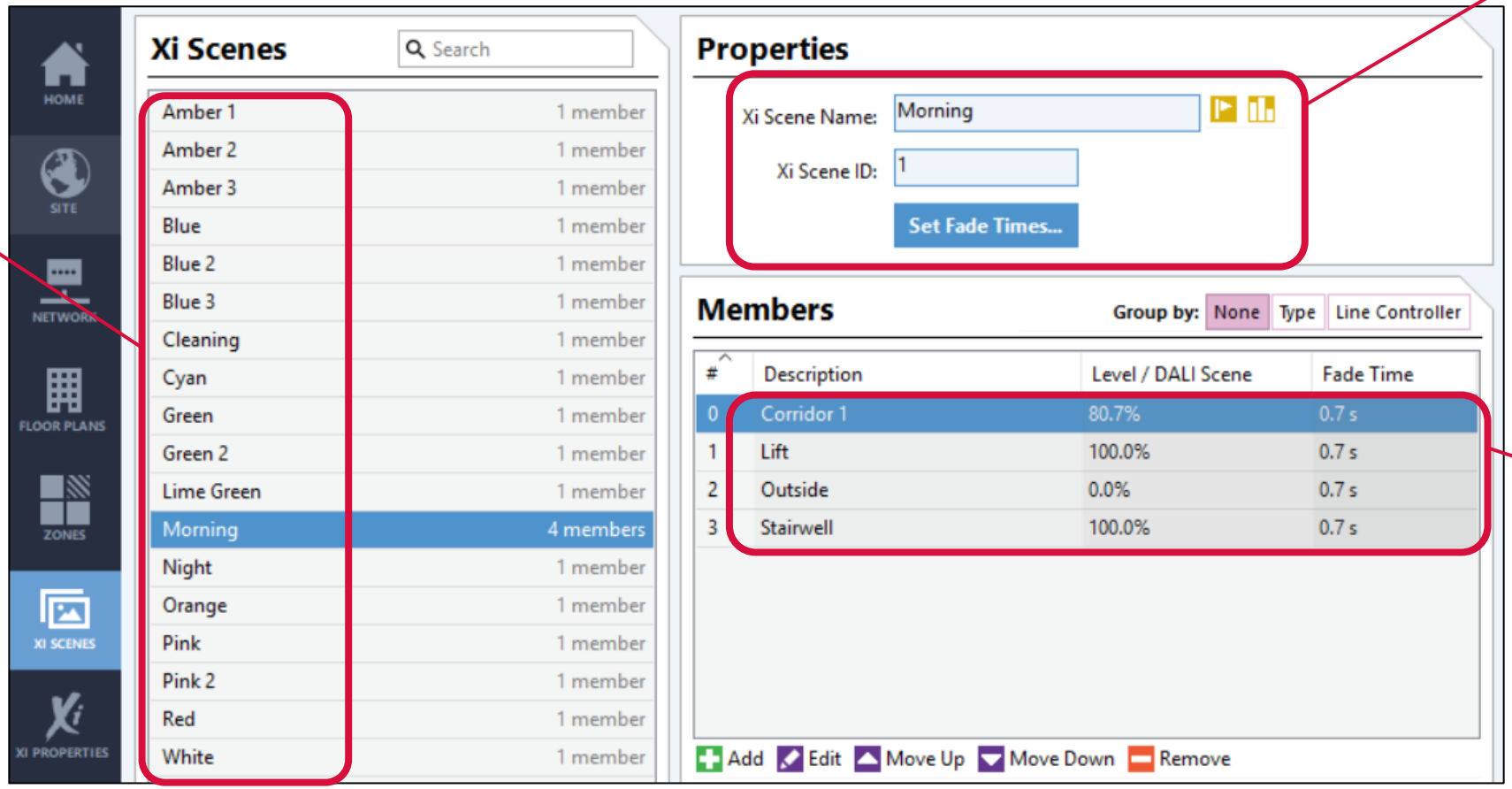
RAPIX SCENES

RAPIX Scenes

- Sometimes called “Xi Scenes”
- No standard DALI limitations:
  - Any number of Scenes;
  - Any number of devices, Groups or Lines;
  - Can span DALI Lines;
  - More flexible fade times.
- See RAPIX Introduction presentation for full details.

RAPIX SCENES

RAPIX Scene Editor



Scenes

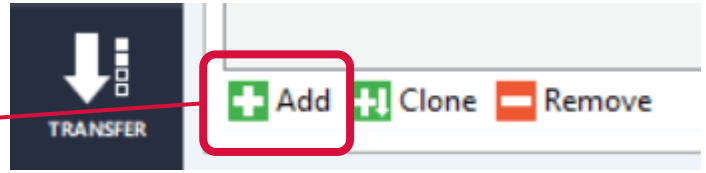
Selected Scene Details

Scene Members, Levels & Fade Times

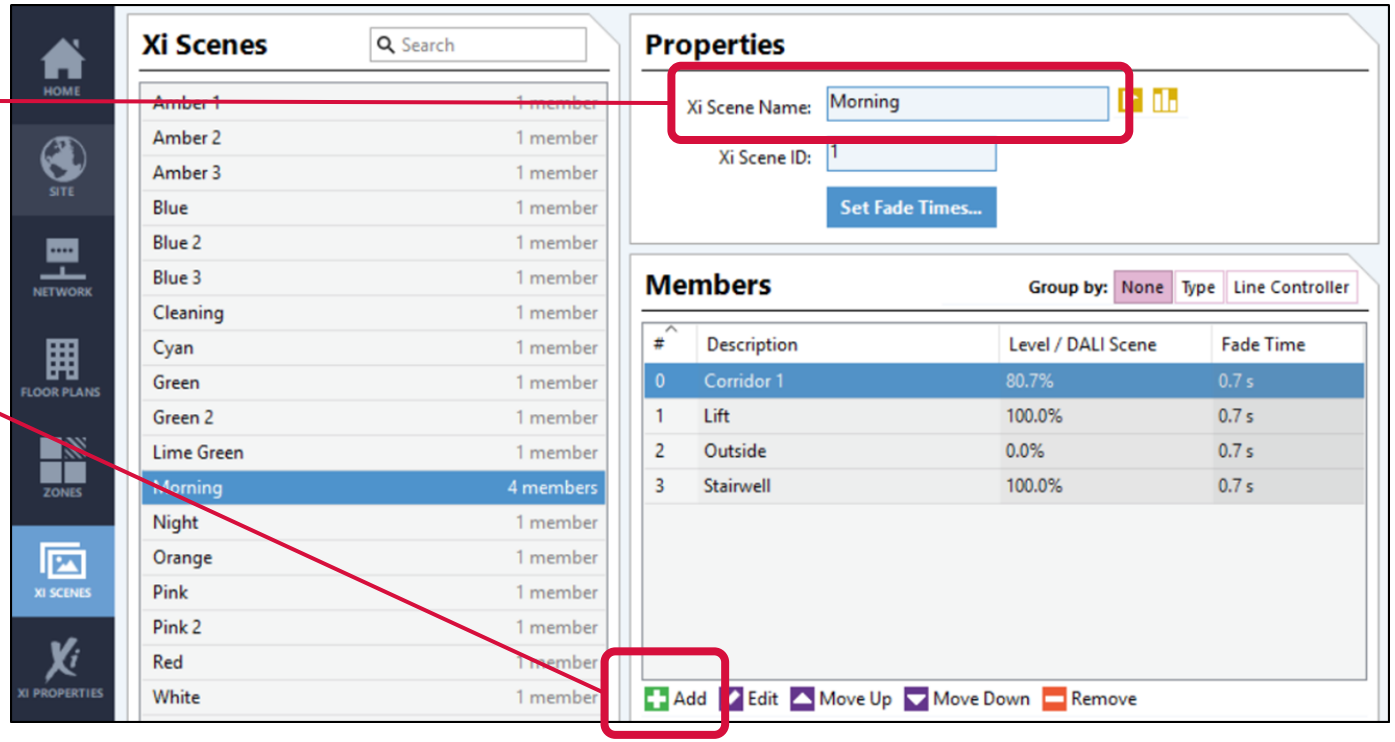
RAPIX SCENES

Adding RAPIX Scenes

- 1. Click the **Add** button



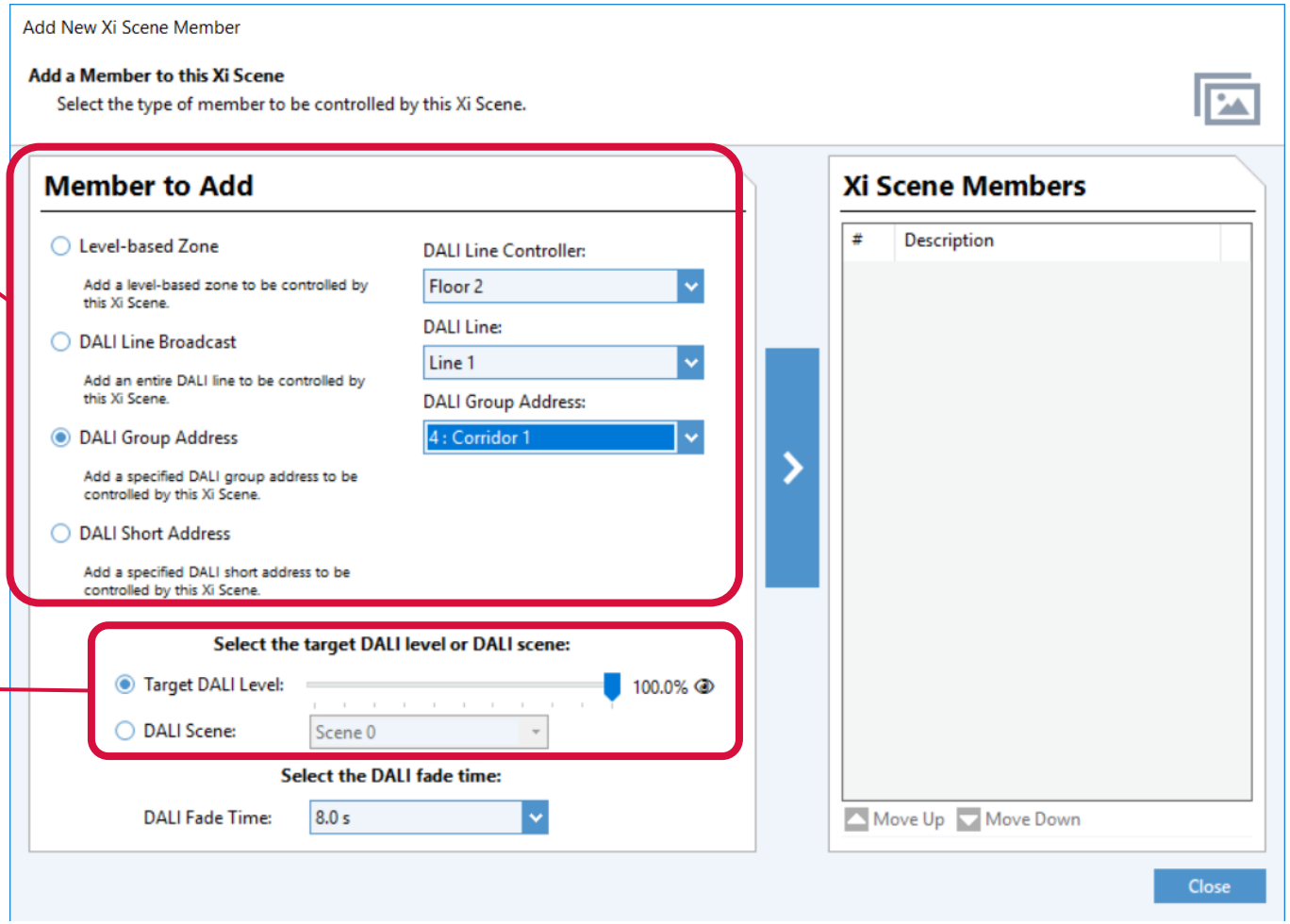
- 2. Enter a name
- 3. Click **Add** to add Scene members.



RAPIX SCENES

Adding RAPIX Scenes

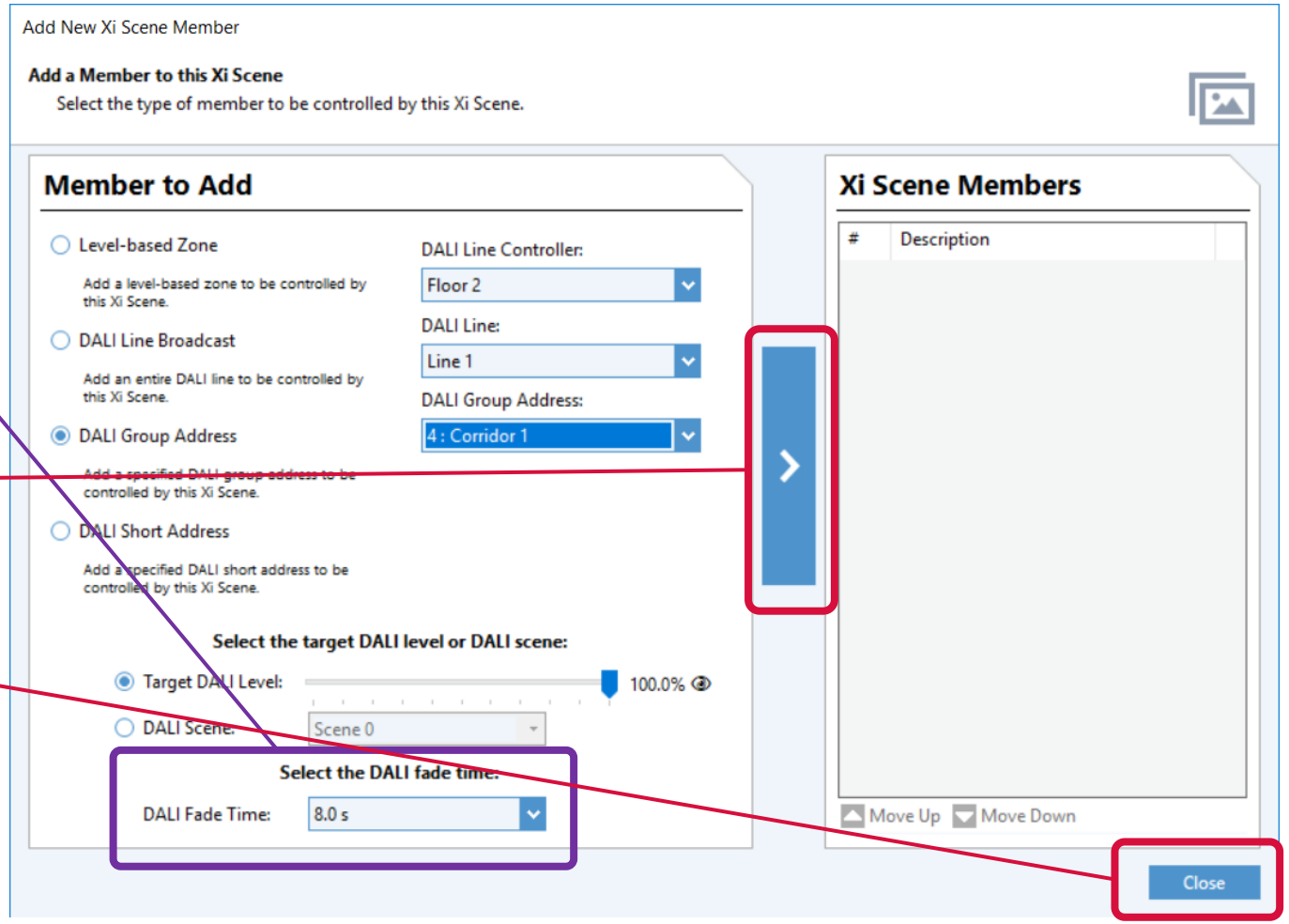
- 4. Select Scene member to add
  - Sub-Zone
  - DALI Line
  - DALI Group
  - DALI Short Address
- 5. Select level
  - %; OR
  - DALI Scene.



RAPIX SCENES

Adding RAPIX Scenes

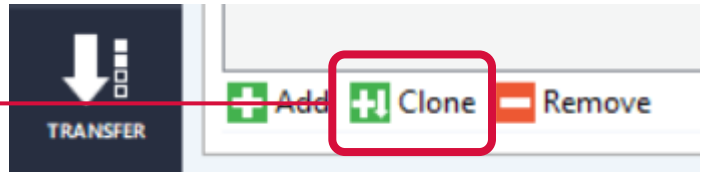
- 6. Select Fade Time
- 7. Click Arrow to add member
- 8. Repeat as required
- 9. Click **Close** when complete.



RAPIX SCENES

Adding RAPIX Scenes

- If you need a Scene that is very similar to an existing one:
  - 1. Select the Scene
  - 2. Click the **Clone** button
  - 3. Edit the new Scene.



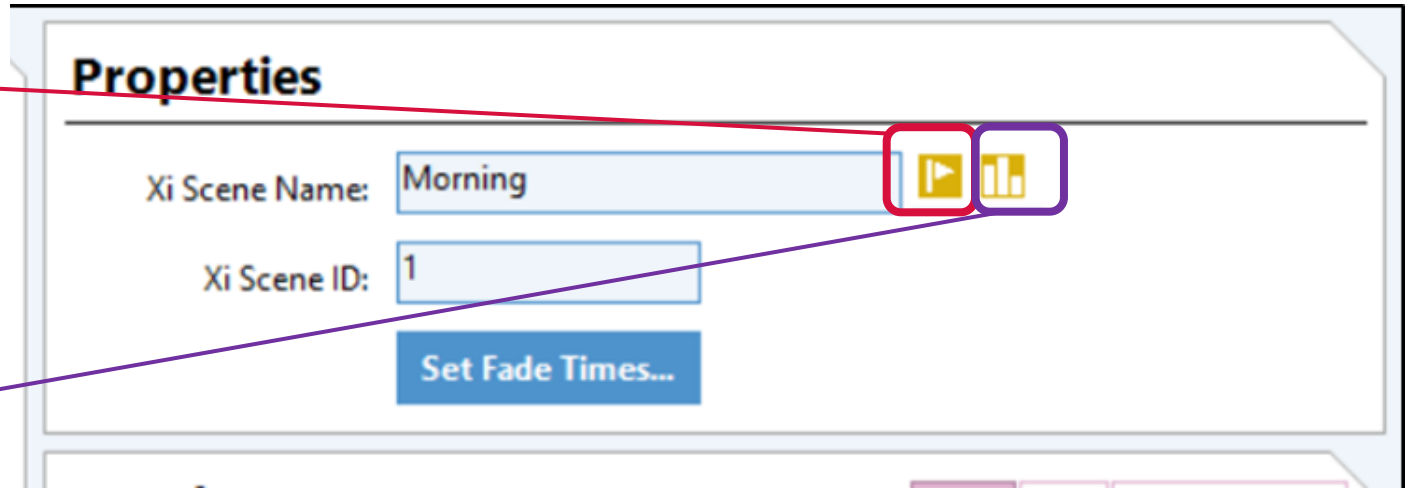
If needed, the order of the Scene members can be changed to create the desired visual effect.

RAPIX SCENES

RAPIX Scenes – Testing

- Option 1
  1. Click the identify button
  2. All Scene members will flash.

- Option 2
  1. Click the Set button
  2. The Scene will be set.



RAPIX SCENES

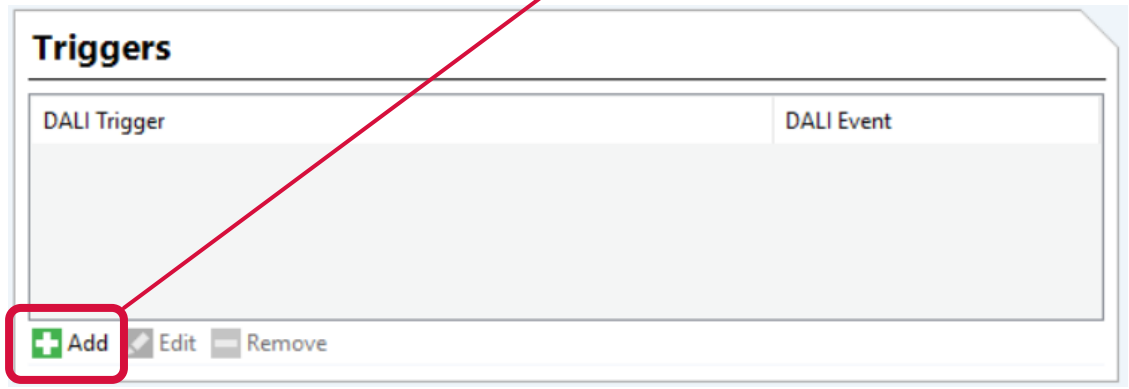
RAPIX Scenes

- Triggers
  - Allows a RAPIX Scene to be set by a non-RAPIX device;
  - Device controls a single address;
  - Zone Controller controls the Scene;
  - **Not needed very often.**

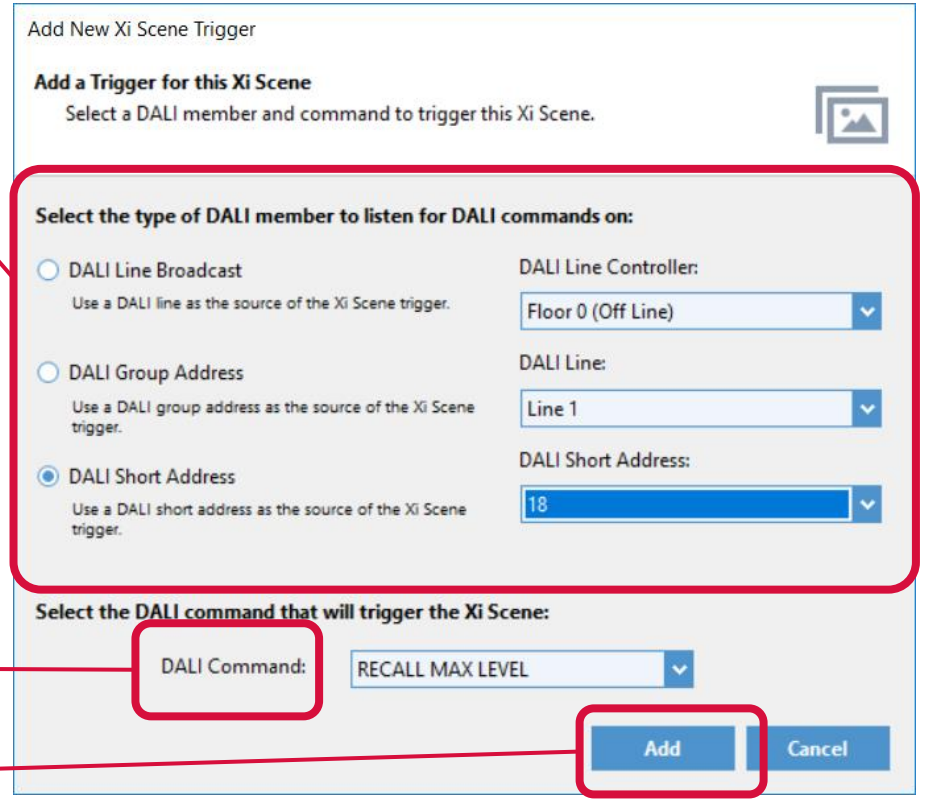
RAPIX SCENES

RAPIX Scene Triggers

1. Click to add Scene trigger



2. Select DALI Address



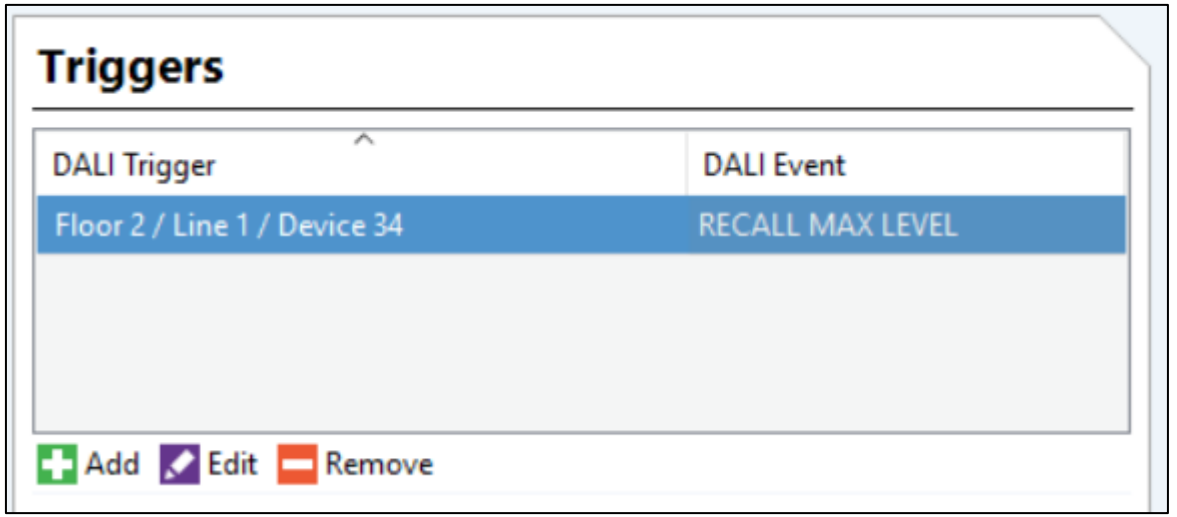
3. Select DALI Command

4. Click Add

RAPIX SCENES

Scene Trigger Example

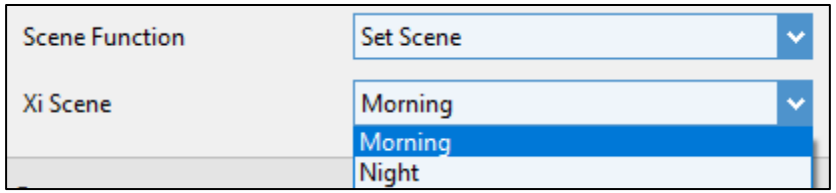
- When the Zone Controller observes Device 34 switched on, it will set the Scene



RAPIX SCENES

Using RAPIX Scenes in eHub Templates

- 1. Create RAPIX Scene in Scene Editor
- 2. Select the Scene in the Template



EXERCISE 2

RAPIX ZONES AND SCENES

RAPIX XI

OPERATING PROPERTIES

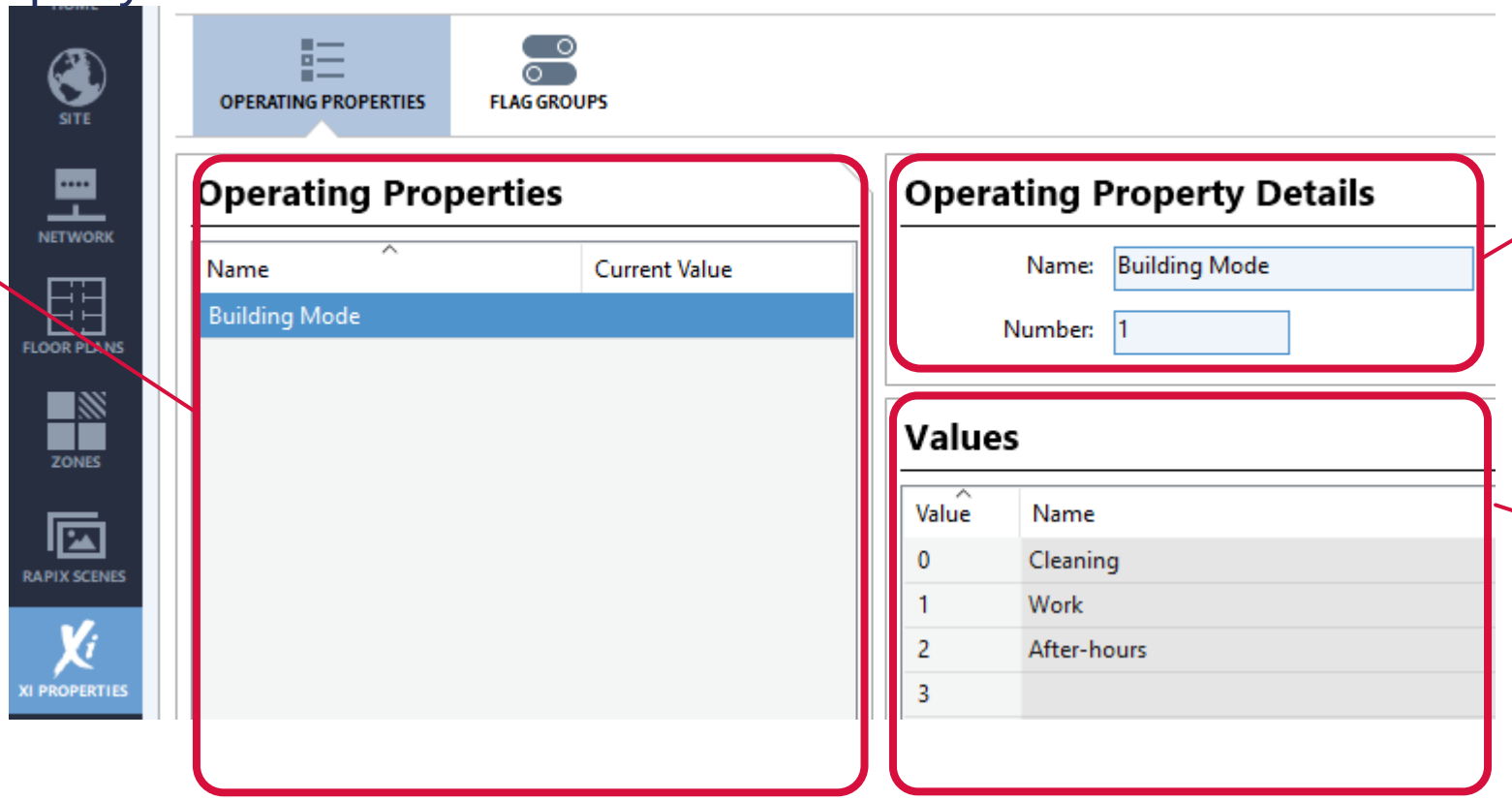
RAPIX XI

Operating Properties

- An Operating Property is used to represent an aspect of the state of the system;
- Each Operating Property has a “value” (0 – 255).
- Example:
  - “Building Occupancy” Operating Property, with values:
    - 0: “Work Hours”
    - 1: “After-Hours”
    - 2: “Cleaning”
- See the RAPIX Introduction presentation for more details.

RAPIX XI

Operating Property Editor



Operating Properties

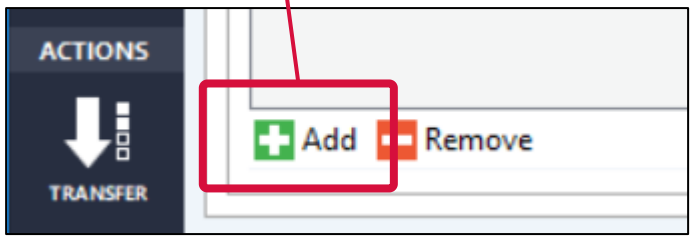
Selected Operating Property Details

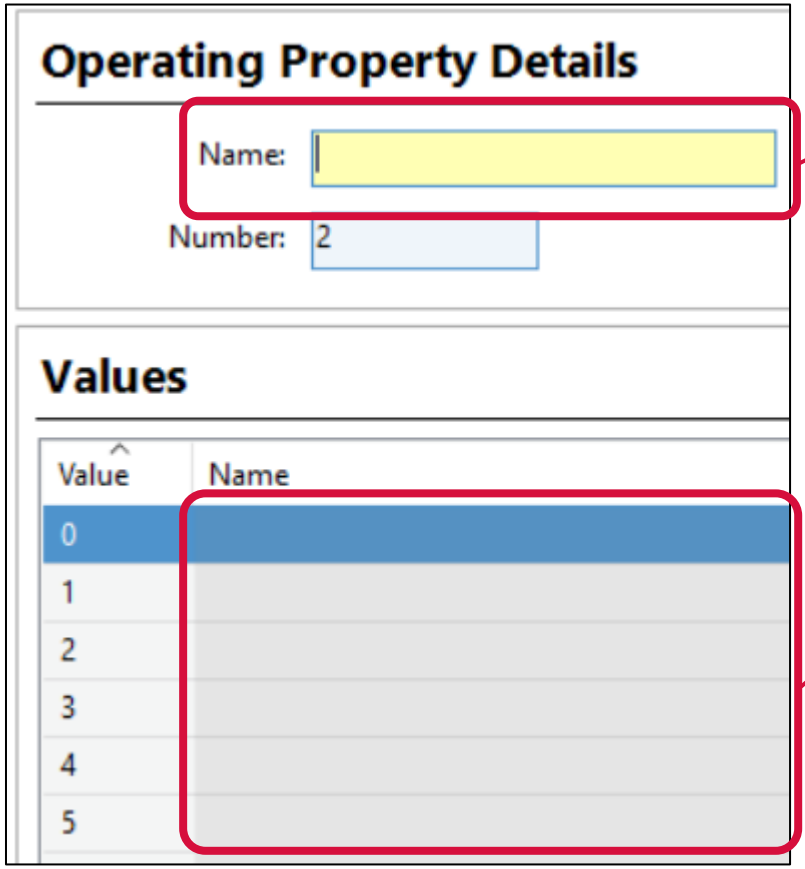
Selected Operating Property Values

RAPIX XI

Adding an Operating Property

1. Click the **Add** button



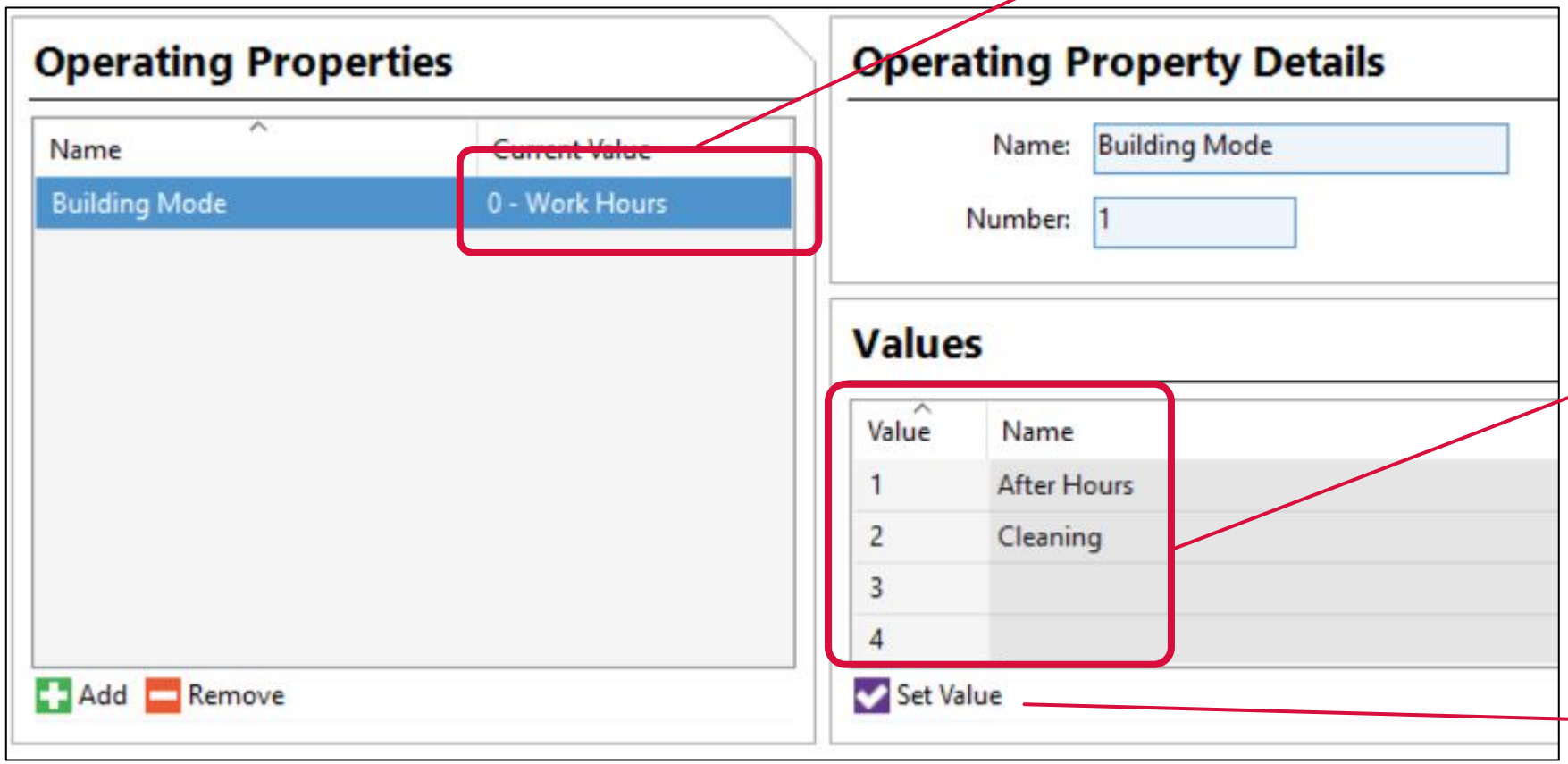


2. Enter the Operating Property name

3. Enter names for Values as required

RAPIX XI

Testing an Operating Property



Current Operating Property value

To set Operating Property value:

1. Select value
2. Click **Set Value**

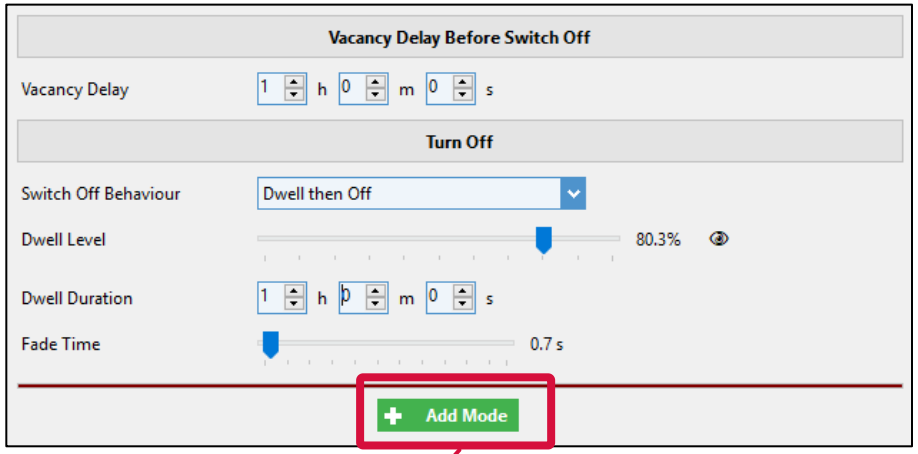
RAPIX XI

Using Operating Properties for eHub Template “mode” selection

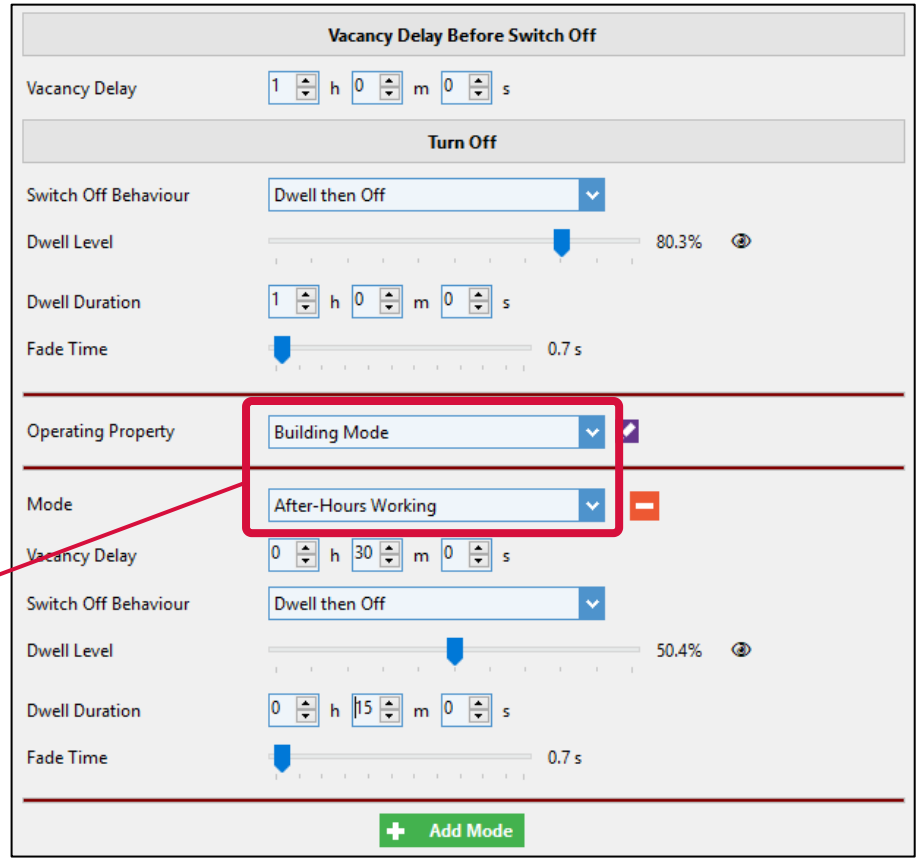
- Template can change behavior based on an Operating Property value
- For example, a motion sensor may need different settings based on:
  - Operating Property “Building Mode” = “Work Hours”
    - Vacancy Delay = 1 hour
    - Dwell Level = 80%
    - Dwell Duration = 1 hour
  - Operating Property “Building Mode” = “After Hours”
    - Vacancy Delay = 30 minutes
    - Dwell Level = 50%
    - Dwell Duration = 15 minutes.

RAPIX XI

Using Operating Properties for eHub Template “mode” selection



1. Click the **Add Mode** button



2. Select the Operating Property and Value

Default Settings

3. Settings when in the selected mode

RAPIX XI

Operating properties can be set using:

- Buttons
  - e.g. “Zone and Xi Timer” template
- Dry Contacts
  - e.g. “Set Xi Operating Property” template
- Schedules
  - See Schedule section of this presentation
- On power-up
  - e.g. using the “Power-up Action” template.

RAPIX XI

FLAGS

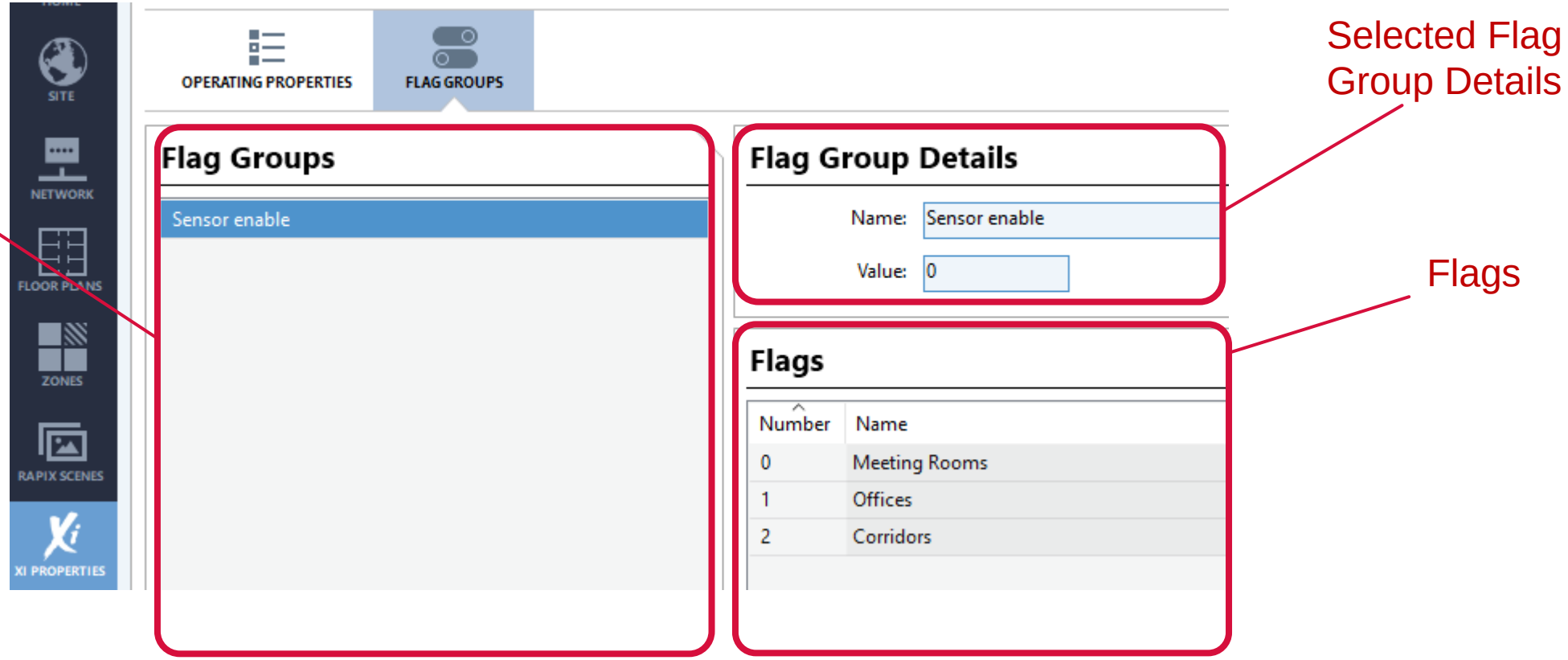
RAPIX XI

Flags

- A Flag is used to represent an aspect of the state of the system.
- Flags are arranged into groups.
- Each Flag has a “value”:
  - Set; or
  - Clear.
- Flags are generally used to enable or disable a system function, for example:
  - “Sensor Enable” Flag Group, with Flags:
    - “Meeting Room 1A Sensors”
    - “Meeting Room 1B Sensors”
- See the RAPIX Introduction presentation for more details

RAPIX XI

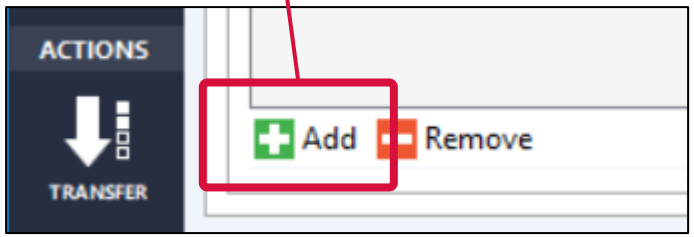
Flag Editor

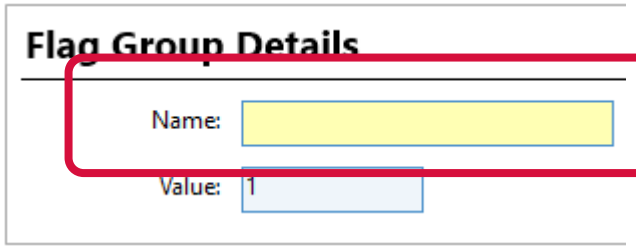


RAPIX XI

Adding a Flag

1. Click the **Add** button to add a Flag Group



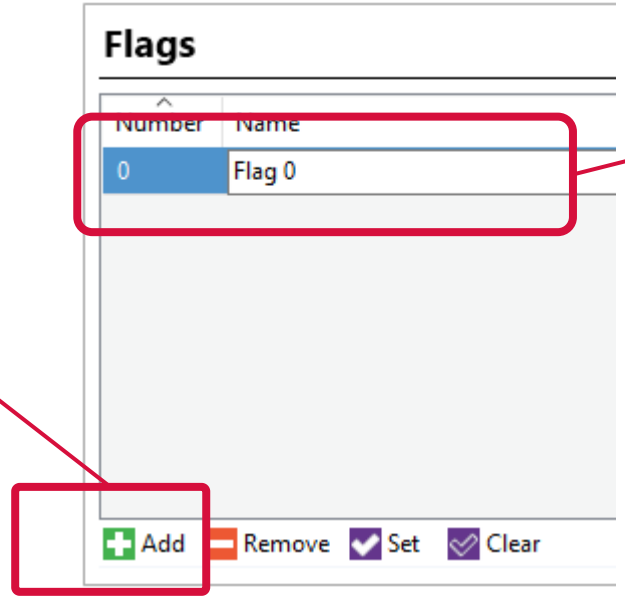


2. Enter the Flag Group name

RAPIX XI

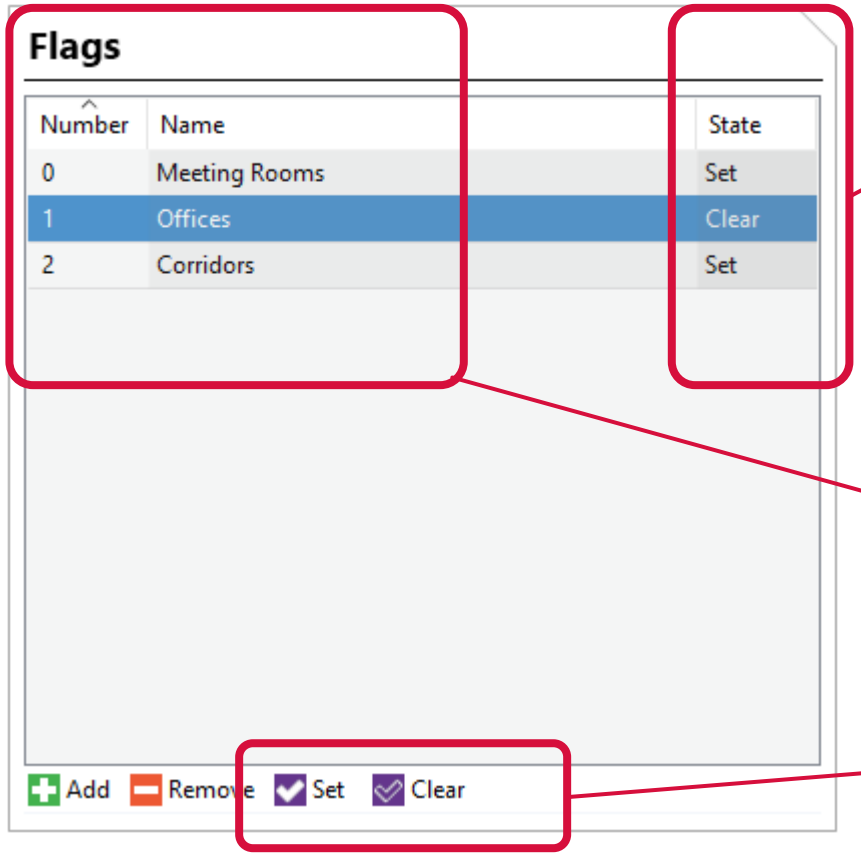
Adding a Flag

3. Click the **Add** button to add a Flag to the Group



4. Click, then enter the Flag name

Testing a Flag



Current Flag state

To set Flag state:

1. Select Flag

2. Click **Set** or **Clear**

RAPIX XI

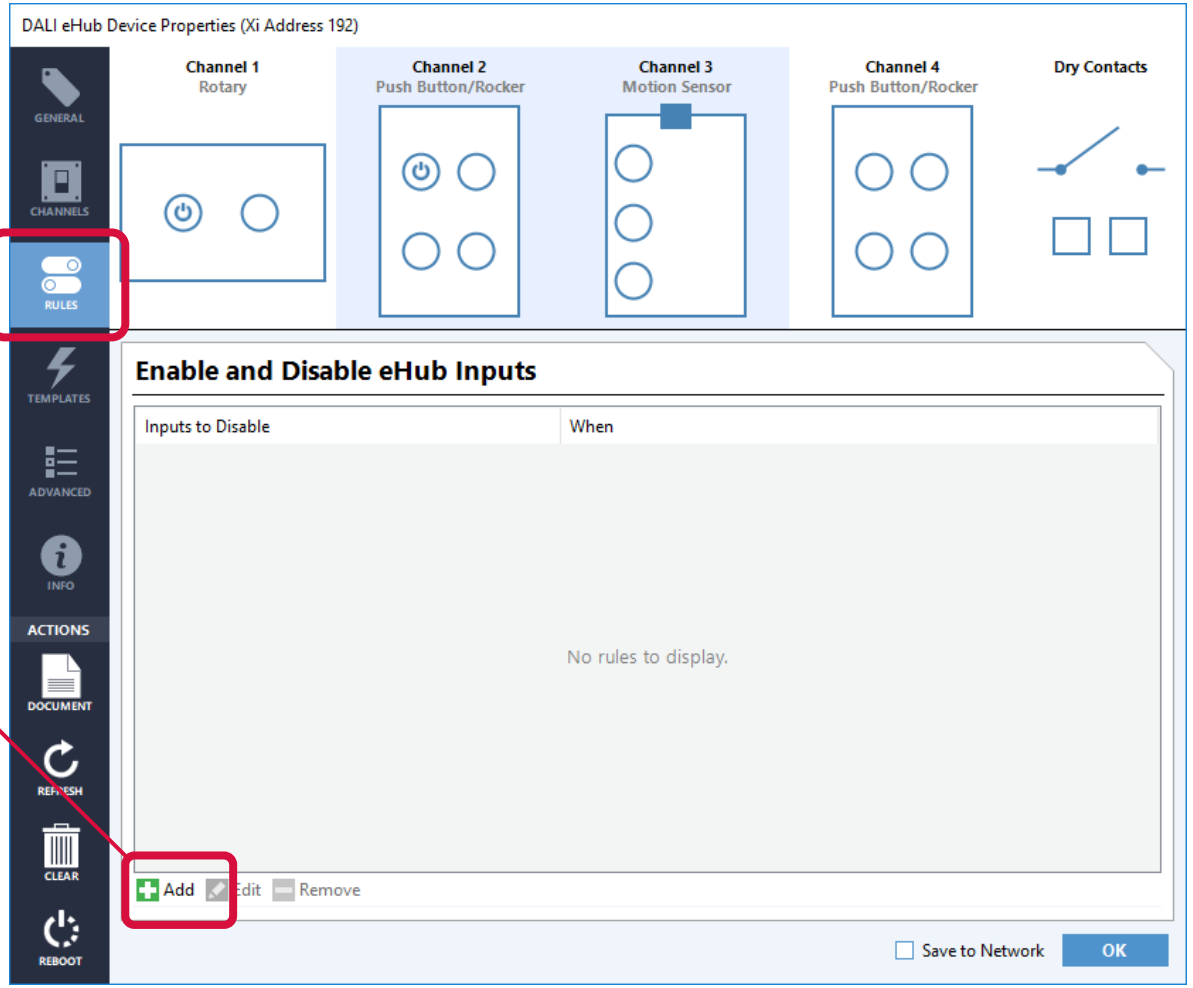
Using Flags for RAPIX Device “Rules”

- RAPIX Device inputs can be disabled based on:
  - Short Address is on / off
  - Scene is set / not set
  - Flag is set / clear.
- Can be used on all inputs:
  - Buttons and dials
  - Sensors
  - Dry Contacts.

RAPIX XI

Using Flags for “Rules”

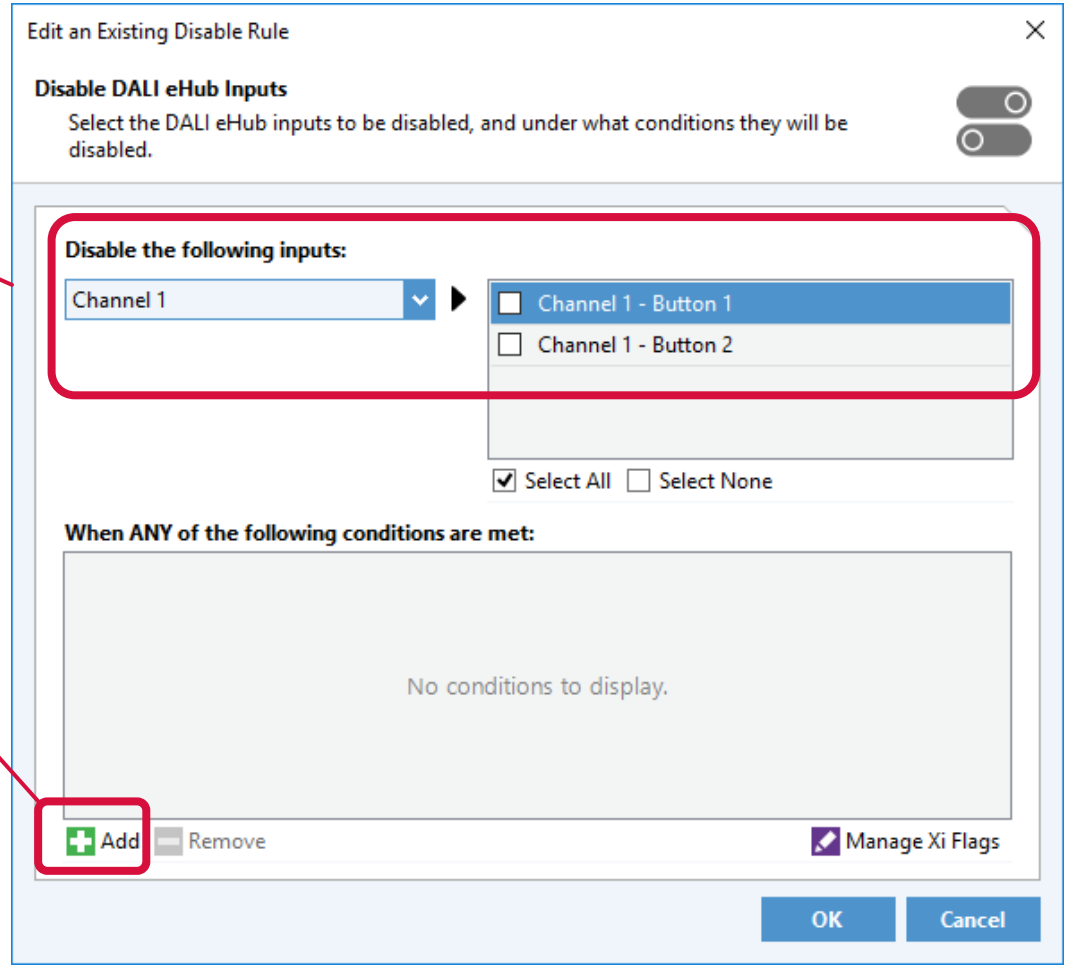
- To Add a Rule:
- 1. Select **Rules** Tab
- 2. Click on **Add.**



RAPIX XI

Using Flags for “Rules”

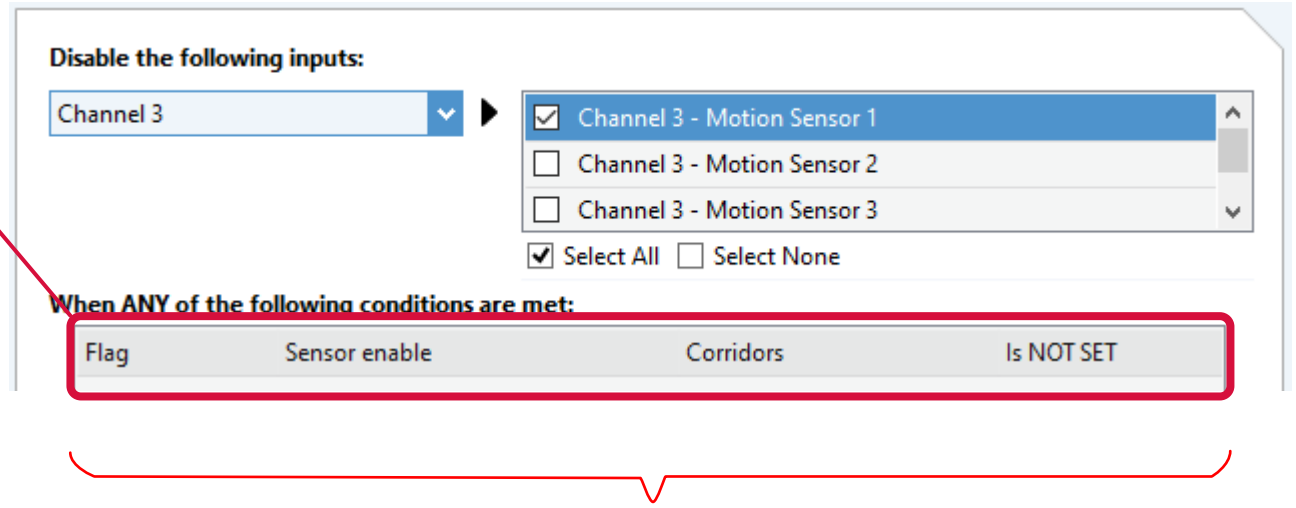
- 3. Select the inputs
- 4. Click on **Add.**



RAPIX XI

Using Flags for “Rules”

- 5. Select the rule details
- 6. Repeat as required.



For this example, Motion Sensor 1 will be disabled when the “Corridors” Flag is not set (i.e. clear)

RAPIX XI

Flags can be set using:

- Buttons
  - e.g. “Toggle Flag” template
- Dry Contacts
  - e.g. “Set Flag” template
- Schedules
  - See Schedule section of this presentation
- On power-up
  - e.g. using the “Power-up Action” template.

EXERCISE 3

OPERATING PROPERTIES AND FLAGS

SCHEDULES

SCHEDULES

Schedules have:

- Name;
- Collection of events, each with:
  - Name;
  - Date rule:
    - Every day;
    - Week days / weekend days;
    - Day of the week or month;
    - Date or range of dates;
    - Every x days.
  - Time rule:
    - Fixed time of the day;
    - Sunrise ± offset;
    - Sunset ± offset.

SCHEDULES

- Events have
  - An action:
    - Zone
      - On, Off, Fade to level
    - RAPIX Scene
      - Set, Off
    - Operating property
      - Set value
    - Flag
      - Set, clear

Schedules are run in the Zone Controllers.

SCHEDULES

Schedule Editor

Schedules

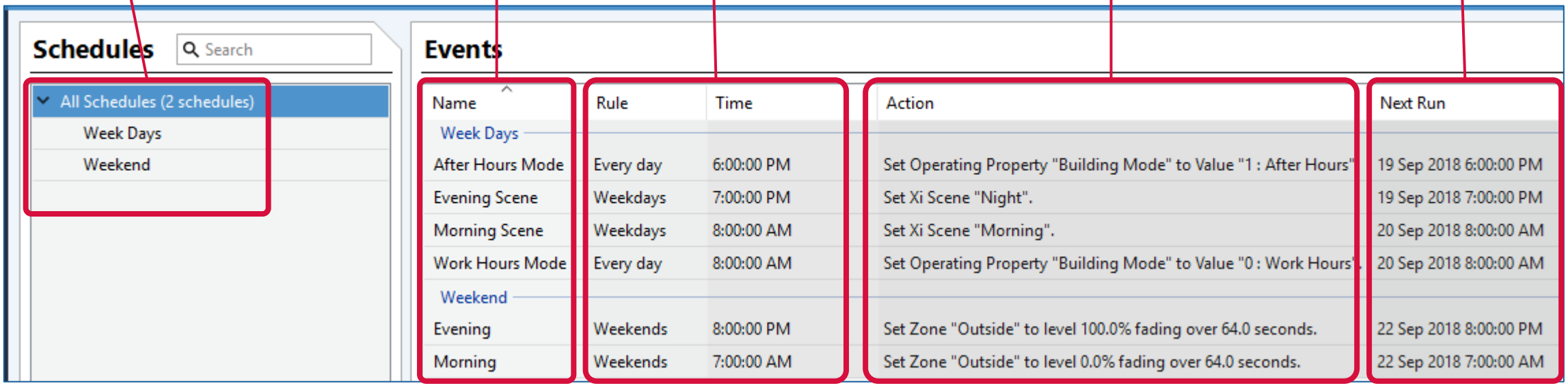
Events

Name

When the event occurs

What the event does

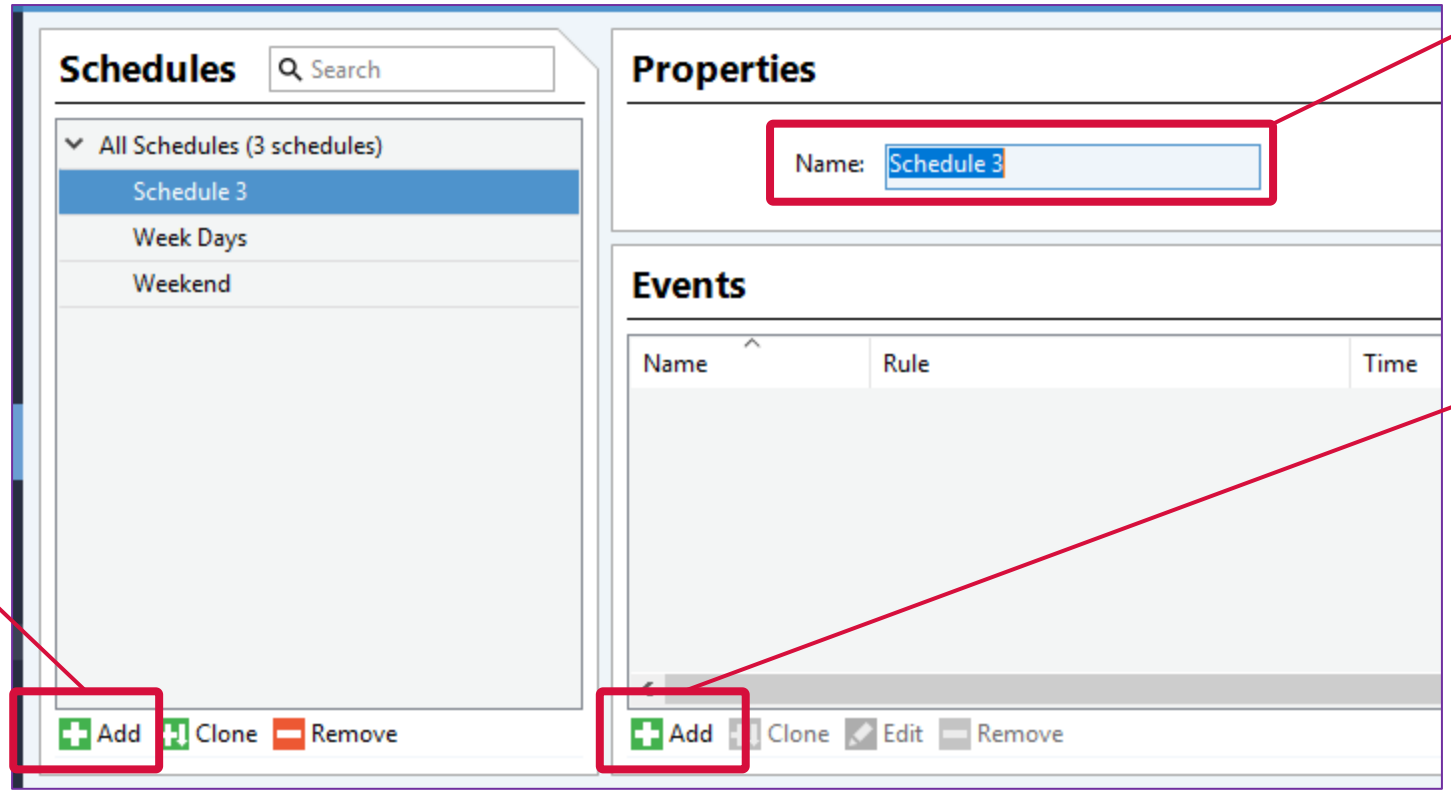
When the event is due next



SCHEDULES

Adding Schedules

1. Click the **Add** button to add a new Schedule



2. Enter a name

3. Click the **Add** button to add a new Event

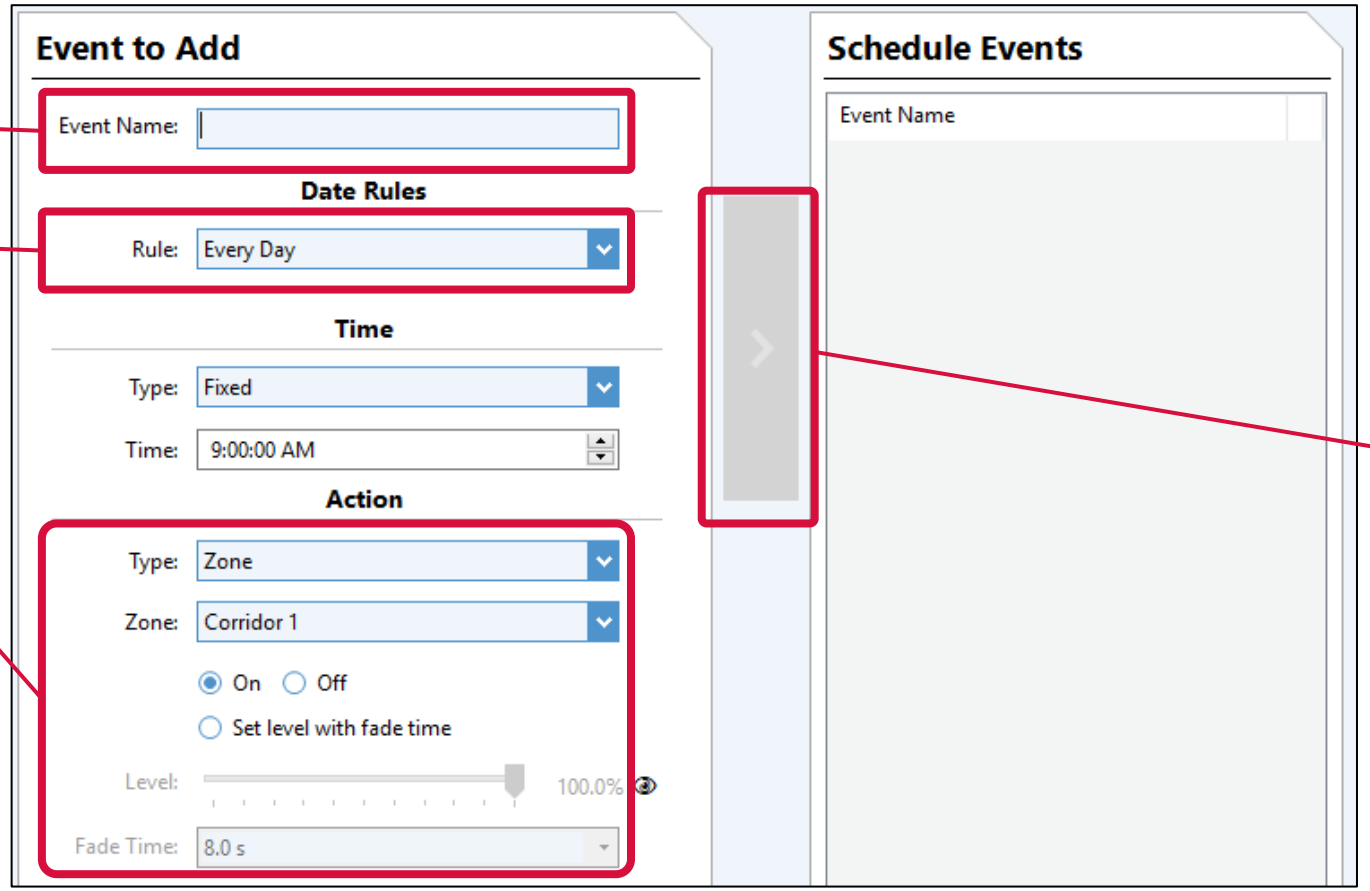
SCHEDULES

Adding Schedules

4. Enter a name

5. Select when the event is to occur

6. Select what the event is to do

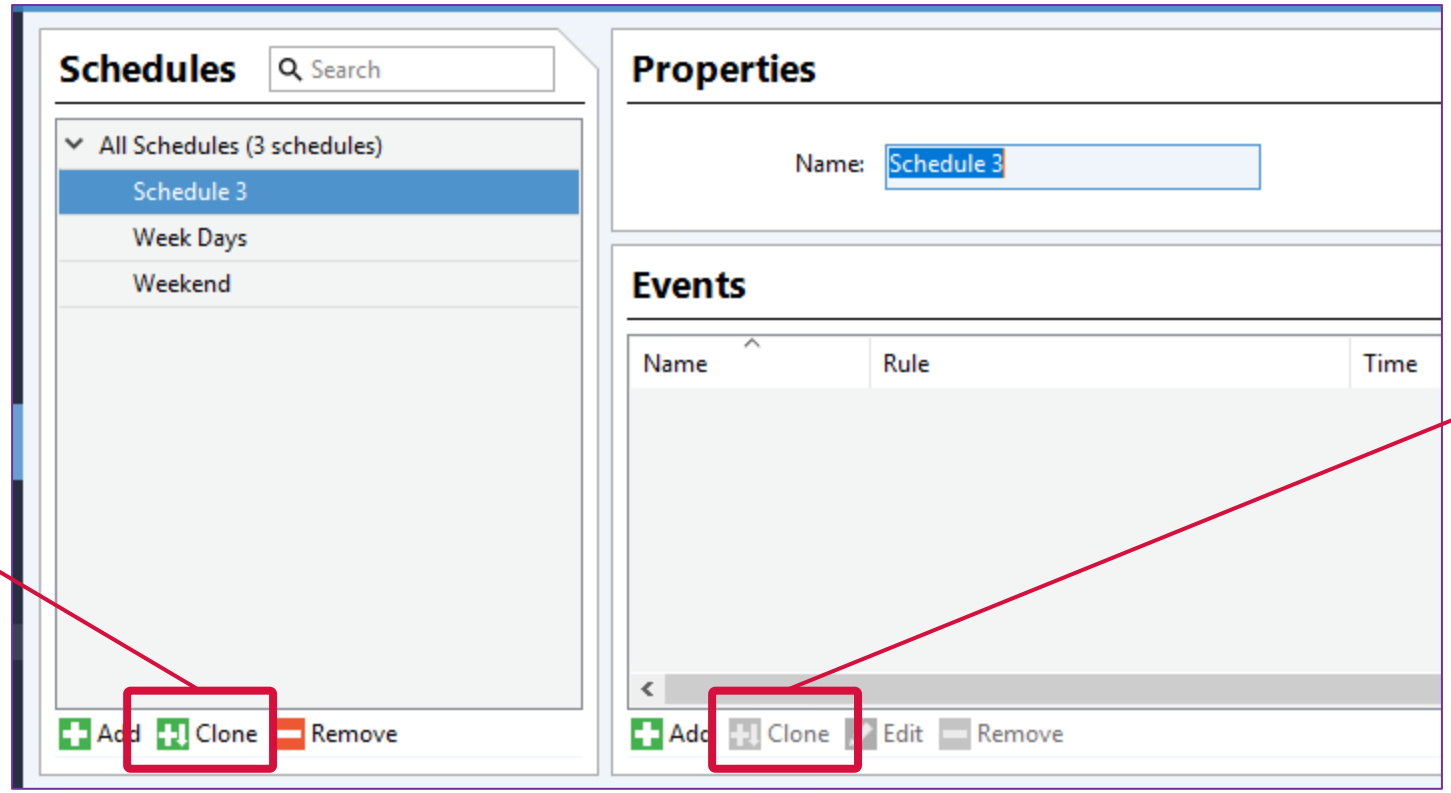


7. Click the **arrow** button to add the new event to the Schedule

SCHEDULES

Adding Schedules

- If a new Schedule is needed that is almost the same as an existing one, it can be “cloned” (copied) then edited.



Clone a whole Schedule

Clone a selected event

EXERCISE 4

SCHEDULES

FLOOR PLANS

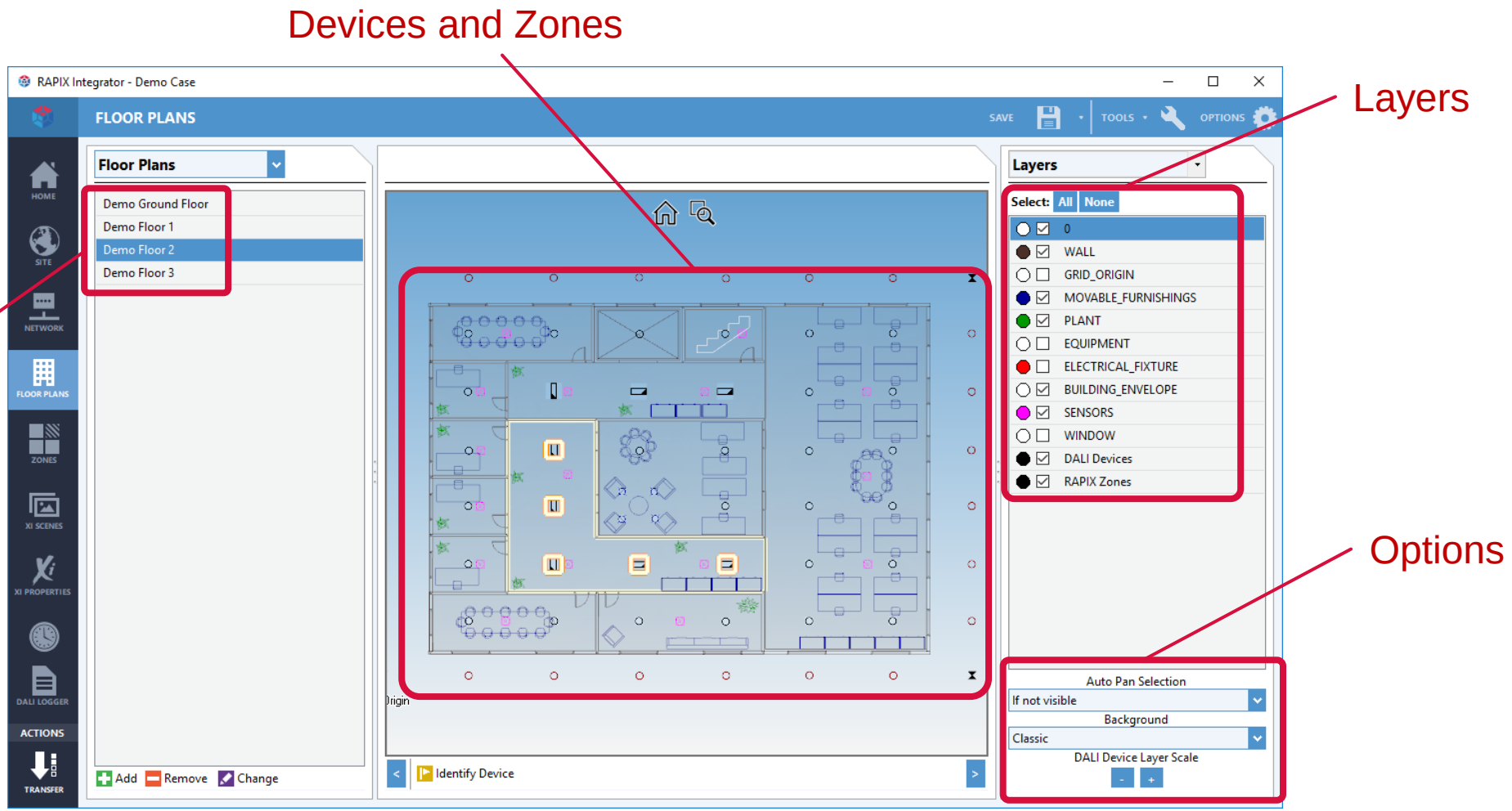
FLOOR PLANS

Floor Plans

- Provides another way to view and edit Devices and Zones.
- Can use floor plans of most common types:
  - CAD (DWG, DXF) – **preferred**
  - PDF
  - Image (BMP, JPEG, PNG, GIF, TIFF)
- See http://www.youtube.com/watch?v=0l8UR-6EHMw for details.

FLOOR PLANS

Floor Plans



EXERCISE 5

FLOOR PLANS