## Introduction - Lighting Scenes

A Lighting *scene* is a lighting effect created by dimming a set of light fixtures to pre-determined levels.

The process of getting the lighting fixtures to the required lighting levels is called *setting the scene*. A scene is said to be *set* if all lighting fixtures in the scene are at the levels defined for the scene.

When setting a scene, the lighting levels are normally faded from their current level to the new (scene) level over time to provide a smooth transition. The time taken to get from the original level to the new level is called the *scene fade time*.

A unique feature of the RAPIX Lighting Control System is to allow a scene *trigger*. This allows an action on a DALI line (such as setting a short address or group) to set a scene.

A building may have many lighting scenes, each with:

- different light fixtures; and/or
- different lighting levels; and/or
- different fade times.

### DALI Scenes

Every DALI lamp control gear (driver, ballast, and so on) has internal lighting levels that it can store for 16 DALI scenes. These scenes are numbered 0 to 15.

If a device is not part of a DALI scene, then that scene storage location is programmed to a special level called "MASK". This just means that when the scene is set, the device does not change its level.

DALI Scenes can only be set using the DALI "GO TO SCENE X" commands.

In the RAPIX Lighting Control System, DALI scenes are set by using them within a RAPIX Scene (see below) to provide greater flexibility.

### RAPIX Scenes

RAPIX Scenes are used to overcome some of the limitations of DALI Scenes. A RAPIX Scene is essentially a list of addresses (including Zones), where for each address there is a definition of:

1. A lighting level (or DALI scene); and
2. A fade time.

It is possible to control a RAPIX Scene from anywhere in the RAPIX system. A scene can be set from:

- A button press;
- A motion sensor event;
- A light level sensor event;
- A schedule event;
- A power-up event; or
- Logic.

The RAPIX Scene status (i.e. whether the scene is *set* or *not set*) can be displayed on the indicators of RAPIX devices. This provides feedback to the user of which scenes are currently set.

*Comparison*

The differences between DALI Scenes and RAPIX Scenes are shown in the table below:

|  | DALI Scene | RAPIX Scene |
|---|---|---|
| Can span DALI Lines? | No | Yes |
| Number of devices in a scene | 64 | No limit |
| Number of scenes available | 16 (per DALI Line) | No limit |
| Fade Times | 0 – 90 seconds | 0 – 24 hours |
| Different fade times within scene? | No | Yes |
| Status can be shown on indicators? | No | Yes |
| Can be controlled from elsewhere? | No | Yes |
| Can be used without detailed knowledge of all DALI devices and their locations? | No | Yes |

## Scene Storage

DALI scenes store a light level in each of the DALI lamp control gear devices (drivers, ballasts, or similar).

RAPIX Scenes are stored in RAPIX Devices:

- Zone Controllers; or
- RAPIX Devices (eHub, RAPIX Sensor, RAPIX Switches or Universal Switch Input)

It is generally simpler to configure RAPIX Scenes in the Zone Controllers.

If there are no Zone Controllers being used, then RAPIX Scenes need to be stored in the RAPIX Devices.

# DALI Scene Creation

## *DALI Device Editor*

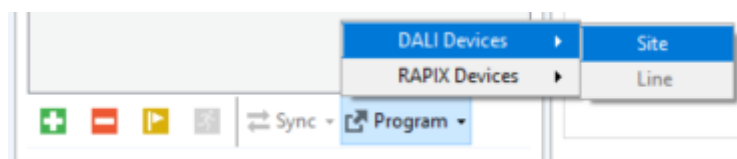The most direct way to configure a DALI scene is to edit the scene level in the DALI device properties:



*DALI Scene levels in the DALI Device Settings form*

This is generally quite time-consuming, so is not recommended for regular use.

Programming of DALI Scenes can be faster by programming multiple devices at once. This is done by either:
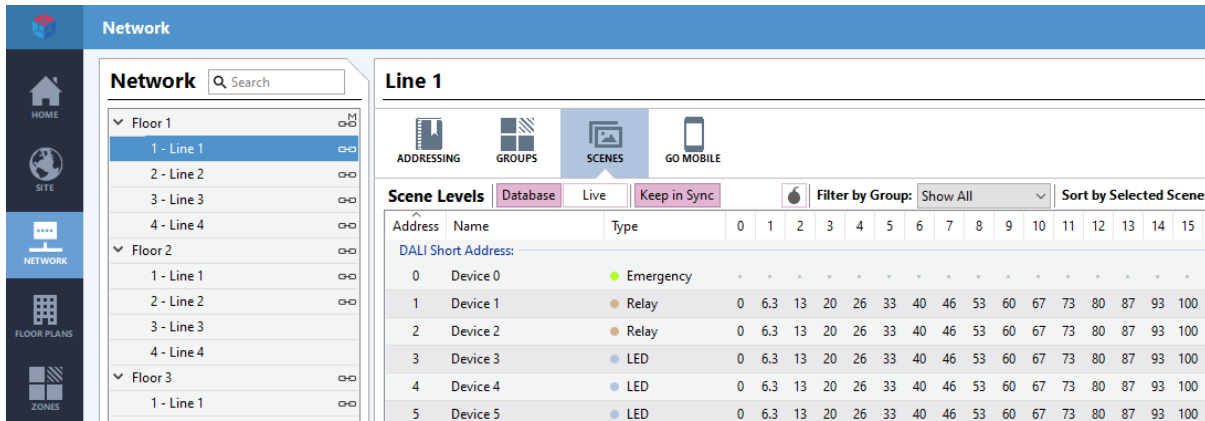
1. Selecting multiple DALI devices then editing them; or
2. Using the Global Programming feature.



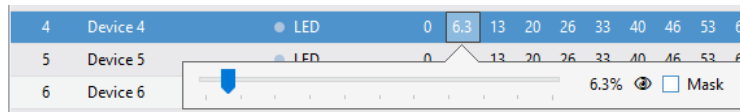*The Global Programming menu items*

## Scene Tab

The DALI Scene tab provides a more convenient view of all DALI Devices on a DALI Line, and their configured DALI Scene levels:



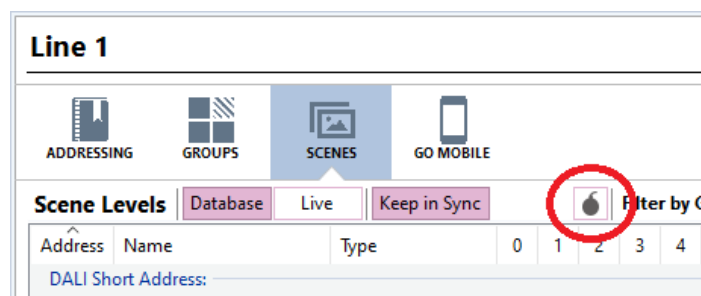*DALI Scene levels in the DALI Scene tab*

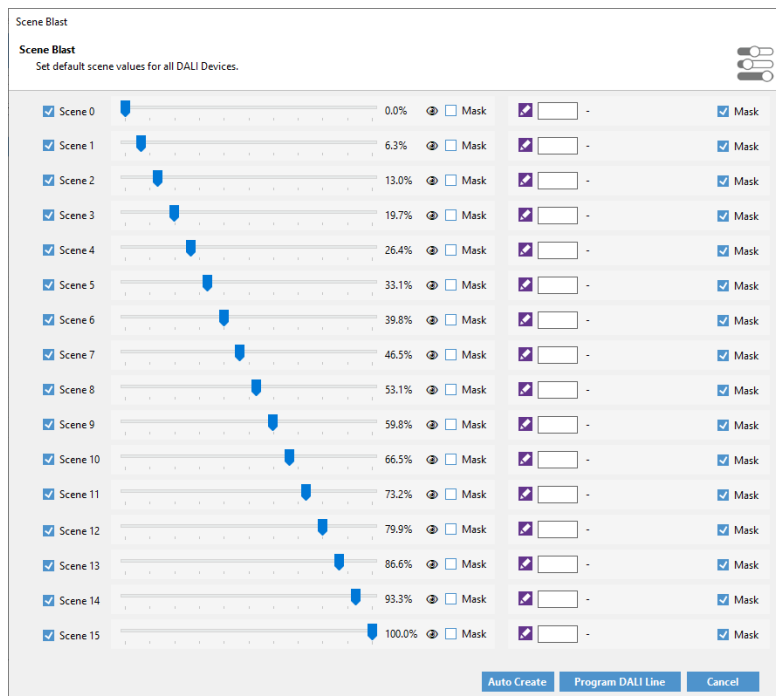A scene level can be edited by clicking on a cell in the grid. This pops up a quick and simple scene editor:



*The pop-up DALI scene level editor*

## Scene Blast

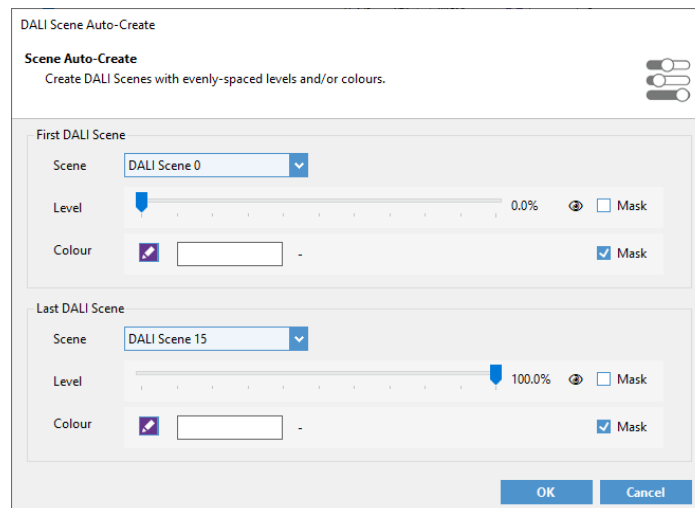To set all DALI Device scene levels at once, click on the scene "blast" button:



*The scene blast button (highlighted)*

*The Scene Blast form*

To use the scene blast form, select the level required for each DALI Scene, then click on **Program DALI Line**.

To make the process even faster, click on the **Auto Create** button to open the Scene Auto Create form:



*The Scene Auto Create form*

Select the level of the first and last DALI scene, then click on **OK** to auto-fill the scene blast form.

### Using DALI Scenes

DALI Scenes are not used directly. They are instead used indirectly as part of a RAPIX Scene. The process of creating RAPIX Scenes that contain DALI Scenes is described below.
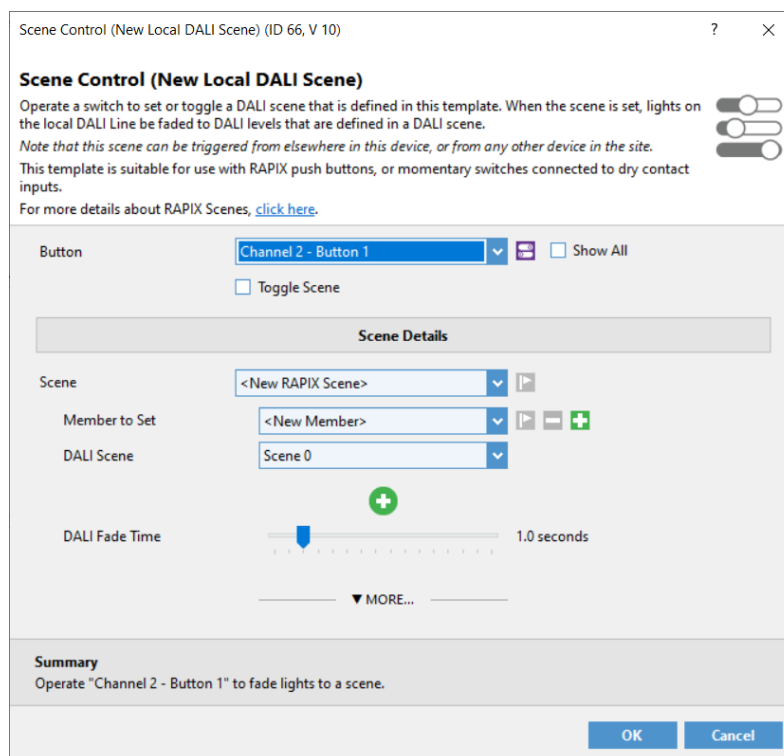
# Creating RAPIX Scenes

## *eHubs*

In small sites with no Zone Controllers, scenes need to be created in the eHub editor. To create a scene and set it from a button, select one of the templates for the button:

- Scene Control (New Local DALI Scene)
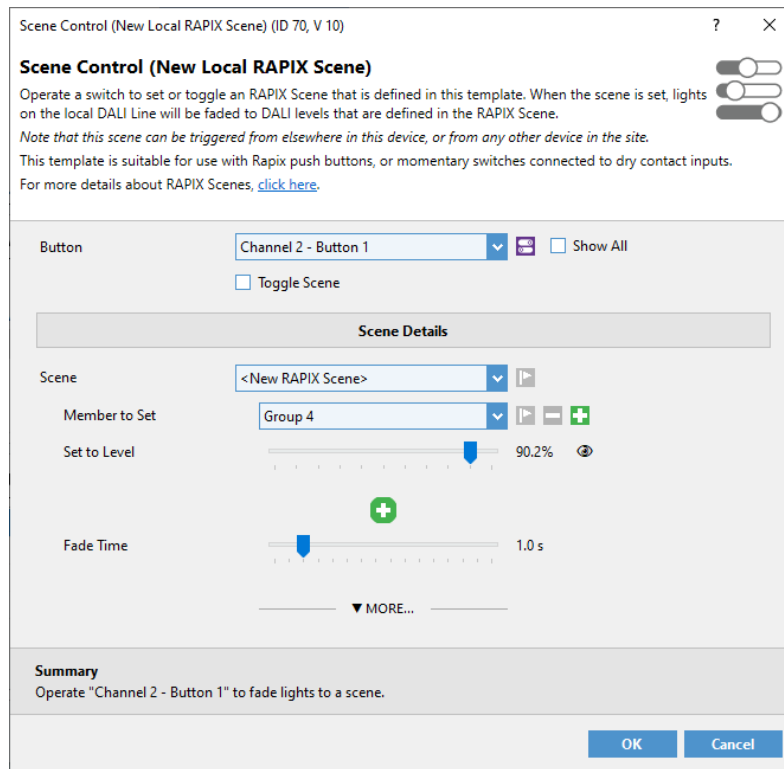- Scene Control (New Local RAPIX Scene)

These two templates allow you to define the scene from within the template. There are other templates available that allow the control of scenes that have already been defined.



*The Scene Control (New Local DALI Scene) template*

To create the scene, select the member (DALI Address), the DALI scene number and the fade time. More scene members can be added by clicking on the + buttons. This process creates an RAPIX Scene that sets the DALI scene. This method allows the DALI scene to be controlled and monitored by the rest of the RAPIX system (as described below).

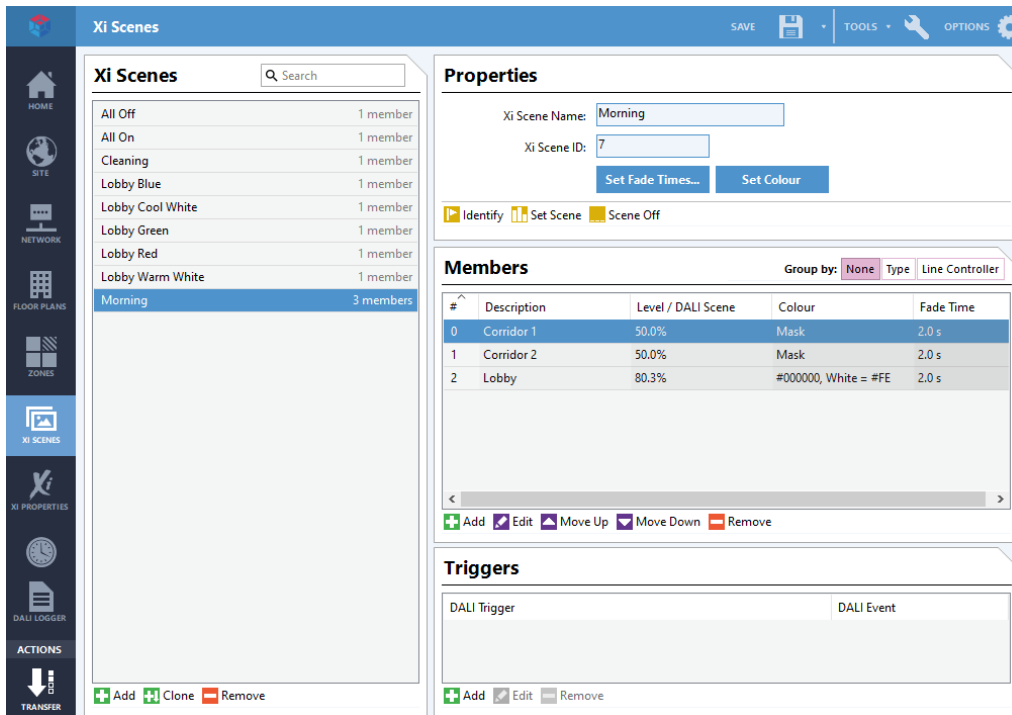The template for creating new RAPIX Scenes is similar:



*The Scene Control (New Local RAPIX Scene) template*

To create the scene, select the member (DALI Address), the level and the fade time. More scene members can be added by clicking on the + buttons.

Each RAPIX Scene has a unique ID that allows it to be controlled and monitored. You do not generally need to know the ID of the RAPIX Scenes unless you are integrating a RAPIX system with some other building control system.
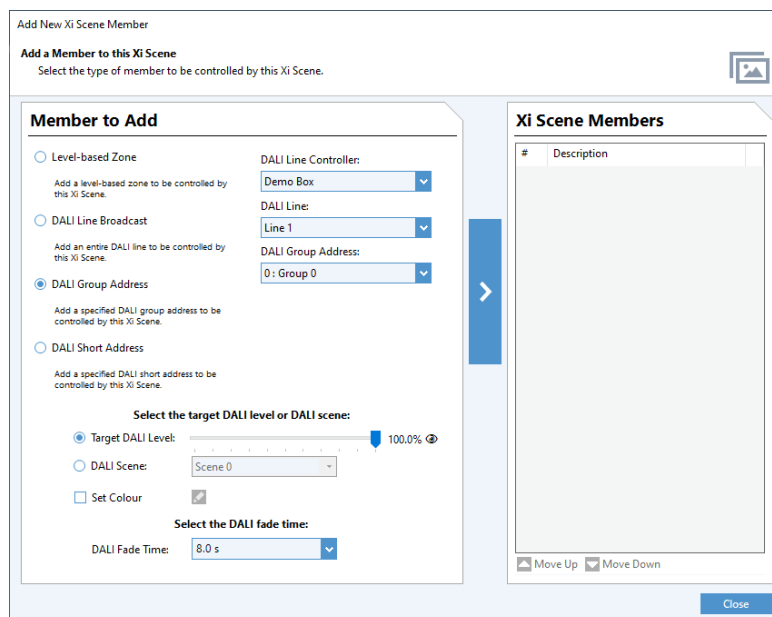
## *Zone Controllers*

Editing scenes for the Zone Controllers is simpler, as they are all managed from a single place. The scene tab shows all RAPIX Scenes in the RAPIX project (including scenes in RAPIX eHubs, switches, sensors and other RAPIX devices):



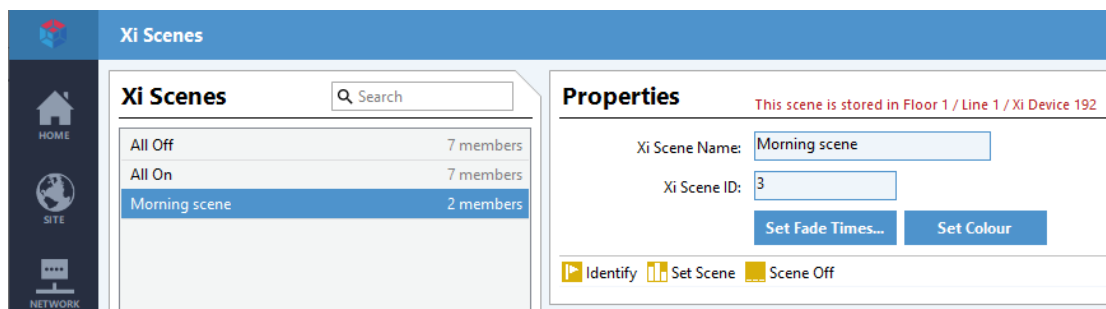***The RAPIX Scenes Tab***

To add a new scene:

1.  Click on the scene **Add** button (at the bottom of the scenes list)
2.  Give the scene a name
3.  Click the members **Add** button to add new Scene members.

*The Add New RAPIX Scene Member form*

4. Select the member (Zone or DALI address)
5. Select the level or DALI Scene
6. Select the fade time
7. Click the **>** button to add the member
8. Repeat steps 4 to 7 as required
9. Click the **Close** button

The scene list also includes scenes that are stored in RAPIX eHubs, switches, sensors and other RAPIX Devices. Those scenes can be edited from the scene tab, but the configuration will need to be transferred to the live device (you need to sync from database to live). Scenes that are stored in an RAPIX eHub, switches, sensors or other RAPIX Device can be identified by the red message in the scene editor:
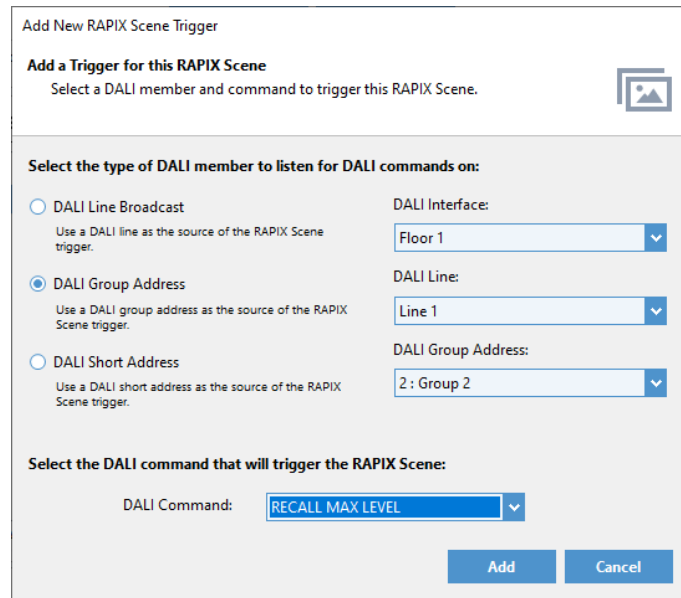


*The message showing that the Scene is stored in an RAPIX eHub, Sensor or Switch*

## Scene Triggering

RAPIX Scenes can be _triggered_ by a DALI command if required. This is generally only needed when integrating with devices or systems that are not RAPIX.

To add a scene trigger,

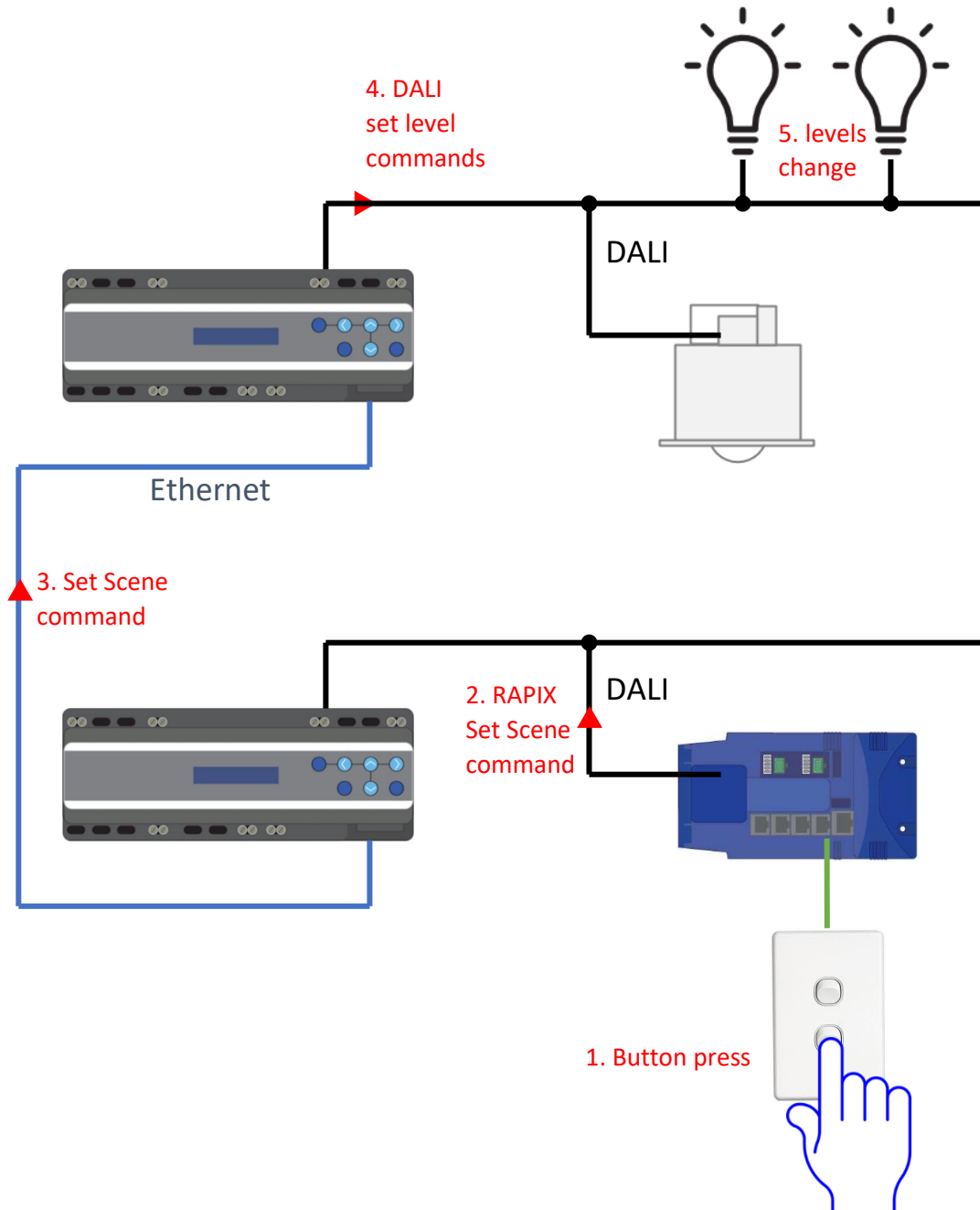1. Click the DALI Trigger **Add** button to add new Scene triggers.



*The Add New RAPIX Scene Trigger form*

2. Select the DALI address
3. Select the DALI Command
4. Click the **Add** button


In the image above, the trigger has been configured so that a DALI "RECALL MAX LEVEL" command for group 2 on DALI Line 1 will result in the scene being set.

## Scene Control

An RAPIX scene can be controlled from anywhere in the RAPIX system. The diagram below shows the process of a scene being set from a button on a different DALI Line:
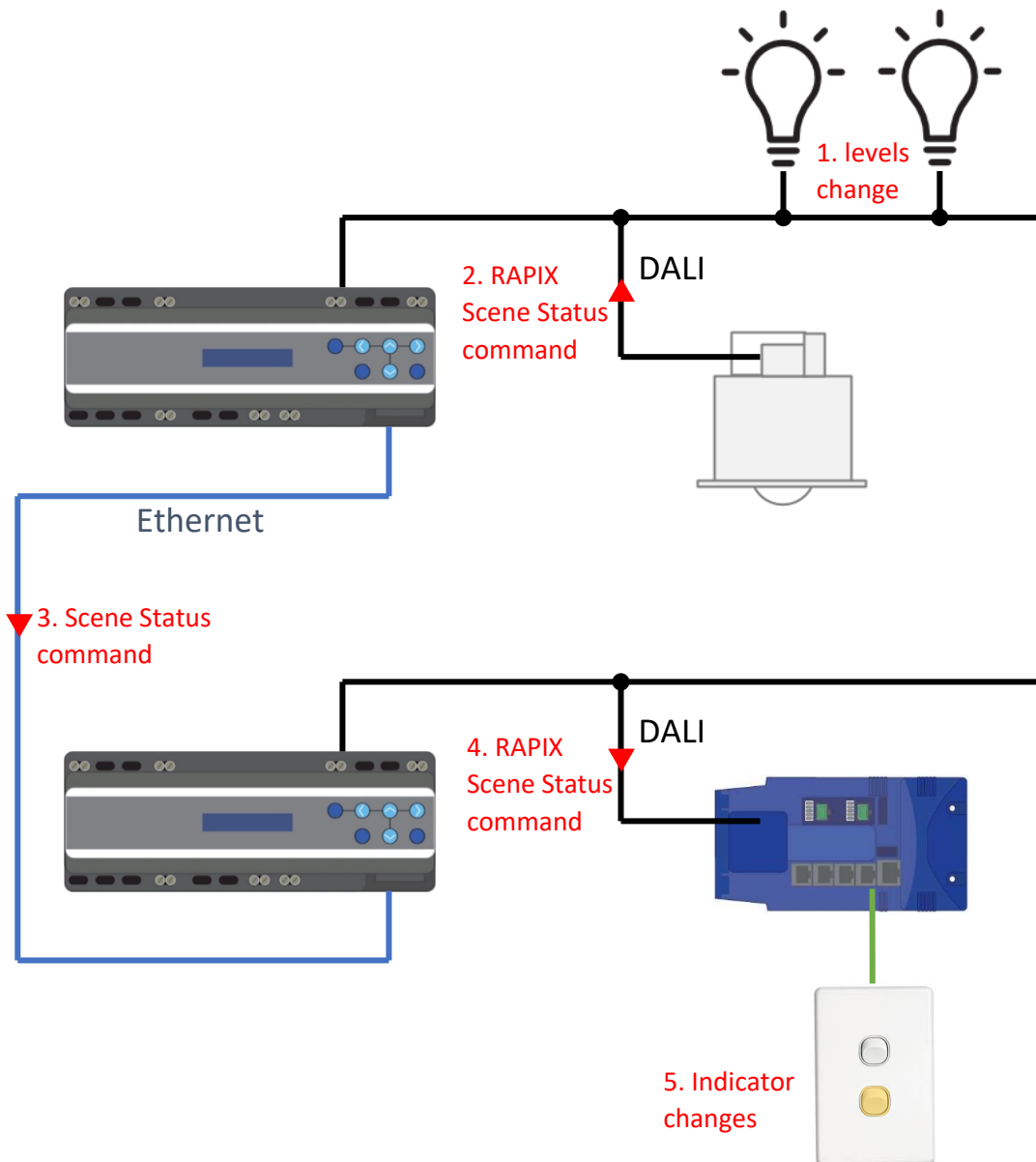


4. DALI set level commands

5. levels change

DALI

Ethernet

3. Set Scene command

2. RAPIX Set Scene command

DALI

1. Button press

*Control of an RAPIX scene from a different DALI Line*

## Scene Indication

When the levels in DALI devices change, this can affect the (*set* / *not set*) of an RAPIX scene.

The state change for the scene is sent to wherever it is required in the RAPIX system. This allows button indicators to show whether a scene is set or not. In the diagram below, a button indicator status is changed due to changes to a scene that is stored in an eHub on a different DALI Line:



1. levels change

2. RAPIX Scene Status command

DALI

Ethernet

3. Scene Status command

4. RAPIX Scene Status command

DALI

5. Indicator changes

*Showing status of an RAPIX scene from a different DALI Line*

## Colour Scenes

For information about colour control using scenes, refer to Application Note APN-RAPIX-010 DALI Colour Control with RAPIX.

## Change History

| Rev | Date | Updated By | Comment |
|---|---|---|---|
| 1 | 2 June 2020 | D. S. | First Release |
| 2 | 14 June 2022 | D. S. | General update |

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APN-RAPIX-015-02 June 2022