



# Matrix COSEC Integration App-note

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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 details the integration of the Matrix COSEC Device with CathesisVision software.

Matrix COSEC is an Access Control system that manages time and attendance. It is adaptive, modular, scalable and function-rich. The system controls entries and exits, and monitors and tracks people’s movement.

Functionally, this integration entails triggering of standard CathesisVision Events, based on the triggers from the Matrix COSEC panel.

**Note:** For information regarding the regular operation of a Matrix COSEC device, please consult the relevant Matrix COSEC manufacturer’s documentation.

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

## 1.1 Cathesis Requirements

### 1.1.1 Software

- CathesisVision 2021.2 and later.
- Windows 10-64 bit and later; Windows Server 2008 R2 and later.
- Minimum 4GB of RAM required.

### 1.1.2 Licensing

License Name		Description
<b>CMCO-2000</b>	Matrix COSEC device	This license is the “base” license to integrate with an access control system. It is applied to the server to which the access control device is connected. It will allow for the connection of a single Matrix COSEC controller.
<b>CMCO-1001</b>	Matrix COSEC object	These licenses apply to the doors, or readers, in an access control system. The CMCO-1001 will license a single door/reader, and may be added on a door-by-door basis.
<b>CMCO-3000</b>	Matrix COSEC bundle	This license includes the CMCO-2000 Matrix COSEC device license, and also provides support for unlimited CMCO-1001 reader licenses.

**Note:** In this integration, individual devices will require a license for each device.

### 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.

## 1.2 Matrix COSEC Requirements

**Note:** Cathesis makes a best attempt to ensure that the equipment and license requirements of third-party equipment are adequately specified. However, it is possible that the requirements of third-party equipment may change over time, including the interface hardware/firmware and licensing. The user is advised to clarify the latest requirements directly with the third-party equipment supplier.

This integration was tested on:

<b>Hardware name</b>	Cosec VEGA
<b>Hardware model number</b>	COSEC VEGA FEX
<b>Firmware as tested</b>	V01R44
<b>Third-party software name</b>	MATRIX COSEC (Admin Management Portal Web, COSEC Monitor, COSEC Web)
<b>Third-party software version</b>	Version: 16.6.1
<b>Third party software license/s required</b>	Licenses on dongle

## 1.3 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 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.

## 1.4 Features and Abilities

- CathesisVision communicates with the Matrix COSEC device via TCP using an IP address. This connects to the server which in turn connects to the device.
- This integration only runs on Windows units.
- Device objects support overlays

### 1.4.1 Device Objects

Device objects populate automatically once communication is established. As the panel supports many expansion modules, the objects displayed in CathesisVision will vary depending on the objects that are configured on the panel.

Object Type		Abilities
<b>General</b>		<ul style="list-style-type: none"> <li>• This integration has Device, System, and Communication Channel objects.</li> <li>• Objects are automatically created as soon as communication between the CathesisVision unit and device is established.</li> <li>• Device objects can be commanded as an action of a CathesisVision system event.</li> <li>• Device objects support overlays.</li> <li>• Objects may be linked to cameras to associate device events with video footage.</li> </ul>
<b>Device</b>	<b>Object properties</b>	<ul style="list-style-type: none"> <li>• Name.</li> <li>• Site.</li> <li>• Device Type.</li> <li>• Application Type.</li> <li>• MAC</li> <li>• Device IP.</li> <li>• Status.</li> <li>• License.</li> </ul>
	<b>Command</b>	<ul style="list-style-type: none"> <li>• Open.</li> <li>• Lock.</li> <li>• Unlock.</li> <li>• Normalise.</li> </ul>
	<b>Overlays</b>	<ul style="list-style-type: none"> <li>• The Device object supports overlays in the camera feed.</li> <li>• Overlays display time.</li> <li>• Overlay location, text size, text colour, and background colour are configurable.</li> <li>• Overlays displays the Device name and the Device event.</li> </ul>
	<b>Connection status</b>	Some examples of Connection Status values: <ul style="list-style-type: none"> <li>• Offline.</li> </ul>

System	Object Properties	<ul style="list-style-type: none"> <li>• Disconnected.</li> <li>• Name.</li> <li>• Status.</li> <li>• COSEC version.</li> </ul>
	States	<ul style="list-style-type: none"> <li>• Connected.</li> <li>• Disconnected</li> </ul>
Communication Channel	Object properties	<ul style="list-style-type: none"> <li>• Name.</li> <li>• Channel Status.</li> <li>• Details.</li> <li>• Creation Type.</li> <li>• Creation Time.</li> <li>• Idle time (min).</li> </ul>
	Channel status	<ul style="list-style-type: none"> <li>• Up.</li> <li>• Down.</li> </ul>

### 1.4.2 Device Events

The CathesisVision Matrix COSEC integration generates Communication, Access and Time, Alarm, System, and Door events, which are triggered on the device and reflected in CathesisVision.

Event Element		Features/Abilities
General		<ul style="list-style-type: none"> <li>• Events triggered on the device are sent to CathesisVision.</li> <li>• Device event types are Communication, Access and Time, Alarm, System, and Door.</li> </ul>
Device Event Types	Communication	<ul style="list-style-type: none"> <li>• Dongle/License key not found.</li> <li>• Connection down.</li> <li>• Connected.</li> </ul>
	Access and Time	<ul style="list-style-type: none"> <li>• User Allowed.</li> <li>• Use Denied.</li> </ul>
	Alarm	<ul style="list-style-type: none"> <li>• Tamper.</li> <li>• Door Abnormal.</li> <li>• Door Force Open.</li> <li>• Door Fault.</li> <li>• Panic.</li> </ul>
	System	<ul style="list-style-type: none"> <li>• Configuration Change.</li> <li>• Login to ACS.</li> <li>• Credentials Deleted.</li> <li>• Master Controller.</li> <li>• Power On.</li> <li>• Enrolment</li> </ul>
	Door	<ul style="list-style-type: none"> <li>• Door Status changed.</li> </ul>

	<ul style="list-style-type: none"> <li>• Door Open/Close.</li> </ul>
<b>CathesisVision System Events</b>	<p>Access Control objects (e.g., Door) may be controlled as a result of a CathesisVision system event:</p> <ul style="list-style-type: none"> <li>• Access control object → Clear all alarm, Open, Lock, Unlock, and Normalise.</li> </ul>

### 1.4.3 Metadatabase

A unique metadatabase is created on the CathesisVision server for this integration. It is fully searchable, with configurable filters based on device event information (as above), and time stamping. The filtered event/s, and the associated video, will then be available for review in a new window from which an archive can be created and exported.

Database Element	Features/Abilities
<b>General</b>	<ul style="list-style-type: none"> <li>• All device events are databased.</li> <li>• Database entries include the footage from cameras linked to device objects.</li> <li>• Multiple cameras may be linked to multiple objects.</li> <li>• Device event metadata is displayed where applicable.</li> <li>• Databased device events may be viewed in the embedded video player, which includes the usual CathesisVision video review tools.</li> </ul>
<b>View Options</b>	<ul style="list-style-type: none"> <li>• All.</li> <li>• Access event.</li> <li>• Time event.</li> <li>• Door event.</li> <li>• Alarm event.</li> <li>• System event.</li> <li>• Communication event.</li> </ul>
<b>Sort Options</b>	<ul style="list-style-type: none"> <li>• Device event time.</li> </ul>
<b>Easy Search</b>	<ul style="list-style-type: none"> <li>• Site name</li> <li>• Master Controller ID.</li> <li>• Door Controller ID.</li> <li>• Device name.</li> <li>• User ID.</li> <li>• User name.</li> <li>• Description.</li> <li>• Direction</li> <li>• Allowed</li> <li>• Event detail.</li> </ul>
<b>Filter</b>	<ul style="list-style-type: none"> <li>• Time.</li> <li>• Event type</li> <li>• Site ID</li> </ul>



- Master controller ID.
- Door controller ID.
- Device name.
- User name.
- Description.
- Direction.
- Allowed.
- Event detail.

**Export** | Database entries may be exported in CSV and PDF format.

#### 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>

## 2. Device Addition and Configuration

This section will detail the procedure for setting up the two systems to communicate with each other effectively. For this integration, the CathesisVision software will communicate with the Matrix COSEC server, and the Matrix COSEC server will communicate with Matrix COSEC device.

CathesisVision does not directly communicate with the Matrix COSEC device, and all communication between Cathesis and the Matrix system is done via the Matrix Cosec Server.



In the example diagram above, the Matrix Cosec Server IP is 192.168.15.55. This will be used for the CathesisVision demonstration setup.

CathesisVision needs a TCP/IP connection to the COSEC Server. The default listening port on the Matrix Cosec Server is TCP port 80.

### 2.1 Matrix COSEC Server setup

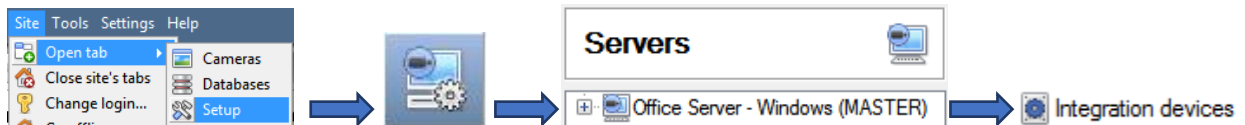
This integration requires at least one reader or device to have been added in the Matrix COSEC web interface prior to CathesisVision configuration. The CathesisVision server will make a connection to the COSEC server without any further setup from the COSEC interface.

**Note:** Please consult the Matrix COSEC manufacturers’ guide for information about how to add a device and other Matrix COSEC configuration. Both Access Control and Time and Attendance modes are supported by the integration.

## 2.2 Add a New Device in CathesisVision

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:


### 2.2.1 The Integration Panel

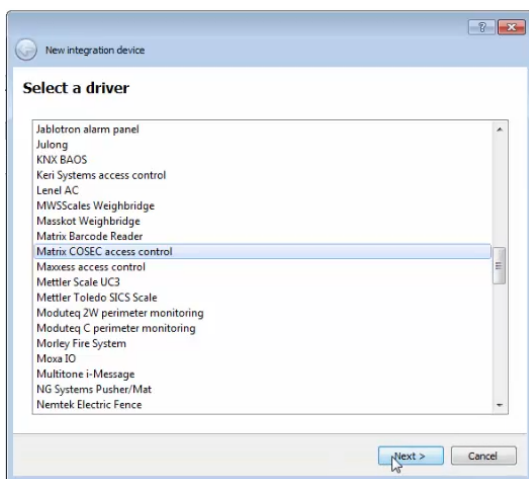


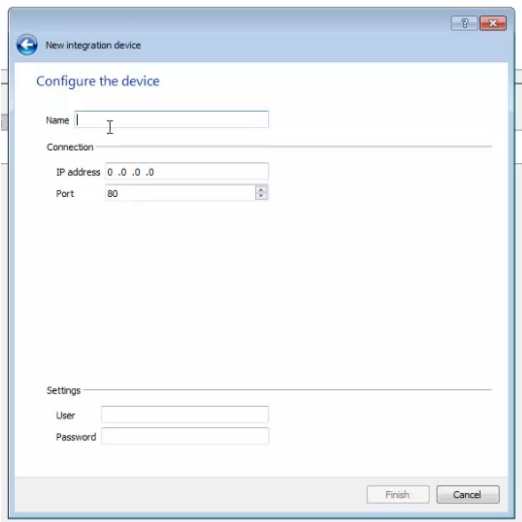
There are two sections in the Integration Panel:

1. The **Devices** list will list the integration devices attached to the integration database.
2. The **Configuration** section enables editing/reviewing the device selected in the **Devices** section.

#### 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 Matrix COSEC access control driver from the list.





3. Give the device a descriptive **name** e.g. Matrix COSEC Device.

4. Enter the IP address of the COSEC server.

**Note:** The IP address entered must be the IP address of the COSEC **server**, and not the IP address of the **device**.

5. Enter the **Username and Password** used for logging in on the Matrix COSEC software.

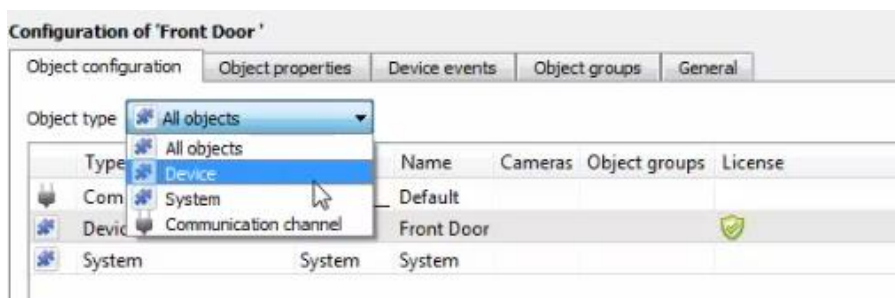
6. Click Finish.

## 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.**

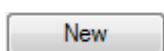
### 2.3.1 Object Configuration Tab

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

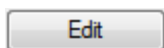


All Matrix COSEC objects (for Device, System, and Communication channel) are automatically populated when communication to the Matrix COSEC Server is established. It is not necessary to add new devices/readers manually.

#### 2.3.1.1 Object Configuration Buttons



For other integrations, this button is used to add a new object.



Click Edit to change object settings.



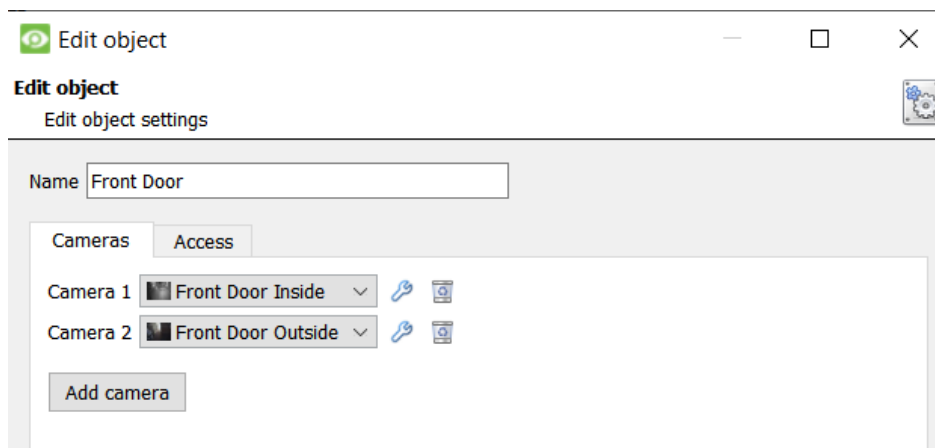
Click Delete to remove an existing object from the CathexisVision configuration.

**Note:** The New button is not necessary for this integration because objects are automatically populated.


### 2.3.1.2 Object Configuration Right-click Options

New...	<b>New</b> opens up the dialogue to add a new object, for other integrations.
Disable	<b>Disable/Enable</b> allows manually enabling/disabling 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, assign cameras to this object, as well as define user access levels for it.

#### Properties: Camera



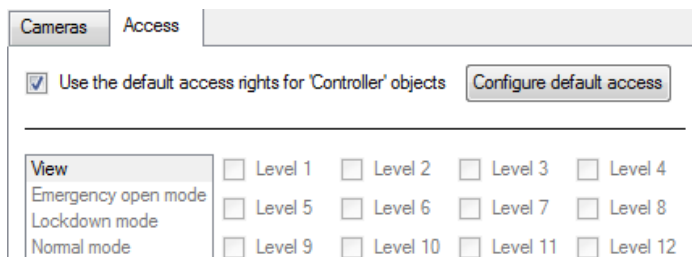
Adding a camera to an object will mean that whenever there is an event on that object, the recording from that camera will be related to the time and date of the object event, in the Integration database.

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

To **delete** a camera, click .

**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.

#### Properties: Access



**Access** allows protecting 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.

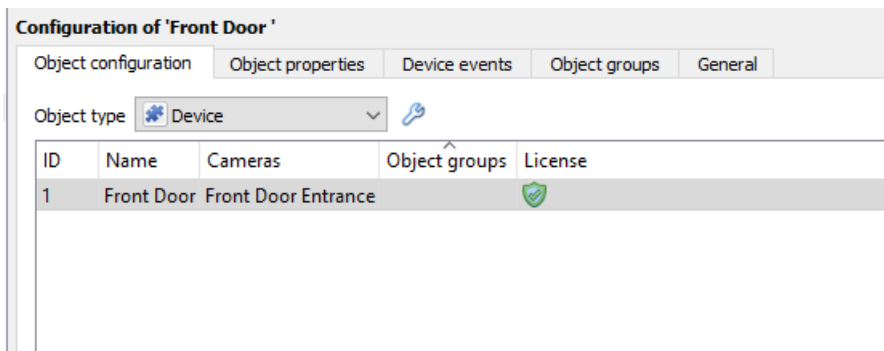
## 2.3.2 Configure Overlays

Overlays may be configured globally for all objects, or individually for selected objects. The path to follow for opening the configuration window for global or individual overlays is different, however the overlay configuration is the same. Overlays may be configured individually for **Device objects**.

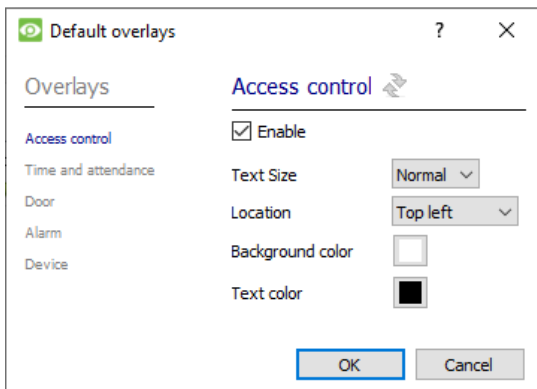
### 2.3.2.1 Configure Global Overlays

Global overlays may be configured for “Reader” or any of the other options except for “All objects.”

Navigate to the global overlays setup by first opening the Object configuration tab.



Select the spanner icon next to the drop-down menu to configure the global overlays.



### 2.3.2.2 Configure Individual Overlays



Right-click an object and select **Properties** to edit the object.

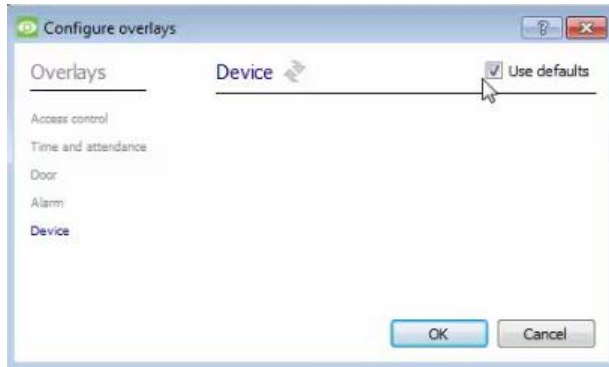


Add a camera to the object.




Then **click** the **settings** icon that appears next to the camera name.

## Overlay Configuration for Individual objects



**Use Defaults:** This option is only available when editing individual overlays.

**Check** the **Use defaults** box to use the global configurations for position, text size, and colour.

Click  to reset values

In the **Device panel**, uncheck **Use defaults** to edit or override globally configured overlays for the selected device.




Select **Text Size** options from the drop-down menu.

Define the **Location** of the overlay panel.

Define the **Background Colour** of the overlay stream: set the panel appearance to default; remove the border or remove the panel entirely (so that only the overlay text appears). Adjust the opacity as required.

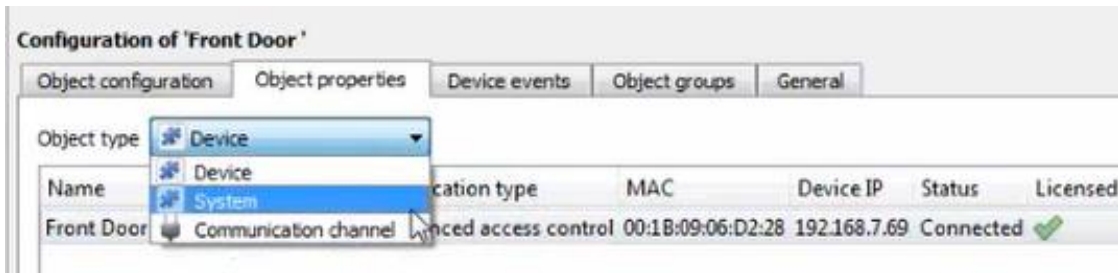
Choose **Text Colour**.

To set a custom panel colour, uncheck **Use Default background colour**.

Click the  box to bring up a colour chart.

## 2.3.3 Objects Properties Tab

The Object properties tab allows viewing objects, sorted by type. In the case of the Matrix COSEC device, there is the option of viewing by **Device**, **System**, and **Communication channel**.



Commands can be given from the Object properties tab.

### 2.3.3.1 Controlling Commands on Devices

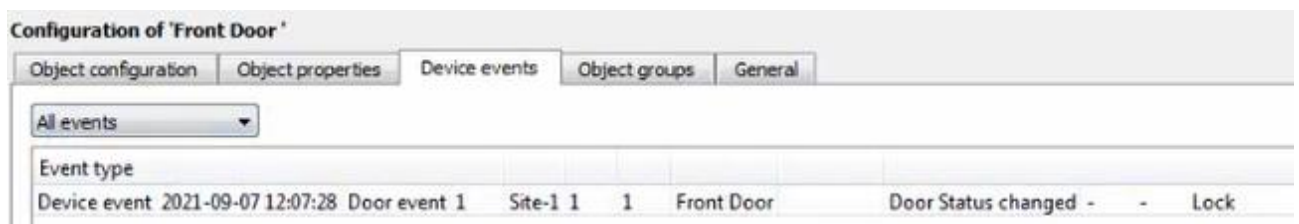
Select **Device** from the drop-down menu on the **Object properties** tab.

**Right-click** an item on the list.

Choose a command from the drop-down menu. The options are **Clear all alarm**, **Lock**, **Normalise**, **Open**, and **Unlock**.



The command will reflect in the Device Events tab.



### 2.3.4 Device Events Tab

The Device events tab will list real-time events happening on this device. It is an excellent way for users to see that the integration is functioning, and to monitor the live events happening on site.



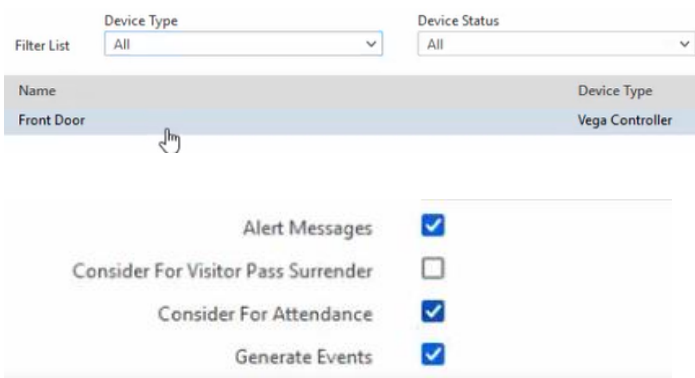
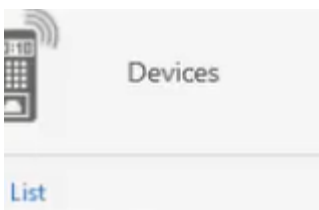
**Configuration of 'Front Door'**

Object configuration | Object properties | **Device events** | Object groups | General

All events		Communications events		Device event							
	12:07:28	Door event 1	Site-1	1	1	Front Door	Door Status changed	-	-	Lock	
Device event	2021-09-07 12:07:40	Door event 1	Site-1	1	1	Front Door	Door Status changed	-	-	Unlock	
Device event	2021-09-07 12:07:45	Door event 1	Site-1	1	1	Front Door	Door Status changed	-	-	Normal	
Device event	2021-09-07 12:07:45	Door event 1	Site-1	1	1	Front Door	Door Open/Close	-	-	Closed	
Device event	2021-09-07 12:07:47	Door event 1	Site-1	1	1	Front Door	Door Open/Close	-	-	Open	
Device event	2021-09-07 12:07:52	Alarm ev...		1	1	Front Door	Door Abnormal	-	-	Major	
Device event	2021-09-07 12:07:52	Door event 1	Site-1	1	1	Front Door	Door Open/Close	-	-	Closed	
Device event	2021-09-07 12:07:52	Alarm ev...		1	1	Front Door	Door Abnormal	-	-	Major	

### 2.3.4.1 Time and Attendance Events Configuration

To view Time and attendance events, it necessary to change a setting on the Matrix COSEC server. This will send data from the COSEC server to the CathesisVision software.



1. **Log in** to the Matrix COSEC server.

2. **Navigate** to **List** on the left-hand menu.

3. **Select** a device from the **Device List**.

This will navigate to Configuration.

4. **Check** the box for **Consider for Attendance** to enable this setting.

5. **Save** all changes by clicking the icon.



Configuration of 'Front Door'

Object configuration | Object properties | Device events | Object groups | General

Device event

Time	Event type	Site ID	Site name	Master con
2021-09-07 12:49:16	Door event	1	Site-1	1
2021-09-07 12:49:21	Alarm event			1
2021-09-07 12:49:21	Door event	1	Site-1	1
2021-09-07 12:49:21	Alarm event			1
2021-09-07 12:50:50	Access event	1	Site-1	1
2021-09-07 12:50:50	Door event	1	Site-1	1
2021-09-07 12:50:55	Alarm event			1
2021-09-07 12:50:55	Door event	1	Site-1	1
2021-09-07 12:50:55	Alarm event			1
2021-09-07 12:51:57	Time and attendance event	1	Site-1	1

6. To **view** time and attendance events, return to the **Integration Devices panel** in the CathesisVision interface.

The Time and attendance event will reflect under the Device **events tab** on CathesisVision. For example, see the bottom row in the image **alongside**.

**Note:** This integration tracks time and attendance events. However, only time data is sent to CathesisVision. To view details of attendance, the user must access the Matrix COSEC web interface.

### 2.3.4.2 Connected, Disconnected, or Offline Status

If the connection is down on the COSEC device or server, this will be indicated in the **Status** column as **Disconnected** or **Offline**. **Navigate** to **Object properties** tab to view connection status.

Object configuration | Object properties | Device events | Object groups | General

Object type Device

Name	Site	Device type	Application type	MAC	Device IP	Status
Front Door	Site-1	Vega Controller	Advanced access control	00:1B:09:06:D2:29	192.168.7.69	Disconnected

<b>Status</b>	Online:	The reader is connected to the software and the server.
	Disconnected:	This reader is disconnected from the Matrix COSEC software.
	Offline:	The connection to the Matrix COSEC server is down. This could indicate a problem or issue occurred on the network.

### Viewing Device Event (disconnection)

To view the device event generated by a disconnection, **navigate** to the **Device events** tab.

**Select Device event** from the drop-down menu.



Device events resulting from the disconnected device will show in the list under the **Device events** tab. See the image below.

Object configuration   Object properties   Device events   Object groups   General												
Device event											Filter	
Time	Event type	Site ID	Site name	Master controller ID	Door controller ID	Device name	User ID	User name	Description	Direction	Access allowed	Event detail
2021-09-28 10:36:12	System event	1	Site-1	1	1	Front Door			Master Controller Power ON	-	-	
2021-09-28 10:36:38	Alarm event			1	1	Front Door			Tamper Alarm	-	-	Critical

The device events can also be viewed from the database. They can be further filtered by event type e.g. System event, Alarm event etc. See the image below.

View System event sorted by Time							
Time	Site name	Master controller ID	Door controller ID	Device name	Description	Event detail	Links
2021-09-21 16:37:00	Site-1	1	1	Front Door	Master Controller Power ON		
2021-09-21 16:39:08	Site-1	1	1	Front Door	Master Controller Power ON		
2021-09-28 10:36:12	Site-1	1	1	Front Door	Master Controller Power ON		

Section 4 provides further instructions about searching the database for events.

### Viewing Communication Event (lost connection)

Configuration of 'Front Door'						
Object configuration		Object properties		Device events		General
Object type Device						
Name	Site	Device type	Application type	MAC	Device IP	
Front Door	Site-1	Vega Controller	Advanced access control	00:1B:09:06:D2:28	192.168.7.69	

Navigate to **Object properties** tab to view connection status. If the connection between the device and the server is lost, it will show as **Offline**.

Configuration of 'Front Door'		
Object configuration		Object properties
Device event		
All events		
Communications event		
Device event		

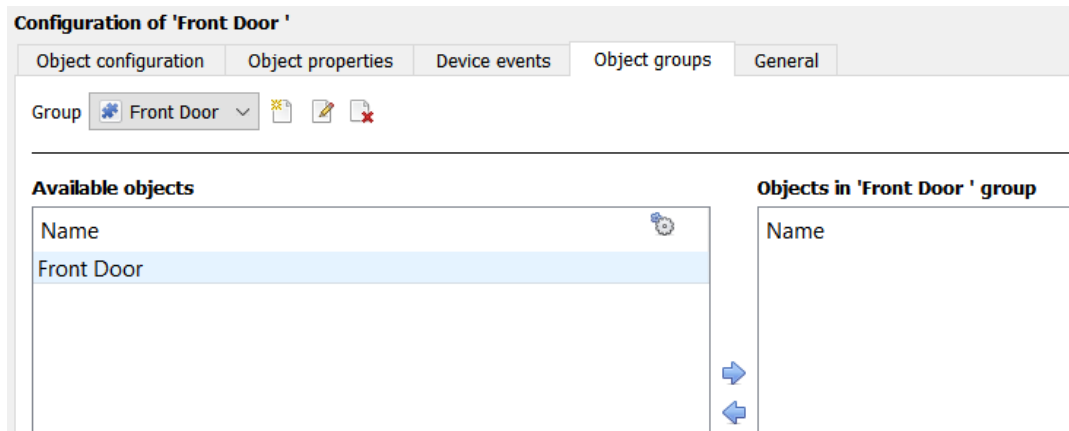
Navigate to the **Device events** tab and select **Communications event**.

Communications event	
Time	Description
2021-09-07 12:24:33.143	Connection down
2021-09-07 12:24:58.535	Connected
2021-09-07 12:27:08.090	Connection down
2021-09-07 12:27:33.394	Connected

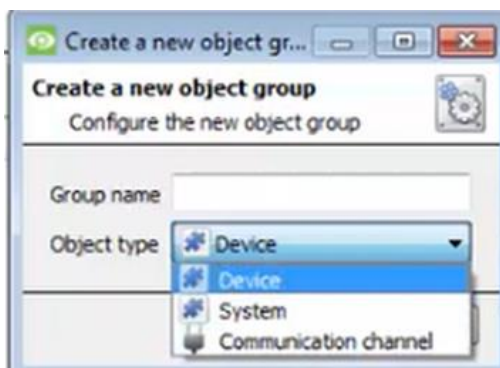
This communications event panel allows the user to see the time the device or server was disconnected, and the time it connected again.




## 2.3.5 Groups Tab

Groups of the same type of object can be created, such as multiple readers.



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



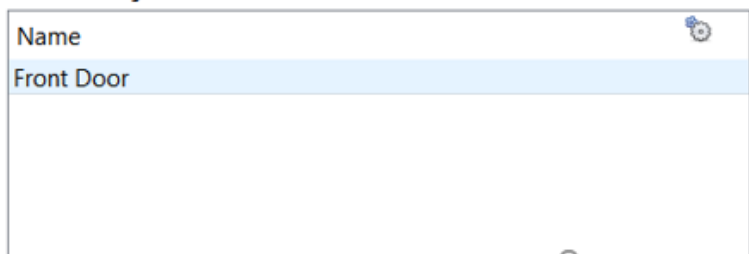
-  To create a Matrix COSEC group, click on this icon.
-  To edit a Matrix COSEC group, click on this icon.
-  To delete a Matrix COSEC group, click on this icon.

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.

### Available objects



A list of available objects will be displayed on the Available objects panel.

 To add these objects to the group, select them 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.

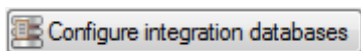
## 2.3.6 General Tab

The general tab deals with the integration database. Here, select a pre-created database, or configure a new database.



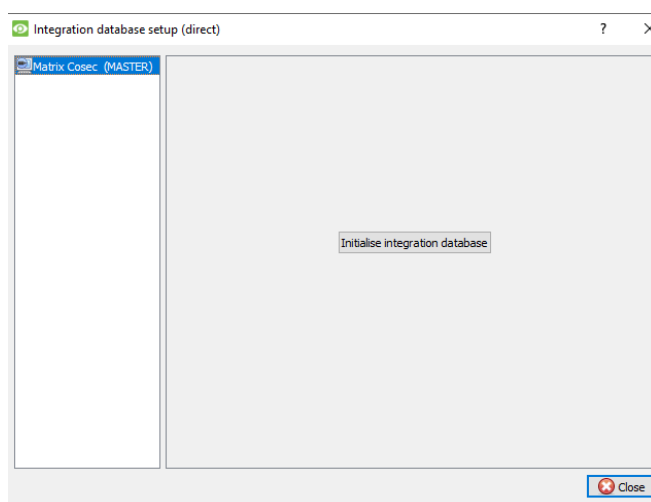
**Note:** Each integrated device needs to be attached to an integration database. Without setting up/adding a database here, the integration will not function properly within the CathesisVision system.

### 2.3.6.1 Configure a New Database



To create a new database, click on this button.

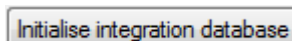
### Initialise the Integration Database

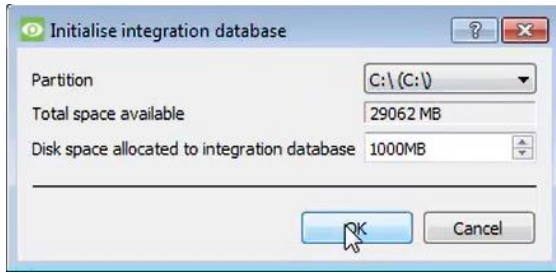


The first time an integration database is added, this feature will need to be initialised. This will add a broad database, into which all integrated devices' databases will be added.

Select the unit the database will be added to from the list on the left.

Click **Initialise integration database**.





The user needs to choose the partition the database will be created on, and select how much space will be allocated to it.

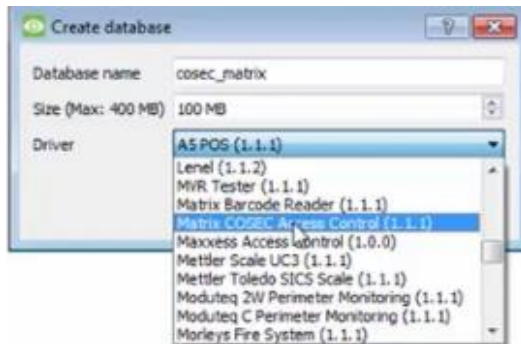
### Add a New Devices Database

After initialisation, the database can be added to the integration.

In the Integration Devices panel, select **General**.

Click **Configure integration databases**.

Click on the **New** button at the bottom of the **Integration database setup** window.

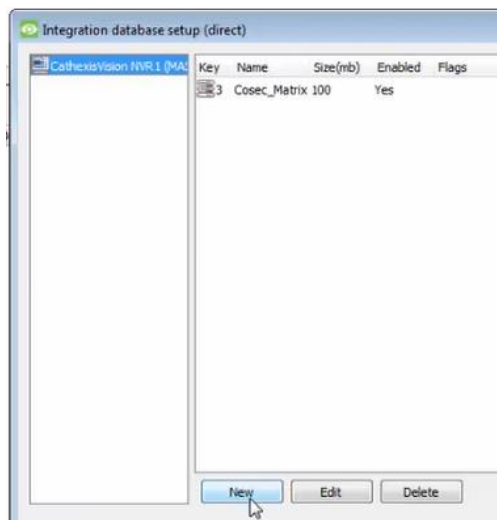


Give the Integration database a descriptive **Database Name**.

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

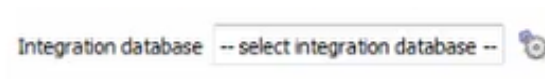
Select the device **Driver, Matrix COSEC** from the drop-down list.

Click **OK** to create the database.

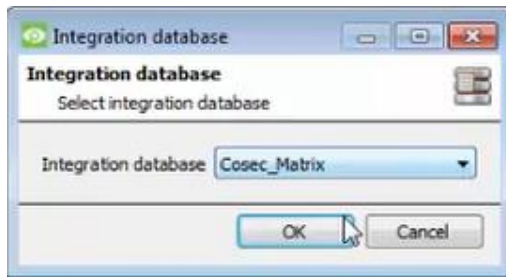


The newly created database will appear in the Integration database setup panel.

### Select the Matrix COSEC Integration Database



From the General tab, **click** the gear icon



In the dialogue that appears, **select** the relevant integration database.

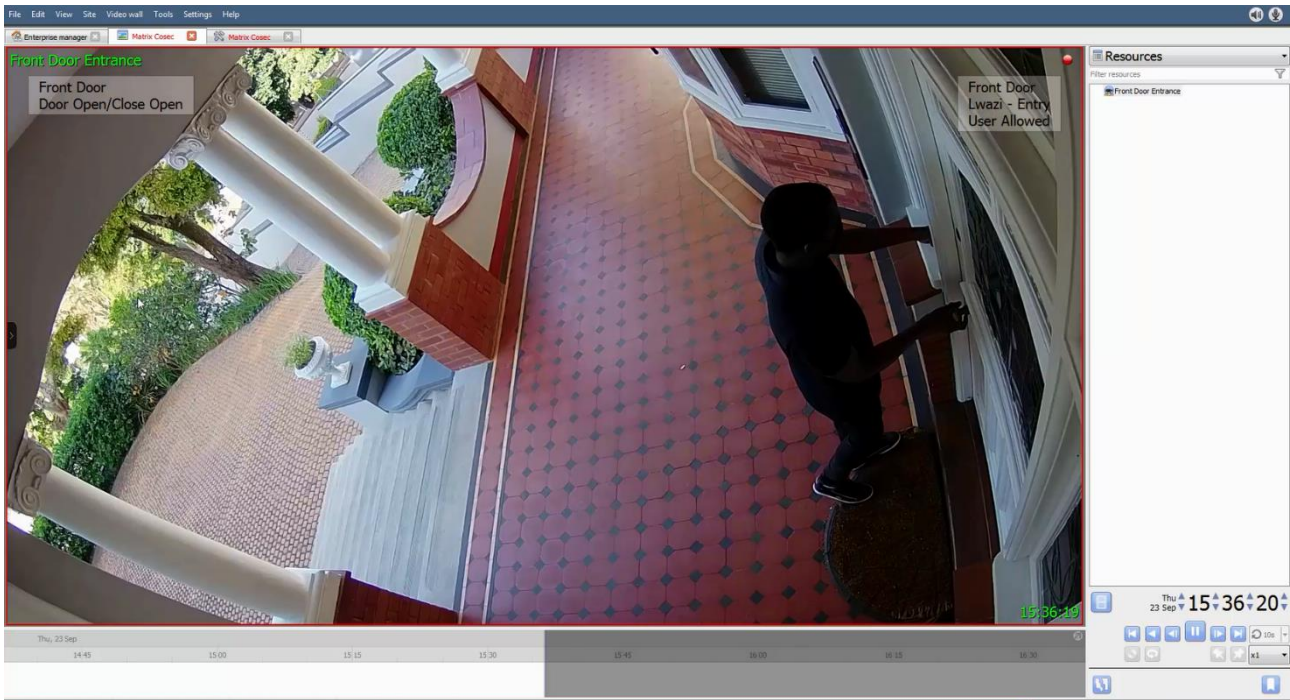
Only databases which relate to the device being added should appear.

**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. Camera Table Overlay Setup

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



**Note:** Cameras must have already been added to device objects, and overlays must have already been configured.

### 3.1 Video Feed Options Panel



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

#### 3.1.1 Select the Overlay



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

Select the **device**, **enable** the overlay, and it will appear over the video feed, as above.



## 4. Database

The database tab allows navigating to 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, this recording can be launched from within the database tab.

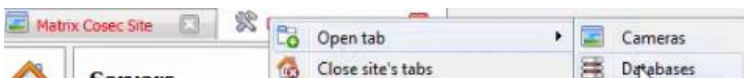
Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathesisVision by the integrated device.

### 4.1 Navigate to the Database

To view information stored in the Integration, first navigate to the Database Tab using the following steps:



1. **Right click** the Matrix COSEC Site tab.



2. Follow the path shown to the left.

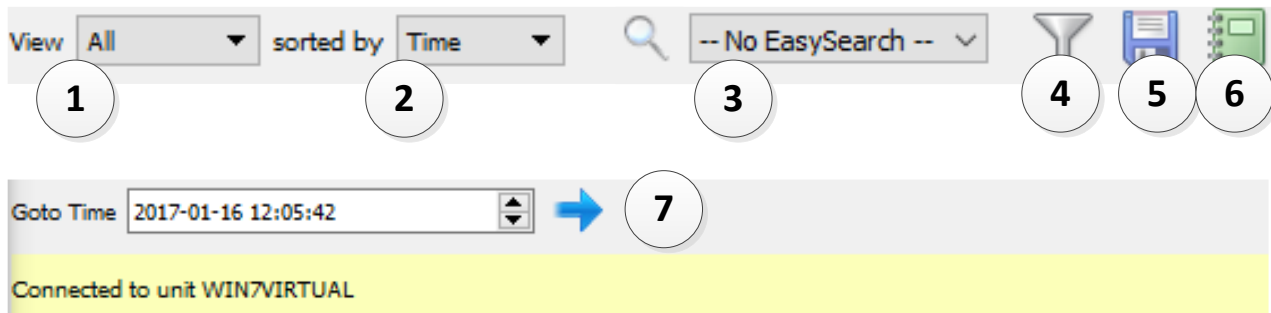










3. Once in the databases tab, **select** the relevant integration database. The databases are ordered under the NVRs to which they are attached.

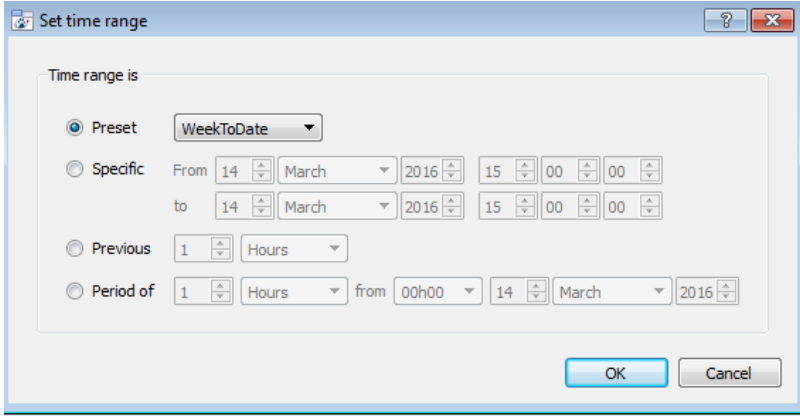

Time	Event type	Site ID	Site name	Master controller ID	Door controller ID	Device name
2021-09-07 12:10:26	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:26	Access event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:26	Access event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:26	Access event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:31	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:31	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:10:32	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:11:23	Time and attendance event	1	Site-1	1	1	1 Front Door
2021-09-07 12:11:23	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:11:28	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:11:28	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:11:28	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:12:40	System event	1	Site-1	1	1	1 Front Door
2021-09-07 12:13:06	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:22:09	Communication					
2021-09-07 12:22:42	Communication					
2021-09-07 12:23:03	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:08	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:08	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:08	Alarm event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:17	Door event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:17	Time and attendance event	1	Site-1	1	1	1 Front Door
2021-09-07 12:23:22	Alarm event	1	Site-1	1	1	1 Front Door

On the left is an image of a Matrix COSEC database.


## 4.2 Database Interface

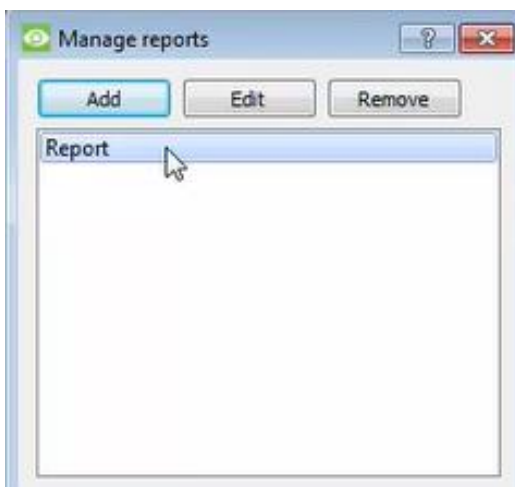


<p>① <b>View</b></p>	<p>Change the way that the database is presented. Some integration databases have multiple view options. The Matrix COSEC database can be viewed by <b>Access event, Time and attendance event, Door event, Alarm event, System event, and Communication event</b>:</p> 
<p>② <b>Sorted By</b></p>	<p>Sort the Events based on the following parameter: <b>Time</b>.</p> 
<p>③ <b>Easy Search</b></p>	<p>The easy search option allows quickly searching the database within one of the following options: <b>Site name, Master controller ID, Door controller ID, Device name, User ID, User name, Description, Direction, Allowed, and Event Detail</b>.</p> 
<p>④ <b>Filter</b> </p>	<p>Filter offers a more advanced manner of sorting information in the Integration Database table.</p> <p>Once the filters dialogue is open, the following options are available:</p> <ol style="list-style-type: none"> <li>To <b>enable</b> filters, check this box: <input checked="" type="checkbox"/> Enable filters</li> <li>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>To <b>delete</b> an added filter, click .</li> </ol> <p>A <b>Time range</b>, within which the search will be conducted, may also be set. To set a <b>Time range</b>, click on the blue hyperlinked text which specifies time (e.g. <a href="#">in the Week to date</a> ).</p> <p>This will bring up the following dialogue box, where the time range can be defined:</p>

	 <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>Multiple filters may be run simultaneously. Filters with the same parameters may be run more than once.</li> <li>To change a filter, click on the blue hyperlinked text.</li> </ol>
<p>⑤ <b>Export</b></p>	<p>Generate metadatabase reports in PDF or CSV format. See below.</p>
<p>⑥ <b>Manage Reports</b></p>	<p>Generate scheduled metadatabase reports. See below.</p>
<p>⑦ <b>Go to Time</b></p>	<p>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, and then click on the  icon.</p>

### 4.2.1 Scheduled Metadatabase Reports

Click the  icon to open the scheduled report window.

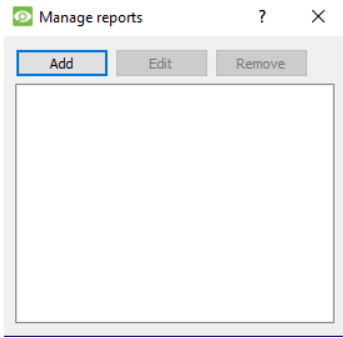


All created reports will be listed here.

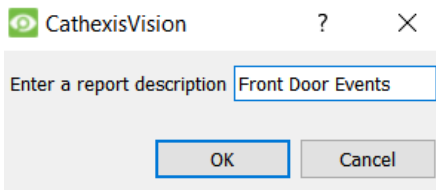
First, click **Add** to create a report. Then **edit** to define the reporting schedule. See below for more detail.

To create, edit, or delete a report, select the entry and click on the corresponding button.

### 4.2.1.1 New Scheduled Report

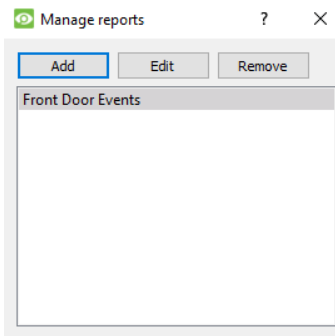


In the Manage reports window, click **Add**.



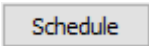
Give the report a description.

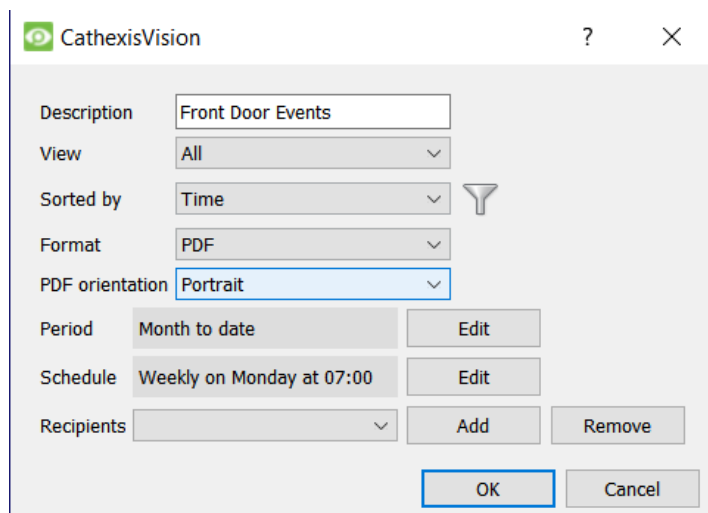
Click **OK** when done.



The item will appear in a list.

Once the new report is listed with the other reports, select it for editing to define the reporting schedule.

Either right-click the entry and select schedule or select the entry and click the schedule button at the bottom of the screen: 



Edit the **Description** if needed.

Edit **Viewing** options.

Select the **Sorted by** option.

Select the **Format**.

Select the **orientation** of the Format.

Select the **Period** to be reported on.

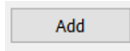
Define the **Schedule** for the report.

Select **Recipients** from the drop-down menu to whom reports will be sent.

## Add/Remove Recipients

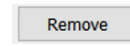
Use the icons to edit the drop-down menu.

**Add recipient**



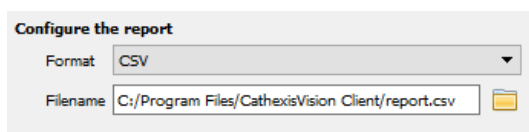
Click **Add** and enter the email address of the recipient. Multiple recipients may be added. All will receive emails.

**Remove recipient**



Select the recipient from the dropdown menu and click **Remove**.

### 4.2.1.2 Export CSV



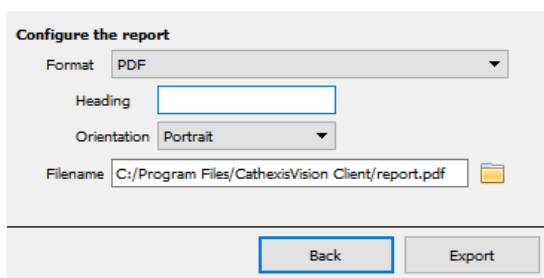
Select **CSV Format**.

Edit the **Filename** by either entering it straight into text field (replacing **report.csv**), or click the



to choose a new save folder and filename.


### 4.2.1.3 Export PDF



Select **PDF Format**.

Give the PDF a **Heading**.

Select either Landscape or Portrait **Orientation** of the PDF.

Edit the **Filename** by either entering it straight into text field (replacing **report.csv**), or click the  to choose a new save folder and filename.

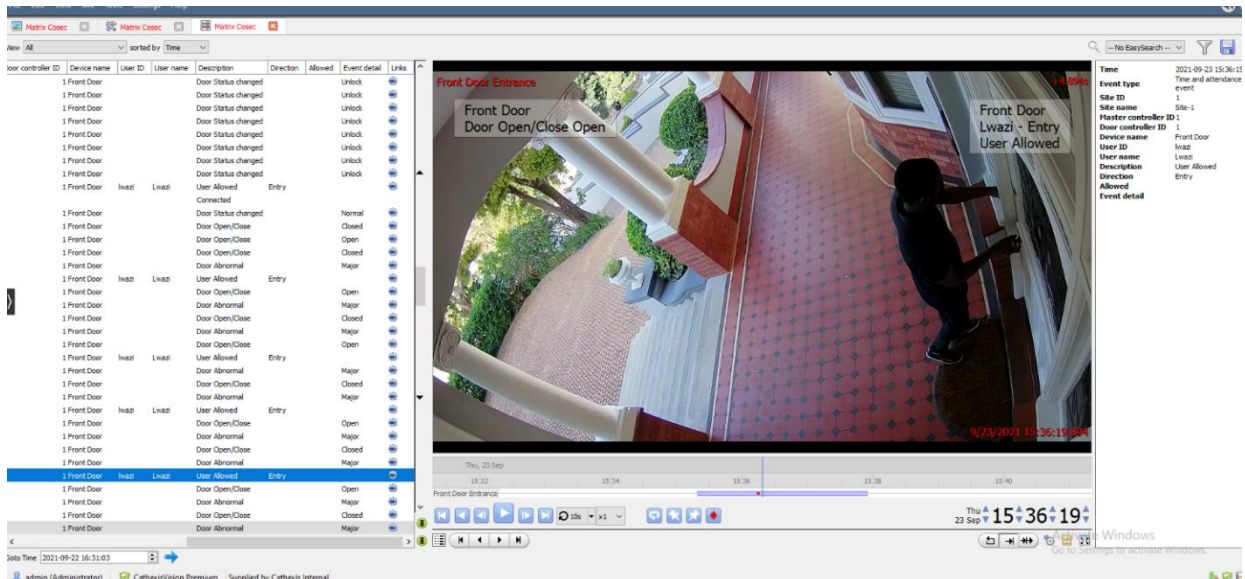
## 4.2.3 Metadata

**Event type** Reader  
**Description** Access Denied - Not In File  
**Object** Reader 3.32  
**First name**  
**Last name**  
**Cardholder id**

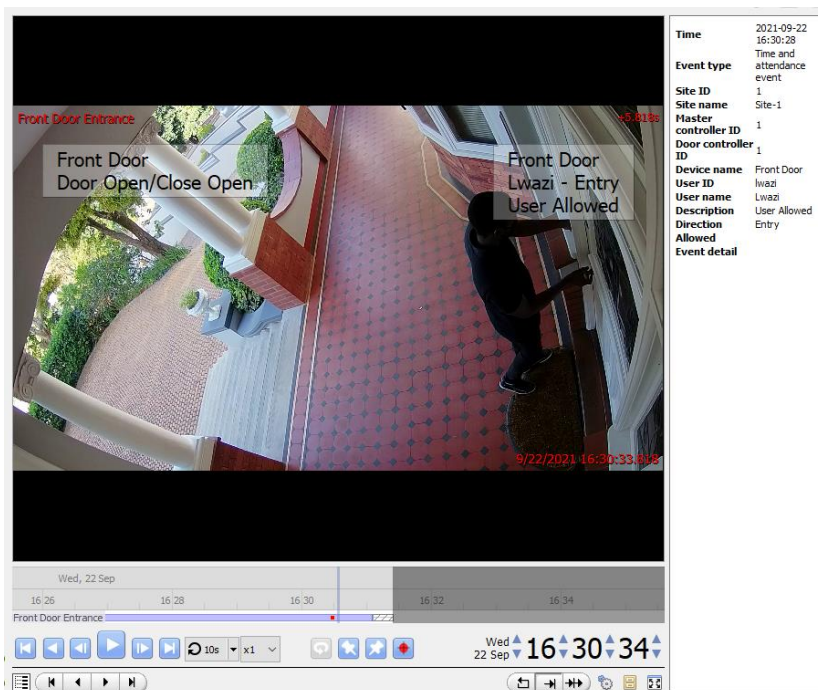
On the right-hand side of the database, meta-data about the event entry is displayed.

## 4.2.4 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 it.



A floating replay window will appear, from which video content may be archived and reviewed.



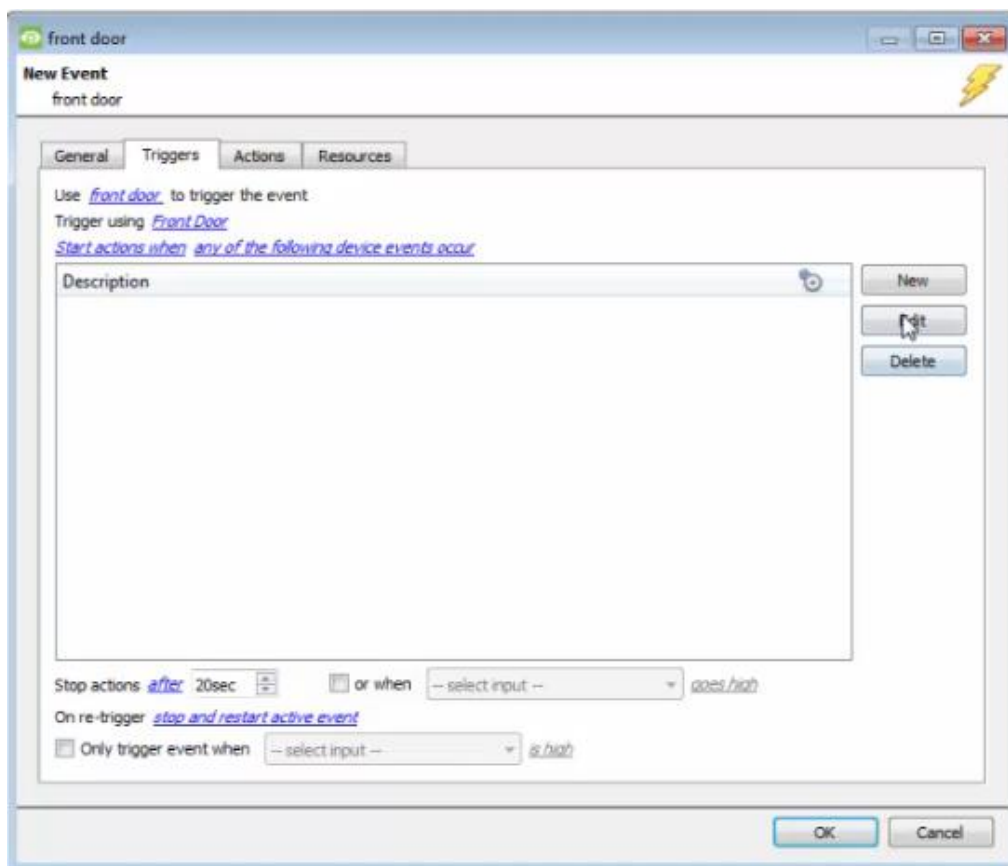
## 5. Events

A CathesisVision event has a trigger, which causes an action. Set integrated devices to act as triggers, or as actions. This document will detail the Matrix COSEC 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* as an event trigger, or action.

### 5.1 Event Window

Events in CathesisVision 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.

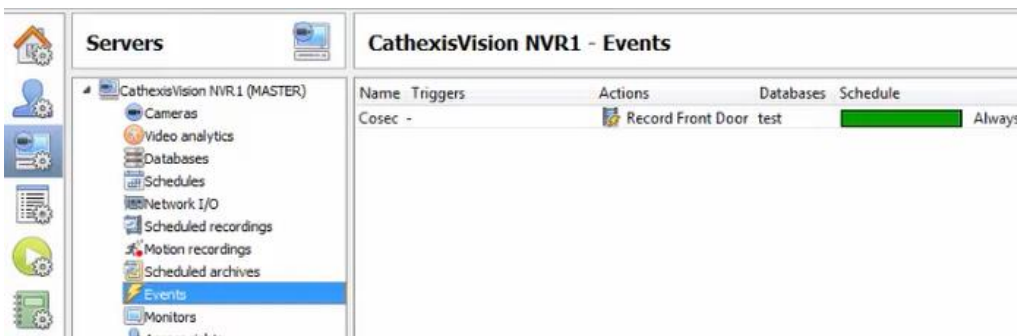



## 5.2 Creating an Event

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



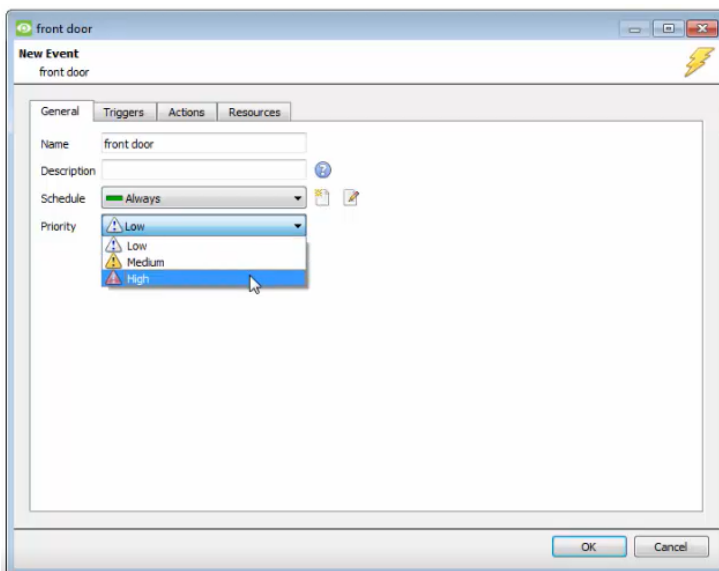
This will allow the user to enter the Events management area:



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


## 5.3 General Tab

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



Give the event a descriptive name.

Modify the description if relevant.

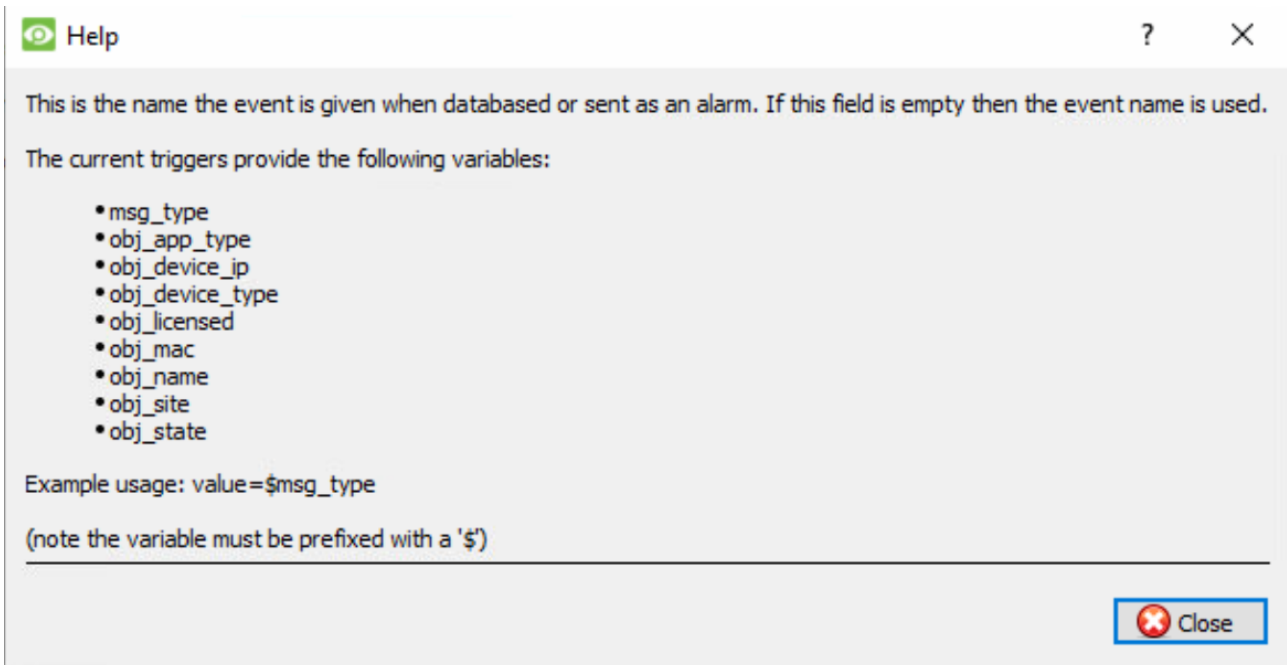
Set up a schedule if desired by clicking the icon. 

Select a priority.



**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 to see a list of available descriptions.

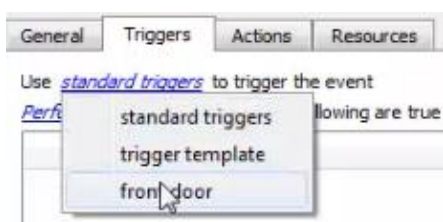
The following items will appear:



## 5.4 Triggers Tab

A trigger is the user-defined input that notifies the event to start. The trigger causes the subsequent action (which the user will also define).

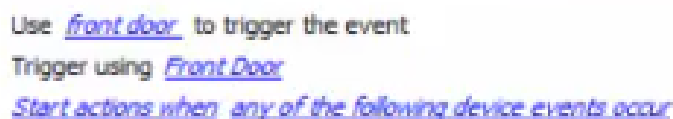
### 5.4.1 Set the Device as the Trigger



To define which device should trigger the event, click on the hyperlink after “use”. To set it as the Matrix COSEC device, click on the hyperlink, and select the device name from the dropdown menu.

### 5.4.2 While/When and Any/All

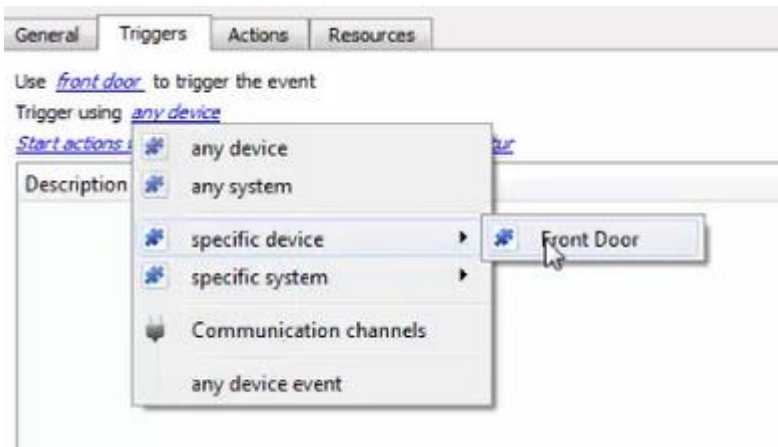
When triggering on a device, there is the option to trigger **while/when** a trigger is active. Also select multiple triggers, and define whether **all/any** of the triggers need to be active to set-off an event.



To change these settings, click on the related blue hyperlinks **in the bottom row** of the image on the left.

### 5.4.3 Trigger Types (Trigger Using)

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



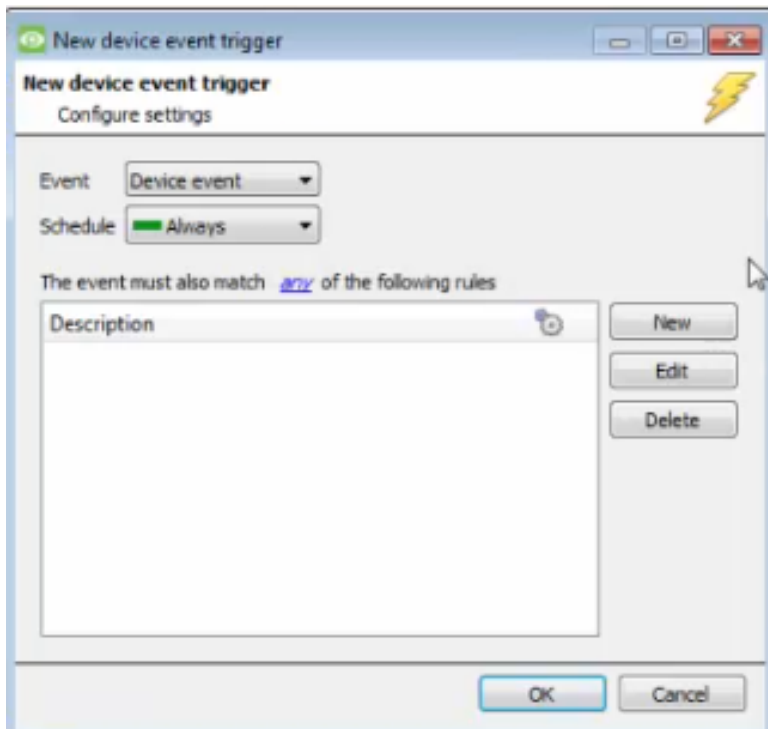
**Any device** will trigger if anything happens on any of the devices.

**Specific device** will trigger on the specific device chosen.

**Any device event** will trigger, initially, when any event occurs on the device. Within the “any device event” setup, “device event rules” may be set, which will constrain the events that prompt triggers.

### 5.4.4 Define the trigger

After selecting a master trigger type, add a trigger to the event. Click on  in the Triggers tab. This will bring up the **New device event trigger** dialogue box.



Choose the type of device Event that will be the trigger. Choose from the drop-down menu.

Choose if **any**, or **all** constraints need to be fulfilled to set off a trigger.

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

**Note:** Multiple constraints (Device Event Triggers) can be set. If constraints are not defined, every single event will trigger this event.



To configure a **New device event rule**, click on  in the **New device event trigger** window. This will bring up the **New device event rule** dialogue.

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 (which is [equals](#) in the example). This will display the rules options.

**Note:** When all available options are known to CathesisVision, a drop-down menu will appear. When these variables are not pre-defined, fill them in.



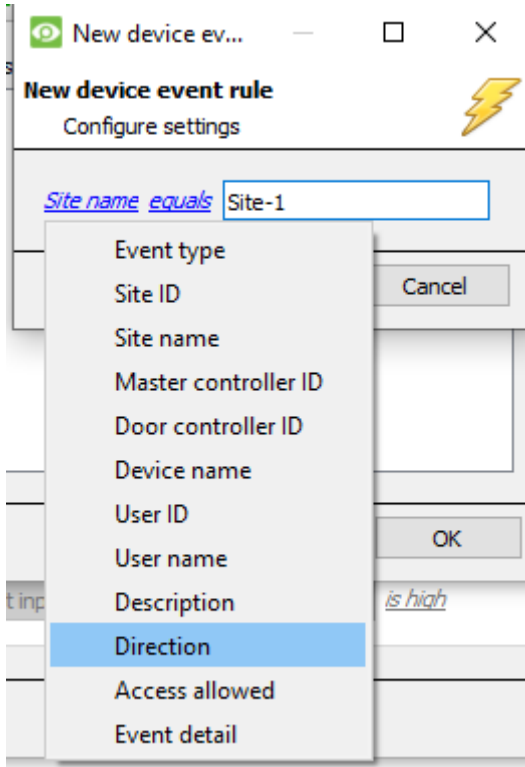
**Configure the settings** on the event type that has been selected.

In the example alongside, if “Access allowed” is the selected event type, a drop-down menu will appear in the next window.



To configure the “Access allowed” event, **select** the appropriate option from the **drop-down menu**.

“Denied” will trigger a system event in response to an unauthorised access.



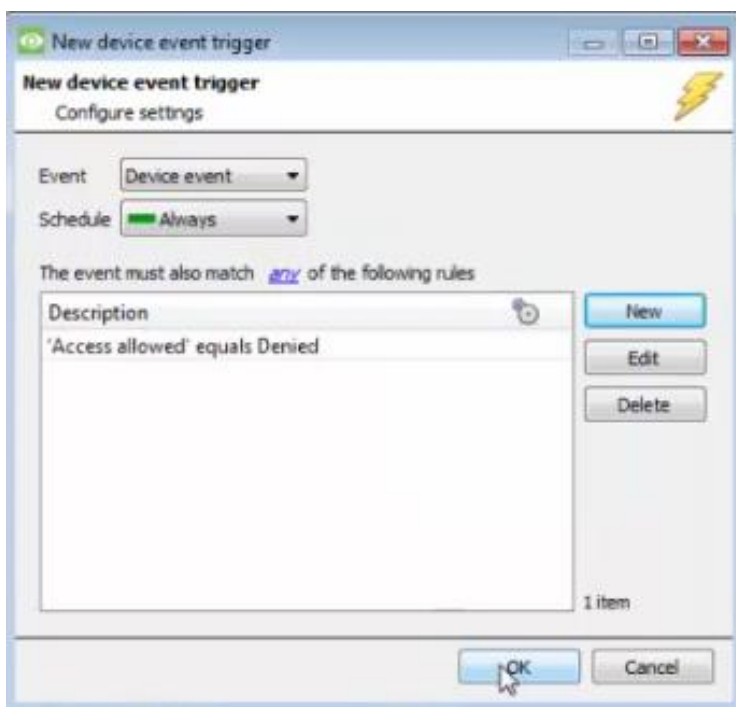
Some event types require a **written description** where there is no drop-down menu. Fill in the description in the field.

**Note:** Descriptions must be named **exactly** as they appear in the **database table**.

Descriptions are **case sensitive**. For example, naming the event “site-1” will not trigger an event since it does not match the description “Site-1.”

See **image below** for an example of the **database table**. The descriptions are visible in the columns.

Time	Event type	Site ID	Site name	Master controller ID	Door controller ID	Device name	User ID	User name
2021-08-20 13:43:47	Access event	1	catDurban	1	1	Front Door	ca	Bheko
2021-08-20 13:43:54	Access event	1	catDurban	1	1	Front Door	ca	Bheko
2021-08-31 14:28:08	Access event	1	Site-1	1	1	Front Door	dums	Dums
2021-08-31 14:28:18	Access event	1	Site-1	1	1	Front Door	dums	Dums
2021-08-31 14:28:18	Access event	1	Site-1	1	1	Front Door	dums	Dums



The newly created event will appear in a list in the New device event trigger window.

Click **OK**.

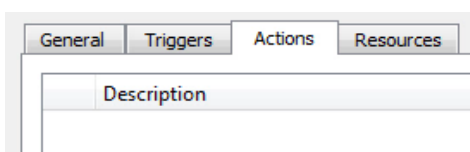
### 5.4.4.1 Any Group

Triggers that are not of the **Any Device Event** type, have a slightly different setup window. In these instances, constraints need not be set, since they are being added one at a time. This option is better if a few triggers have been selected 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.


**Note:** This is true for groups too, since a group may only be made up of one object type.

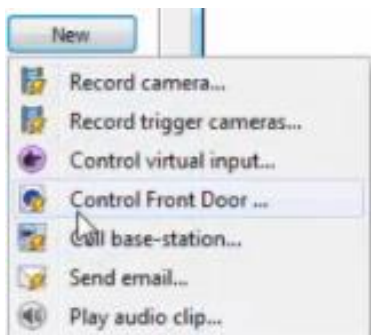
## 5.5 Actions Tab



Having defined the triggers that will initiate an event, the user will need to define Actions. One of the available actions will be to *control* a Matrix COSEC device.

### 5.5.1 Adding an Action

To add an action, click  in the Actions tab.



A list of **available actions** will appear.

The drop-down contains all the available **action types**.

The device **action type** is represented by this icon: .

It will state "**Control ...**" and the name of the Action device e.g.,




#### 5.5.1.1 Control Device

Click a Control device option e.g.  **Control Front Door ...** in the menu to 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.

Device



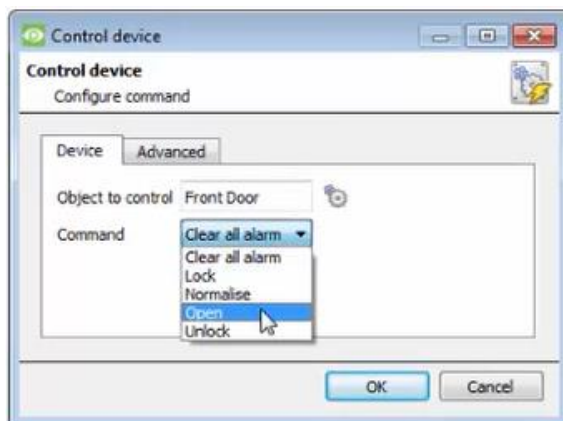
To select an **Object**, click on the  icon.

This provides a selection of all the Objects available on the Matrix COSEC device.



Select the device to control.

Click OK.



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

Click OK.

## 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 Cathexis schedule, which may be applied to the actions.

## 5.6 Resources Tab

In the Resources tab, users can select the cameras, audio input, and audio output to be used.

The default is to select “Use trigger resources.”



## 6. Maps

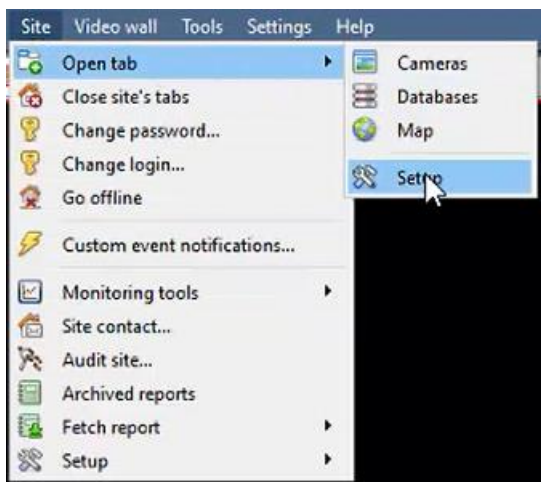
It is possible to add the Matrix COSEC device to a site map, which will allow for a number of action options when access control events are triggered. These options include the animation of triggered access control events and connecting to site cameras when access control events are triggered, etc.

**Note:** This section will only deal with the specifics of the Matrix COSEC device. For more information on using the CathexisVision Map Editor and Map Tab, please consult the *Map Editor Operation Manual*.

### 6.1 Add the Matrix COSEC Device as a Resource

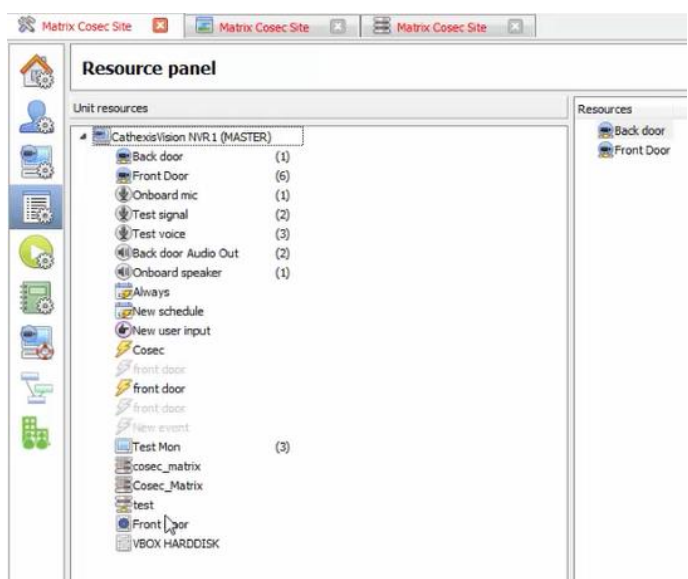
To configure the map, the Matrix COSEC device must be added as a resource to be added to the map.

#### 6.1.1 Add the Device in the Resource Panel



Navigate to the **Resource Panel** by following:  
**Site / Open Tab / Setup / Configure resource Panel**

Click the **Configure Resources** icon:



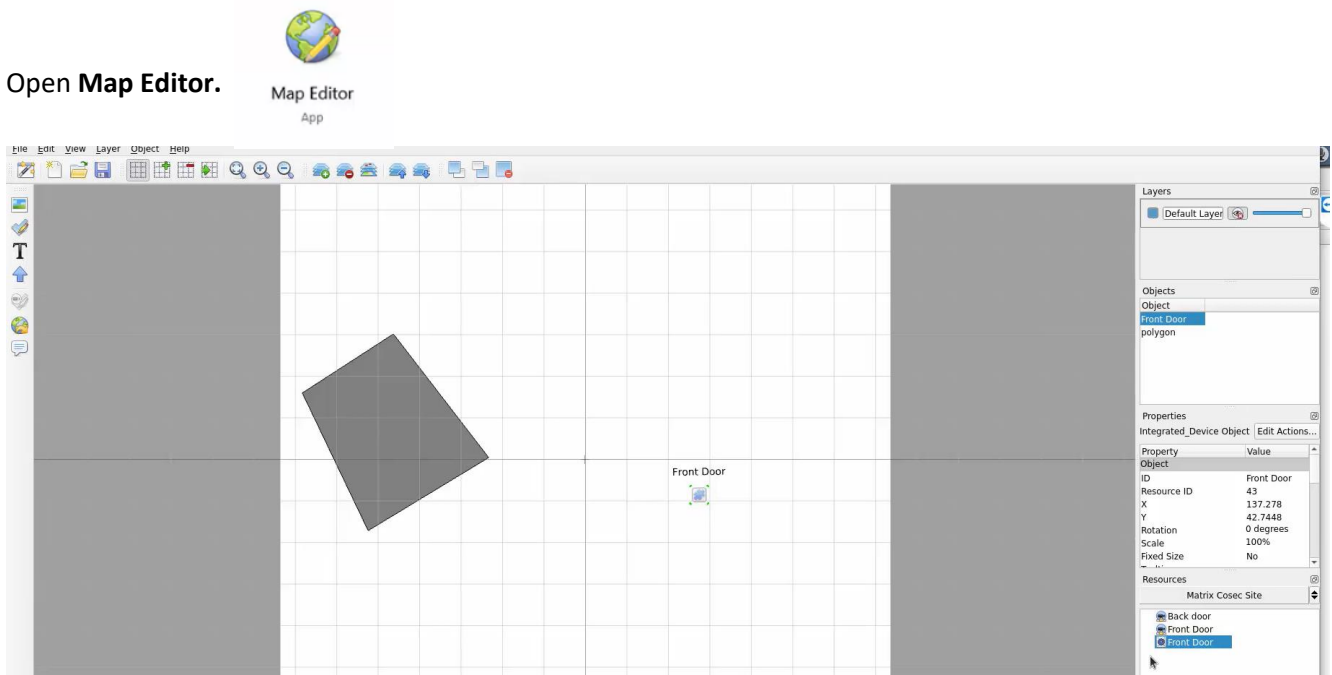
In the site's Resource panel, a list of resources will be displayed.

Select the **Matrix COSEC** integration device. Drag and drop it under **Resources** on the right.

The Matrix COSEC integration device will now be listed as a Resource in the Maps editor.



## 6.2 Configure Map Editor



On the right, **select** the Matrix COSEC Site.

The Matrix COSEC integration devices will then be listed as resources underneath.

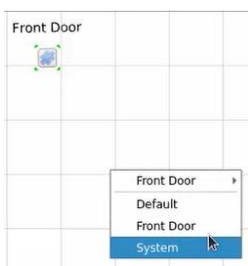
### 6.2.1 Add the Device in Map Editor

Once the Matrix COSEC device has been added as a **Resource**, it will be available to drag onto the map area from the **Site Resources** list.

### 6.2.2 Adding Device Objects


**Drag** the Matrix COSEC integration device from the Site Resources list onto the map area.

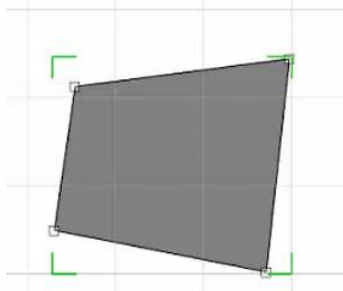
**Select** one of the associated objects as illustrated below.



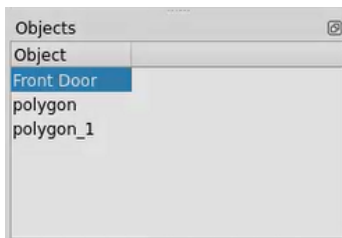
**Note:** To add multiple objects, repeatedly drag-and-drop the Matrix COSEC integration device onto the map area to bring up this option.

### 6.2.3 Add a Polygon

On the options bar on the left, click the **Add polygon** icon: 



Draw a polygon on the map interface.

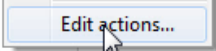


The polygon will now be listed under **Objects** on the right.

### 6.2.4 Adding and Editing Device Actions

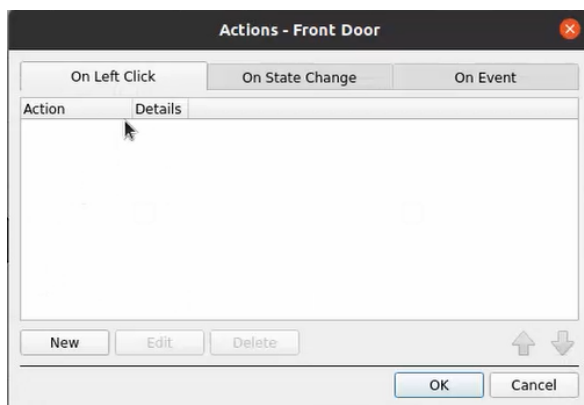
To add or edit actions to the device objects:



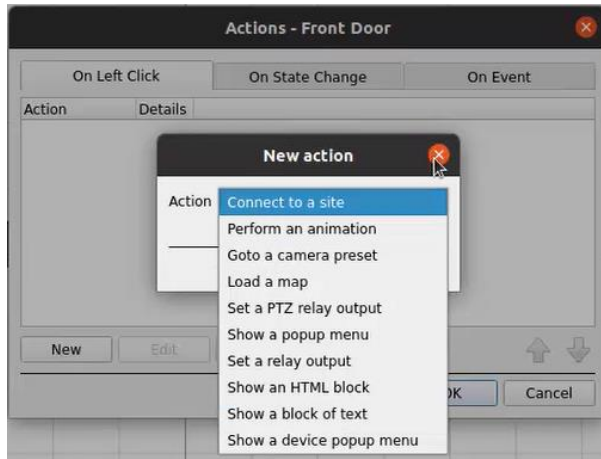
**Right-click** the map object and select .

Actions may be set for **Left/Right-Clicks, State Changes** and **Events**.

#### 6.2.4.1 On Left-Click



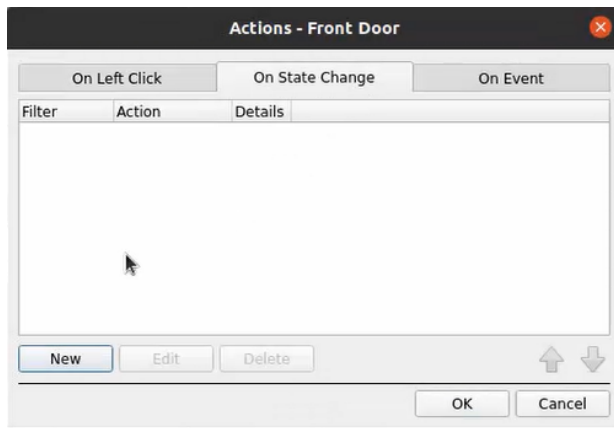
In the **On Left Click** tab in the window that appears, **click New**.



The user can choose an **action** from the drop-down menu.

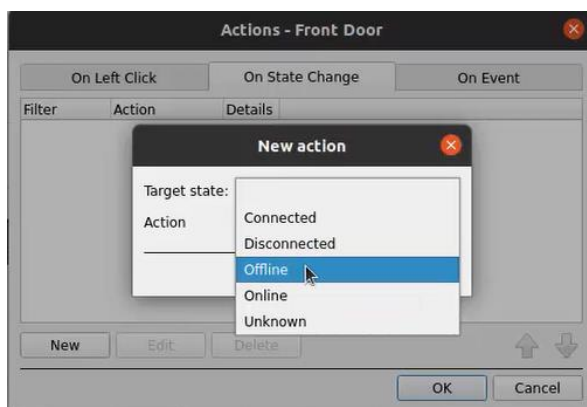
### 6.2.4.2 On State Change

The following example shows how the user can set the polygon to turn green when the object is offline, and red when online.

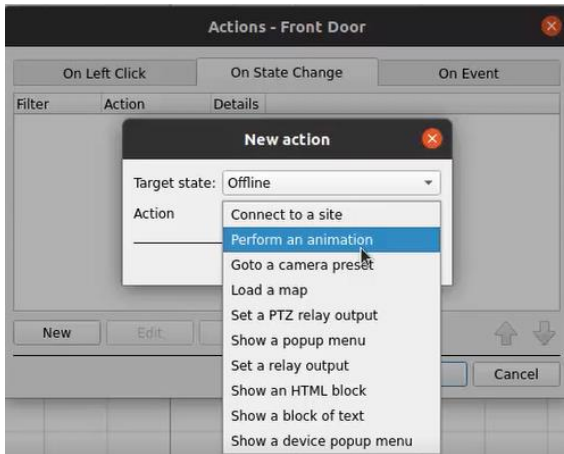


In the **On State Change** tab, select **New**.

### Target State Offline

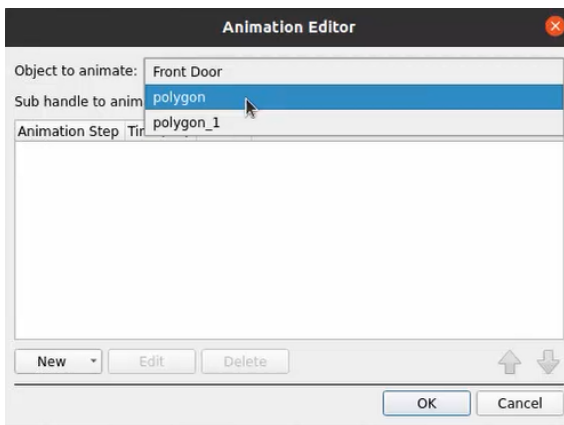


Select the target state as **Offline**.

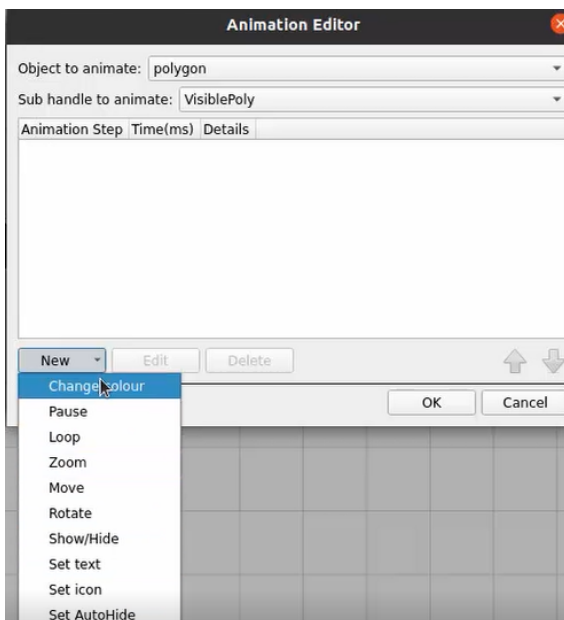


Select an **Action**. In this example, the user has selected Perform an animation.

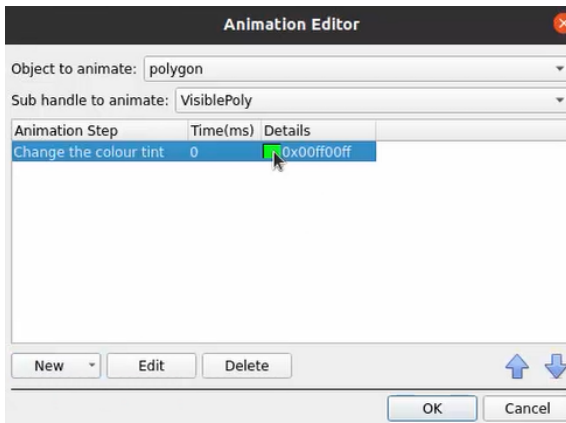
Click OK.



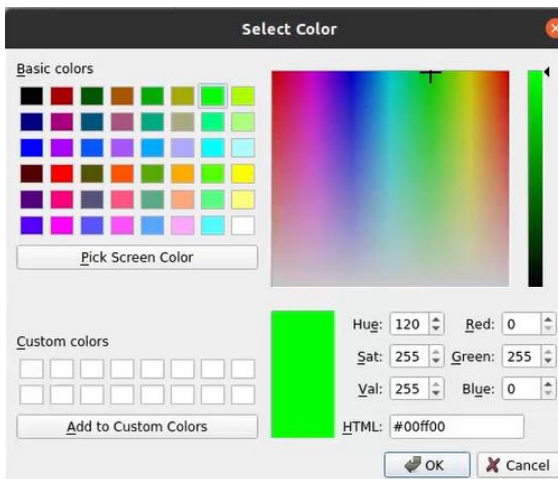
In the Animation Editor window that opens, select the polygon as the **Object to animate**.



Select **Change colour** from the drop-down list.



Double-click on the block of colour under **Details** to edit the colour. A window will appear with colour options.

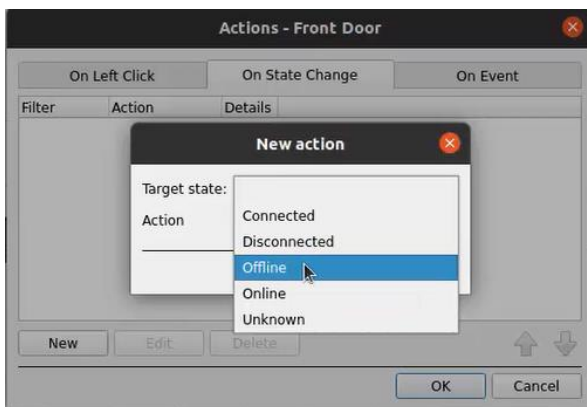


**Select the colour** which will indicate that the Target State is **Offline**. In this example, the user has chosen to keep the colour as green.

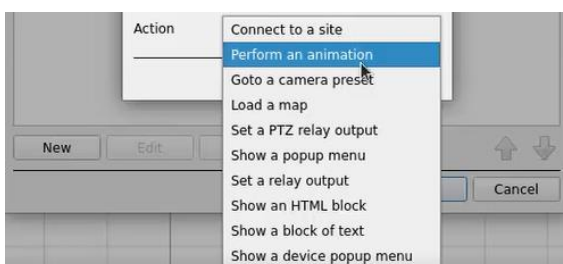
Click **OK**.

On returning to the **Animation Editor** window, click **OK**.

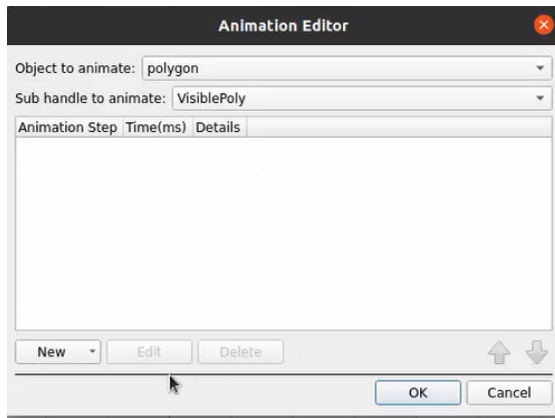
### Target State Online



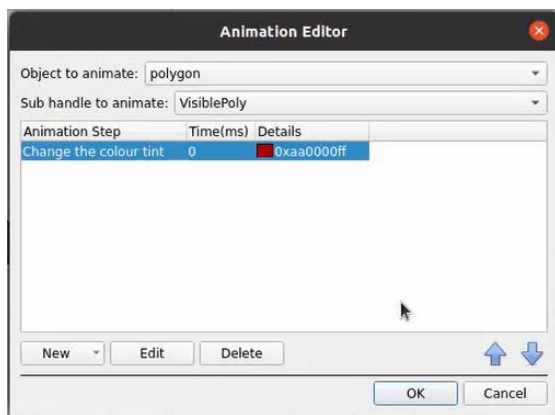
To change the settings for when the Target State is Online, select **Online** from the drop-down list.



Select an Action from the drop-down list. In this example, the user has selected **Perform an animation**.



In the Animation Editor window that opens, select the polygon as the **Object to animate**.



Select **Change colour** from the drop-down list.

In this example, the user has chosen to change the colour to red.

**Note:** Multiple actions may be added to the map objects.

Once finished, save the map.

**NB:** The map must not be saved in the Work folder of the installation directory.

### 6.2.4.3 On event



In the **On Event** tab, select **New**.



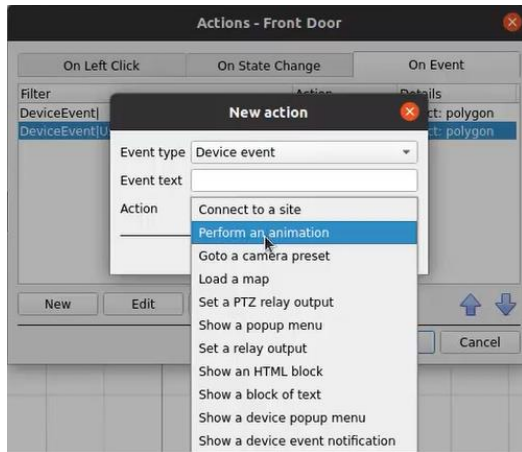
Select **Event type** from the drop-down menu.

Add **Event text**. E.g. User Allowed

Description	Direction	Allowed
Connected		
Dongle/License Key not found		
Connected		
Door Open/Close		
Door Abnormal		
Door Open/Close		
User Allowed	Entry	Allowed

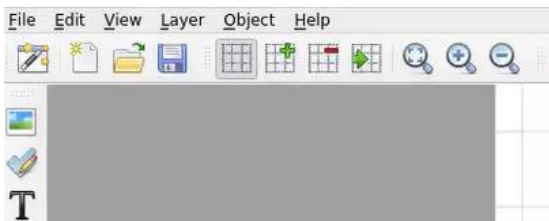
**Note:** The name given in the Event text field must be identical to the **Description** in the CathexisVision database table, as in the image alongside.

Descriptions are **case sensitive**. “User Allowed” should not be written as “user allowed”.

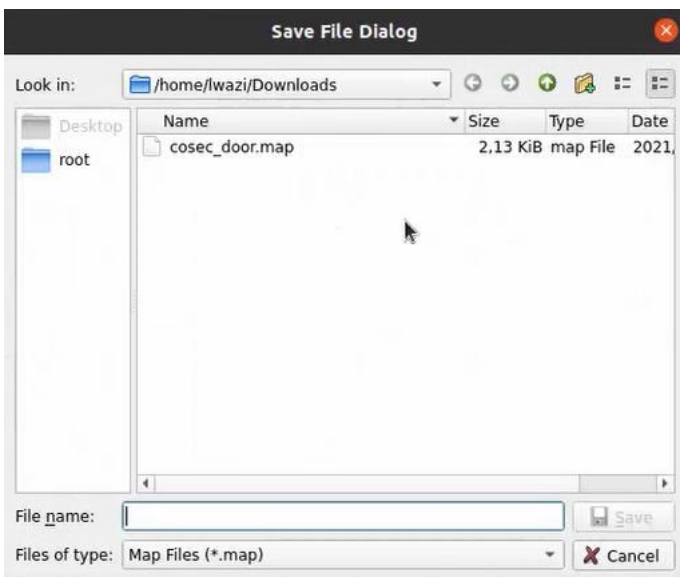


The user can choose the Event type (Any Event or Input Event) and select an action from the drop-down list.

### 6.3 Save Map



In map editor click the **Save** icon.

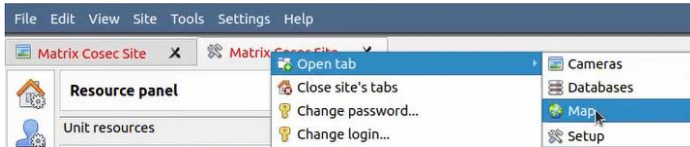


Give the map a name. Click **Save**.

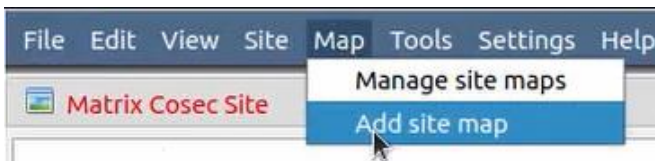


## 6.4 Load Map onto CathesisVision

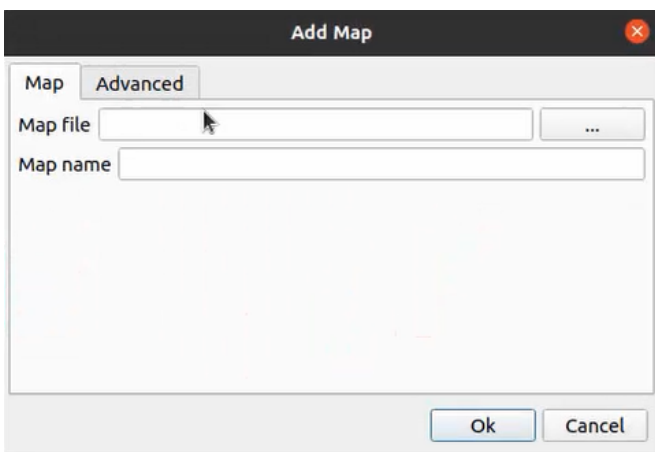
Upload the saved map to CathesisVision. Once the map is open, all objects added to the map area in the Map Editor will be visible on the map, and all actions set will be available.



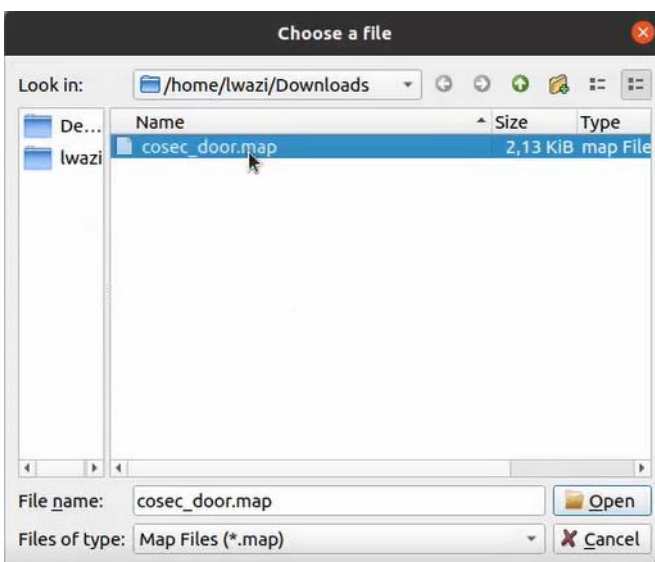
In CathesisVision, go to **Site / Open tab / Map**.



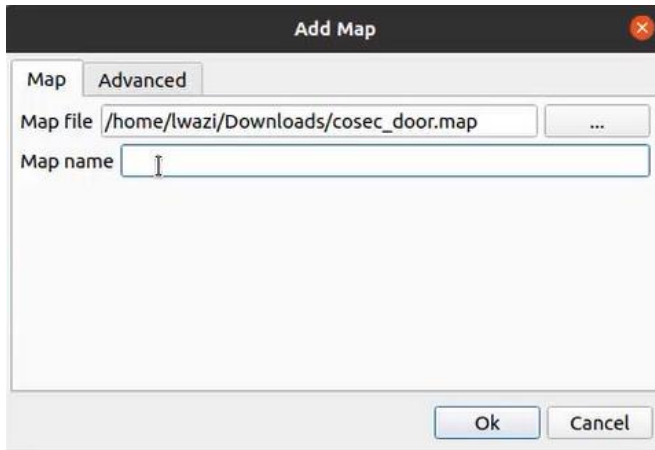
Then, in the Map tab, go to Map / **Add site map**



In the **Add Map** window that opens, click on the ellipses icon to retrieve the **Map file**.



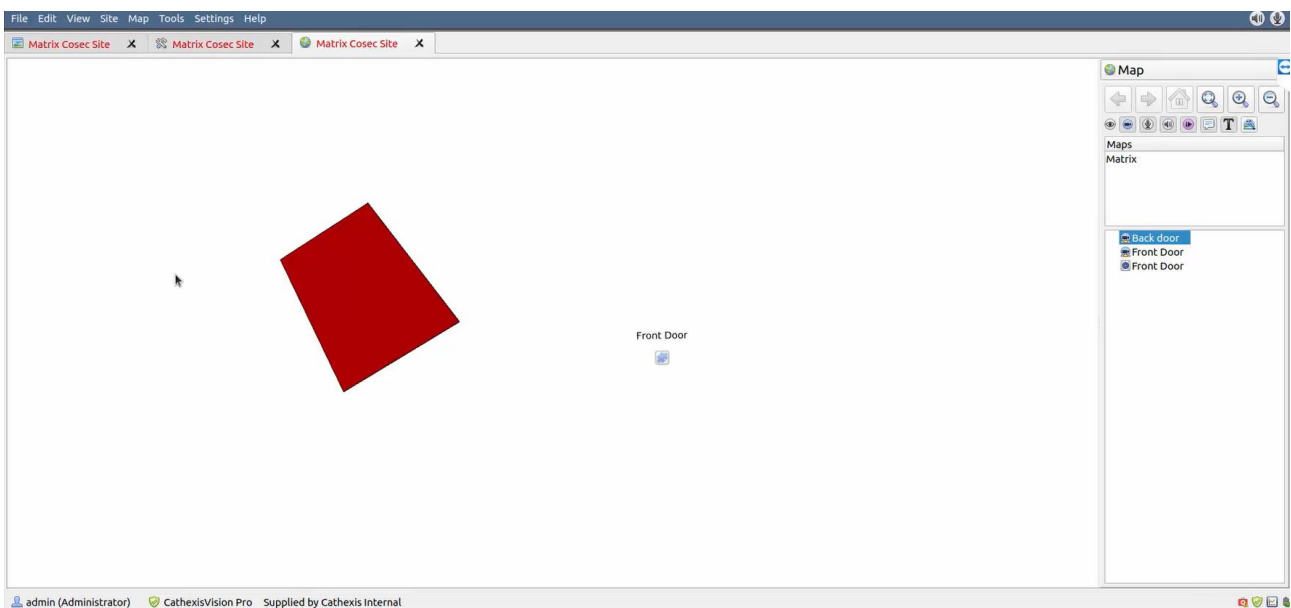
Select the integration map and then click **Open**.



Give the map a **descriptive name**.

Click **OK**.

The applied changes will now be reflected on the map tab, as shown below.



## 7. Conclusion

Please remember that this app-note was designed to deal specifically with this integration. For further information about the CathesisVision software, consult the main manual (<http://cathesisvideo.com/>).

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