

inMotion Seeker Metal Detector Integration

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1 Introduction

This document will detail the integration of the inMotion Seeker Metal Detector, with CathexisVision's software. Functionally this integration will entail the triggering of standard CathexisVision Events, based on the triggers from the inMotion device.

Requirements

There are two inMotion hardware devices. One has a USB interface which does serial communication, and the other has an Ethernet/Network port. See below for the requirements for the two device types.

inMotion Seeker Serial (USB) Requirements

- CathexisVision 2016 Service Pack 3 and later.
- Windows only.

inMotion Seeker IP Relay (Ethernet) Requirements

- CathexisVision 2016 Service Pack 3 and later.
- Windows and Linux

Notes:

1. If you need information regarding the regular operation of an inMotion device, please consult the relevant documentation.

a. License requirements

The Cathexis inMotion integration license requirements are as follows:

License Name	License Description
CISM-1001	inMotion Seeker metal detector.
CISM-2000	inMotion Seeker metal detector device.
CISM-3000	inMotion Seeker metal detector bundle.

b. 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.

Integration Features

This metal detector is designed to detect concealed weapons, carried by people entering a secure area.

Connection type	USB serial port or Ethernet/Network
Polling rate	Information is sent to CathexisVision every 3.3 ms
Display type	Data is displayed in CathexisVision via an overlay, which is placed over a CathexisVision video feed.

Objects: Sensor

- Sensor states displayed: **Normal, Alarmed.**
- Commands:
 - Setting the **sensitivity** of the sensor.
 - **Reset** the sensor. The sensor will reboot, and the sensitivity will return to the default.
 - Setting the **threshold** sets the value above which an event will occur.

Overlay:

- The overlays are configurable (position/colour).
- The sensor states are displayed on the overlay.

Integration Database:

- All device events are entered in the database.
- Multiple cameras can be assigned to a single sensor, and viewed in the database.
- Events can be filtered in the integration database.

Device Offline:

- When the connection is lost you will get an offline status and, once it comes back online, the device calibrates itself.

Multiple Sensors:

- Able to configure multiple sensors.

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.

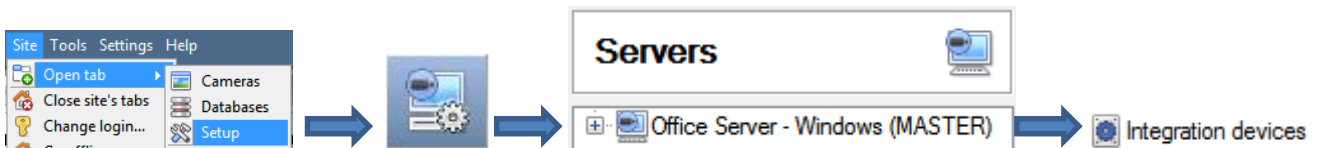
b. CathexisVision Specific Seeker Setup (Set up the Seeker device)

The inMotion Seeker integration integrates using either a built in USB to Serial converter , or an Ethernet/Network port.

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



Name	Driver
Cat EIO Counter	Cathexis EIO3148 Counter
Galaxy	Galaxy alarm panel
inMotion SEEKER	InMotion SEEKER
LPR	Cathexis LPR
Woolworth POS	Woolworths POS

Type	ID	Name
Sensor	1	1
Sensor	2	2

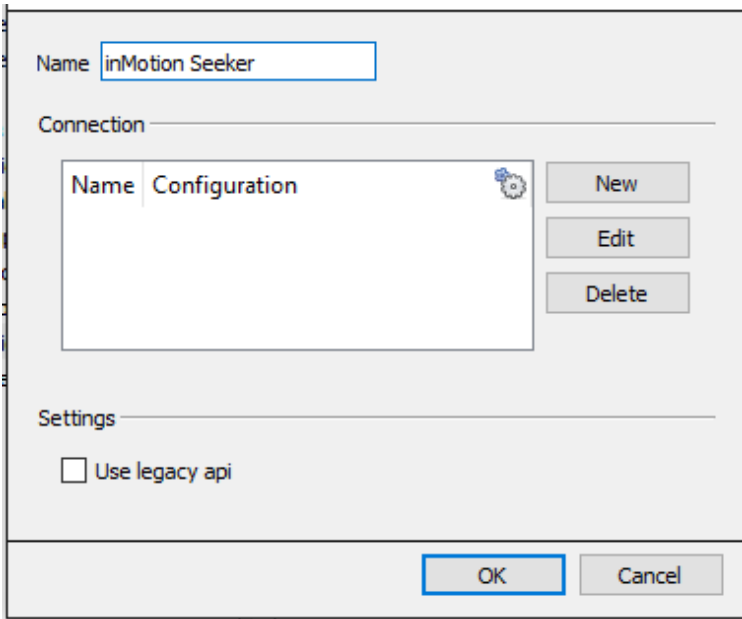
You will notice two sections in the Integration Panel:

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, click on **New device** in the Devices section. This will open the addition dialogue.
2. Select **inMotion SEEKER** driver from the list.



Name the device.

- New** to add a channel. See below.
- Edit** to edit an existing channel.
- Delete** to delete a channel.

To use the Legacy API, check **Use legacy api**.

- **Add a Channel**

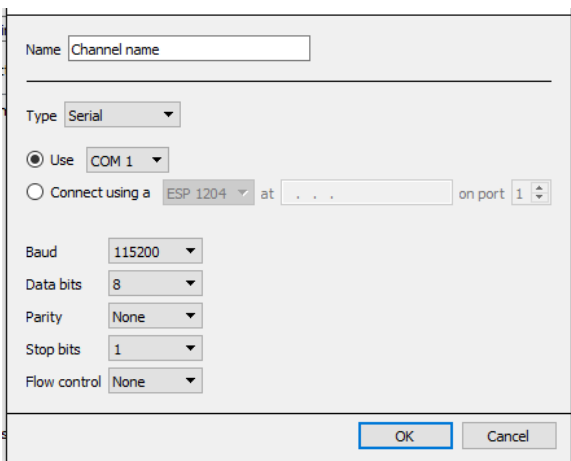
When adding a new channel, the option is to connect using either the USB interface or the Ethernet/Network Port.

IMPORTANT NOTE:

Because there are **two hardware devices** for the inMotion Seeker Integration, the next section on adding channels will **vary depending on your connection type**, i.e., whether the hardware used connects using USB Serial Port or IP Relay (Ethernet/Network).

Therefore, only add the channel type that matches your specific hardware. See below.

1. **Add a Channel using Serial USB Interface**



Give your channel a descriptive **Name**.

Select the **Type**:
Serial.


Select the **COM port**. (explained below this table).

Make sure that your **Baud rate**, **Data bits** settings etc. all match those set up on the Seeker device.

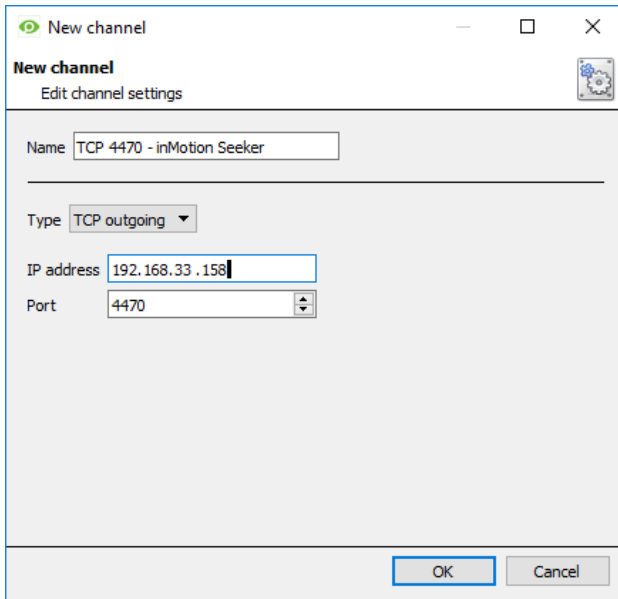
Note: this device cannot connect using an ESP.

COM Port Selection

To see which is the correct Com port, follow these steps:

1. Open the Computer Manager: **Windows Start Menu -> Right Click on Computer -> Left-Click on Manage.**
2. Use the **Device Manager**: in the **Computer Manager**, click on **Device Manager**.
3. The device will show up as  **USB Serial Port (COM6)**, under the **Ports** heading in the **Device Manager**.

2. Add a Channel using IP Relay (Ethernet/Network)



Give the channel a descriptive **Name**.

Select the TCP outgoing **Type**.

Set the **IP address** of the inMotion Seeker device.

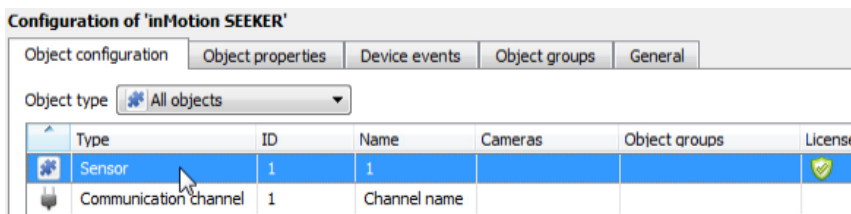
Set the **Port** number. The default is 4470.


Note: The device connected to your network, is configured to receive an IP address from a DHCP server. Refer to the inMotion SEEKER manual on how to configure the device's network address. Not covered in this manual.

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**.

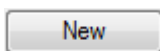
Object Configuration Tab



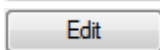
Type	ID	Name	Cameras	Object groups	License
Sensor	1	1			
Communication channel	1	Channel name			

The object configuration tab is the tab where you may view all the individual objects that comprise the integration. The Seeker device has **Sensor**.

• **Object Configuration Buttons**



You may add a new object by clicking on New.

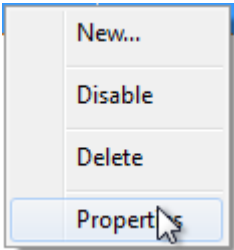


Will open up an existing object for edition.



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

• **Object Configuration Right-click Options**



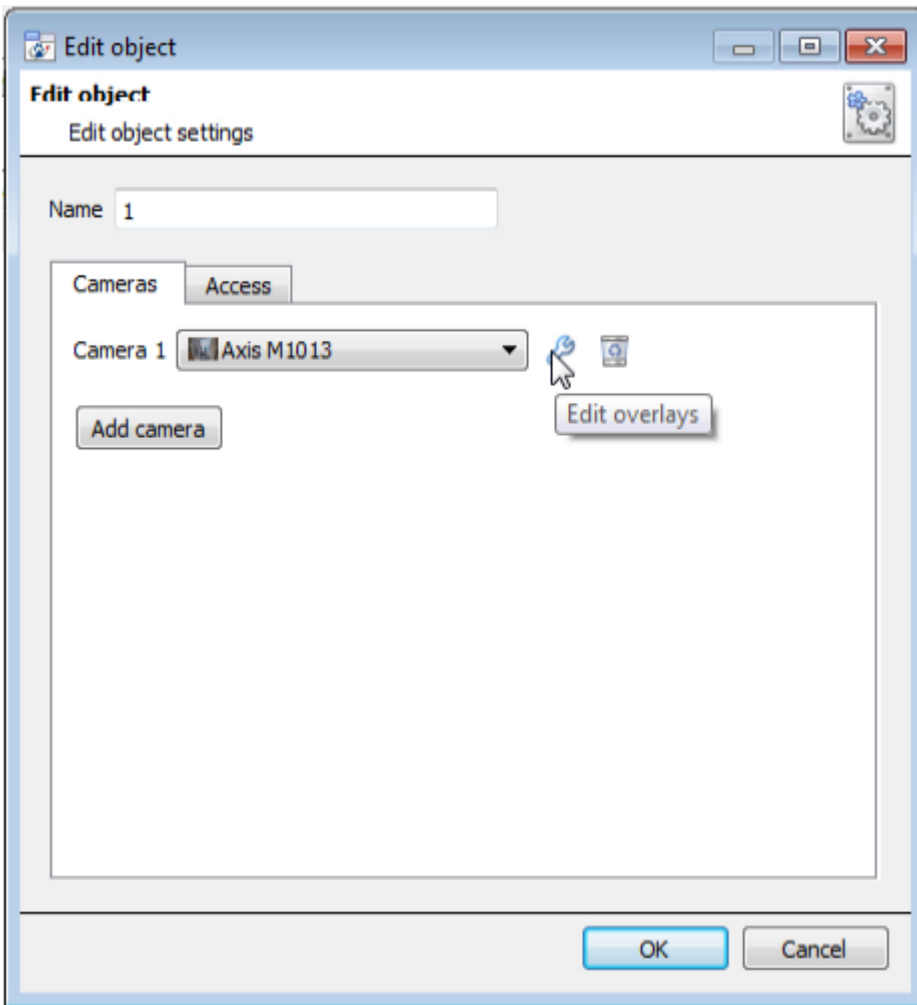
New will open up the dialogue to add a new object.

Disable/Enable allows you to manually enable/disable individual objects.

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 “Add Camera.

To delete a camera, click on

To change the Seeker overlay settings, click on the . (Explained below.)

Note: While you can add multiple cameras here, only the first camera added with the object will be linked in the integration database.

Note: If you do not have *continuous recording* set up, on associated cameras, you will run the risk of device 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** you will be able to set the access levels.

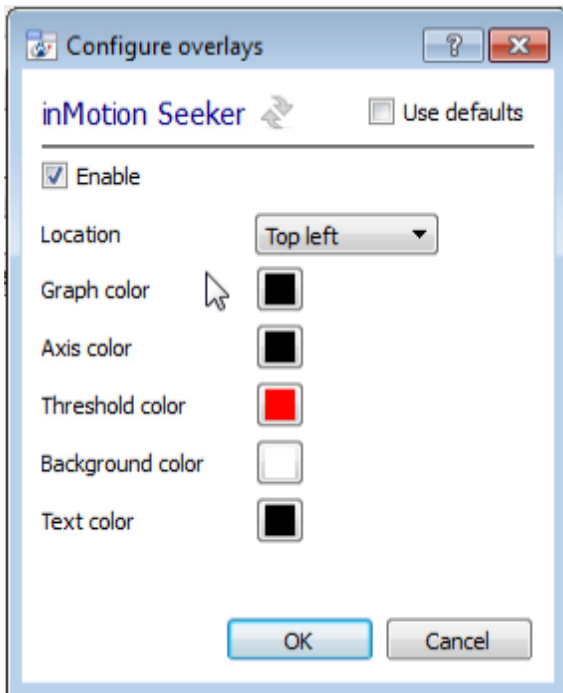
Note: If you have *Use default access rights* checked, you must make sure that those default rights have been correctly defined. Click on **Configure default access** to do this.

- **Seeker Overlay Settings**

The Seeker integration allows for the information received from the counter to be displayed as an overlay on the camera you assigned to the **counter** object, above.

After clicking on the  icon, you will see the **Configure overlays** dialogue. To edit a custom overlay, uncheck the **Use defaults** option, which will expose the overlay options.

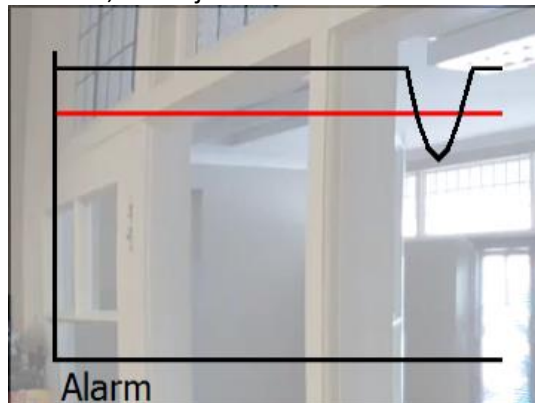
Note: Both the name of the Sensor and the Sensor Sensitivity will be displayed in the overlay.



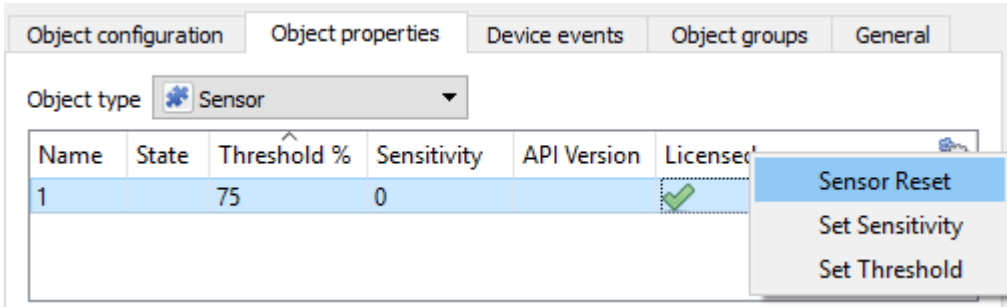
Location will define where on the camera feed's image the overlay is positioned.

You may define the **Graph, Axis, Threshold, Background, and Text** colours.

The settings to the left will look like so. With denomination, counted, and rejection information included in the overlay:

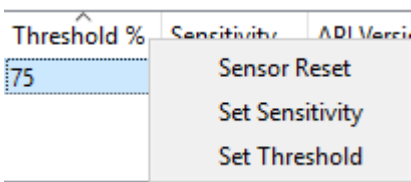


Objects Properties Tab



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

- **Right Click Options**



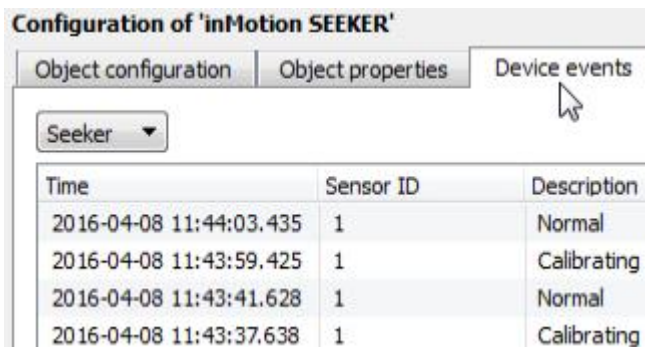
There are a number of options available when right-clicking on a **sensor**.

Sensor Reset will reset the sensor.

Click **Set Sensitivity** to set the sensitivity to a level between 1 and 5.

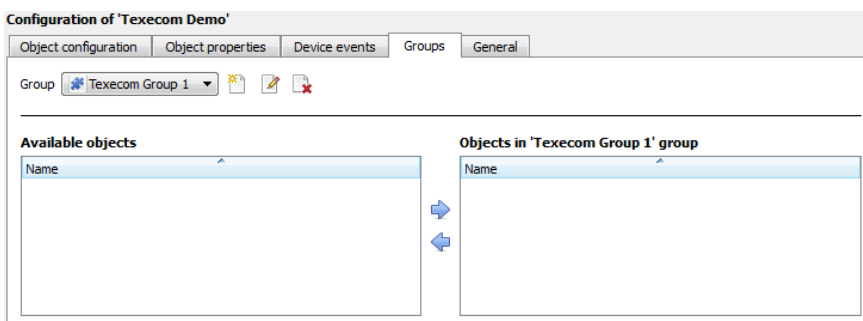
Click **Set Threshold** to set the threshold to a percentage (0-100).

Device Events Tab



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.

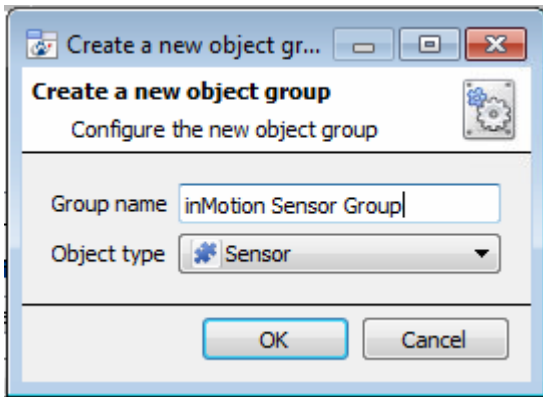
Groups Tab



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 devices in that group is triggered.)

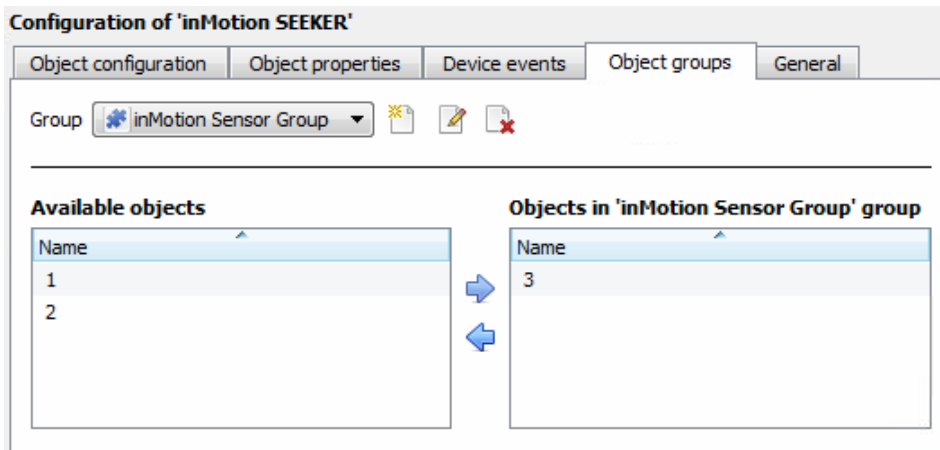
- *Create a Group*



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

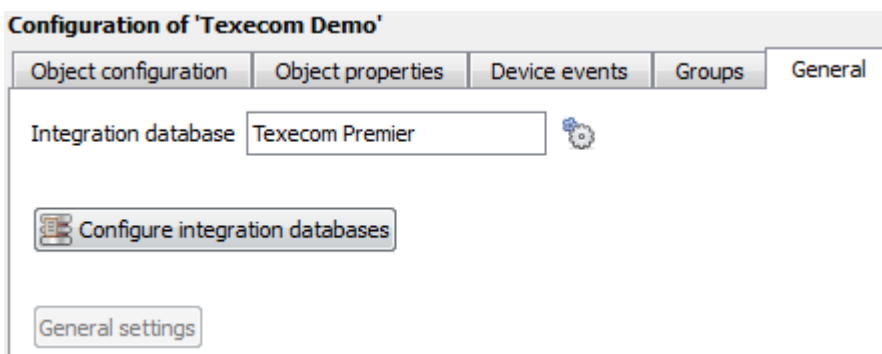
Give the group a descriptive **Group name**.

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 / .

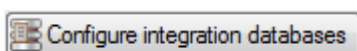
General tab



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

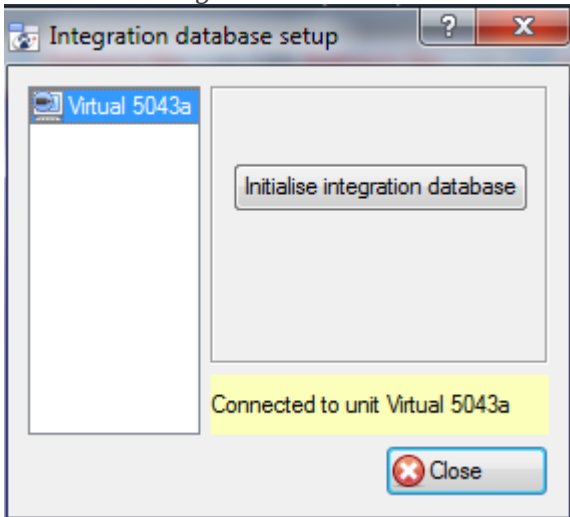
Important Note: Each integrated device needs to be attached to an Integration database. Without setting up/adding a database here your integration will not function properly within the CathexisVision system.

- *Configure a new database*



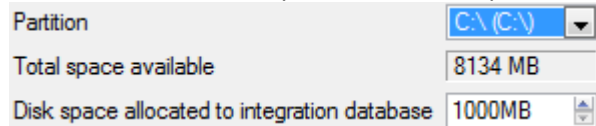
If there is no database created yet, clicking on this button will take you to the integration database setup.

Initialise the Integration Database



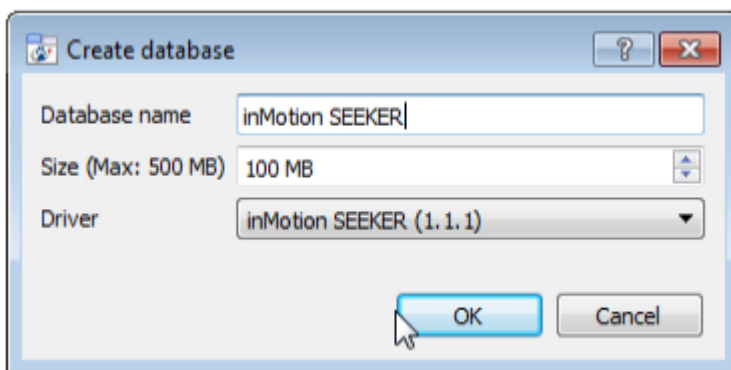
The first time you add an integration database you will have to initialise this feature on the unit. This will add a broad database, within which you will be adding all of your integrated device's databases.

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



Add a New Device Database

After initialisation, you will be able to add the database for the integration that you are working with. Click on the **New** button, at the bottom of the Create database window.

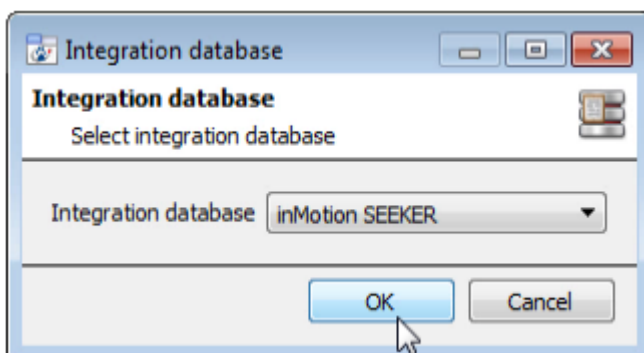


Give your Integration database a descriptive **Database Name**. e.g. Seeker Integration database.

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 Seeker Integration Database**

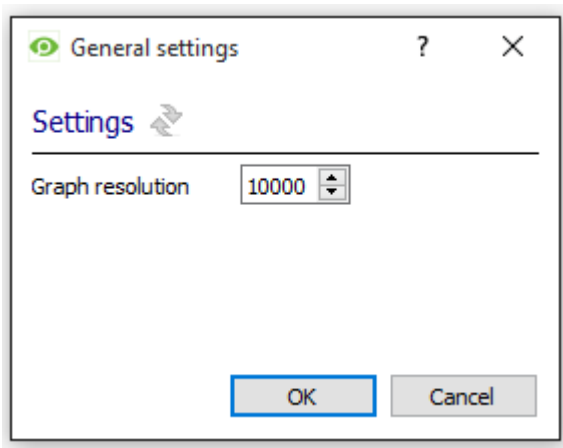


Integration database **-- select integration database --**

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.

- **General Settings**

Under General Settings, the graph resolution may be configured. Please see below.



The data coming from the device ranges between 0 and 5000.

In this window, set an upper limit to the data displayed on the graph. If the data is higher it will be set to this value, whereas data below this value will be scaled linearly.

3 Database

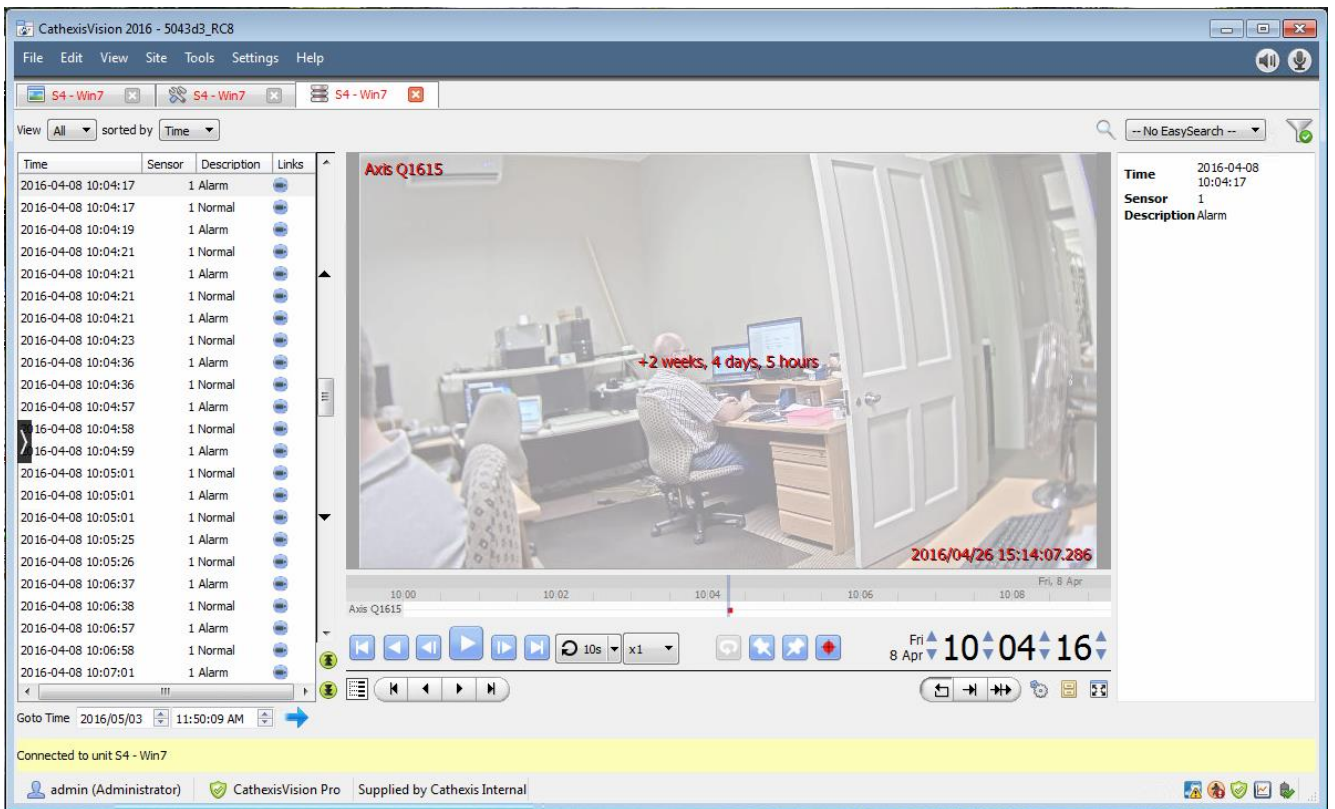
a. Introduction

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.

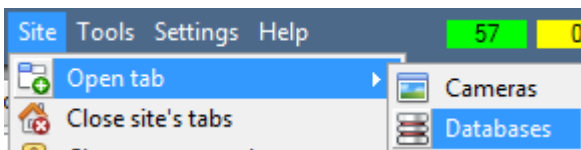
Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathexisVision by the integrated device.

The inMotion Seeker database is information rich. This is an example of some of the layout. With the database entries in the left panel, the associated video review panel in the middle, and meta-data information in the panel on the right.

Database Overview

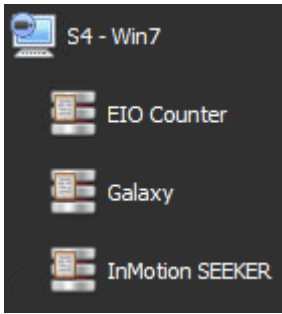


b. Navigate to the Database



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.









From 2016.2 onwards, when the database tab opens you will have to select the relevant integration database from the database panel that opens on the left hand side. The databases are ordered under the NVRs that they are attached to. To open and close this list click on the arrow in the centre of the list:



c. Database Interface



<p>① View</p>	<p>You may change the way that your database is presented. Some integration databases have multiple view options. The Seeker database has All.</p>
<p>② Sorted By</p>	<p>You may sort the Events based on the following parameters: Time.</p>
<p>③ Easy Search</p>	<p>The easy search option allows you to quickly search the database within one of the following options: Sensor, and Description.</p>
<p>④ Filter </p>	<p>Filter offers a more advanced manner of sorting information in the Integration Database table.</p> <p>Once you have the filters dialogue open you will have the following options:</p> <ol style="list-style-type: none"> To enable filters check this box: <input checked="" type="checkbox"/> Enable filters To add a new filter click on . The filter icon  will change to  when filters are active. To delete an added filter click on . <p>The options in this integration are Sensor, Time, and Description.</p> <p>Note:</p> <ol style="list-style-type: none"> You may run multiple filters simultaneously. And you may even filter using the same parameter more than once. 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.)
<p>⑤ Goto Time</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 then click on the  icon.</p>

4 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 Seeker 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.

Door Event

Edit Event

Door Event

General Triggers Actions Resources

Use [standard triggers](#) to trigger the event

[Start actions when](#)

Description	Schedule
-------------	----------

No items

Stop actions [after](#) 20sec or when -- select input -- [goes high](#)

On re-trigger [stop and restart active event](#)


Only trigger event when -- select input -- [is high](#)

OK Cancel

b. Creating an Event

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



Once in Events management click on . 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.

Use [inmotion seeker](#) to trigger the event

Trigger using [any sensor](#)

[Start actions when any of the following device events occur](#)

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

Use [inmotion seeker](#) to trigger the event

Trigger using [any sensor](#)

[Start actions when any of the following device events occur](#)

Description

standard triggers

trigger template

lpr

galaxy

woolworth pos

inmotion seeker

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


Trigger Types (Trigger Using)


Use [inmotion seeker](#) to trigger the event


Trigger using [any sensor](#)


[Start actions when any of the following device events occur](#)

Description

 any sensor

 specific sensor

 Communication channels

 any device event

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


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

Object in group... If you have set up a group it will appear here in this list.


Communication channels will trigger only on the Communication channels.

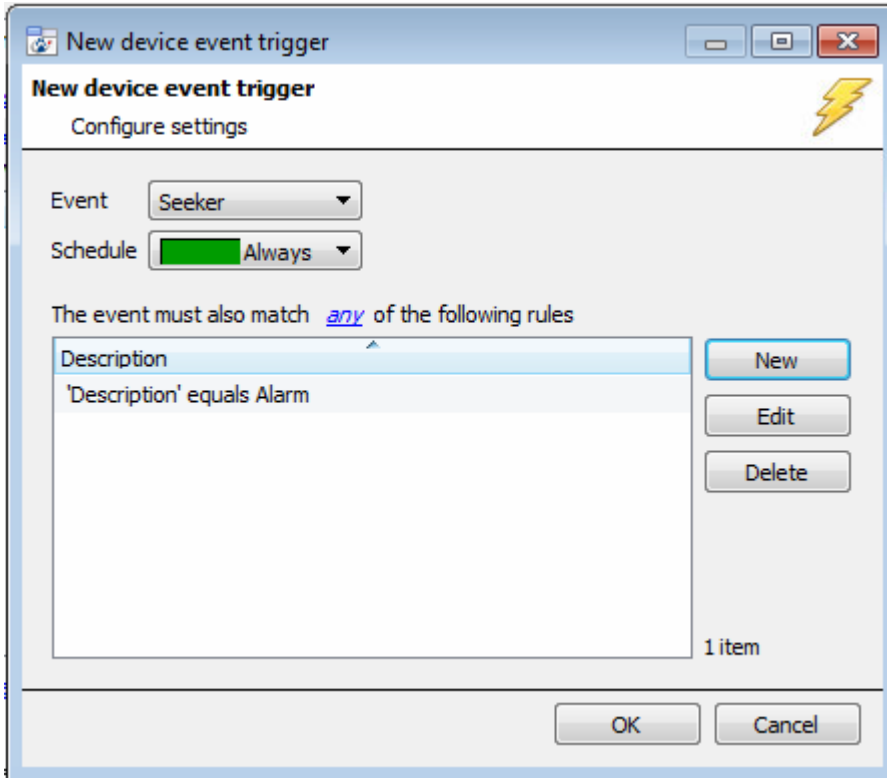
Specific Sensor will trigger on an event from the specific object selected.

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.

Define Your Trigger

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, for the various trigger types:

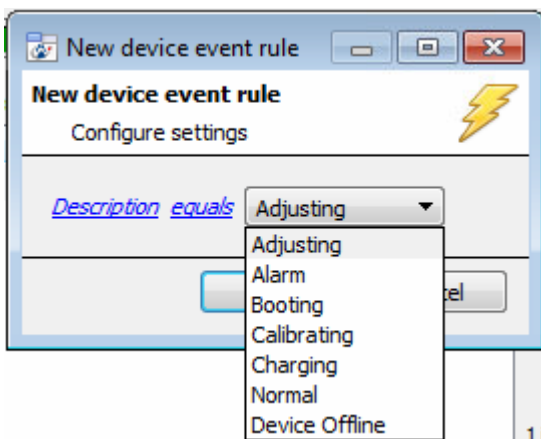


For example within the [any device event](#) option you may choose what type of device Event will be your trigger. Choose an event type from the drop down menu.

Note: You may set multiple constraints (**Device Event Triggers**). If you do not define a constraint, every single device event will trigger this event.

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

Choose if [any](#), or [all](#) constraints need to be fulfilled to set off a trigger.

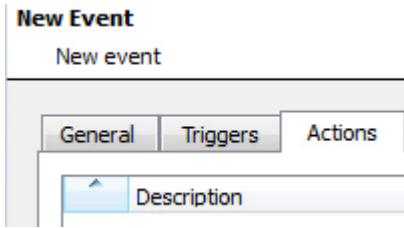


To change the constraint, click on the first hyperlink, this will bring up the full list of available rules.

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 Seeker device, see the Seeker settings for the strings needed here.

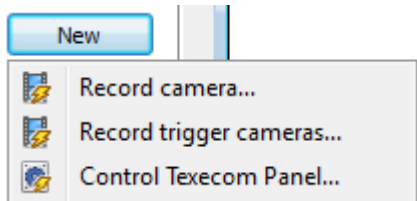
d. Actions



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.

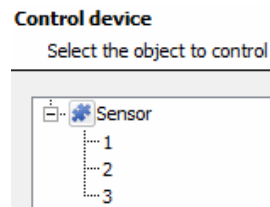
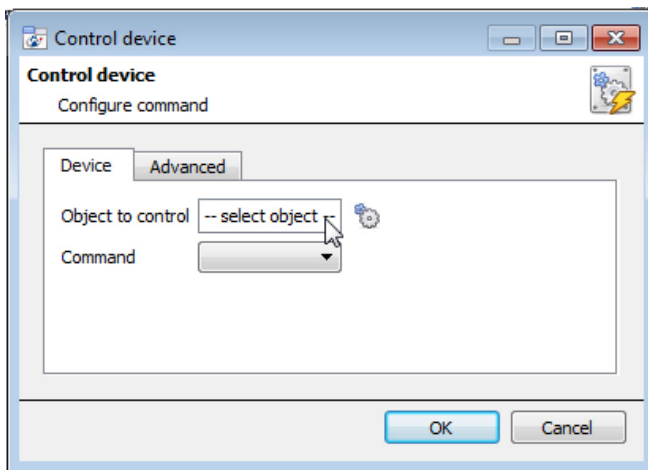
The Seeker allows for control of Sensor objects.


New Action



To create a new Event Action click on .

Select **Control inMotion_device_name** if you wish to control this device with the CathexisVision event.



Clicking on the  icon will bring up a list of the Seeker objects which may be controlled by this event.

Click on the **Command** options drop-down menu, to see all the options which CathexisVision can control on the selected object.

5 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