



BioAccess Integration App-note

6 January 2022

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1. Introduction

This document will detail the integration of the BioAccess device with CathesisVision. Functionally this integration will entail the triggering of standard CathesisVision Events, based on information received from the device.

Communication for this integration is one-directional: CathesisVision receives event information from the BioAccess device and cannot query the device or send a heartbeat to determine if the BioAccess software and hardware are functional. Thus, the BioAccess device must be configured to send events to CathesisVision.

Note:

1. For information regarding the regular operation of a BioAccess device, please consult the relevant documentation.
2. There is a General Integration section in the main CathesisVision Manual. It has vital information about creating an integration database, as well as a general introduction to the Integration Panel. **Read over this section.**

1.1 Requirements

1.1.1 General Requirements

- CathesisVision 2017.3 and later.
- Please note this integration was tested and works with BioAccess version 6.3.0.0.

1.1.2 CathesisVision License Requirements

License No.	License Name	Description
CBIO-2000	BioAccess Device license	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 BioAccess device.
CMCO-1001	BioAccess Reader license	These licenses apply to the doors, or readers, in an access control system. The CBIO-1001 will license a single reader, and may be added on a reader-by-reader basis.
CBIO-3000	BioAccess Bundle license	This license includes the CBIO-2000 BioAccess device license, and also provides support for unlimited CMCO-1001 reader licenses.

Note:

1. Either purchase the bundle license, or **both** the device and reader license.
2. In this integration, individual devices will require a license for each device.

1.2 Integration Components

All CathesisVision integrations have two component levels: **Device** and **Object**.

Device The device is CathesisVision software's interface, which handles all the interaction between CathesisVision and the integrated hardware. When an integration is added to the CathesisVision system, a device is added. The messages received from the device are called Device Events.

Objects Objects are the individual pieces of hardware that comprise the integration. There 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.

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.

1.3 Features and Abilities

1.3.1 General Integration Features

- CathesisVision receives event information from the BioAccess software via UDP.
- The BioAccess software needs to be configured to export live door events to the CathesisVision server.
- Communication is one-directional. CathesisVision cannot control or query the device.
- CathesisVision cannot send a heartbeat to the device and thus cannot determine whether the software and hardware is functional.

1.3.2 Device Objects

- Device objects are generated once events are received.
- Reader objects support overlays.
- Device objects can be used to trigger events.
- Device objects cannot be controlled as an action of a CathesisVision system event.
- Objects may be linked to cameras to associate device events with video footage.

1.3.3 Events

CathesisVision receives event information from the BioAccess device. All device messages are databased as 'Door transactions' or 'Other events.' See below for full list.

Note: Not all of these events have been tested as the evaluation hardware and software did not allow the events to be triggered. This is indicated next to the listed events.

Event Element	Features/Abilities
Device Event Types	<p>Most door-related events:</p> <ul style="list-style-type: none"> • AccessGranted - message received. • AccessDenied - message received. • DoorOpenTooLong - message received. • DoorForcedOpen - message received. • DoorClosedAfterAlarm - message received. • DoorUnlocked - message received. • DoorLockedBack - message received. • BioMismatch - As per ANV Holdings Normal access denied message (Biometric denied). • DualAuthenticationFailure – unable to trigger. • AccessCardExpired – unable to trigger. • EmergencyDoorRelease – unable to trigger. • KeyOverride – unable to trigger. • EDRTamper – unable to trigger. • KOTamper – unable to trigger. • Anti-PassbackViolation – unable to trigger. • EmergencyBreakGlass – unable to trigger. • RequestToExit - As per ANV Holdings this feature isn't used.
	<p>Other Events</p> <ul style="list-style-type: none"> • TamperAlarm - message received as Tampering Detected. • TempCardReturned – unable to trigger. • TempCardNotReturnedAfterExpiry – unable to trigger. • TempCardExpired – unable to trigger. • InternalLogFileFull - The software handles the logs. This Event is unlikely to be triggered as the device can hold up to 1 million logs. • ManagementMenuLogin – unable to trigger. • ManagementMenuLogout – unable to trigger. • DatabaseDeleted - message received. • EnrolmentCompleted - message received. • DeletionCompleted - message received as Person Deleted. • UserModificationCompleted - message received as Person Modified. • ContactlessCardEncoded – unable to trigger. • ContactlessCardReset – unable to trigger.

	<ul style="list-style-type: none"> • SettingsChanged - message received. • ContactlessCardSecurityKeysReset - message received as Card Security Key Reset. • FirmwareUpgrade – unable to trigger. • JobCodeCheckFailure - As per ANV Holdings this feature isn't used. • TerminalBootCompleted - message received as Reboot Completed. • AddUser - message received as Person Added. • RebootInitiated - message received. • DuressFingerDetected – unable to trigger. • SecurityPolicyChanged - message received.
<p>CathexisVision Event Actions</p>	<ul style="list-style-type: none"> • BioAccess events application are reflected in CathexisVision, and can be used to create CathexisVision system events which can perform a number of CathexisVision system actions. • It is not possible to control this integration.

1.4 Metadatabase

A unique meta-database is created on the CathexisVision 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
<p>General</p>	<ul style="list-style-type: none"> • All device events are databased as 'door transactions' or 'other events.' • Database entries include links to the footage from cameras linked to device objects. • Multiple cameras may be linked to multiple objects. • Device event meta-data is displayed where applicable. • Databased device events may be viewed in the embedded video player, which includes the usual CathexisVision video review tools.
<p>View Options</p>	<ul style="list-style-type: none"> • Door events. • Other events.
<p>Sort Options</p>	<ul style="list-style-type: none"> • Device event time.
<p>Easy Search</p>	<ul style="list-style-type: none"> • Transaction type. • Reader name. • User name.
<p>Filter</p>	<ul style="list-style-type: none"> • Time. • Event type. • Transaction type.

- Reader name.
- Reader ID.
- User name.
- User ID.

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

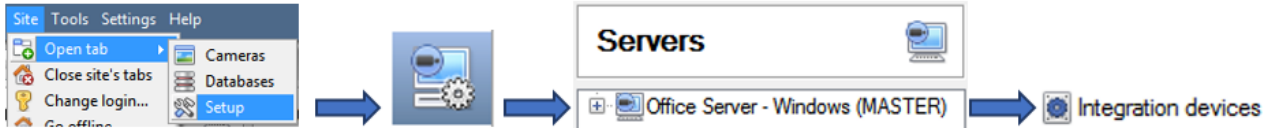
USEFUL LINKS

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>

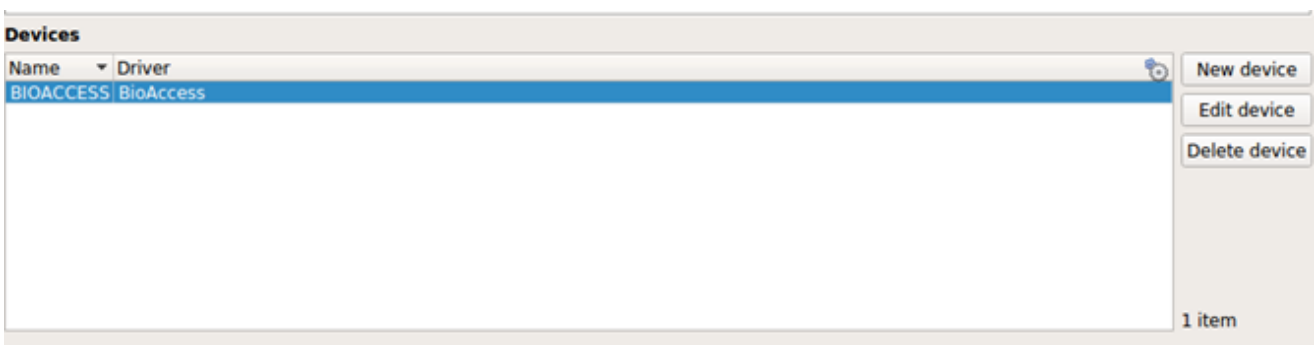
2. Device Addition and Configuration

Integrations 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:

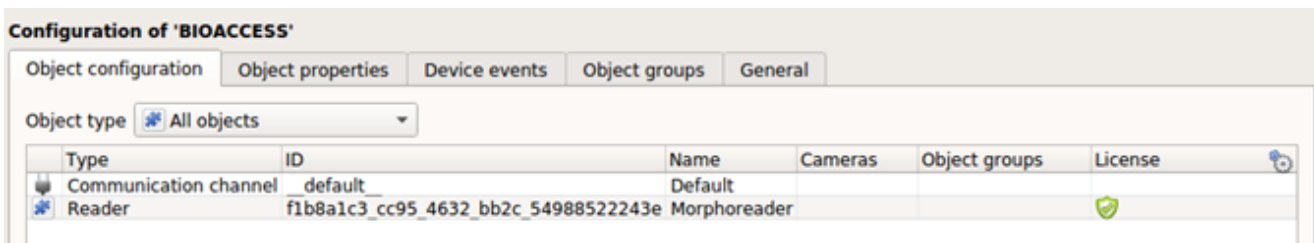


There are two sections in the Integration Panel:

1. The **Devices** list will list the integration devices that are attached to the integration database.

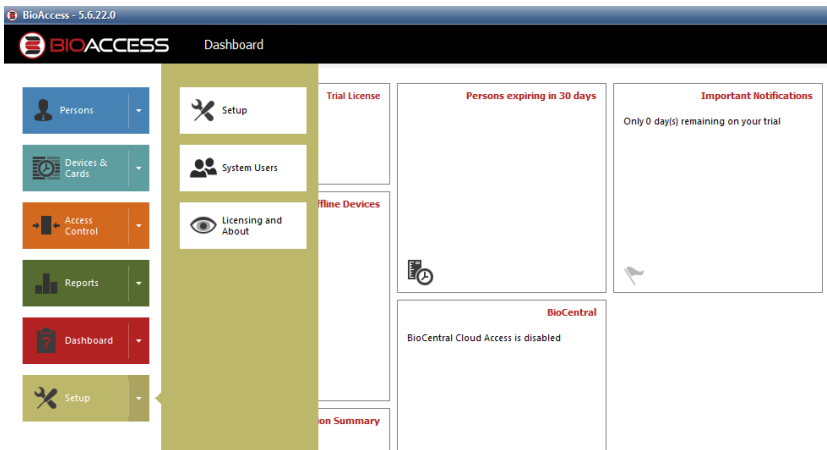


2. The **Configuration** section enables the user to edit or review the device selected in the **Devices** section.

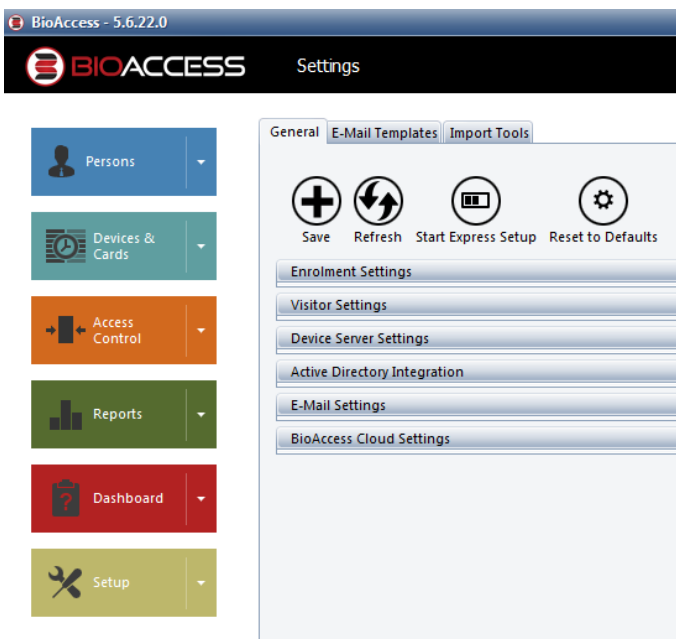


2.1 BioAccess Device Setup

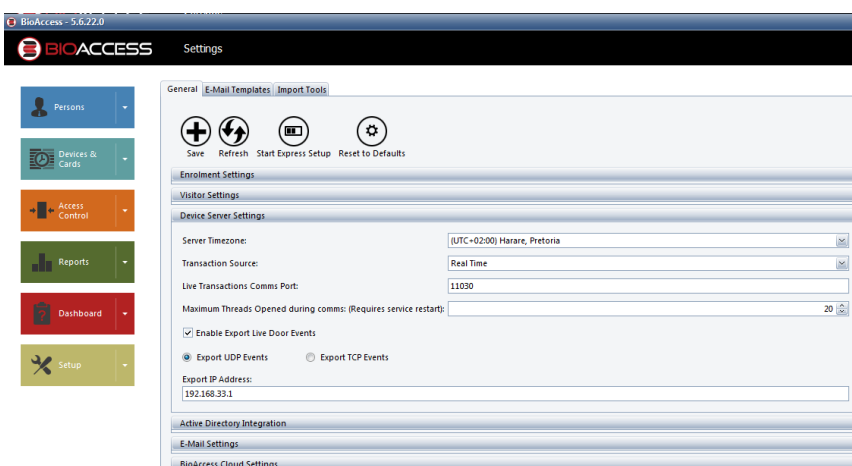
The BioAccess device needs to be configured to send event information to the CathesisVision server. These settings take place in the BioAccess software.



In the BioAccess software, open **Setup**.



In the General tab, select **Device Server Settings**.




Enter the relevant details here.

To send event information to CathesisVision:

- Check **Enable Export Live Door Events**.
- Select **Export UDP Events**.
- Enter the **IP Address and Port number** of the CathesisVision server.
- Click **Save**.

2.2 Devices Section (Add a New Device)

1. Once in the Integration Panel, in the devices section, click on . This will open the addition window.
2. Select the **BioAccess** driver.

2.2.1 Add the Device

Configure the device

Name

Connection _____

UDP listen port

Give the device a descriptive **name**.

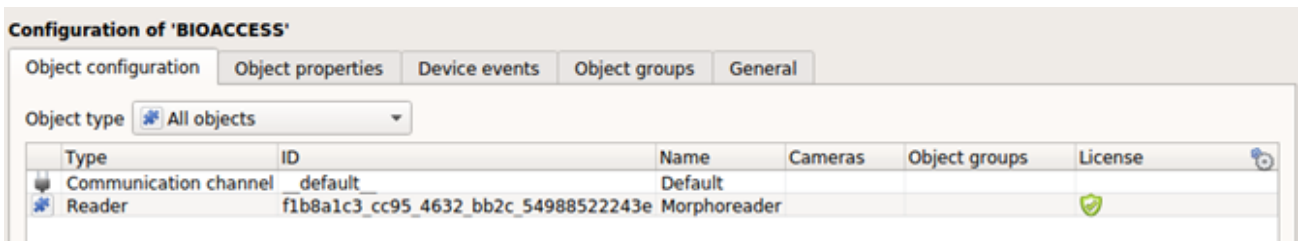
Enter the UDP listen port that CathesisVision will receive event information to.

Once the device has been added and configured, select it in the **Devices list** and all the objects will automatically populate the **Configuration Section**.

2.3 Configuration Section (Tabs)

The configuration section is divided up into a number of Tabs. The available tabs are: **Object configuration**, **Object properties**, **Device events**, **Groups**, **General**.

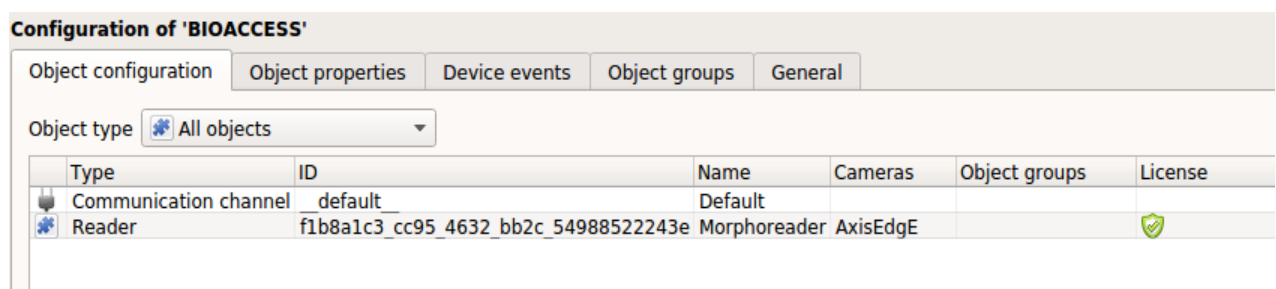
The BioAccess device objects are only generated when events are received.



2.3.1 Object Configuration Tab

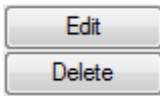
The Object configuration tab is the tab where the individual objects that comprise the integration may be viewed. The BioAccess integration objects are **Readers** and **Communication channels**.

In this tab, the **Names**, **Cameras** and **Groups** assigned to each object are visible.



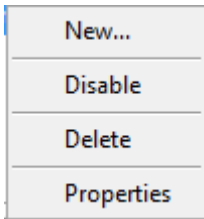
2.3.1.1 Object Configuration Buttons

In the case of the BioAccess device, objects are only created once events are received from the device. They cannot be created manually.



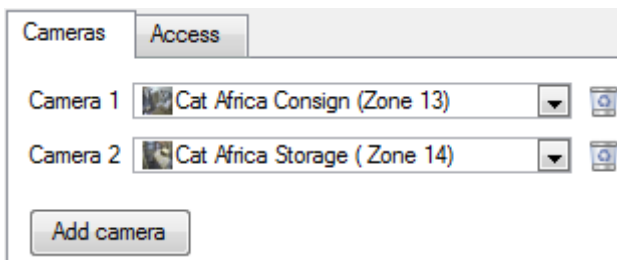
Click Edit to change an existing object.
Click Delete to remove an existing object from the CathesisVision configuration.

2.3.1.2 Object Configuration Right-click Options

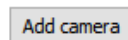


New does not apply to this integration, as objects are detected automatically by the system.
Disable/Enable allows individual nodes to be enabled or disabled.
Delete will permanently remove this object from the list.
Properties will open up the object properties. The object may be edited from here. (Specifically, this is where cameras and user access levels are assigned.)

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.



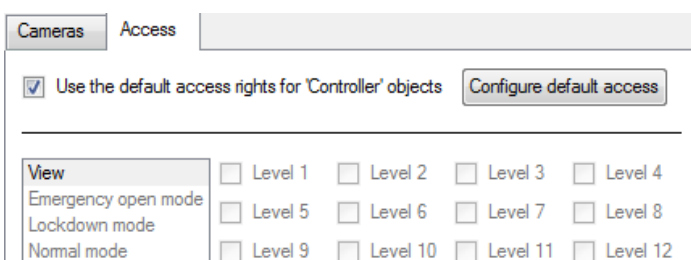
To add a camera, click on Add camera, and select the relevant camera from the drop-down menu.



To delete a camera, click the trash icon.

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

Properties: Access



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

A list of objects for which access levels may be set, is visible.

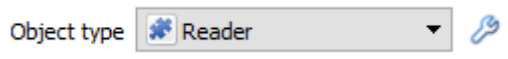
Note: If *Use default access rights* is checked, make sure that those default rights have been correctly defined. Click on **Configure default access** to do this.

2.3.2 Configure Overlays

Overlays are supported for reader objects. Overlays may be configured globally for **all readers**, or they may be configured for a single reader. See below for how to open the overlay configuration window for global or specific overlay configuration. Thereafter, the overlay configuration window looks the same for both options.

Note: Overlay display time is configured in the **General** tab of the Integration Devices panel.

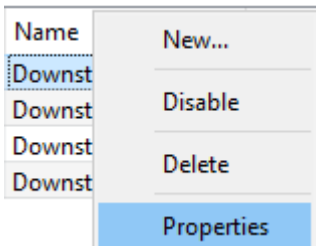
2.3.2.1 Configure Global Overlays



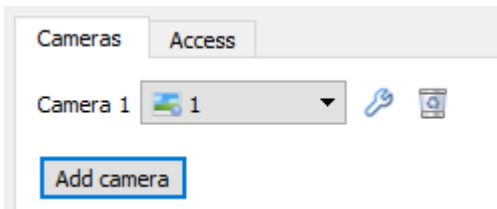
Select the zone object from the Object type drop-down menu and click the **Default Settings icon**.

Select the Overlays tab.

2.3.2.2 Configure Overlays for Single Object



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

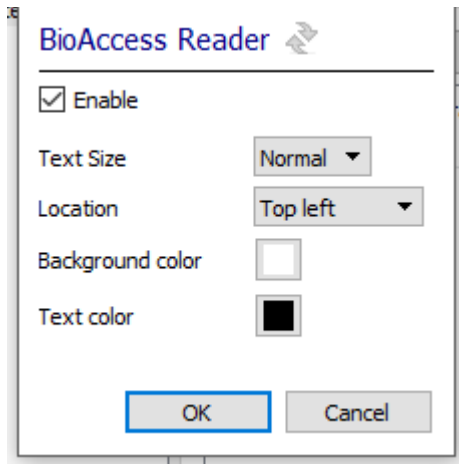


Add a camera to the object, and then click the settings icon that appears next to the camera name.

Note: This option only appears for zone objects.

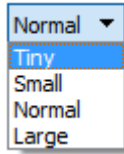
Overlay Configuration Window

Note: This window looks the same for both global and specific object overlay configurations.

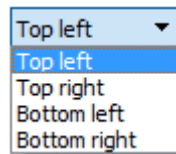


Enable Check to **Enable** overlays.

Select the **Text Size** of the overlay:



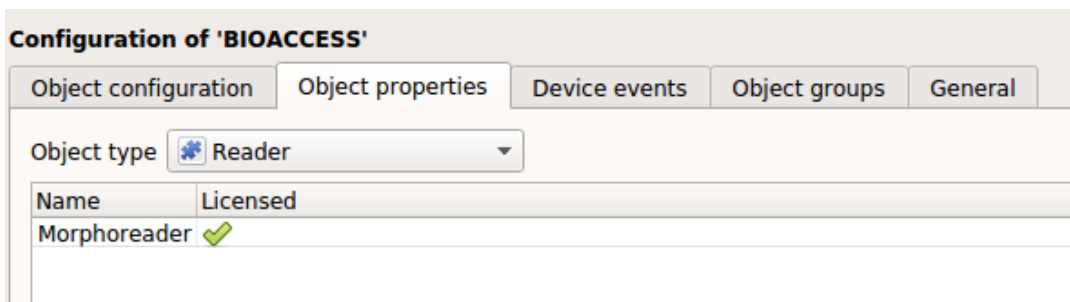
Select the **Location** of the overlay:



Choose the **Background and Text** of the overlay. Clicking on the block of colour will open a colour chart.

2.3.3 Objects Properties Tab

The Object properties tab displays the objects, sorted by type. In the case of the BioAccess device, the object types available are Reader.



2.3.4 Device Events Tab

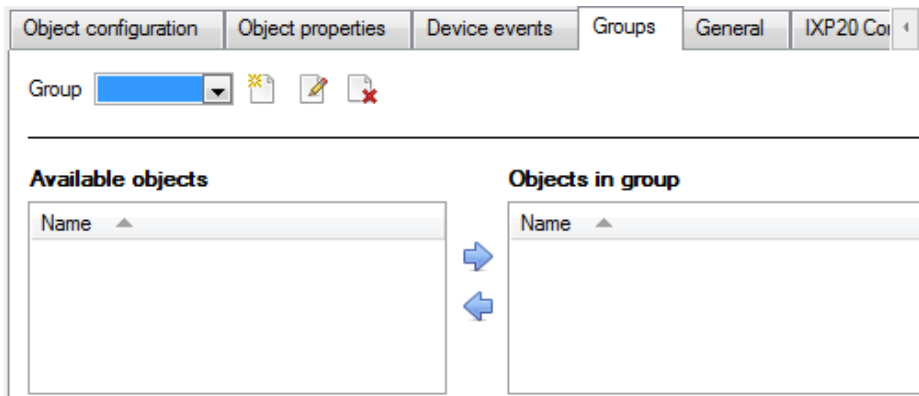
This will list real time events happening on this device. It is an excellent way for installers to see that the integration is functioning, and to monitor the live events happening on site.



Events may be viewed by type.

Note: When navigating away from this window, the device events for that session will disappear but will still be accessible in the integration metadata base. Please see **Section 3 Database** for more information on navigating to and interacting with the database.

2.3.5 Groups Tab



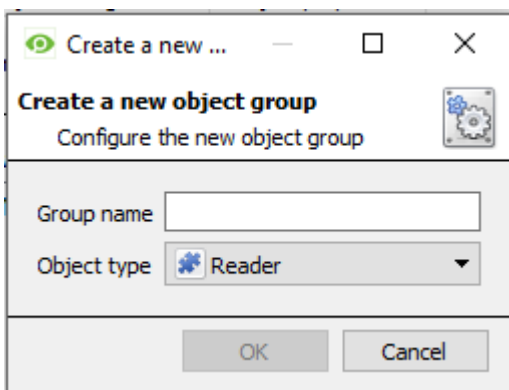
Groups of the same type of object may be created.

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 objects in that group are triggered.)

2.3.5.1 Create a Group

To create/edit a group click on / .

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



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

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

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

There is a list Available Objects. To add/remove these objects to the group select them (it is possible to select multiple at a time), and click on / .

2.3.6 General Tab

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

2.3.6.1 Configuring a Database

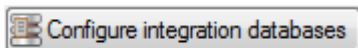
Select an Integration Database

- If an integration specific database has already been created, select it by clicking the settings icons.

Only databases relevant to the integration being added should appear.

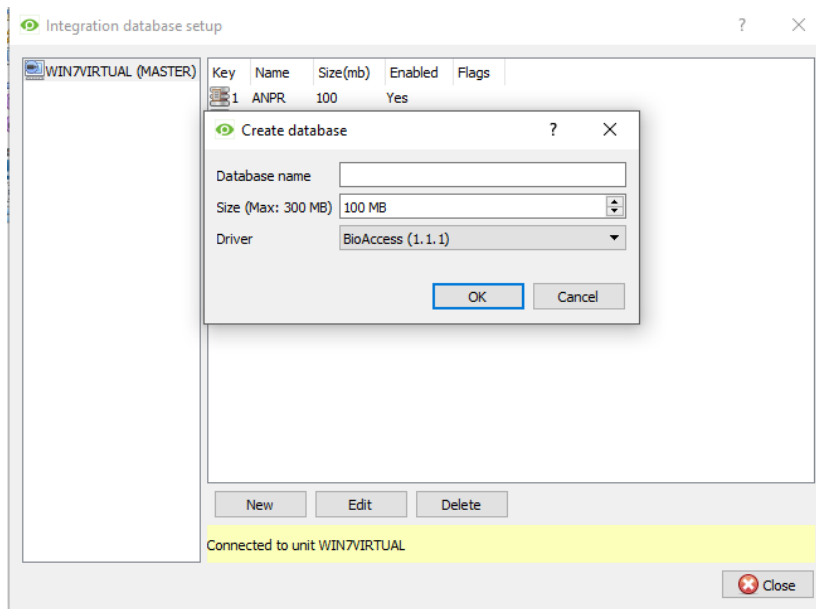
If a database has not been created, see below.

Configure a New Database



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

Click **New** to create a database.



Give the database a **Name**.

Select the **Size** of the database. The max is 100MB.

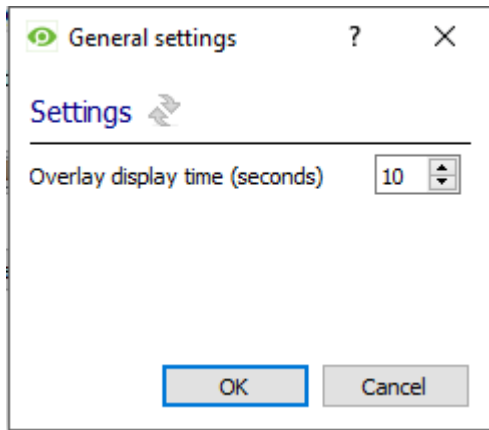
Select the **BioAccess** driver.

Click **OK** when done.

- Select the newly created database by clicking the settings icon and selecting it from the drop down menu.

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

General Settings Button



Set the time (in seconds) that event overlays should be displayed for.

Note: Overlays can be enabled/configured in the Object Configuration tab.

3. Camera Tab Overlay Setup

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

Note: Cameras must have already been added to the objects.

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.

Once popped out, the Video feed options panel will present a number of options specific to the settings configured for that video feed.

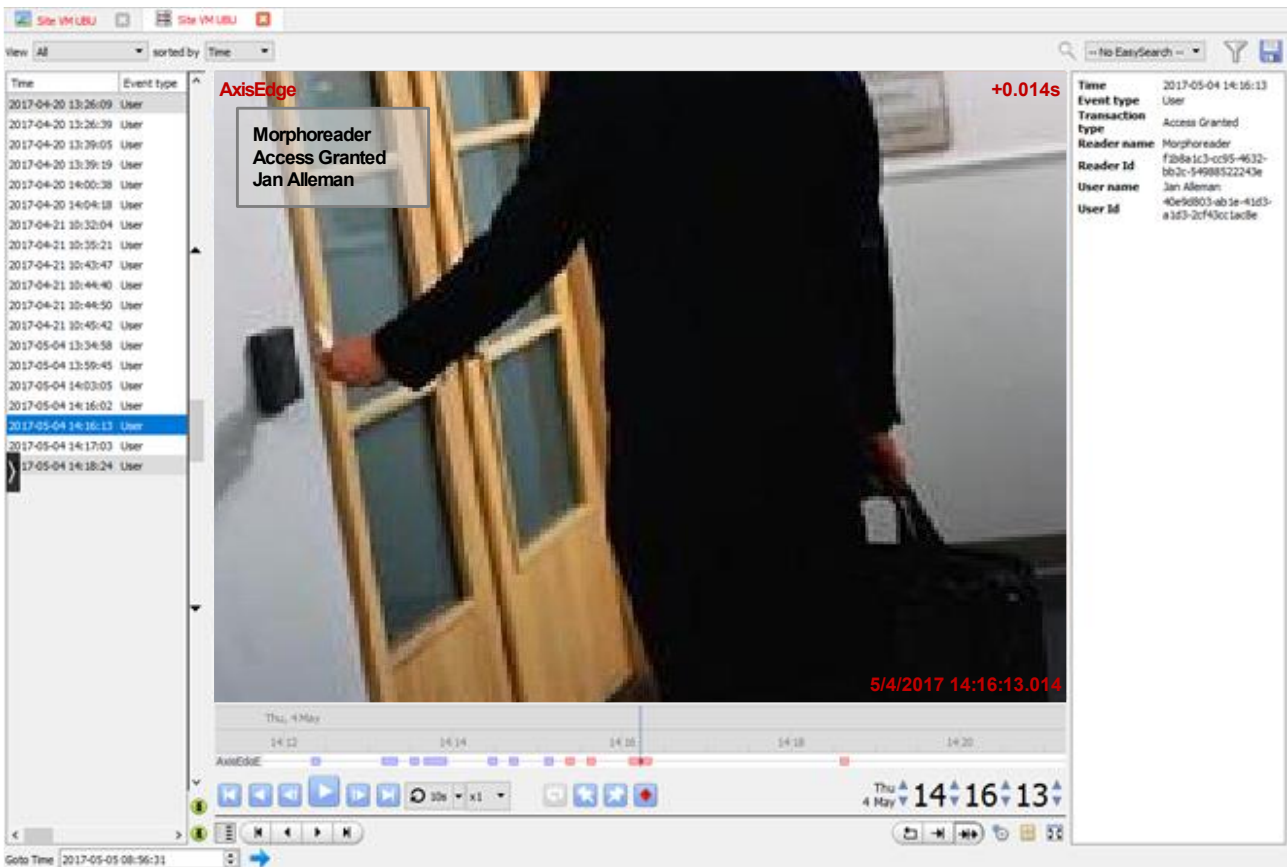
3.1.1 Select the Overlay



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

Select the desired overlay and it will appear over the video feed, as above.

4. Database

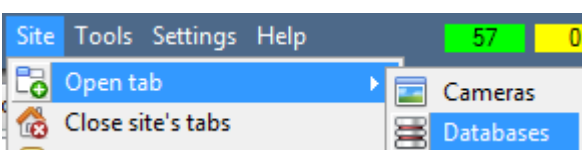


The database tab will allow the user to navigate the records in each individual database. In the database tab, each database is presented as a table. It has built in filters, and the ability to navigate by timestamp. If a database record has an associated recording, the user will also be able to launch this recording, from within the database tab.

This database video player is embedded in the database view. This player uses the same timeline features as the CathesisVision cameras tab.

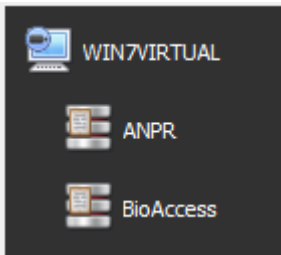
Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathesisVision by the integrated device.

4.1 Navigate to the Database



To view the information stored in the Integration database, follow the path to the left.

This will open the Databases Tab.

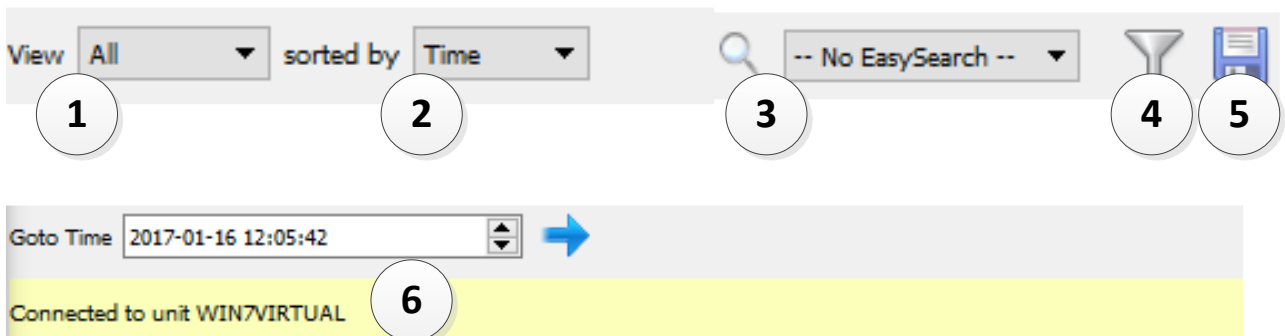


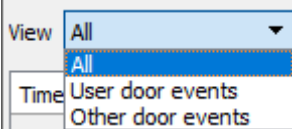
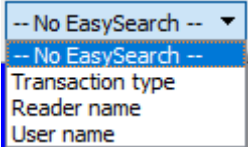

Once in the Databases Tab, select the relevant integration database. The databases are ordered under the NVRs that they are attached to.

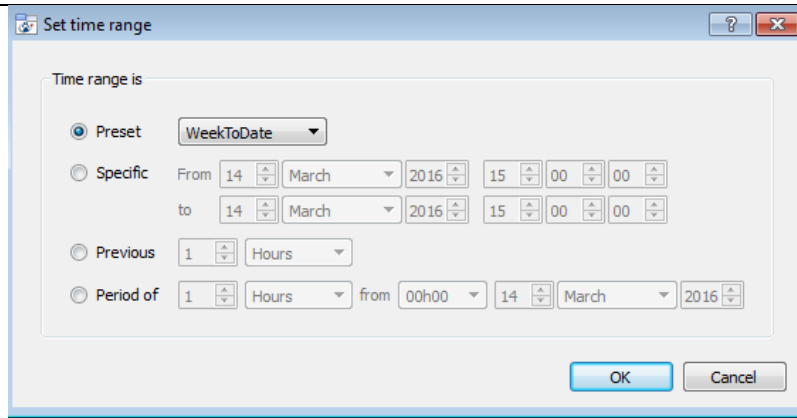


Hover over the arrow on the left-side of the camera image to bring up the database panel on the left.

4.2 Database Interface



<p>① View</p>	<p>The way the database is presented may be changed. Some integration databases have multiple view options. The BioAccess database allows viewing by:</p> 
<p>② Sorted By</p>	<p>Events may be further sorted based on the following parameters: Time.</p>
<p>③ Easy Search</p>	<p>The easy search option allows for a quick search of the database within one of the following options:</p> 
<p>④ Filter </p>	<p>Filter offers a more advanced manner of sorting information in the Integration Database table.</p> <p>The following filter parameters are available: System time, device time, zone, ID, partition, event, or group.</p> <p>A Time range, within which the search will be conducted, may also be set. To set a Time range, click on the blue hyperlinked text which specifies time (e.g., in the Week to date).</p> <p>This will bring up the following dialogue box, where the time range can be defined:</p>

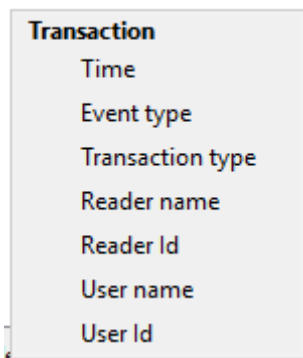


Once the filters dialogue is open, the following options are available:

1. To **enable** filters check this box: Enable filters
2. To **add** a new filter click on . The filter icon will change to when filters are active.
3. To **delete** an added filter click on .

Filter options:

[Time is in the Week to date](#)



Note:

1. Multiple filters may be run simultaneously. Filters with the same parameters may be run more than once.
2. To change a filter click on the blue hyperlinked text. (For example, click on [Device Time](#) to change the filter from Device Time, to any of the other available options.)

	Generate meta-database reports in PDF or CSV format. See below.
	This navigates to a specific point in time, down to the second. To navigate to a timestamp set the time using the time and date boxes. Then click on the arrow icon.

4.2.1 Generate Meta-Database Reports



Click the save icon to open the Export window.

The dialog box titled "Export" has a close button (X) and a help button (?). It contains a section "Select the period to export" with four radio button options:

- Preset: A dropdown menu shows "Quarter to date".
- Specific: "From" is set to 1 January 2017 00:00:00 and "to" is set to 1 April 2017 00:00:00.
- Previous: Set to 1 Hours.
- Period of: Set to 1 Hours from 00h00 16 January 2017.

 At the bottom are "Back" and "Next" buttons.

Select the **Period** to export, and enter the required details.

Click **Next**.

The dialog box titled "Export" has a close button (X) and a help button (?). It contains a section "Configure the report" with:

- Format: A dropdown menu showing "CSV".
- Filename: A text field containing "C:/Program Files/CathesisVision Client/report.csv" and a folder icon to the right.

 At the bottom are "Back" and "Export" buttons.

Select the **Format** to export the report in; either CSV or PDF.

See below for the two options.

4.2.1.1 Export CSV

A close-up of the "Configure the report" section showing the "Format" dropdown set to "CSV" and the "Filename" text field containing "C:/Program Files/CathesisVision Client/report.csv" with a folder icon to its right.

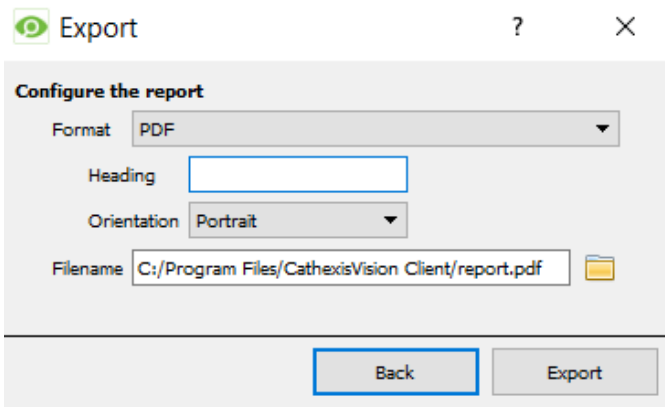
Select CSV **Format**.

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



Or click the folder icon to choose a new save folder and filename.

4.2.1.2 Export PDF



Select PDF **Format**.

Give the PDF a **Heading**.

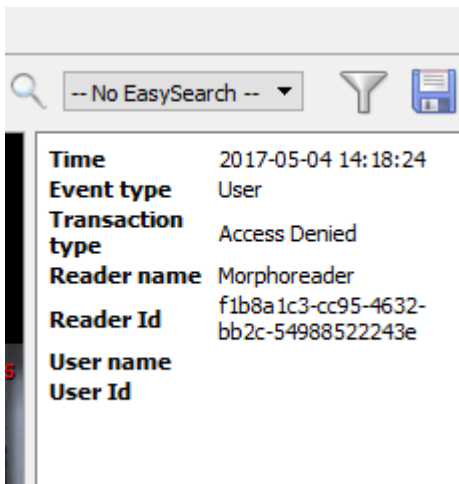
Select either Landscape or Portrait **Orientation** of the PDF.

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



Or click the folder to choose a new save folder and filename.

4.2.2 Metadata



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

4.2.3 Viewing an Entry's Associated Recording

- To view an associated recording, simply left-click on a database entry which has the camera icon in the **Links** column. Then click play in the video player.

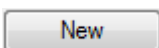
5. Events

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

Most of the data that CathesisVision receives from a device is presented in the Events interface. This is done in order to give the user a full range of options. As a result, some of the options presented in the interface may be *impractical* for being used as an event trigger, or action.

5.1 Events

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



Once in Events management click on New. This will open up the New Event window.

5.1.1 While/When and Any/All

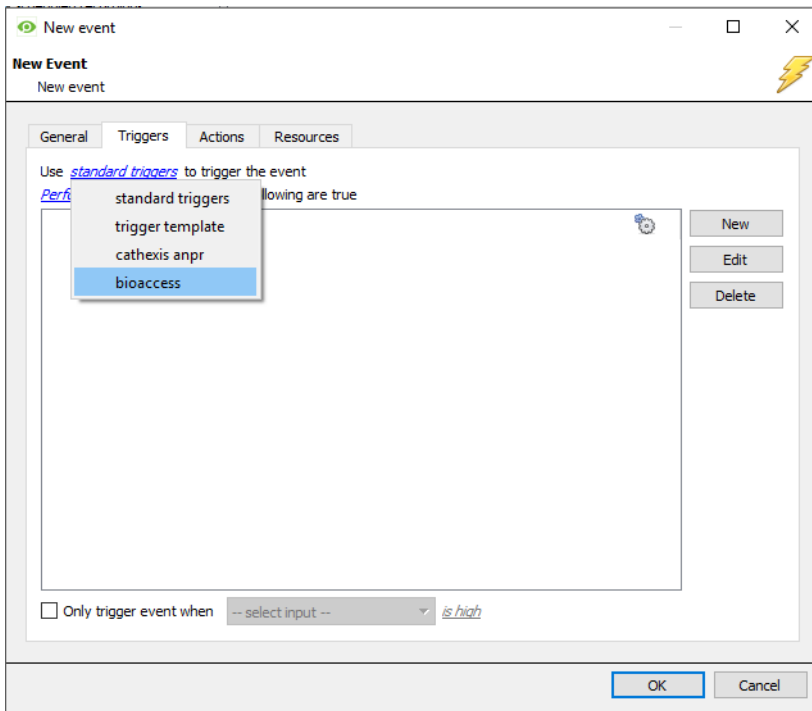
When triggering on a door, the option is to trigger **while/when** a trigger is active. The user will also be able to select multiple triggers, and define whether **all/any** of the triggers need to be active to set-off an event.

Use [bioaccess](#) to trigger the event
 Trigger using [any reader](#)
 Start actions when [any of the following device events occur](#)

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

5.2 Triggers

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



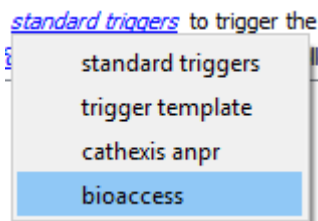
In this window, define the rules and constraints which will trigger an event on the BioAccess device.

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

Note: The user may set multiple constraints, choosing if *any*, or *all* constraints need to be fulfilled to set off a trigger.

5.2.1 Set the Device as the Trigger

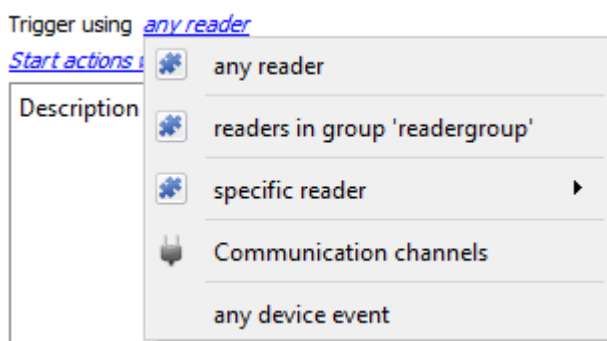
Choose the Master Trigger type here.



If creating a new event, the trigger type will default to: Use [standard triggers](#). To define which device to trigger the event, click on the hyperlink after "use". To set it as the BioAccess device, click on the hyperlink, and select the relevant device name from the dropdown menu.

5.2.1.1 Trigger Types

Choose whether certain device objects or any device event will trigger an event.



Any reader will trigger using any of the readers.

Readers in group... will trigger using any of the reader in that group.

Specific reader will trigger using only a specific reader.

Any device event will trigger when any trigger occurs on the BioAccess device.

Note: If object groups have been created, the option to trigger using specific/any group will appear here.

Note for group triggers: To database this event under the name of a specific object, and not the name of the triggering group, modify the Description field in the **General tab** of the Event setup.

Click on the question mark icon to see a list of available descriptions.

Example usage: value=\$input_name

In this example, replace 'value' with the name the event should be databased under.

5.2.2 Device Event Triggers

After selecting a master trigger type, add a trigger to the event.

Click on New in the Triggers tab. This will bring up the dialogue box below:

Select the **Event** type.

Define the **Schedule**.

Click on the blue hyperlink to define whether the **any** or **all** of the configured device event rules should trigger an event.

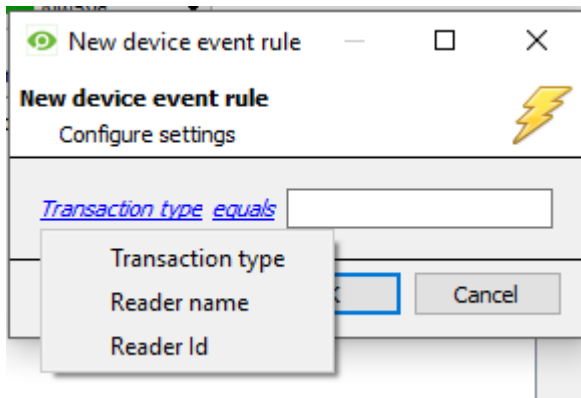
Next, add rules to the device event trigger.

Note: Rules for different event types must be added individually. I.e., switching from Access to Door event types in this window will lose any rules configured for Access events.

5.2.2.1 Add Rules to Device Event Triggers

If no constraints are set, every device event will trigger this. Once constraints are set, only the constraints chosen will trigger the event. Once the type of device event that will be the trigger is selected, add a new **device event rule**.

To do this, click on New in the **New Device Event Trigger** window.



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 display the rules options.

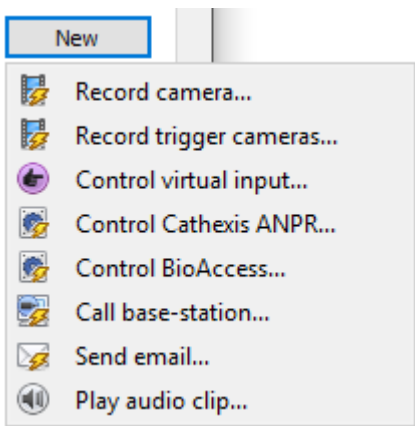
Note: When all available options are known to CathesisVision, they will be visible in a drop-down menu. When these variables are not pre-defined, they will need to be filled in manually. The information pulled through to the events is information sent to CathesisVision from the BioAccess device, see the BioAccess settings for the strings needed here.

5.3 Actions

Once the triggers that are going to initiate the event have been defined, to define some Actions in the **Actions Tab** of the **New Event** window.



To set an action for an event trigger, click New and select an action from the available options:



It is **not possible** to control the BioAccess device.

6. Conclusion

This document was designed to deal specifically with this integration. For further information about the CathesisVision software please consult the main manual (<http://cathesisvideo.com/>).

For support, please contact support@cat.co.za.