



# Advanced Mx4100 EN54 Fire Alarm Panel Integration App-note

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<sup>1</sup> While Cathexis has made every effort to ensure the accuracy of this document, there is no guarantee of accuracy, neither explicit, nor implied. Specifications are subject to change without notice.

## 1. Introduction

This document will detail the integration of the Advanced Fire panel, with CathexisVision's software. Functionally this integration will entail the triggering of standard CathexisVision Events, based on the triggers from the Advanced panel.

### Note:

1. If you need information regarding the regular operation of a Advanced device, please consult the relevant Advanced documentation.
2. 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.
3. Events that occur when the communication channel, between the Advanced panel, and CathexisVision, is down will not be retrieved when the channel is up again.

### 1.1. License requirements

#### 1.1.1. CFPL-2000 CathexisVision Fire Panel Integration License

Advanced will need to be licensed on the CathexisVision software, using the CFPL-2000 CathexisVision Fire Panel Integration license.

Only a single license is required per site provided the Fire Panels are all interconnected. If they are individually connected into the server as separate integration devices then a license is required per panel.

### 1.2. 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 object.

In the case of the Advanced panel the **device** is the panel itself; the objects are the **zones/nodes** (various sensor devices), and the **groups** (groupings of zones).

#### 1.2.1. Objects

The following device event messages, and objects/object types, will be represented in the CathexisVision integration, after installation and configuration, of the Advanced hardware.

### 1.2.1.1. Objects

The Advanced panel has the following objects:

Object	Definition
Sensor device	Specific input sensors used to trigger alarms from.
Relay device	Output relays.
Switch device	-
Device	Generic device term for all devices not listed as one of the above.
Zone	Conceptual grouping of devices. This is global and not confined to a specific node.
Node	Hardware unit (BMS, Advanced panels are nodes) connected to a common RS485 bus.

### 1.2.1.2. Device States

State	Description
Unknown	Whenever the connection to a specific node has been lost, its devices will be set to unknown until that that node can provide their current status.
Ready	Default device state.
Disabled	Disabled devices will not report alarm conditions.
Faulty	A device requiring maintenance will show a faulty state.
Alarmed	The device is triggering an alarm to its network node. This will cause the associated zone to become alarmed as well.

### 1.2.1.3. Device Actions

The device has two possible actions:

1. Disable
2. Enable

### 1.2.1.4. Zone States

1. Unknown
2. Ready
3. Partially disabled
4. Disabled
5. Armed

### 1.2.1.5. Zone Actions

Action	Description
disable	Disables all devices in zone that can be disabled
enable	Enables all devices in zone that were previously disabled

### 1.2.1.6. Node States

State	Description
Online	The ring of known nodes will be polled periodically to check whether they are online. If a node ignores this heartbeat from the DSS it and all the devices associated with it will be put in an offline state until a successful heartbeat is received on a future poll
Offline	

### 1.2.1.7. Node Actions

Action	Description
Mute	Turns off the internal buzzer on panels and remote terminals
Silence	Silences sounder output devices
Reset	Resets the panel/network from a latched condition e.g. fire
Resound	Turns any silenced outputs back on
Generate fire alarm	
Generate alert alarm	
Clear fire alarm*	
Clear alert alarm*	

\*These are two independent alarms and clearing one does not affect the other.

## 2. Device Addition and Configuration

### 2.1. Introduction

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

### 2.2. CathexisVision Specific Advanced Setup

The Advanced device needs to be setup in a certain way, in order for it to correctly integrate with the CathexisVision suite.

#### 2.2.1. Connection Options

The Advanced device can be connected to the CathexisVision software via the following channels, under the same license and as the same device:

- RS232
- ESP1204

Multiple Advanced panels may be linked together using a RS485 bus. This will form one Advanced device within the DSS software with multiple network nodes.

Alternatively each panel can be connected to an ESP and be represented by an Advanced device within the DSS software.

Network Bus card that connects from the main PCB on the panel to the MXP-510 listed below.



Mxp-510 Standard Network BMS Interface (This connects from the Network Bus card above and gives RS232 connection to ESP 3102)



Note the setup switch position on the picture MXP-510 BMS to ESP.



### 2.2.2. Commissioning Mode

Ensure that the panel is **not** in commissioning mode. Commissioning mode disables the protocol messages from being sent/received by and from the panel.

### 2.2.3. Port Number

The port number needs to be the same in both the Advanced, and CathexisVision setups. This is generic to all CathexisVision 3rd party serial integration devices.

### 2.2.4. Primary Node Number

You will need the number of an existing Advanced node. This is needed when adding the device in the CathexisVision software.

### 2.2.5. Next Commissioned Node References

Please ensure that the next commissioned node references are valid. The next node references should form a circular reference structure. For example for a 4 node system with nodes (1), (5), (6), (19). The next node references might be (1)5, (5)6, (6)19, (19)1.

## 2.3. 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 the path below.


### 2.3.1. The Integrations Panel



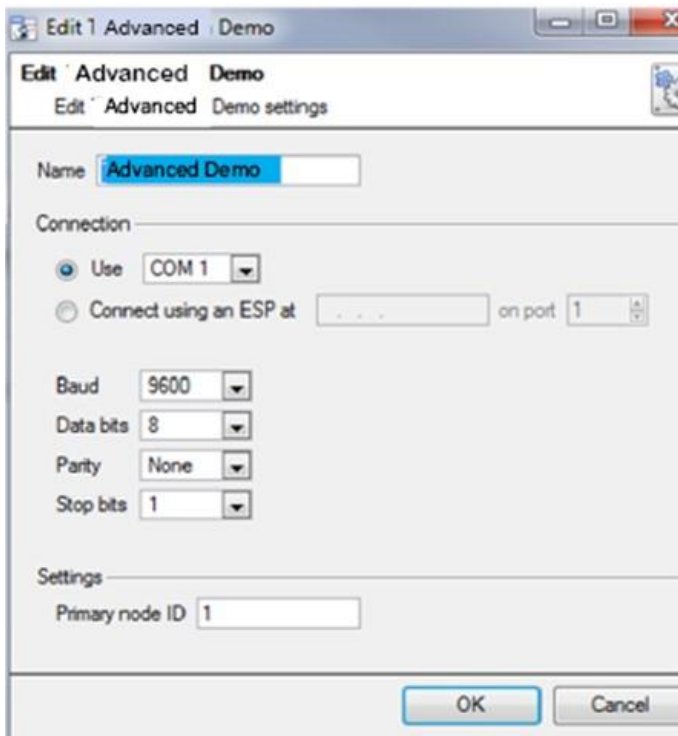
You will notice two sections in the Integration Panel:

1. The **Devices** list will list the integration devices that are attached to your integration database.
2. The **Configuration** section enables you to edit/review, the device which you have selected in the **Devices** section.

### 2.3.2. Device Addition

1. Once in the Integration Panel, in the devices section, click on . This will open the addition window.
2. Select Technoswitch fire panel (use this for the Advanced alarm panel as well) from the list.





Give your device a descriptive **name**.

Choose the right **connection**. If you are using RS232 this is the COM port number. If you are using an ESP, then input the correct IP address.

**Note:** The ESP can take 4 serial connections (represented as 'port' here). So make sure that you have selected the correct port number.

Make sure the **baud rate**, **data bits**, **parity**, and **stop bits** match the relevant settings on your Advanced panel.

The **primary node** was discussed earlier, and can be the number of an existing Advanced node.

## 2.4. 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**.

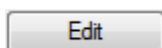
### 2.4.1. Object configuration

The object configuration tab is the tab where you may view all the individual objects that comprise the integration.

#### 2.4.1.1. Object Configuration Buttons



You may add a new object by clicking on New.

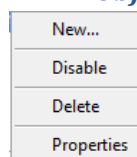


Will open up an existing object for edition.



Is used to delete an existing object from the CathesisVision configuration.

#### 2.4.1.2. Object Configuration Right-click Options



**New** will open up the dialogue to add a new object.


**Disable/Enable** allows you to manually enable/disable individual nodes.

**Delete** will permanently remove this object from the list.

**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 , and select the relevant camera from the drop-down menu.

To delete a camera click on .

### Note:

1. If you do not have **continuous recording** setup, on associated cameras, you will run the risk of zones (object) triggering while the cameras are not recording. To only record cameras, when an object triggers, you will need to setup **Events** that trigger a recording, when one of these objects is activated.
2. Only the first camera associated here will be displayed in the Integration Database.

## Properties: Access

**Access** allows you to protect sensitive objects, by only allowing certain levels users access to them.

You will see a list of objects, whose access level you may set.

**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.

## 2.4.2. Objects Properties Tab

The Object properties tab allows you to view the objects, sorted by type. In the case of the Advanced device you will have the options of viewing by **device**, **node**, or **zone**.

### 2.4.2.1. Device

1. Disabling a Device will disable it on the Alarm Panel and prevent it from being triggered. Its State will change from **Normal** to **Disabled** and it will tick the "Is disabled" column.
2. Certain Devices cannot be disabled.

3. When a Device is triggered it will change State, from **Normal** to **Alarmed**, and tick the “Is alarmed” column. When the Node is Reset, the State will change back to **Normal**.
4. If a Device's State cannot be detected it will remain **Unknown**.
5. If communication to the Alarm panel is lost, all Device States will change to **Unknown**.

#### 2.4.2.2. Node

1. The user can generate **Alert/Fire** alarms, **Mute** alarms and **Reset** alarms from the right-click menu of the Node.
2. Node state shows **Online** and, if there is no communication with the Alarm panel, the state will change to **Offline**.

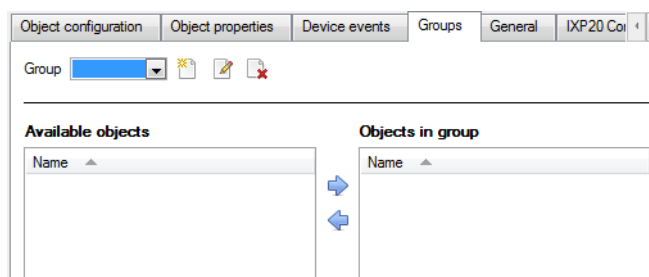
#### 2.4.2.3. Zone

1. If a Device is disabled the associated Zone's State will change to **Disabled**, if only the one Device is attached; or changed to **Disabled (partial)**, if there are other Devices attached that are still enabled.
2. Disabling a Zone will disable all Devices in that Zone that can be disabled.  
**Note:** Some Devices cannot be disabled.
3. All Devices associated with a Zone is displayed in the “Devices column”.
4. If communication to the Alarm panel is lost, all Zone States will change to **Unknown**.

### 2.4.3. Device Events Tab

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

### 2.4.4. Groups Tab

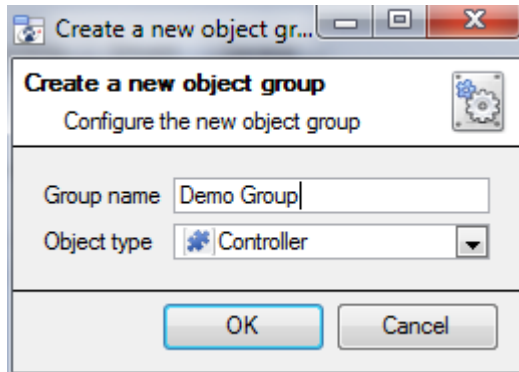


You can create groups of the same type of object.

**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 zones/partitions in that group is triggered.)

### 2.4.4.1. Create a Group

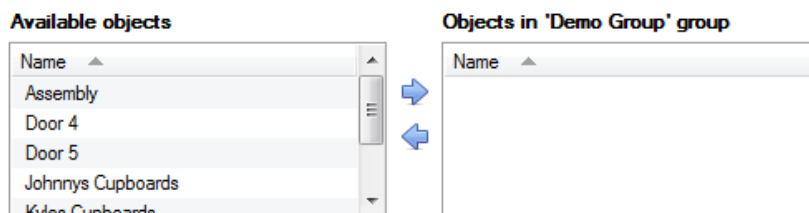
To create/edit a group click on / . (**Note:** Once a group has been created, you may not edit the object type of the group.)



When creating a group you will select what object type to include in the group. Once the group is created the available objects panel will fill up with all available objects of that type. From this list you will choose which objects you want to use in your 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 / .

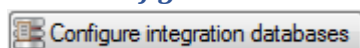
## 2.4.5. General tab

Currently the general tab deals with the **Integration database**. Here you will be able to select a pre-created database, or you will be able to configure a new database.

### 2.4.5.1. Select an Integration database

Integration database | Access To select a database click on , and select the relevant database. Only databases which relate to the device you are adding should appear.

### 2.4.5.2. Configure a new database



If there is no database created yet, clicking on this button will take you to the integration database setup.

**Note:** The information on setting up an integration database may be found in the **Integration Devices General Settings** section of the CathexisVision Setup Manual.

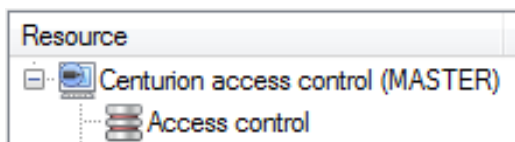
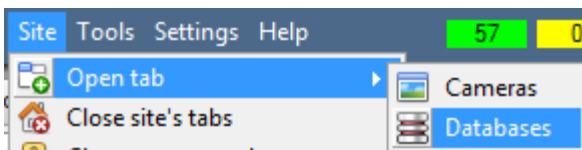
## 3. Database

### 3.1. 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 CathesisVision by the integrated device.

### 3.2. Navigate to the Database

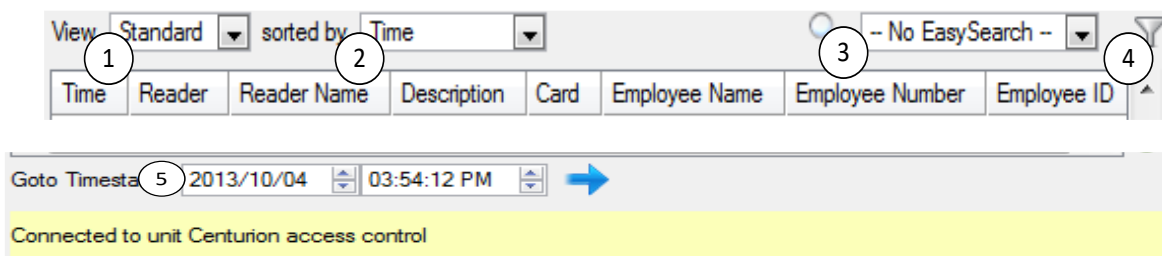


You may view the information stored in the Integration database, by following the path you see to the left.

This will take you to the Database Tab.

Once in the databases tab you will have to select the relevant integration database. The databases are ordered under the NVRs that they are attached to.

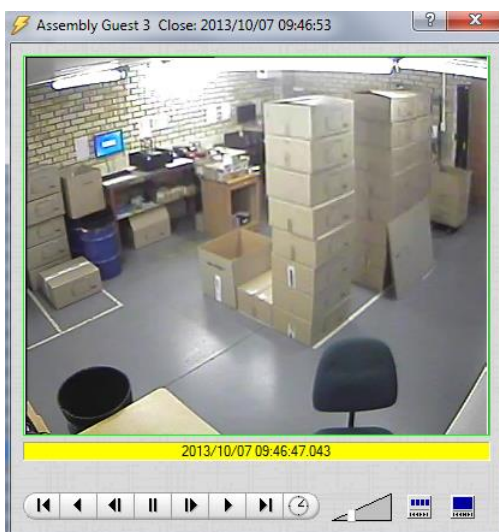
### 3.3. Database Interface



① <b>View</b>	You may change the way that your database is presented. Some integration databases have multiple view options. The Advanced database only has one, Standard, option.
② <b>Sorted By</b>	You may sort the Events based on the following parameters: <b>time, type, ID, name,</b> and <b>state</b> .
③ <b>Easy Search</b>	The easy search option allows you to quickly search the database within one of the following options: <b>type, ID, name,</b> and <b>state</b> .
④ <b>Filter</b>	Filter offers a more advanced manner of sorting information in the Integration Database table.

	<p>You are able to filter based on the following parameters: <b>time, type, ID, name, and state.</b></p> <p>Once you have the filters dialogue open you will have the following options:</p> <ol style="list-style-type: none"> <li>1. To <b>enable</b> filters check this box: <input checked="" type="checkbox"/> Enable filters</li> <li>2. To <b>add</b> a new filter click on </li> </ol> <p>The filter icon  will change to  when filters are active.</p> <ol style="list-style-type: none"> <li>3. To <b>delete</b> an added filter click on .</li> </ol> <p><b>Note:</b></p> <p>You may run multiple filters simultaneously. And you may even filter using the same parameter more than once.</p> <p>To change a filter click on the blue hyperlinked text. (For example, click on <a href="#">Timestamp</a> to change the filter from Timestamp, to any of the other available options.)</p>
<p>⑤ <b>Go to Time</b></p>	<p>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 the click on the .</p>

### 3.3.1. Viewing an Entry's Associated Recording



If you have attached cameras to device objects in the Integration setup, and have set these cameras up to record continuously, each Integration database entry will have a corresponding recording. To view a databased event's recording double click it. A floating replay window will appear, from which you may review and archive video content.

will give you the view to the left.

will break down the image into 4 sequential frame viewers.

## 4. Events

### 4.1. Introduction


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

Most of the data that CathesisVision 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.

### 4.2. Creating an Event

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



1. Once in Events management click on . This will open up the New Event window.
2. Once in this window, select the Triggers tab and click on the hyper link titled, [standard triggers](#).
  - a. From the menu that drops down, left-click the Advanced device that you want to trigger the event with.

#### 4.2.1. While/When and Any/All

When triggering on a door 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 set-off an event.

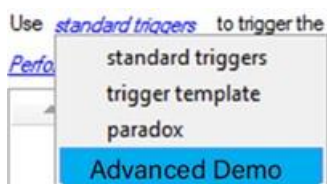
Trigger using [Door 3](#)  
[Perform actions while](#) [any](#) of the properties meet the following criteria

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

### 4.3. 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).

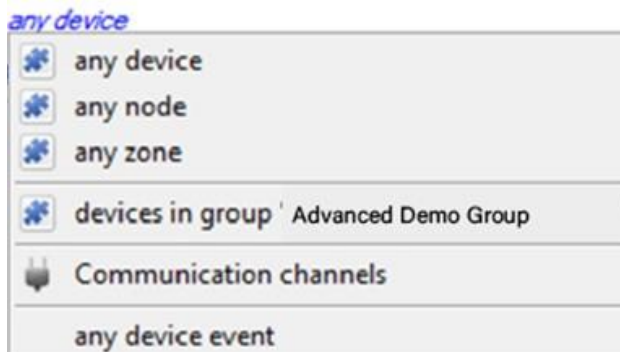
#### 4.3.1. Set your device as the trigger



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 Advanced device, click on the hyperlink, and select the relevant device name from the dropdown menu.

### 4.3.2. Trigger Types (Trigger Using)

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




**Any device** will trigger on any of the Advanced devices.

**Any node** will trigger on any node.


**Any zone** will trigger if anything happens in a specific zone

**Devices in group...** If you have created an object group, it will appear in this drop-down list, and may be selected as a trigger.

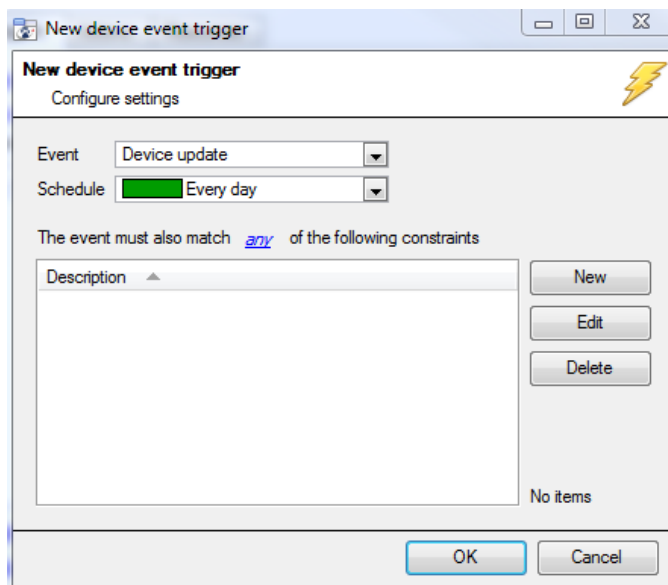
**Any device event** will trigger when any trigger occurs on the Advanced device.

**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 will database the text "Door Name" along with the name of the *door object* that triggered the event:

Description

After selecting a master trigger type, you will need to add a trigger to the event. Click on  in the Triggers tab. This will bring up the dialogue box you see below:

### 4.3.3. Any Device Event



For example within the [any device event](#)

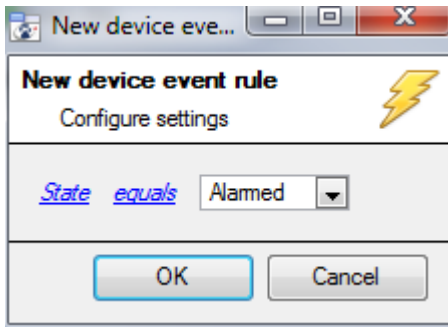
option you may choose what type of device Event will be your trigger.

Choose from the drop-down menu. The Advanced offers Device Update, Node Update, Problem, and Zone Update

**Note:** You may set multiple constraints. Choosing if [any](#), or [all](#) constraints need to be fulfilled to set off a trigger. If you do not define a constraint literally every single device event will trigger this event.

To add/edit/delete a rule (a constraint) use the New, Edit, and Delete buttons on the right hand side.





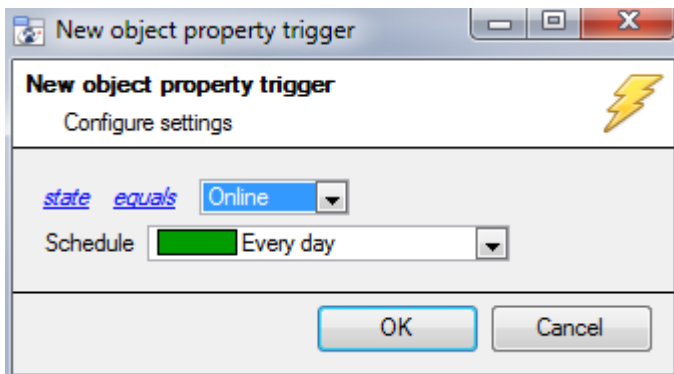
To change the constraint click on the first hyperlink, this will bring up the full list of available rules.

To modify the way this rule will be treated click on the second hyperlink (equals in the example) this will show you the rules options.

**Note:** When all available options are known to CathexisVision you will see a drop-down menu. When these variables are not pre-defined you will need to fill them in yourself. The information pulled through to the events is information sent to CathexisVision from the Advanced device, see the Advanced settings for the strings needed here.

#### 4.3.4. Any Device/Node/Zone/Group

The non-Any Device Event triggers have a slightly different setup window. In these instances you do not need to set constraints, since you are essentially adding them one at a time. This option is better if you have a select few triggers that you want to use.

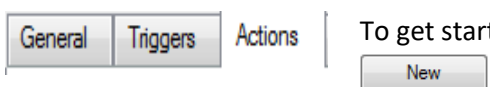


Since you are only using one type of object to trigger the event in this instance, the dialogue will appear as the **New Device Event Rule** window did previously.

### 4.4. Actions

Once you have defined the triggers that are going to initiate your event, you will need to define some Actions. One of the available actions will be to *control* an Advanced device.

#### 4.4.1. Open Actions Tab and Select the Advanced Device



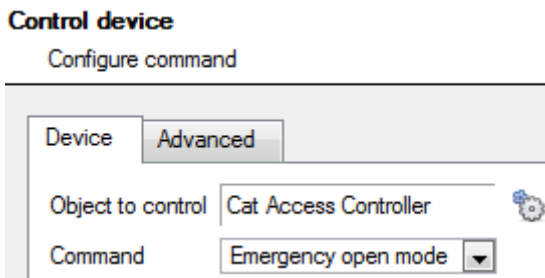
To get started left-click on the tab titled “Actions”, and click on


A menu will drop down containing all the available action types. The device action type is represented by this icon: . It will say “Control ...” and the name of your Advanced device e.g. Control Advanced .

#### 4.4.1.1. Control device

This will bring up the **control device** dialogue. Under the **device** tab the user defines how the device will be controlled; under the **advanced** tab, the scheduling of the action is defined.

#### 4.4.2. Device

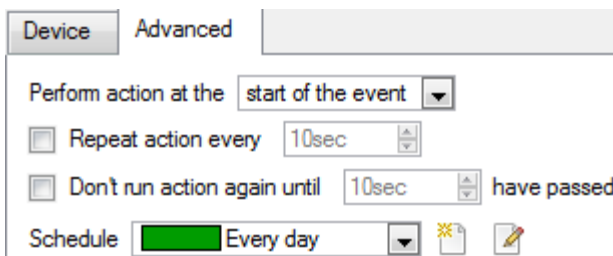


To select an **Object** click on the  icon. This will give you a selection of all the Objects available on the Advanced device.

The **command** drop down will change to represent the commands available to that Object.

**Note:** you may only take a global action here, and global actions may only apply to **controllers**. For example you may not control **communication channels**, or **door nodes**, as part of an event action. If you select one of these objects you will have no options in the Command menu.

#### 4.4.3. Advanced



You may choose to **perform action at the** start of the event, or once the event triggers have subsided.

The two checkboxes allow the user to set the action to repeat every few seconds, and/or not run for a period after it has triggered.

**Schedule** is a standard Cathexis schedule, which you may apply to the actions.

## 5. Conclusion

Please remember that this app-note 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](mailto:support@cat.co.za)