



# Advanced Mx4100 EN54 Fire Panel Integration App-note

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# 1. Introduction

This document details the integration of the Advanced fire panel with CathesisVision. This integration entails the triggering of standard CathesisVision Events, based on the triggers from the Advanced panel.

**Note:**

1. For information regarding the regular operation of an Advanced device, please consult the relevant Advanced documentation.
2. There is a General Integration section in the *CathesisVision Setup Manual*. It has information about creating an integration database and a general introduction to the Integration Panel. **Read this section.**
3. Events that occur when the communication channel, between the Advanced panel and CathesisVision is down will not be retrieved when the channel is up again.

## 1.1 License Requirements

### 1.1.1 CFPL-2000 CathesisVision Fire Panel Integration License

Advanced needs to be licensed on the CathesisVision software using the CFPL-2000 CathesisVision 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 CathesisVision integrations have two component levels: **Device** and **Object**.

Device	The device is CathesisVision software's interface, which handles all the interaction between CathesisVision and the integrated hardware. When an integration is added to the CathesisVision system, a device is added. The messages received from the device are called Device Events.
Objects	Objects are the individual pieces of hardware that comprise the integration. There can be 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 CathesisVision integration, after installation and configuration of the Advanced hardware.

### 1.2.1.1 Objects

The Advanced panel has the following objects:

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

### 1.2.1.2 Device States

State	Description
<b>Unknown</b>	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.
<b>Ready</b>	Default device state.
<b>Disabled</b>	Disabled devices will not report alarm conditions.
<b>Faulty</b>	A device requiring maintenance will show a faulty state.
<b>Alarmed</b>	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
<b>disable</b>	Disables all devices in zone that can be disabled
<b>enable</b>	Enables all devices in zone that were previously disabled

### 1.2.1.6 Node States

State	Description
<b>Online</b>	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
<b>Offline</b>	

### 1.2.1.7 Node Actions

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

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

## 2. Device Addition and Configuration

This section details the procedure for setting up the two systems to communicate with each other.

### 2.1 CathesisVision Specific Advanced Setup

The Advanced device needs to be set up correctly in order for it to integrate with CathesisVision correctly.

#### 2.1.1 Connection Options

The Advanced device can be connected to the CathesisVision 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.



## 2.1.2 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.

## 2.1.3 Port Number

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

## 2.1.4 Primary Node Number

The number of an existing Advanced node is needed when adding the device in CathexisVision.

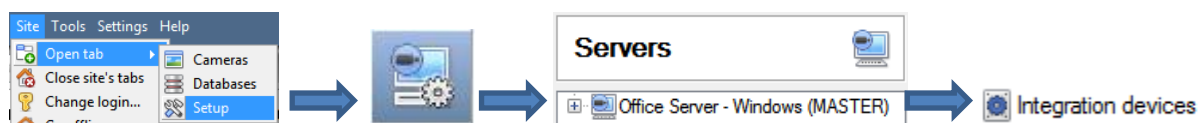
## 2.1.5 Next Commissioned Node References

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.

## 2.2 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.

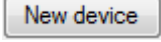
### 2.2.1 The Integrations Panel



There are two sections in the Integration panel:

1. The **Devices** list will list the integration devices that are attached to the integration database.
2. The **Configuration** section is where the device selected in the Devices section may be edited/reviewed.

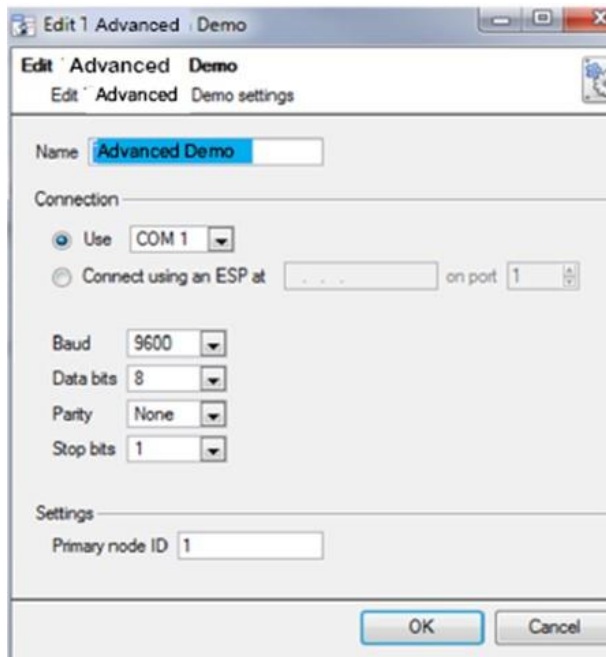
#### 2.2.1.1 Device Addition

1. Once in the Integration Panel, in the devices section, click on .

This will open the addition window.

2. Select **Advanced alarm panel** from the list.





Give the device a descriptive **name**.

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

**Note:** The ESP can take 4 serial connections (represented as 'port' here). Ensure the correct port number has been selected.

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

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

## 2.3 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**.

### 2.3.1 Object Configuration

The object configuration tab is where the individual objects that comprise the integration may be viewed.

#### 2.3.1.1 Object Configuration Buttons

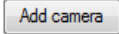
- |        |  |
|--------|--|
| New    | Click New to add a new object.   |
| Edit   | Click Edit to open an existing object for editing.                               |
| Delete | Click Delete to delete an existing object from the CathexisVision configuration. |

#### 2.3.1.2 Object Configuration Right-click Options

- |            |  |
|------------|--|
| New...     | <b>New</b> will open up the dialogue to add a new object.  |
| Disable    | <b>Disable/Enable:</b> Manually enable/disable individual nodes.   |
| Delete     | <b>Delete</b> will permanently remove this object from the list.   |
| Properties | <b>Properties</b> will open up the object properties. The object may be edited from here. (Specifically, the user may assign cameras to this object, as well as define user access levels for it.) |

## Properties: Cameras

Adding a camera or cameras to an object will mean that, whenever there is an event on that object, the recording from that camera or cameras 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. Multiple cameras can be added to a single object.
2. If **continuous recording** is not set up on associated cameras, there is the risk of zones (object) triggering while the cameras are not recording. To only record cameras, when an object triggers, set up **Events** that trigger a recording, when one of these objects is activated.
3. Only the first camera associated here will be displayed in the Integration Database.

## Properties: Access

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

A list of objects will be displayed. The user may set access levels for these objects.

**Note:** If *Use default access rights* is checked, ensure that those default rights have been correctly defined. Click on **Configure default access** to do this.

## 2.3.2 Objects Properties Tab

In the Object Properties tab, view objects, sorted by type. In the case of the Advanced device, there are the options to view by **device**, **node**, or **zone**.

### 2.3.2.1 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**.

### 2.3.2.2 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**. If there is no communication with the Alarm panel, the state will change to **Offline**.

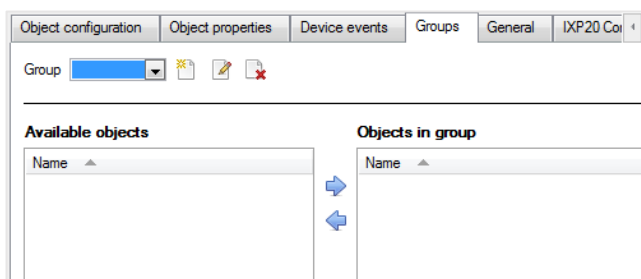
### 2.3.2.3 Zone

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**.

## 2.3.3 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.

## 2.3.4 Groups Tab





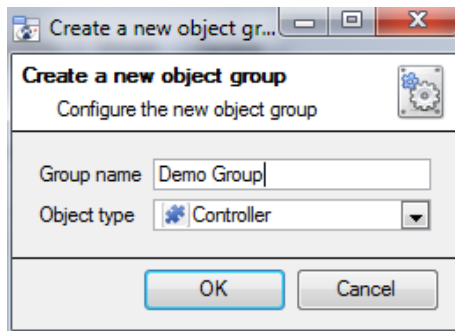
The user can create groups of the same type of object.

**Tip:** This is useful when setting up Events, because events can be triggered by an object group.

(For example, a group will trigger if any of the zones / partitions in that group is triggered.)

### 2.3.4.1 Create a Group

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

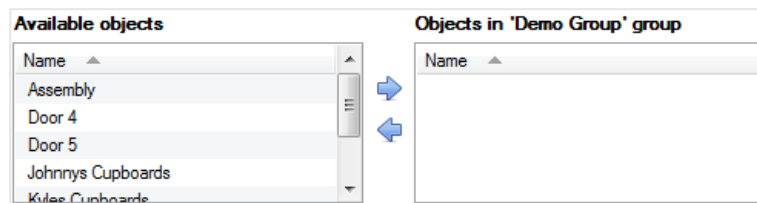


When creating a group, select what object type to include in the group. Once the group is created, the available objects panel will fill up with all available objects of that type.

From this list, choose which objects to use in the Group.

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

Click on the drop-down menu to select the **Object type** to be grouped.



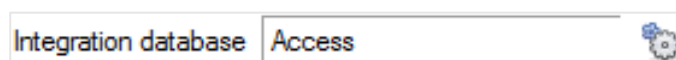
A list of Available Objects will be displayed.

To add/remove these objects to the group select them (multiple objects can be selected at one time), and click on ➡ / ⬅.

## 2.3.5 General Tab

The General tab deals with the **Integration database**. Here, the user will be able to select a pre-created database, or configure a new database.

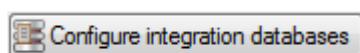
### 2.3.5.1 Select an Integration Database



To select a database, click on the gear icon.

Select the relevant database. Only databases which relate to the device being added should appear.

### 2.3.5.2 Configure a New Database



If there is no database created yet, clicking on this button will open 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*.

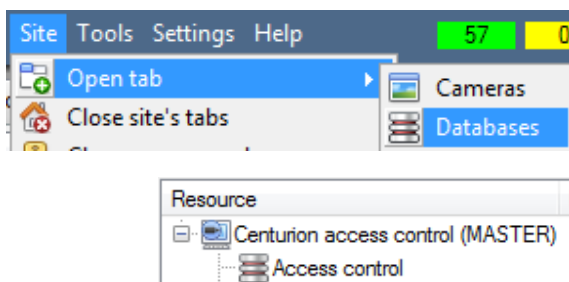
## 3. Database

In the Database tab, the user can navigate the databased entries for each individual database. 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, the recording can be launched 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.

### 3.1 Navigate to the Database



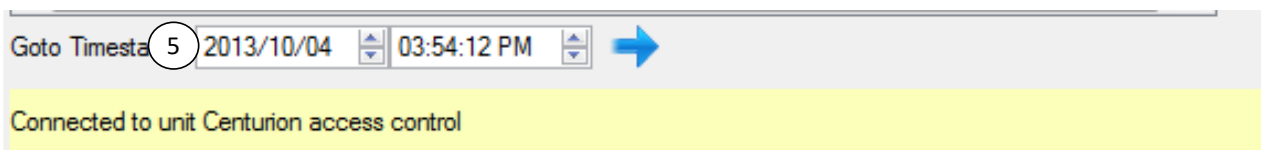
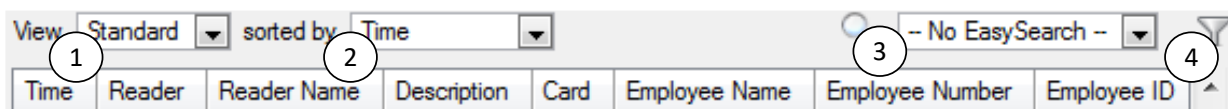
View the information stored in the Integration database by following the path shown to the left.

The Database tab will open.






In the databases tab, select the relevant integration database.

The databases are ordered under the NVRs to which they are attached.

### 3.2 Database Interface



①	View	Change the way the database is presented. Some integration databases have multiple view options. The Advanced database only has one option: Standard.
②	Sorted by	Sort Events based on the following parameters: time, type, ID, name, and state.
③	Easy Search	Quickly search the database with one of the following options: type, ID, name, or state.

<p>④</p>	<p>Filter </p>	<p>Filter offers a more advanced manner of sorting information in the Integration Database table.</p> <p>Filter based on the following parameters: time, type, ID, name, and state.</p> <p>Once the filters dialogue is open, the following options will be available:</p> <p><input checked="" type="checkbox"/> <b>Enable filters</b>    Check this box to enable filters.</p> <p>    Click this icon to add a new filter.</p> <p>    The filter icon will change when filters are active.</p> <p>    Click this icon to delete an added filter.</p> <p><b>Note:</b></p> <p>Multiple filters may be run simultaneously. The same parameter can be used to filter more than once.</p> <p>To change a filter click on the blue hyperlinked text.</p> <p>(For example, click on <a href="#">Timestamp</a> to change the filter from Timestamp, to any of the other available options.)</p>
<p>⑤</p>	<p>Go to time</p>	<p>This navigates to a specific point in time, down to the second.</p> <p>To navigate to a timestamp set the time using the time and date boxes, and the click on the this icon: </p>

### 3.2.1 Viewing an Entry's Associated Recording



If cameras are attached to device objects in the Integration setup, and these cameras are set up to record continuously, each Integration database entry will have a corresponding recording or recordings.

When viewing an event, there is the option to view all the cameras associated with the object.

To view a databased event's recording, double click it. A floating replay window will appear, from which video content may be archived and reviewed.



Clicking on this icon will provide the view shown to the left.



Clicking on this icon will break down the image into 4 sequential frame viewers.

## 4. Events

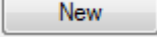
A CathesisVision event has a trigger, which causes an action. Integrated devices can be set to act at triggers, or as actions. This chapter details the Advanced specific aspects of Events. There is a comprehensive guide to CathesisVision Events in the main setup manual.

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.

### 4.1 Creating an Event

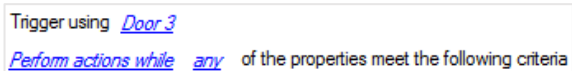
To create an event using the Advanced device, enter the Events management area:



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 will trigger the event.

#### 4.1.1 While/When and Any/All

When triggering on a door, there is the option to trigger while/when a trigger is active. The user may select multiple triggers, and define whether all/any of the triggers need to be active to set off an event.

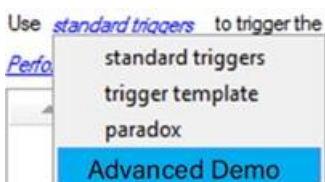


To change these settings, click on the blue hyperlinks.

### 4.2 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).

#### 4.2.1 Set the Device as the Trigger



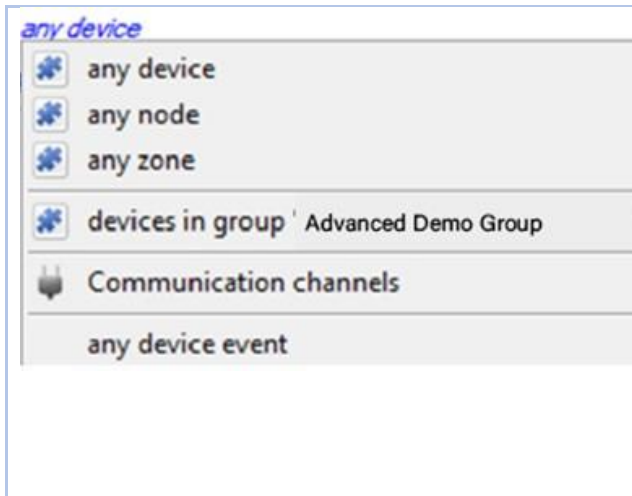
If creating a new event, the trigger type will default to: Use [standard triggers](#)

To define which device will 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.

## 4.2.2 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 an object group has been created, 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:** To database this event under the name of a specific object and not the name of the triggering group, modify the Description field in the General tab of the Event setup.

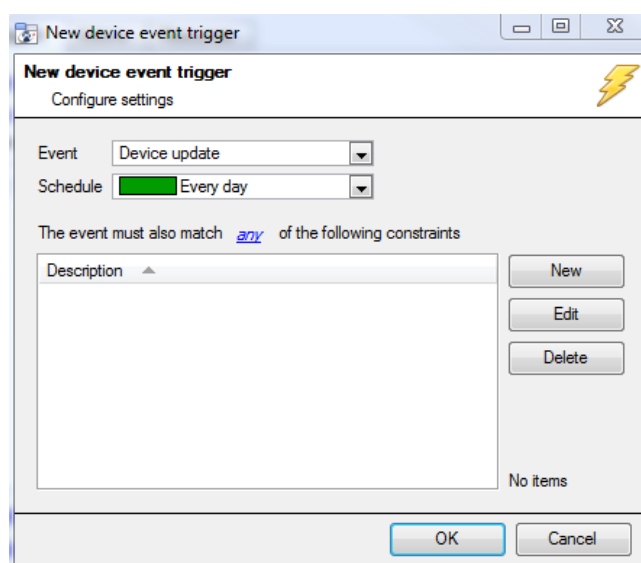
Click on the to see a list of available descriptions. Here is an example which will database the text "Door Name" along with the name of the *door object* that triggered the event:

Description

After selecting a master trigger type, a trigger must be added to the event.

Click on in the Triggers tab. This will bring up a dialogue box.

### 4.2.2.1 Any Device Event



For example, within the [any device event](#) option, the user may choose what type of device Event will be the trigger.

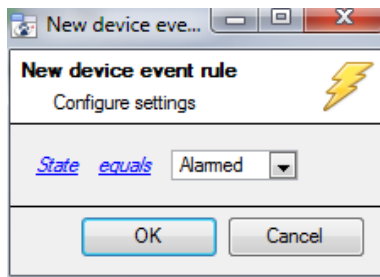
Choose from the drop-down menu. Advanced offers Device Update, Node Update, Problem, and Zone Update.

**Note:** It is possible to set multiple constraints.

Choosing if [any](#), or [all](#) constraints need to be fulfilled to set off a trigger. If a constraint is not defined, 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 side.





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

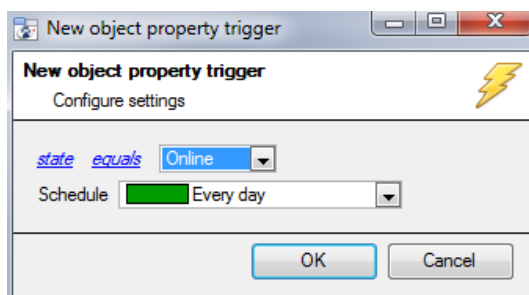
To modify the way this rule will be treated click on the second hyperlink ([equals](#) in the example) this will show the rules options.

**Note:** When all available options are known to CathesisVision, a drop-down menu will display.

When these variables are not pre-defined, the user will need to fill them in. The information pulled through to the events is information sent to CathesisVision from the Advanced device, see the Advanced settings for the strings needed here.

#### 4.2.2.2 Any Device/Node/Zone/Group

The non-Any Device Event triggers have a slightly different setup window. In these instances, constraints do not need to be set, since they are essentially being added one at a time. This option is better if there are a select few triggers the operator wishes to use.

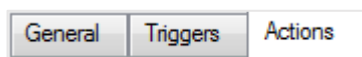


Since only one type of object is being used to trigger the event in this instance, the dialogue will appear as the **New Device Event Rule** window did previously.

## 4.3 Actions

Once triggers that will initiative the event have been defined, define some Actions. One of the available actions will be to *control* a Advanced device.

### 4.3.1 Open Actions Tab and Select the Advanced Device



To start, click on the tab titled "Actions". Then 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 the Advanced device e.g. .

## 4.3.2 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.

### 4.3.2.1 Device

To select an **Object** click on the icon.

This will show 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:** It is only possible to take a global action here, and global actions may only apply to **controllers**. For example, **communication channels**, or **door nodes**, cannot be controlled as part of an event action. Selecting one of these objects will present no options in the *Command* menu.

### 4.3.2.2 Advanced

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 Cathesis schedule, which may be applied to actions.

## 5. Conclusion

This app-note was designed to deal specifically with this integration. For further information about the CathesisVision software please consult the **CathesisVision Setup Manual** (<http://cathesisvideo.com/>).

For support, please contact [support@cat.co.za](mailto:support@cat.co.za)

### A NOTE ON CAMERA CHANNELS

The CathesisVision software packages have **limits on camera channels**. A multi-sensor camera is physically a single device (camera) but it **requires a camera channel for each one of the internal cameras**. The same applies to an encoder: a 16-channel encoder will account for 16 camera channels on the CathesisVision software, even though it is a single device. Even when a camera or device only uses a single IP license, the camera channel limit will still apply.

### USEFUL LINKS

To view **tutorial videos** on CathesisVision setup, visit <https://cathesisvideo.com/resources/videos>

Find answers to Cathesis **Frequently Asked Questions**: <https://cathesis.crisp.help/en/?1557129162258>