CaddX NX-8 Alarm Panel Integration App-note

12 July 2022

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1. Introduction

This document will detail the integration of the CaddX NX-8 Alarm Panel, with CathexisVision software. Functionally this integration will entail the triggering of standard CathexisVision Events, based on the triggers from the CaddX NX-8 panel.

Note: For information regarding the regular operation of InBio Pro Series, please consult the CaddX manufacturer's documentation.

There is a General Integration section in the main ***CathexisVision Setup Manual***. It contains information about creating an integration database, as well as a general introduction to the Integration Panel. **Read this section.**

1.1 Requirements

1.1.1 General Requirements

- CathexisVision 2016 Service Pack 1 and later.

Note:

- CathexisVision cannot detect the CaddX device if the Controller or Communications channel has lost connection when using the Serial Port.
- When using an ESP1204, the communication channel will only show it is disconnected, if the network connection to the ESP1204 is down.

1.1.2 License Requirements

License	Name	Description
CALM-2000	CathexisVision Alarm Panel License	This license is the "base" license to integrate with an alarm panel. It is applied to the server to which the alarm panel is connected. It will allow for the connection of a single alarm panel.

Note: In this integration, individual alarm panels will require a license for each panel.

A NOTE ON CAMERA CHANNELS

The CathexisVision 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 CathexisVision 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.

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 an integration is added to the CathexisVision 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 may 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 objects.

In the case of the CaddX panel the **device** is the panel itself; the **objects** are the zones, and partitions.

1.3 Features and Abilities

- Video /Data Association
- Event Control
- Database Search
- Interactive and Map Control

USEFUL LINKS

*To view **tutorial videos** on CathexisVision setup, visit https://cathexisvideo.com/resources/videos*

*Find answers to Cathexis **Frequently Asked Questions**: https://cathexis.crisp.help/en/?1557129162258*

2. Device Addition

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

2.1 CaddX Setup

There are two ways to connect the CaddX device such that it will work as an integration with the CathexisVision software.

2.1.1 Connection Options

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

- RS232
- ESP

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

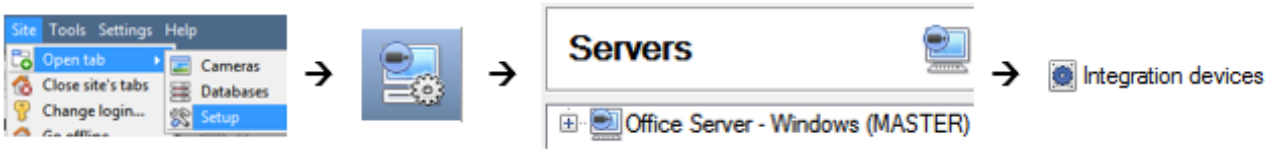
Alternatively each panel can be connected to an ESP and be represented by a CaddX device within the VMS software.

2.2 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.

2.2.1 The Integration Panel

To get to the Integration Panel, follow this path: **Site / Open tab / Setup / Configuration icon / Server / Integration devices**.



There are two sections in the Integration Panel:

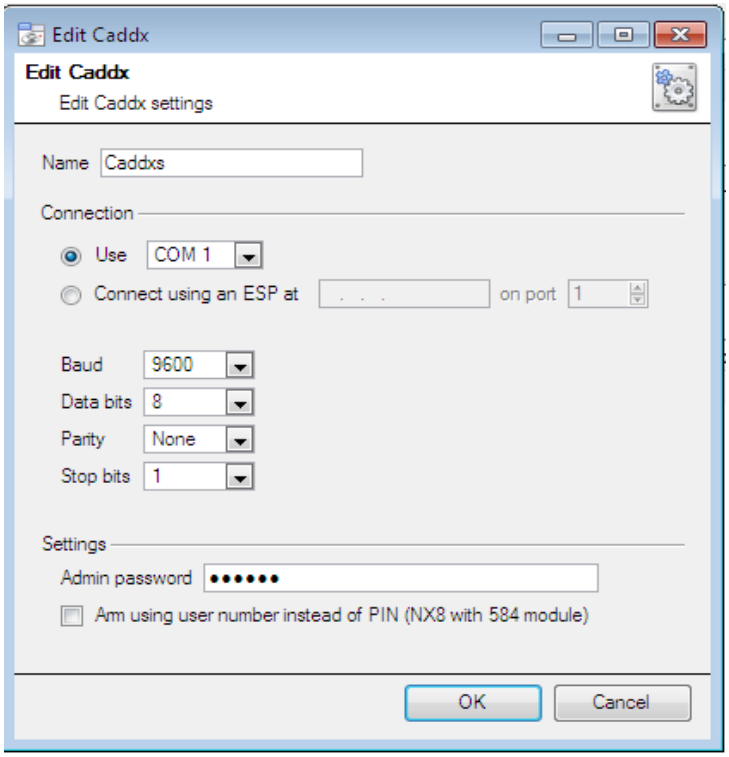
1. The **Devices** list shows the integration devices attached to the integration database.

2. The **Configuration** section enables editing/reviewing the device selected in the **Devices** section.

2.2.2 Device Addition

1. In the Integration Panel, navigate to the **Devices section.**
2. Click on the **New device** button on the right-hand side. This will open the addition dialogue.
3. Select **CaddX Alarm Panel** from the list.

A new window will open. Edit the settings here.



Give the device a descriptive **name**.

Choose the right connection:

- For an RS232 connecting, this is the COM port number.
- For an ESP connection, enter the correct IP address.

Enusre that the **baud rate**, **data bits**, **parity**, and **stop bits** match the relevant settings on the CaddX panel.

The **password** settings here are those which have been set on the CaddX Panel.

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

3. Configuration Section (Tabs)

The configuration section is divided into five main tabs. These tabs are: Object configuration, Object properties, Device events, Groups, and General.

3.1 Object Configuration Tab

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

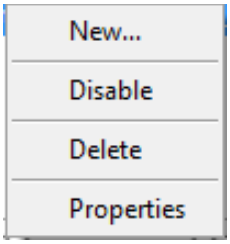
3.1.1 Object Configuration Buttons

Click **New** to add a new object.

Click **Edit** to change an existing object.

Click **Delete** to remove an existing object from the CathexisVision configuration.

3.1.2 Object Configuration Right-Click Options



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

Disable/Enable allows objects to be enabled/disabled manually.

Delete will permanently remove this object from the list.

Properties will open up the object properties. The object may be edited from here. Specifically, assign cameras to this object, and define user access levels.

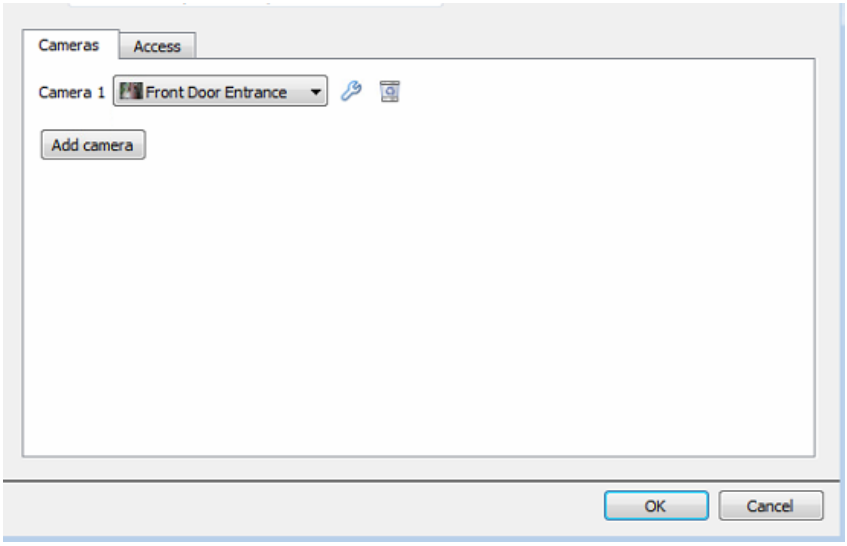
3.1.3 Edit Object

Use the Object configuration tab to make changes. Open the object **editing window** by selecting object from the list, and clicking the **Edit button**, or **right-click Properties**.

This window is where cameras are added to objects, overlays are configured, and access rights to the integration are added. These are dealt with in two tabs: **Cameras** and **Access**.

3.1.3.1 Properties: Camera

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.

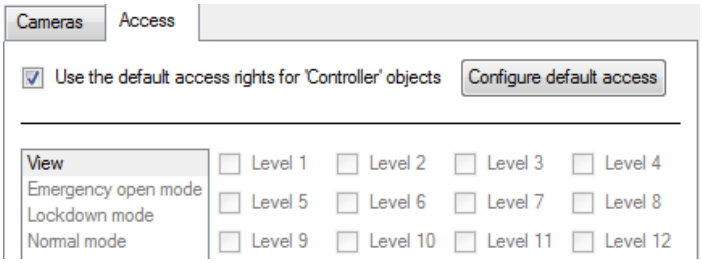


Add camera To **add** a camera, click Add camera, and select the relevant camera from the drop-down menu.

To **delete** a camera, click the trash icon.

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

3.1.3.2 Properties: Access



Access can be used to protect sensitive objects, by only allowing certain user levels access to them.

There will be a list of objects, whose access level may be set.

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

3.2 Objects Properties Tab

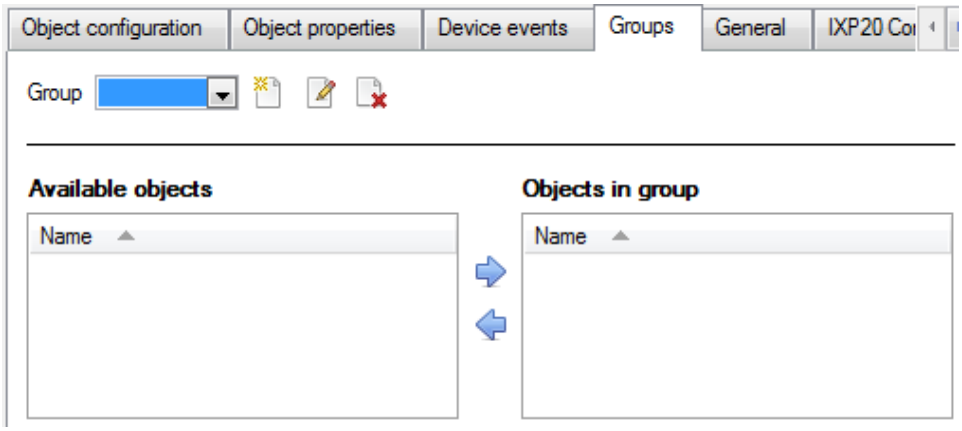
The Object properties tab allows you to view the objects, sorted by type. In the case of the CaddX device you will have the options of viewing by **partition,** or **zone.**

3.3 Device Events Tab

The Device events tab lists real-time events happening on this device. Installers can ensure that the integration is functioning, and monitor the Events happening on site.

3.4 Groups Tab

Groups of the same type of object can be created (e.g. groups of doors).

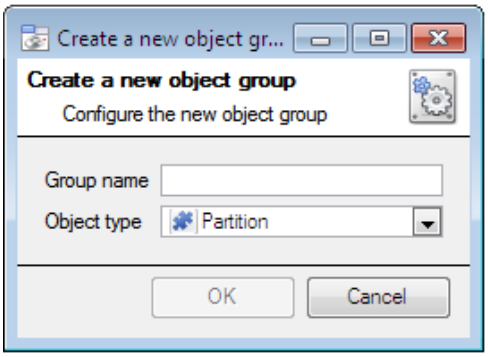


Tip: This is useful when setting up events, because events can be triggered by an object group. (I.e. A group will trigger an event if any of the doors in that group are triggered.)

3.4.1 Create a Group

To **create** a group, click on this icon.
To **edit** a group, click on this icon.
To **delete** a group, click on this icon.

A new dialogue box will open when the create button is clicked.



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

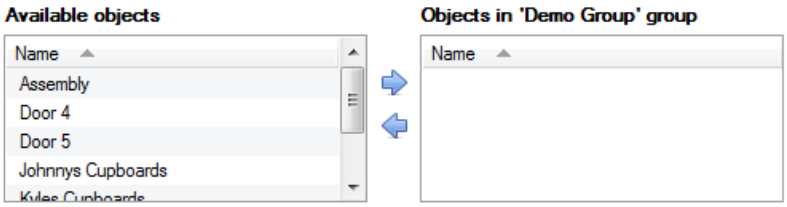
Click on the drop-down menu to select the **object type** to group.

Note: Once a group has been created, the object type of the group cannot be edited.

The next step is to add individual objects to the group.

3.4.2 Add or Remove Objects

After creating a group, a list of all the available objects for that group will be displayed in the Available objects panel, on the left-hand side. These are ready to be added to the group.

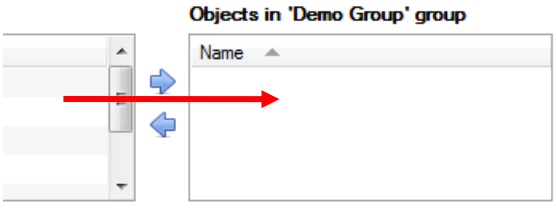


Objects can then be chosen from this list, and added to the group.

To **add** these objects to the group, select them from the list, and **click on the right arrow**.

To **remove** these objects from the group, select them and **click on the left arrow**.

Note: Multiple objects may be selected at a time.

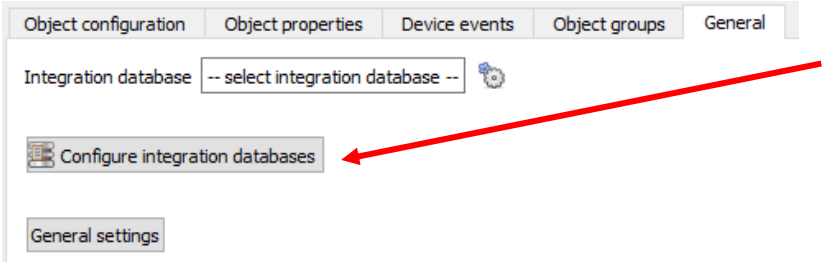


Once individual objects have been added to the group using the arrows (above), they will appear in the section on the right-hand side.

3.5 General Tab

The General tab of the Configuration section (Integration panel) deals with the integration database. Setup must be completed here, before the Databases tab can be used to search events and view associated footage.

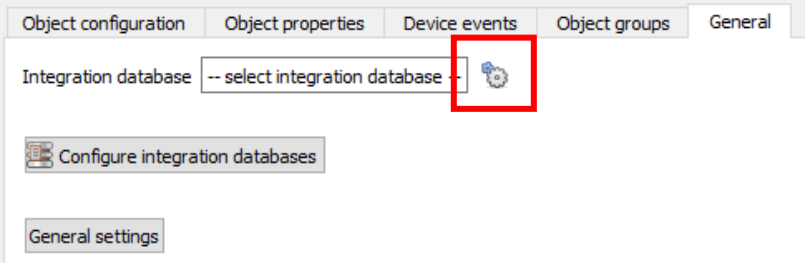
3.5.1 Configure a New Database



To add a new database, click the **Configure integration databases** button from the General tab.

Note: Information about setting up an integration database may be found in the Integration Devices General Settings section of the CathexisVision Setup Manual.

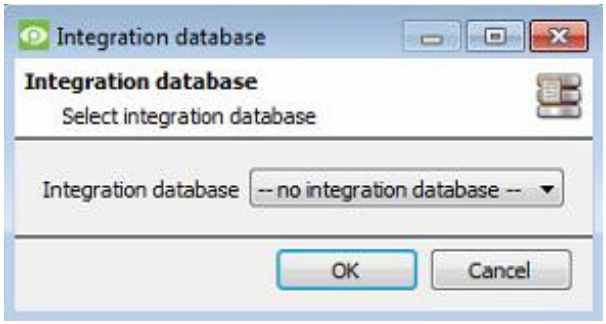
3.5.2 Select the Integration Database



Navigate to the General tab.

Then, click the **settings icon.**

A dialogue will appear. Only databases which relate to the device being added should appear.



Select the **CaddX database** from the drop-down menu.

Then click **OK**.

4. Events

A CathexisVision event has a trigger, which causes an action. Set integrated devices to act as triggers, or as actions. This document describes the CaddX 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 gives the user a full range of options. As a result, some of the options presented in the interface may be *impractical* as an event trigger, or action.

4.1 Event Window

Events in CathexisVision are set up via the Event Window, which has four 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.

4.2 Creating an Event

To create an event using the CaddX device, navigate to Events by following the sequence: **Open Tab / Setup / Servers / Master Server / Events**. This is shown below.

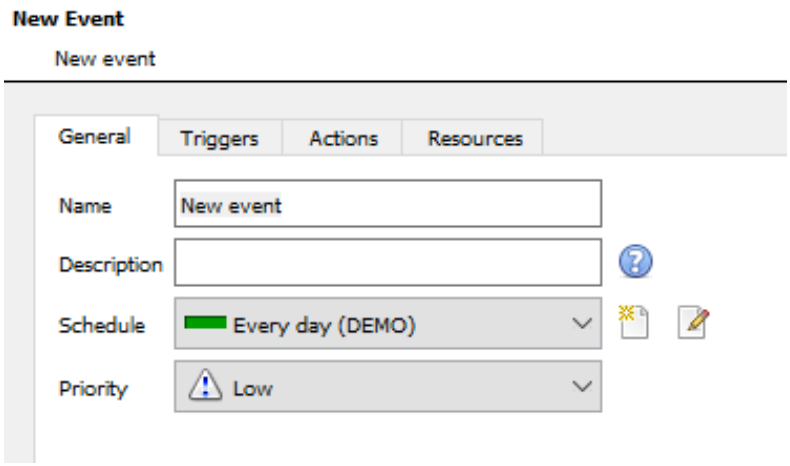
This will allow the user to enter the Events management area:

Once in Events management area, click the **New** icon at the bottom of the screen. This will open up the **New Event window**. Alternatively, right-click and select **New**.

The new event window has four tabs which can be used to set up the event: General, Triggers, Actions, and Resources.

4.3 General Tab

Create a new event under the General tab by filling in the fields.



Give the event a descriptive **Name**.

Set up a **Schedule** if desired by clicking the icon.

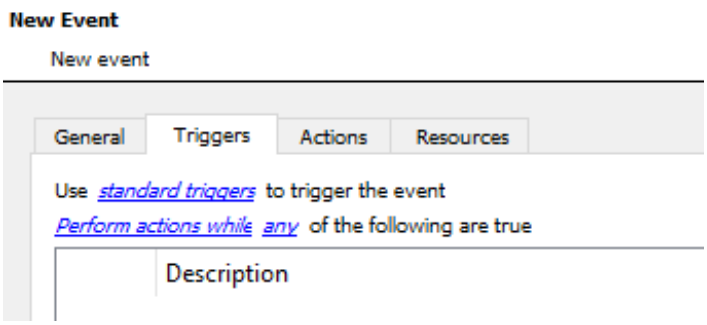
Select a **Priority**.

Modify the **Description** if relevant. See below.

4.4 Triggers Tab

The Triggers tab is where a user chooses which device events will be used for an automated CathexisVision response (action). A trigger is a user-defined input, for example, the user may choose to define the trigger as a door opening on an access control system.

Once the user defines the *trigger*, it can be used to cause a subsequent *action* (which the user will also define).



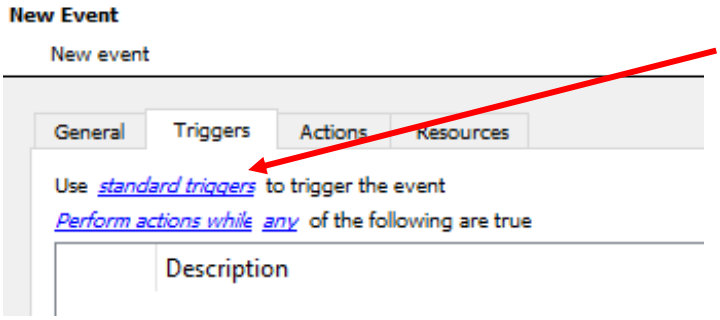
The user will need to click on the hyperlinks (depicted alongside) to set up the trigger.

By clicking on each hyperlink, options will open.

The subsections below provide instructions for these different hyperlinks.

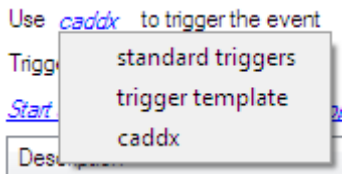
4.4.1 Set the Device as the Trigger

For a new event, the trigger type will default to “standard triggers”. The user will need to change this to the CaddX device.



To change the event trigger, **click on “standard triggers”** (the hyperlink after the word “Use”).

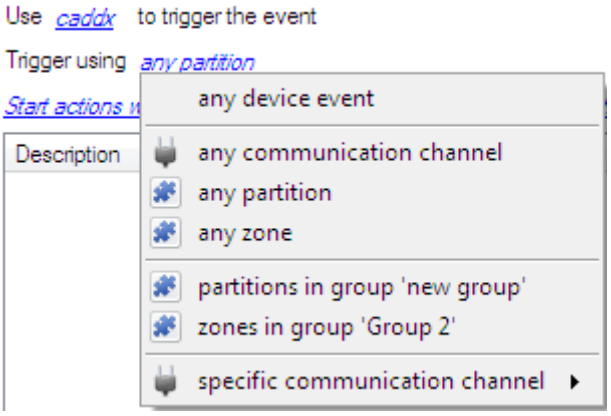
This will open a drop-down menu with more options.



To set the CaddX device as the trigger, **select the device name** (CaddX) from the drop-down menu.

4.4.2 Trigger Types (Trigger Using)

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

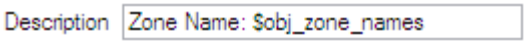


Any partition will activate on the defined triggers for all partitions.
Any zone will activate on the defined triggers for all zones.
Groups (Zone/Area) will trigger when an event occurs in any of the chosen object groups.
Specific Area/Zone Will trigger on activity in a specific area/zone.
Any device event will trigger, initially, when any event occurs on the device. Within the "any device event" setup you may set "device event rules" which will constrain which events will trigger the event.

Note for group triggers: For an event to be databased 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.

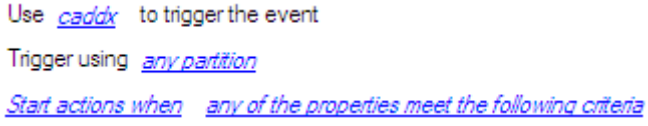
Click on the question mark icon to see a list of available descriptions and instructions for how to enter these descriptions.

Here is an example which will database the text "Zone Name:" along with the name of the zone object that triggered the event:



4.4.3 While/When and Any/All

When triggering on a specific CaddX zone or partition, the user will have the option to trigger **while/when** a trigger is active. Multiple triggers may be selected. The user may define whether **all/any** of the triggers need to be active to set off an event.



To change these settings click on the relevant blue hyperlinks.

After selecting a master trigger type using the hyperlinks, the user may proceed to creating a new device event.

4.4.4 Define the Trigger ("Any Device Event" Option)

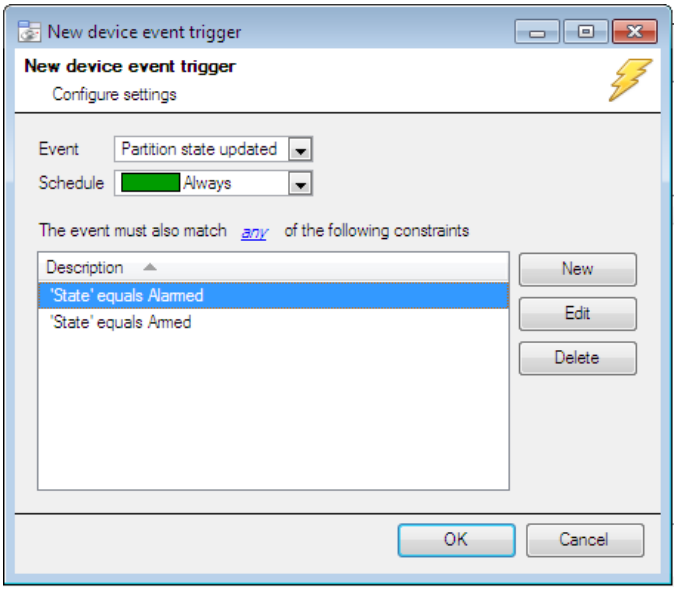
If the user has selected the hyperlink *any of the following device events occur*, they will need to follow the steps below to add a **new device event trigger**.

Click on **New** in the Triggers tab.

Clicking on New will bring up the **New device event trigger** dialogue box.

4.4.4.1 New Device Event Trigger

The user will then need to configure the new device event trigger.



- Within the *any device event* option the user may choose a type of device **Event** as a trigger. Choose from the drop-down menu.

  The CaddX device offers **Partition added**, **Partition state updated**, **Zone added**, and **Zone state updated**.

- Choose a **schedule**.

- Choose whether *any* or *all* constraints need to be fulfilled to set off a trigger.

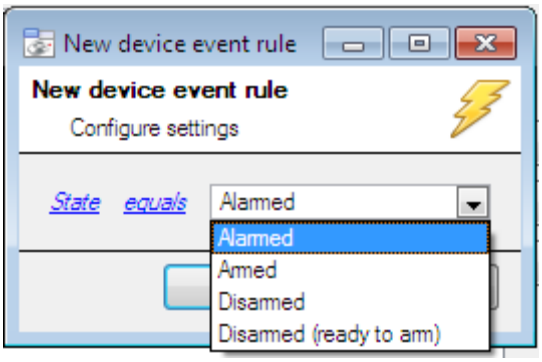
- Use the **new/edit/delete** buttons on the right-hand side to add a device event rule (a constraint). Follow the instructions below.

Note: Multiple constraints can be set. If constraints are not defined, every device event will trigger this event.

4.4.4.2 New Device Event Rule: Configure Settings

To configure a New device event rule, **click on New** in the New device event trigger window.

This will bring up a further window, called **New device event rule**.



To change the constraint **click** on the **first hyperlink** (State, in this example). 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.

Defining a Constraint: Drop-Down Menus or Written Descriptions

When all available options are known to CathexisVision, a drop-down menu will appear alongside the chosen constraint. **Click an item** from the drop-down menu to select.

When these variables are not pre-defined, they will need to be entered as a written description. The information pulled through to the events is information sent to CathexisVision from the CaddX device. See the CaddX settings for the strings needed here.

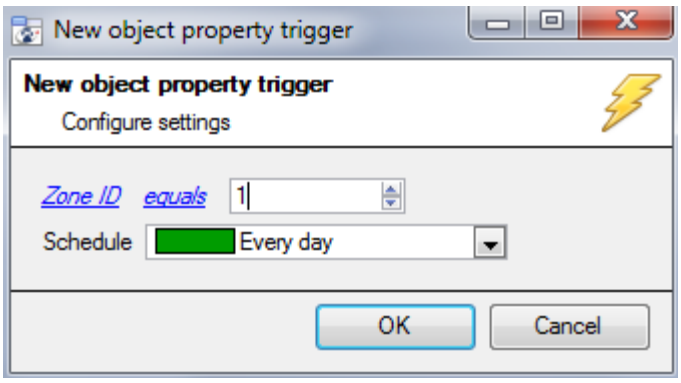
4.4.5 Define the Trigger ("Properties Meeting Criteria" Option)

If the user has defined the trigger by choosing according to *properties meeting criteria*, the *New object property trigger* dialogue box will open.

- In these instances, further constraints do not need be set, since they are being added one at a time.
- This option is better if a few triggers have been selected.
- This is also true for groups, since a group may only be made up of one object type.

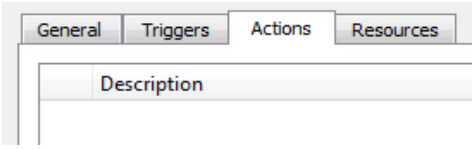
4.4.5.1 New Object Property Trigger: Configure Settings

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.



Click the hyperlinks to modify the constraints.

4.5 Actions Tab



Having defined the triggers that will initiate an event, the user will need to define Actions.

Select the **Actions tab** from the **New event** window.

One of the available actions will be to *control* a CaddX device.

4.5.1 Adding an Action

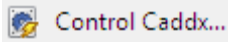
To add an action, click New in the Actions tab.

A list of **available actions** will appear. The drop-down contains all the available **action types**. The icons represent the device action **type.**

Select an option, for example, Record Camera.

This icon represents an action to control. It will state "**Control** …" and the name of the Action device i.e. Control CaddX.

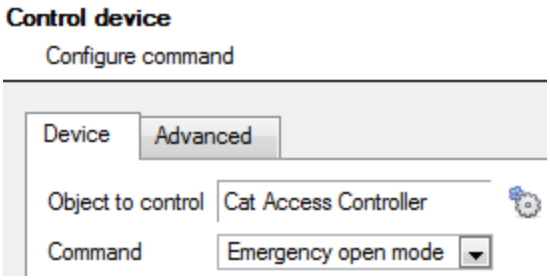
4.5.1.1 Actions: Control Device



Click this option to open 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.

Configure Command Window: Device Tab



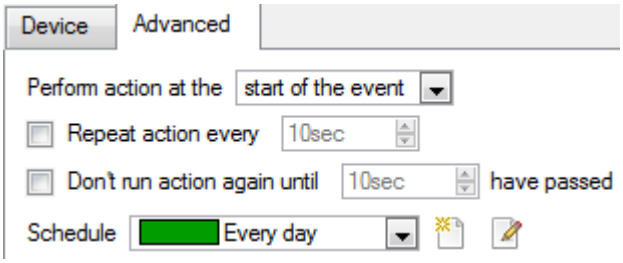
To select an **Object**, click on the **settings icon.**

This will show all the Objects available on the CaddX device.

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

Note: Only global action may be taken here, and global actions may only apply to **controllers**. For example, **communication channels**, or **door nodes**, may not be controlled as part of an event action. If the user selects one of these objects, there will be no options in the *Command* menu.

Configure Command Window: Advanced Tab



Choose to **perform action:** either **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 may be applied to the actions.

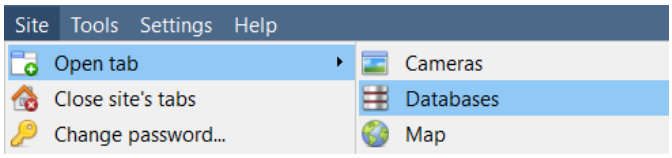
5. Databases

The Databases tab allows the user to navigate to the databased entries for each individual database. In the Databases 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, this recording can be launched from within the Databases tab.

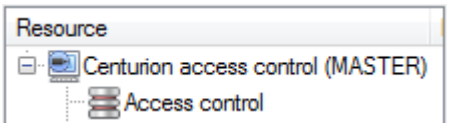
Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathexisVision by the integrated device.

5.1 Navigate to Databases

To view information stored in the Integration, first navigate to the Databases Tab.



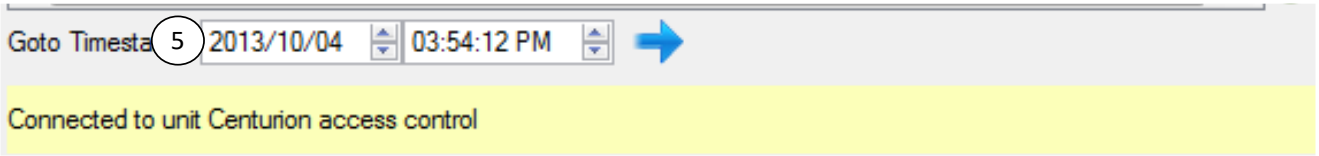
Follow the path on the left: **Site** / **Open tab** / **Databases**.

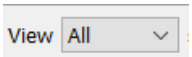


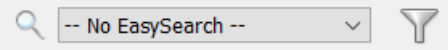
Select the relevant integration database.

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

5.2 Database Interface

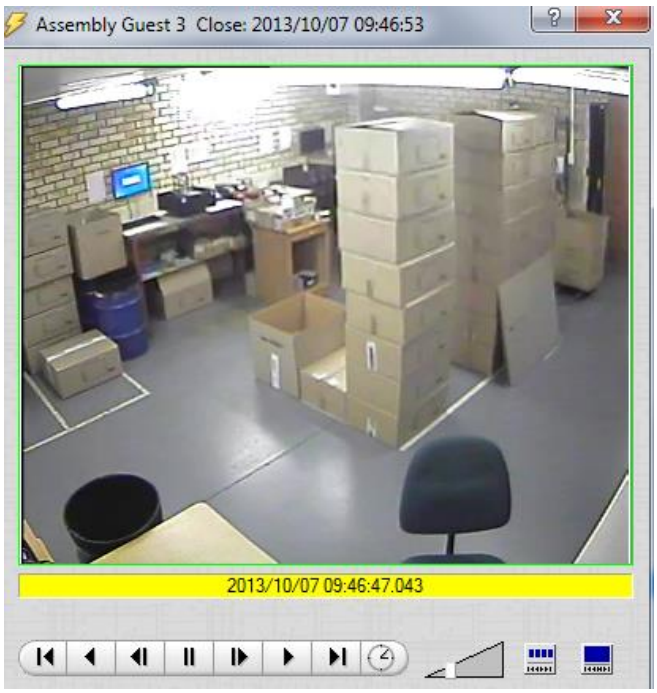


① **View**	Change the way that the database is presented. Some integration databases have multiple view options. Click the field to see the available options in the drop-down menu. 
② **Sorted By**	Sort the Events based on the following parameters: T**ime, Zone, State**.

③ **Easy Search**	Easy Search options depend on the View chosen and allows quick searching of the database. Click the field to see the available options in the drop-down menu.  Available options are: **Zone,** and **State**.
④ **Filter**	Filter offers a more advanced manner of sorting information in the Integration Database table. Filter based on the following parameters: T**ime, Zone, State.** Once you have the filters dialogue open you will have the following options: 1. To **enable** filters check this box: 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 . **Note**: 1. Multiple filters may be run simultaneously. Filters with the same parameters may be run more than once. 2. To change a filter, click on the blue hyperlinked text.
⑤ **Go to Time**	This navigates to a specific point in time, down to the second. To navigate to a timestamp, set the time using the time and date boxes. Then, click on the arrow icon.

5.2.1 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. See the image below.



To view a databased event's recording, double click the item.

A floating replay window will appear, from which you may review and archive video content.

Click the monitor icon to see the view as shown on the left.

Click the split monitor icon to see the view in 4 sequential frame viewers.

6. Conclusion

This app-note was designed to deal specifically with this integration. For further information about the CathexisVision software, consult the main manual (http://cathexisvideo.com/).

For support, email support@cat.co.za.