OTIS Elevator Integration Document

Contents[1]

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1 Introduction

This document will detail the integration of the OTIS Elevator, with the CathexisVision software. Functionally this integration will entail the triggering of standard CathexisVision Events, based on the triggers from the OTIS device.

a. General Requirements

- CathexisVision 2016.3 and later.

b. Elevator Version Requirements

All OTIS elevators are compatible with the BA interface box. Elevator uses interface box XAA21200C1.

Note:
1. The OTIS Elevator communicates with the CathexisVision software through a set of 11 outputs, on one or multiple Cathexis EIO3148s, depending on the number of floors the elevator can travel. Objects may be set to only use a single EIO, however this will limit the number of floors the elevator can travel. Thus, to increase the number of floors, at least two Cathexis EIO3148s are required. Please consult the CathexisVision EIO3148 manual for more information on the setup and operation of this device.
2. Each elevator object is set to a default of 5 floors. The floor numbers can be increased by setting the object to use multiple EIOs. See the Object Configuration section for details.
3. If you need information regarding the regular operation of an OTIS device, please consult the relevant OTIS documentation.
4. There is a General Integration section in the main CathexisVision manual. It has vital information about creating an integration database, as well as a general introduction to the Integration Panel. **Read over this section**.

c. License requirements

The OTIS Elevator integration license requirements are as follows:

License Name	License Description
COES-2000	OTIS Elevator Device License
COES-1001	OTIS Single Elevator License
COES-3000	OTIS Elevator Bundle - includes device license and unlimited elevators.

d. Integration Components

All CathexisVision integrations have two component levels: **Device** and **Object**.

Device	The device is CathexisVision software's interface, which handles all the interaction between CathexisVision and the integrated hardware. When you add an integration to the CathexisVision system, you add a device. The messages received from the device are called Device Events.
Objects	Objects are the individual pieces of hardware that comprise the integration. You may have multiple "object types" under the objects group. For example, the main controller and door nodes, of an access control system, are both objects. They are different types of objects

2 Device Addition and Configuration

a. Introduction

This section will detail the procedure for setting up the two systems to effectively communicate with each other.

b. CathexisVision Specific OTIS Elevator Setup (Set up the OTIS device)

The EIO3148 devices need to be setup. Set the EIO devices to match the following conditions.

Note: When using two EIO3148s, the second EIO must have the same IP address as the first, but incremented by one. For example:

First EIO: 192.168.0.55

Second EIO: 192.168.0.56

The table below indicates the number of floors an elevator can travel per EIO connected:

Number of EIOS Connected	First Floor	Final Floor
1	0	7
2	0	63

- *Pinout*

When using one EIO			
Output on device	**EIO**	**Output on EIO**	**Description**
PO5-1 PO5-2	1	1	Binary Code 1
PO5-3 PO5-4	1	2	Binary Code 2
PO5-5 PO5-6	1	3	Binary Code 3
PO5-7 PO5-8	1	4	Binary Code 4
PO7-1 PO7-2	1	5	Binary Code 5
PO7-3 PO7-4	1	6	Binary Code 6
PO7-5 PO7-6	2	1	DOWN
PO7-7 PO7-8	2	2	UP
PO4-1 PO4-2	2	3	NAV
PO4-3 PO4-4	2	4	PKS
PO4-5 PO4-6	2	5	SAFE
When using two EIOs			
Output on device	**Input on EIO**		**Description**
PO5-1 PO5-2	1		Binary Code 1
PO5-3 PO5-4	2		Binary Code 2
PO5-5 PO5-6	3		Binary Code 3
PO7-5 PO7-6	4		DOWN
PO7-7 PO7-8	5		UP
PO4-1 PO4-2	6		NAV

PO4-3 PO4-4	7	PKS
PO4-5 PO4-6	8	SAFE

c. Devices Section (Add a New Device in CathexisVision)

Integrations are added on a server-by-server basis. They are managed in the Integration Devices panel, under the Setup Tab of the servers to which they are added. To get to the Integration Panel follow this path:
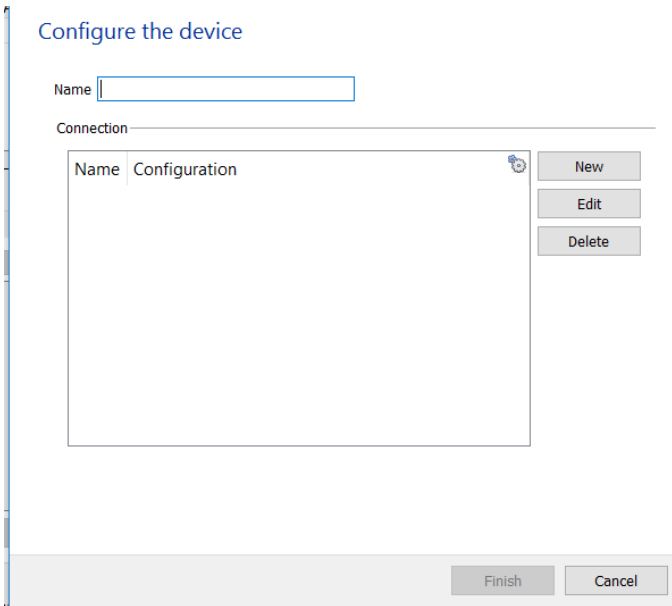
The Integrations Panel

	You will notice two sections in the Integration Panel: The **Devices** list will list the integration devices that are attached to your server. The **Configuration** section enables you to edit/review, the device which you have selected in the **Devices** section.

- ### *Device Addition*

1. Once in the Integration Panel, in the Devices section, click on [New device]. This will open the addition window.
2. Select the **OTIS Elevator** driver from the list.

Configure the device

Name [   ]

Connection

Name	Configuration

[New]
[Edit]
[Delete]

[Finish] [Cancel]

Give the device a descriptive **name.**

Add, **Edit** or **Delete** channels from the device by using the buttons on the right side of the configuration window.

See below **for Adding a Channel.**

Adding a Channel

Click [New] to add a channel.

New channel
Edit channel settings

Name [Channel name]

IP address [0 .0 .0 .0]

Port [850]

[OK] [Cancel]

Give the channel a **Name**.

Enter the **IP address** of the EIO device.

Leave the **Port** number as default.

d. Configuration Section (Tabs)

The configuration section is divided up into a number of tabs. These tabs are: **Object configuration, Object properties, Device events, Groups,** and **General.**

Object Configuration Tab

Configuration of 'OTIS Elevator'

	Type	ID	Name	Cameras	Object groups	License	
	Elevator	0.0.0.0	0.0.0.0			✓	
	Communication channel	__default__	Default				
	Elevator	192.168.1.169	Elevator1			✓	
	Elevator	192.168.1.170	Elevator2			✓	
	Elevator	192.168.1.171	Elevator3			✓	
	Elevator	192.168.1.172	Elevator4			✓	

Object type: All objects

Tabs: Object configuration | Object properties | Device events | Object groups | General
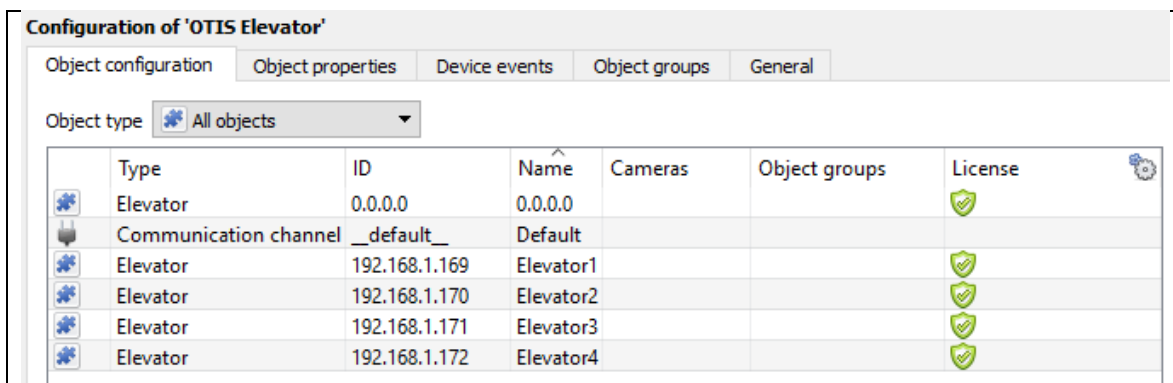
The object configuration tab is the tab where you may view all the individual objects that comprise the integration.

- ***Object Configuration Buttons***

New   You may add a new object by clicking on New.
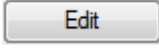
Edit   Will open up an existing object for edition.

Delete   Is used to delete an existing object from the CathexisVision configuration.

- ***Object Configuration Right-click Options***
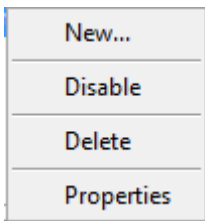
New...	**New** will open up the dialogue to add a new object.
Disable	**Disable/Enable** allows you to manually enable/disable individual objects.
Delete	**Delete** will permanently remove this object from the list.
Properties	**Properties** will open up the object properties. You may edit the object from here. (Specifically you will be able to assign cameras to this object, as well as define user access levels for it.)

Properties: Cameras
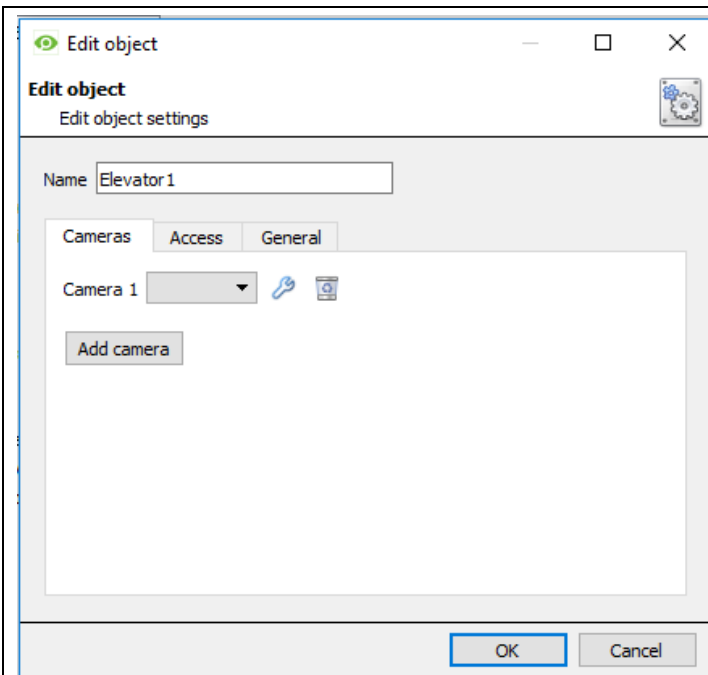
Adding a camera to an object will mean that, whenever there is an event on that object, the recording from that camera will be related to the time and date of the object event, in the Integration database.

To add a camera, click on **Add Camera**, and select the relevant camera from the drop-down menu.

To configure the **overlays** for the specific elevator object that has been selected, click 🔧 .

Note: This setting will only apply to the specific elevator object that has been selected. To configure overlays for **all** elevator objects, please see the section below on defining the Default Settings for elevator objects.

To delete a camera click on 🔲 .

Note: Multiple cameras may be associated with individual objects.

Note: If you do not have ***continuous recording*** set up, on associated cameras, you will run the risk of objects triggering while the cameras are not recording. To only record cameras, when an object triggers, you will need to set up **Events** that trigger a recording, when one of these objects is activated.

Properties: Access
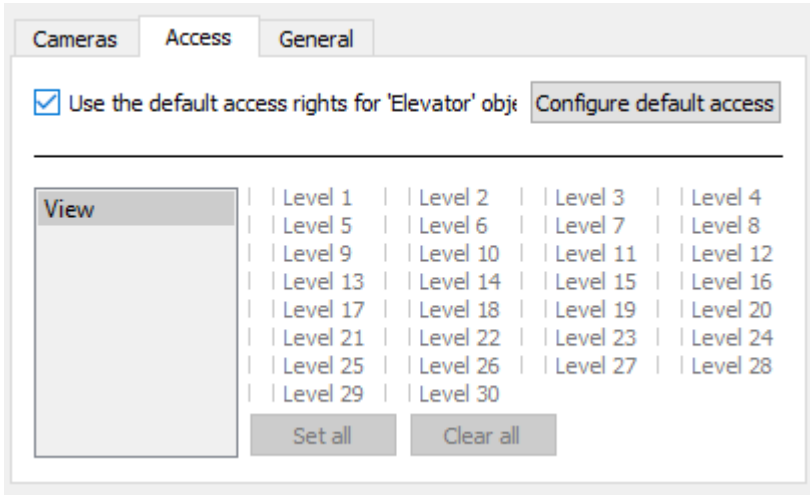
Access allows you to protect sensitive objects, by only allowing certain user levels access to them.

Under **View,** set the access levels.

Note: If you have *Use default access rights* checked, you must make sure that those default rights have been correctly defined. Click on **Configure default access** to do this.

Properties: General

Each elevator object is set to a default of 5 floors. To increase the number of floors:

1. Uncheck **Use Defaults**;

2. Check Use multple EIOs to increase the number of floors

Note:

    a. This setting will only apply to the specific elevator object that has been selected. To increase floors for **all** elevator objects, please see the section below on defining the Default Settings for elevator objects.

    b. When using two EIO3148s, the second EIO must have the same IP address as the first, but incremented by one. For example:
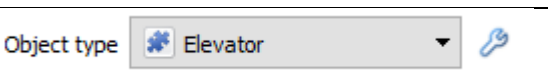
        First EIO: 192.168.0.55

        Second EIO: 192.168.0.56

- *Configure Default Settings for Elevator Objects*
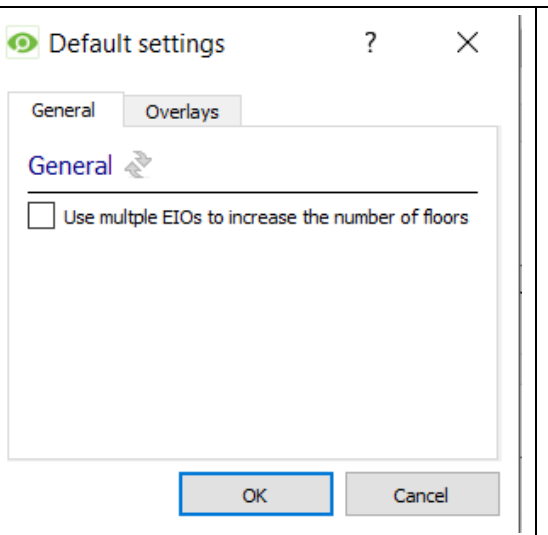
In this window, the **default settings for overlays** and the **number of floors** per elevator object may be defined. Configuring Default Settings for an object will mean that the settings defined here will be applied to all the elevator objects, and the user will not need to define these settings for each object individually.

Note: To define these setting for only some, but not all, objects, please see the section above.
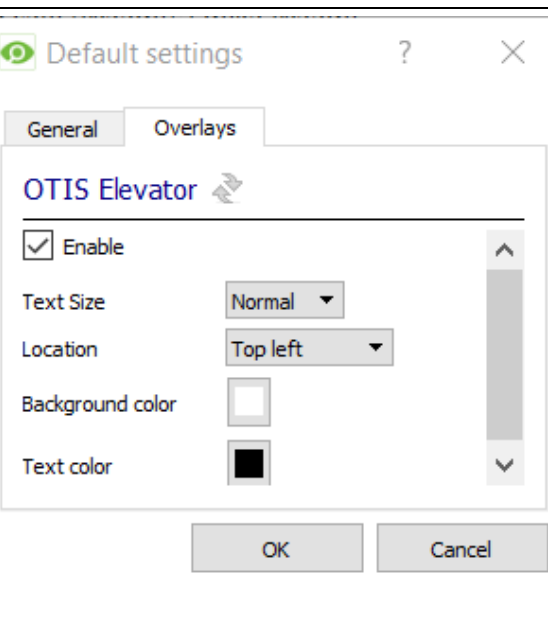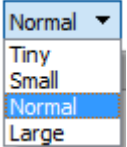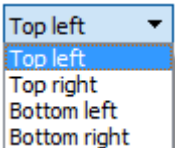
Default Settings Window

	Select the Elevator Object type from the drop-down menu, and select the 🔧 icon. **Note**: This icon only appears when the Elevator object is selected.
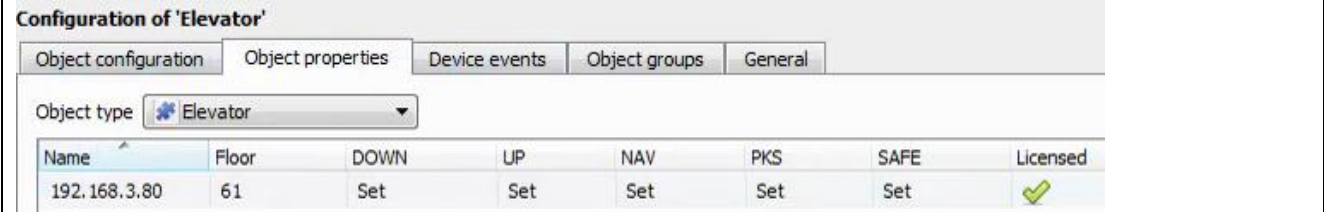
General Tab

	Each elevator object is set to a default of 5 floors. To increase the number of floors Check **Note**: This setting is a global configuration, and will apply to all elevator objects. To increase floors for **individual** elevator objects, please see the section above, in the Properties window.

Overlays Tab

	Check ☑ Enable to **Enable** overlays. Select the **Text Size:** Select the **Location** of the overlay: Choose the **Background color** of the overlay. Clicking will open a color chart. Choose the **Text Color** of the overlay text. Clicking the will open a color chart.
Note: This setting is a global configuration, and will apply to all elevator objects. To increase floors for **individual** elevator objects, please see the section above, in the Properties window.	

Objects Properties Tab

Name	Floor	DOWN	UP	NAV	PKS	SAFE	Licensed
192.168.3.80	61	Set	Set	Set	Set	Set	✓
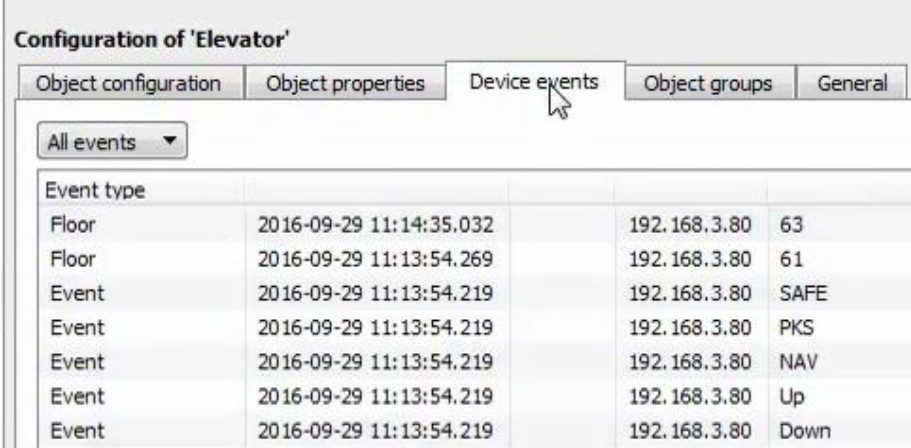
The Object properties tab allows you to view the object properties, sorted by object type. In the case of the OTIS Elevator device you will have the options of viewing by **Elevator,** or **Communication Channel.**
Note: Once the device has been added, the **Elevator** and **Communication Channel** objects will populate automatically.

Note: If communication is lost with the EIO/s, the columns will indicate an UNKNOWN state. Check the Device Events tab to see which EIO lost communication.
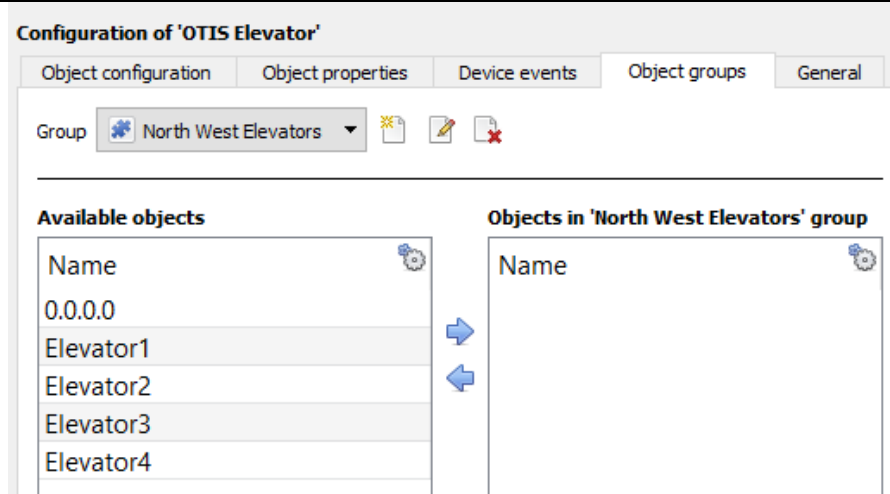
Device Events Tab

Event type			
Floor	2016-09-29 11:14:35.032	192.168.3.80	63
Floor	2016-09-29 11:13:54.269	192.168.3.80	61
Event	2016-09-29 11:13:54.219	192.168.3.80	SAFE
Event	2016-09-29 11:13:54.219	192.168.3.80	PKS
Event	2016-09-29 11:13:54.219	192.168.3.80	NAV
Event	2016-09-29 11:13:54.219	192.168.3.80	Up
Event	2016-09-29 11:13:54.219	192.168.3.80	Down

This will list all events sent from this device. It is an excellent way for installers to see that the integration is functioning, and to monitor the events happening on site.

Object Groups Tab

In this tab, objects of the same type may be grouped together.

Tip: This is very useful when setting up Events, because events can be triggered by an object group. (E.G. a group will trigger, if any of the devices in that group is triggered.)
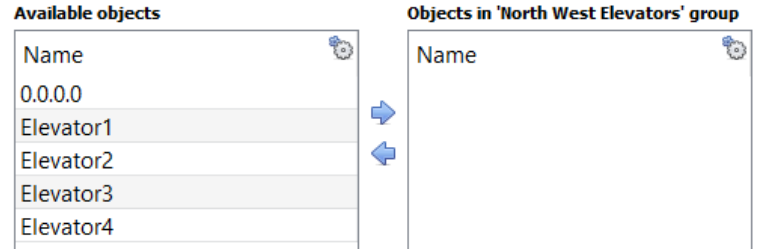
- *Create a Group*
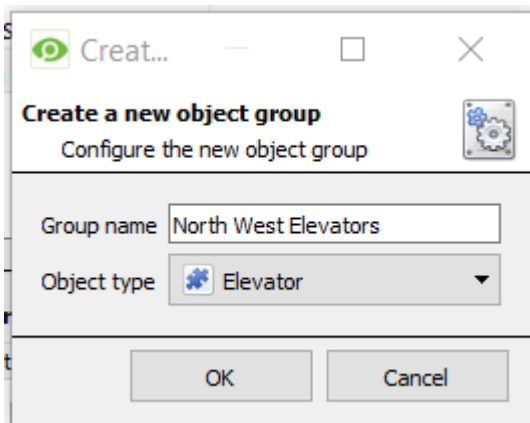
To create/edit a group click on 📄/ ✏️. (**Note**: Once a group has been created, you may not edit the object type of the group.)

Give the group a descriptive **Group name.**

Click on the drop-down menu to select the **Object type** that you would like to group.

You will then see a list of Available Objects. To add/remove these objects to the group select them (you may select multiple at a time), and click on ➡️/ ⬅️.

General tab
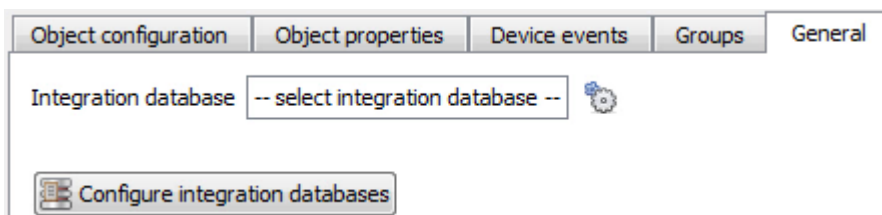
Currently the general tab deals with the **Integration database and other general settings**. Here you will be able to select an existing database, or you will be able to configure a new database for your integration.

Important Note: Each integrated device needs to be attached to an Integration database. Without setting up/adding a database here your integration will not function properly within the CathexisVision system.

- ### *Configure a new database*
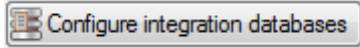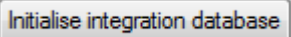
If there is no database created yet, clicking on this button will take you to the integration database setup.

Initialise the Integration Database
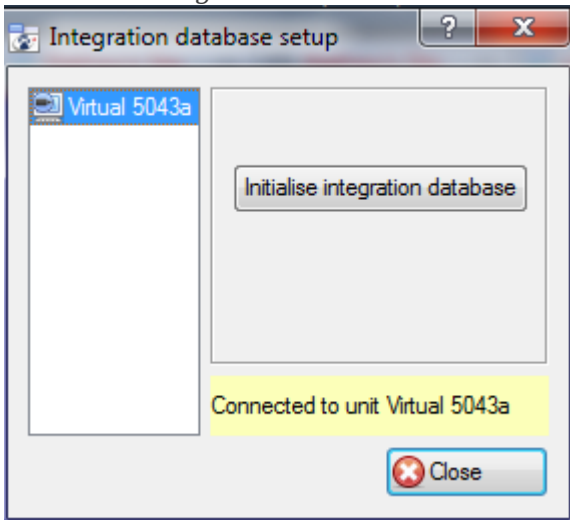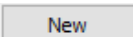
The first time you add an integration database you will have to initialise this feature on the unit. This will add a broad database, within which you will be adding all of your integrated device's databases.

Select the unit you wish to add the database to, from the list on the left, and click . You will have to choose which partition the database will be formed on, and select how much space it will take up.

Partition	C:\ (C:\) ▼
Total space available	8134 MB
Disk space allocated to integration database	1000MB ▲▼
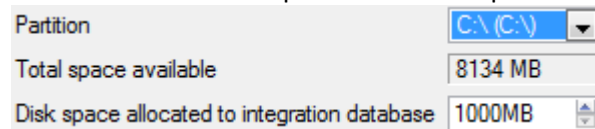
Add a New Devices Database

After initialisation, you will be able to add the database for the integration that you are working with. Click on the button, at the bottom of the Create database window.
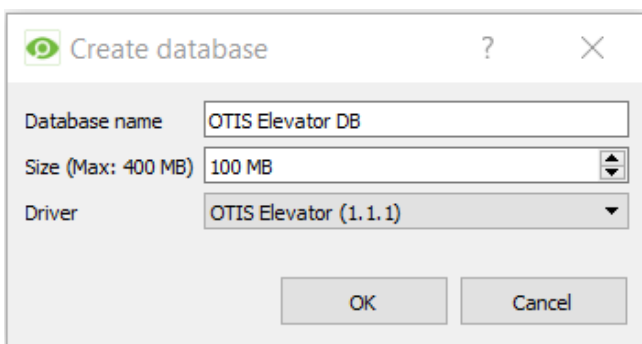
Give the Integration database a descriptive **Database Name**.

Allocate a **Size** to your new device database.

Choose the device **Driver** that your device will be using, and click on OK to create the database.

- *Select the Integration database*
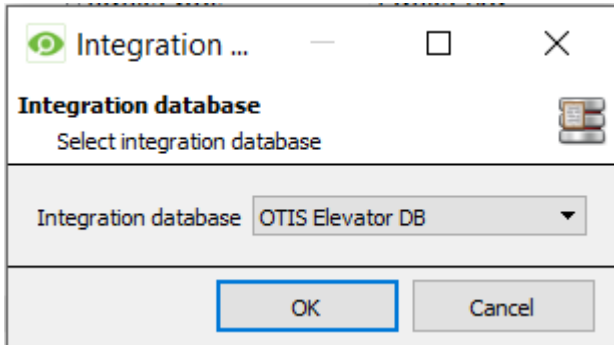
Integration database | -- select integration database -- |

Once a database has been created the user may select it by clicking on the icon, and selecting it in the dialogue that appears. Only databases which relate to the device you are adding should appear.

3 Camera Tab Overlay Setup

Once all the relevant settings have been configured, the elevator overlay can be pulled through over the relevant camera feed.

Note: Cameras must have already been added to the elevator objects.

a. Video Feed Options Panel

To bring up the overlay, click the arrow to the left of the screen, to pop out the Video feed options panel. Once popped out, the Video feed options panel will present a number of options specific to the settings configured for that video feed.

Select the Overlay

Clicking the icon will bring up the overlay options for this video feed.

Select the desired overlay and it will appear over the video feed, as above.

4 Database

a. Introduction

The database tab will allow you to navigate the databased entries, for each individual database. In the database tab each database is presented as a table. It has built in filters, and the ability to navigate by timestamp. If a database entry has an associated recording you will also be able to launch this recording, from within the database tab.

Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathexisVision by the integrated device.
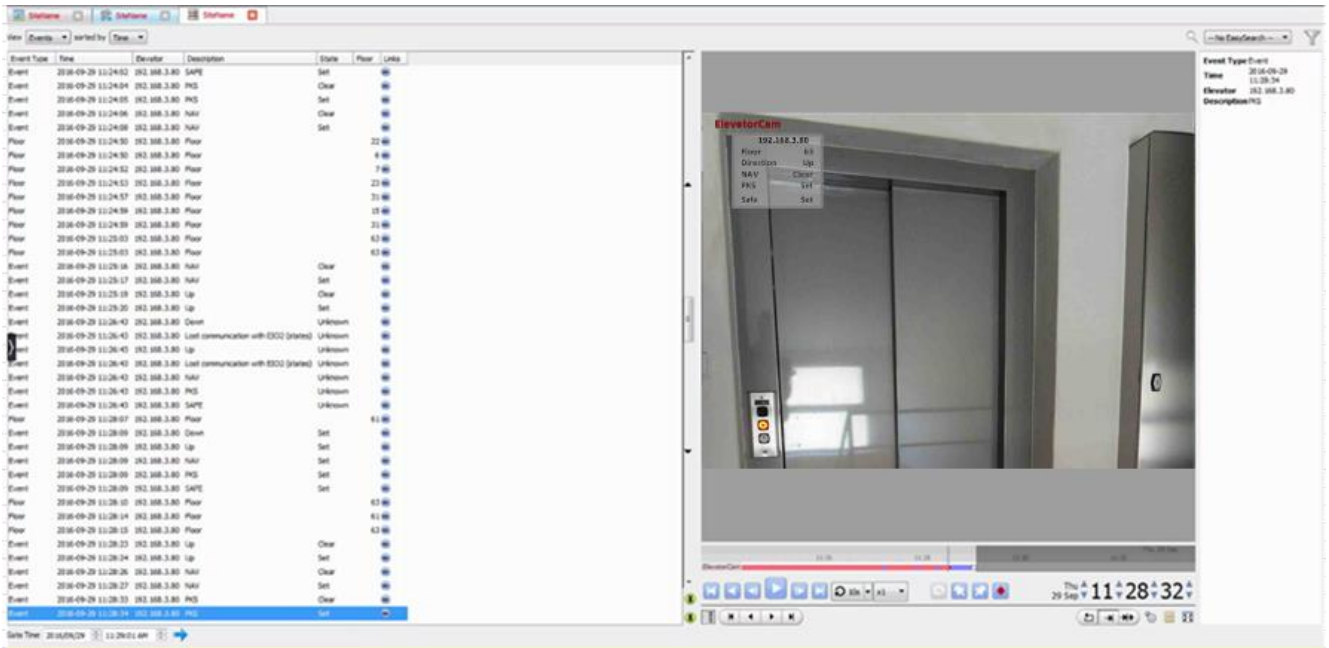
b. Navigate to the Database
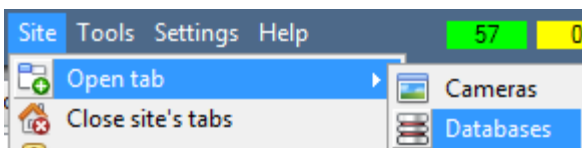
To view the information stored in the Integration database, follow the path to the left.
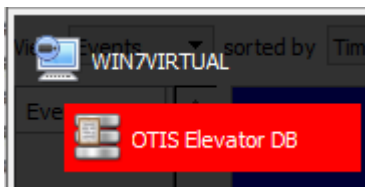
This will open the Database Tab.
Once in the databases tab, select the relevant integration database. The databases are ordered under the NVRs that they are attached to.

Hover over the on the left-side of the camera image to bring up the database panel on the left.

c. Database Interface
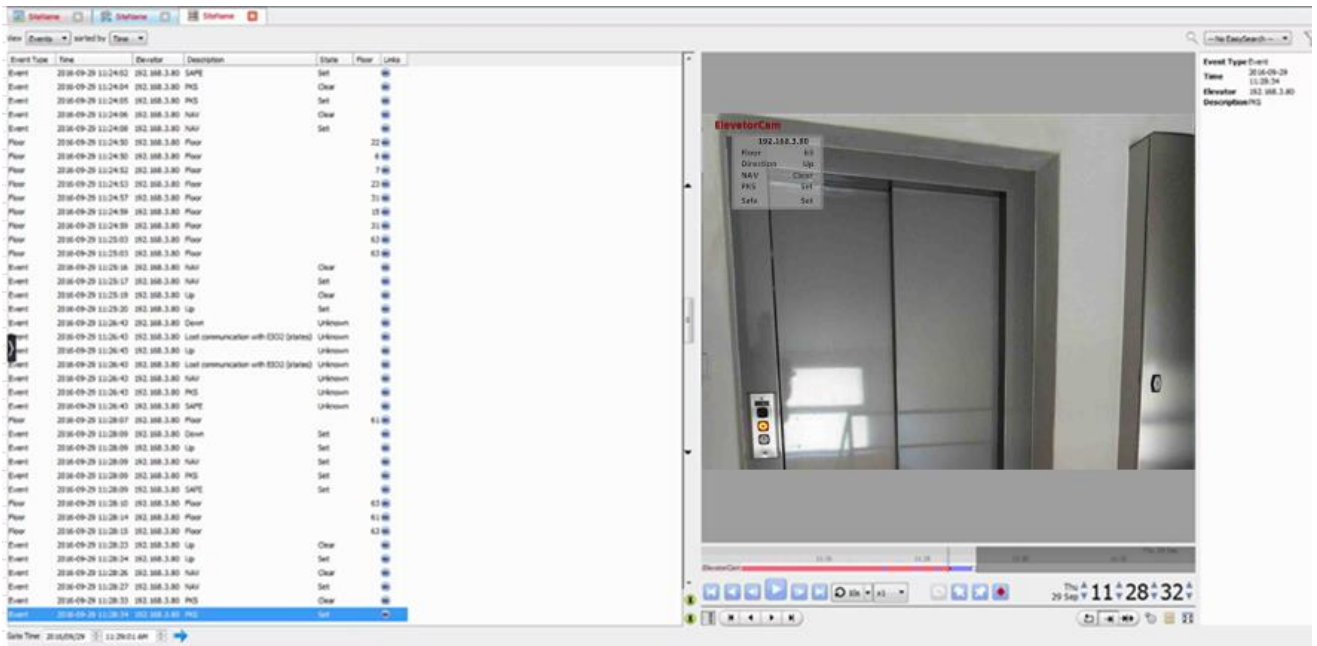
① **View**	You may change the way that your database is presented. Some integration databases have multiple view options. The OTIS database has **Events** and **Floor** options.	
② **Sorted By**	You may sort the Events based on the following parameters: **Time**.	
③ **Easy Search**	The easy search option allows you to quickly search the database within one of the following options: **Elevator, Description, State and Floor.**	

④ **Filter**	Filter offers a more advanced manner of sorting information in the Integration Database table.
	
	Once you have the filters dialogue open you will have the following options:
	1. To **enable** filters check this box: ☑ Enable filters
	2. To **add** a new filter click on 🔽➕.
	The filter icon 🔽 will change to 🔽✓ when filters are active.
	3. To **delete** an added filter click on 🔽➖.
	
	The OTIS Elevator panel has the following filter options:
	
	Transaction
	    Event Type
	    Time
	    Elevator
	    Description
	    State
	    Floor
	
	Note:
	1. You may run multiple filters simultaneously. And you may even filter using the same parameter more than once.
	2. To change a filter click on the blue hyperlinked text. (For example, click on *Timestamp* to change the filter from Timestamp, to any of the other available options.)	

⑤ Go to Time	This will allow you to go to a specific point in time, down to the second. To navigate to a timestamp set the time using the time and date boxes, and then click on the ➡ icon.	

Viewing an Entry's Associated Recording

If you have attached cameras to device objects in the Integration setup and if there are available recordings for those cameras, then each Integration database entry will have a corresponding recording.

This integration uses the new video option where the video player is embedded in the database view. This player uses the same timeline features as the CathexisVision cameras tab.

To view an associated recording, simply left-click on a database entry which has the 🔵 icon in the **Links** column. Then click play in the video player.
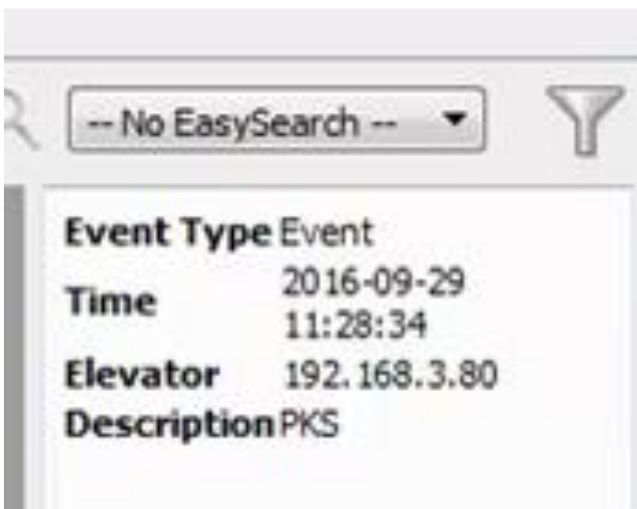
- *Reviewing Multiple Cameras*

	If multiple cameras were added to the recorded object during the integration setup, these are displayed on the left of the video player screen as thumbnails. Select a camera thumbnail to review it.

- *Device Event Metadata*

When a database entry is selected, its event information will be displayed on the right of the video player:
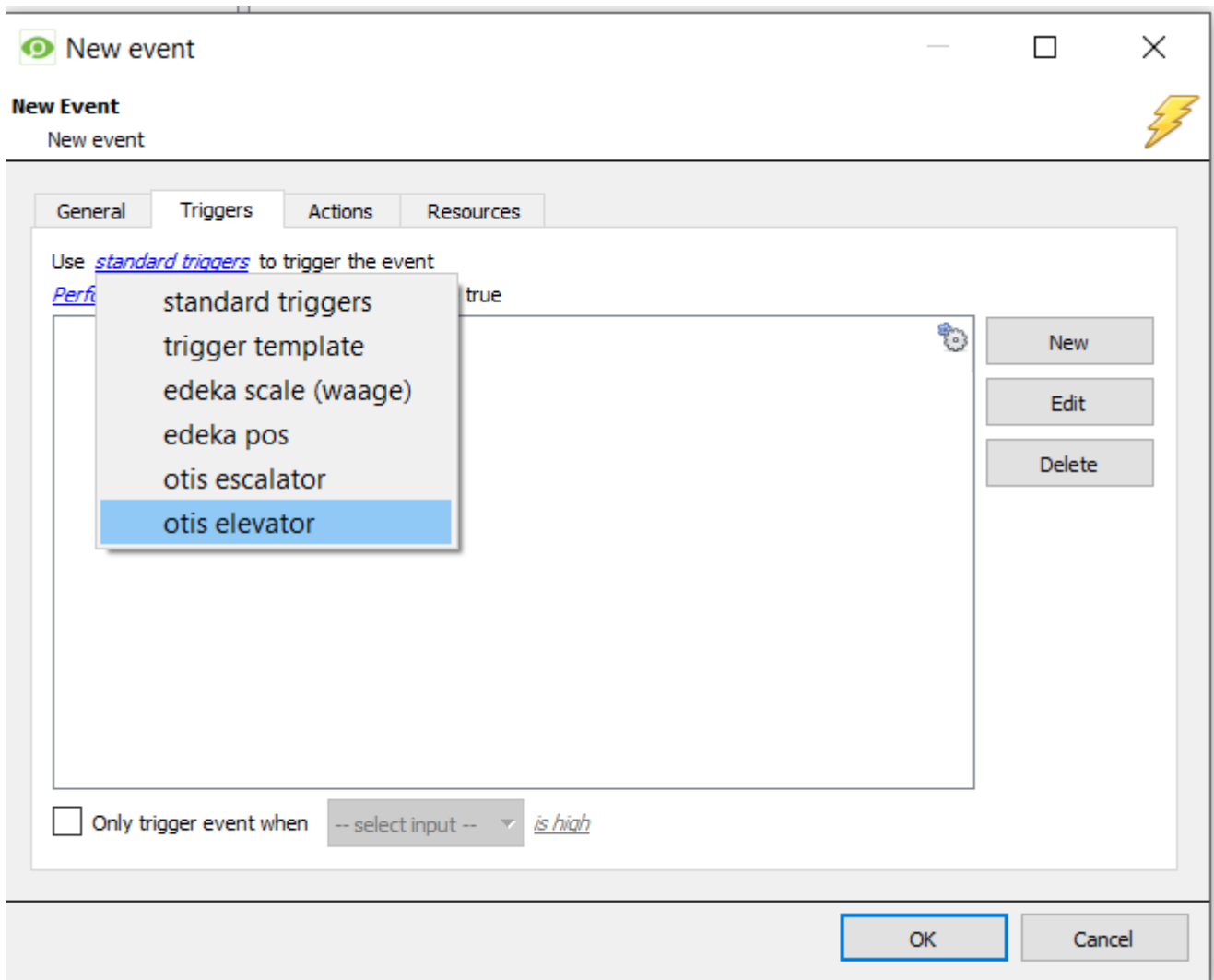
5 Events

a. Introduction

A CathexisVision Event has a trigger, which causes an action. You may set integrated devices to act at triggers, or as actions. This document will detail the OTIS Elevator specific aspects of Events. There is a comprehensive guide to CathexisVision Events in the main setup manual.

Most of the data that CathexisVision receives from a device is presented in the Events interface. This is done in order to give the user a full range of options. As a result, some of the options presented in the interface may be *impractical* for being used as an event trigger, or action.

Event Window

Events in CathexisVision are setup via the Event Window. This has 4 tabs. In the **General Tab** an event is given a name, description, schedule and priority. In the **Triggers Tab** the trigger/s for the event is defined. In the **Actions Tab** the action/s which the event takes is defined. In the **Resources Tab** the various site resources which can be used as part of an event are defined.

b. Creating an Event

To create an event using the OTIS device, enter the Events management area:

Once in Events management click on [New]. This will open up the New Event window.

- ### *While/When and Any/All*

When triggering on an object you will have the option to trigger **while/when** a trigger is active. You will also be able to select multiple triggers, and define whether **all/any** of the triggers need to be active to start an event.

 As usual, to change these settings click on the related, blue, hyperlinks.

c. Triggers

A trigger is the user defined input that tells the event to start. The trigger causes the subsequent action (which the user will also define).
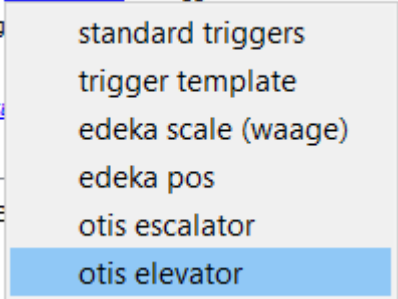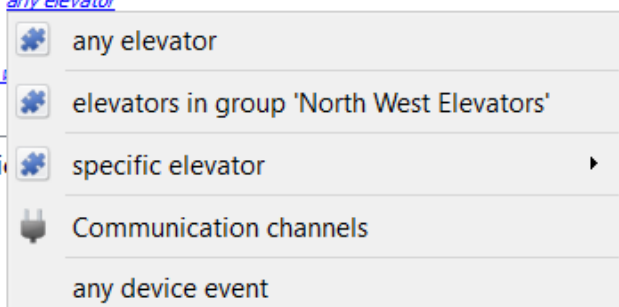
Set your device as the trigger

 If you are creating a new event, the trigger type will default to: Use *standard triggers* . To define which device you want to trigger the event, click on the hyperlink after "use". To set it as the OTIS device, click on the hyperlink, and select the relevant device name from the dropdown menu.

Trigger Types (Trigger Using)

 It is useful to think of this as a **master trigger type**.

Any Elevator will trigger when any of these objects sends the selected trigger.

Elevators in group... If a group has been created, selecting this option will set the event to trigger when any of the objects in the group sends the selected trigger.

Specific Elevator will trigger only on a specific object sends the selected trigger.

Communication channels will trigger only on the Communication channels.

Any device event will trigger on any event that occurs on the device. Within the "any device event" setup you may set "device event rules" which will constrain which device events will trigger the event.

Note for group triggers: If you want this event to be databased under the name of a specific object, and not the name of the triggering group, you will need to modify the Description field in the **General tab** of the Event setup. Click on the 🛈 to see a list of available descriptions. Here is an example which send the triggering object's name to the database, for the event: Description $obj_name 🛈

Device Event Triggers

After selecting a master trigger type, add a trigger to the event. Click on ⟨New⟩ in the Triggers tab. This will bring up the dialogue box below:
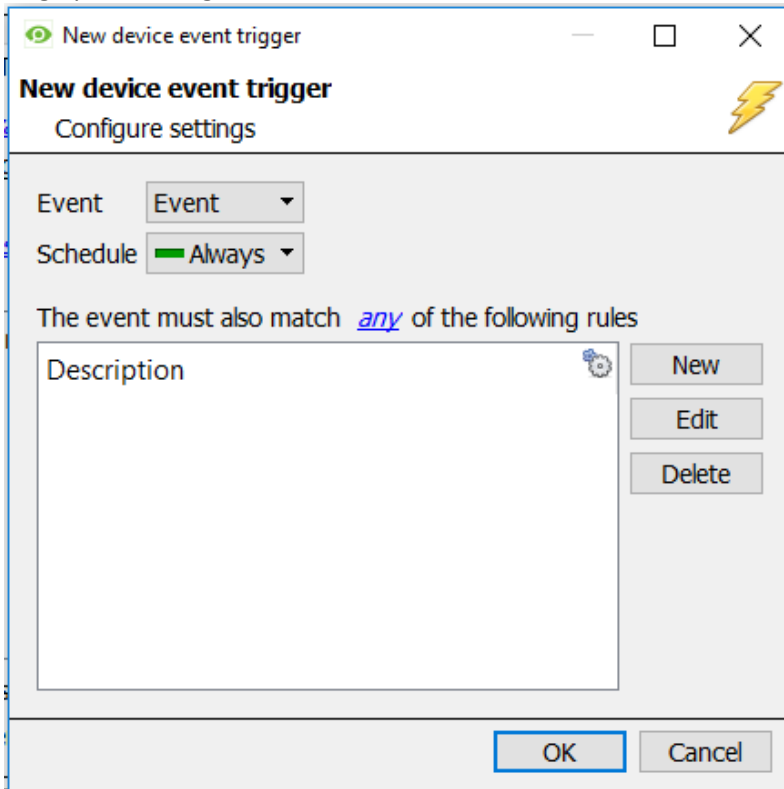
Select the **Event** type. The OTIS Elevator device only has **Event** and **Floor** events.

Define the **Schedule**.

Click on the blue hyperlink to define whether the *any* or *all* of the configured device event rules should trigger an event.

Next, add rules to the device event trigger.

- *Add Rules to Device Event Triggers*

If no constraints are set, every device event will trigger this. Once constraints are set, only the constraints chosen will trigger the event. Once the type of device event that will be the trigger is selected, add a new **device event rule.** To do this, click on ⟨New⟩ in the **New Device Event Trigger** window.
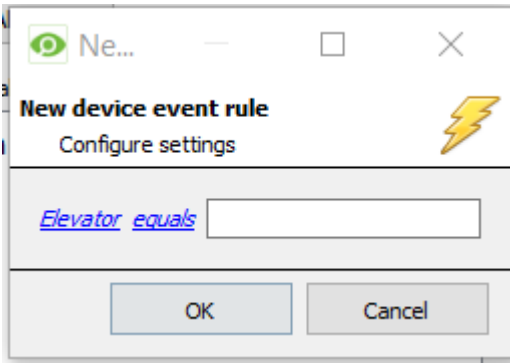
To change the constraint, click on the first hyperlink, this will bring up the full list of available rules:
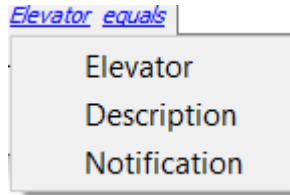
To modify the way this rule will be treated click on the second hyperlink:
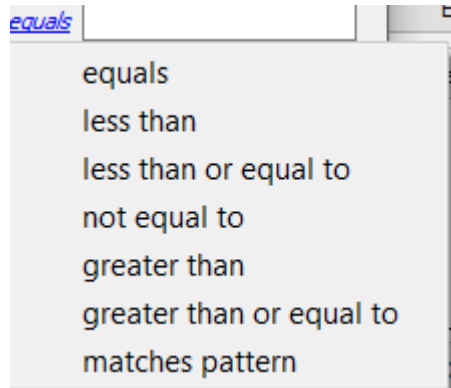
Note: When all available options are known to CathexisVision, they will be visible in a drop-down menu. When these variables are not pre-defined, they will need to be filled in manually. The information pulled through to the events is information sent to CathexisVision from the OTIS Elevator device. See the relevant OTIS manual for more information.

d. Actions
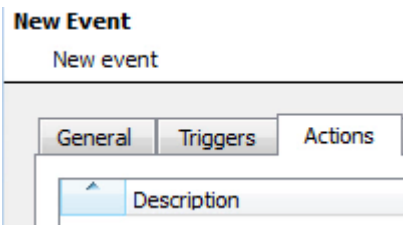
Once you have defined the triggers that are going to initiate your event, you will need to define some Actions. With many integrations there will be the option to control the integrated device, as one of the actions. **However, this is not an option for the OTIS Elevator device**.

New Action
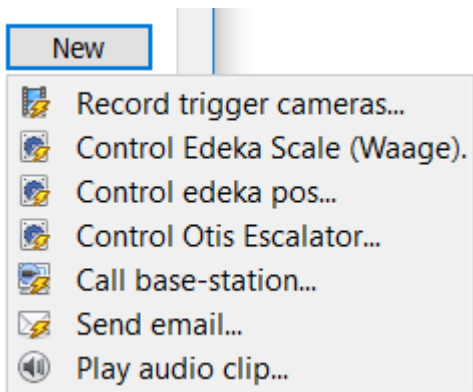
To create a new Event Action click on [New].

Note: The OTIS Elevator **cannot** be controlled as an action.

6 Conclusion

Please remember that this appnote was designed to deal specifically with this integration. For further information about the CathexisVision software please consult the main manual (http://cathexisvideo.com/).

For support please contact support@cat.co.za