Vanderbilt ACT Access Control Integration App-note

Contents

1. Introduction

This document indicates the features/abilities of the Vanderbilt ACT Access Control solution when integrated with CathexisVision.

The CathexisVision integration of the Vanderbilt ACT Access Control solution allows for local and remote monitoring and operation from within the CathexisVision interface. All device objects may be linked to cameras, allowing associated footage to be databased according to the configuration of CathexisVision events and alarms, which trigger on information received from the device. All messages from the device are also databased. Operators with sufficient access rights, are able to issue certain commands to the device, such as locking and unlocking doors, etc.

Note: For information regarding the regular operation of a Vanderbilt ACT Access Control device, please consult the relevant Vanderbilt ACT Access Control manufacturer's documentation.

There is a General Integration section in the main *CathexisVision 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 General Requirements

- ACT Enterprise 1.3.0.4 (API v1)
    - Tested using ACTpro 4000 panel.
    - CathexisVision 2015 Service Pack 2 and later.
    - Windows 7 64-bit and later, Windows 2008 R2 and later.
    - Cathexis ACT Server (cathexis-act-server.msi).
- ACT Enterprise 2.8.0.44 (API v2)
    - Tested using ACTpro 1520e panel.
    - CathexisVision 2018 Service Pack 5 and later.
    - Windows 7 64-bit and later, Windows 2008 R2 and later, Ubuntu 12.04 32-bit, Ubuntu 16.04 64-bit and Fedora 16.
    - Cathexis ACT Server (cathexisactserver-20.msi).

Note:
- ACT Software must be licensed to use the API.
- The installer doesn't provide an option for the user to add it to the firewall, once the wrapper is installed it has to be manually added under apps that are allowed to communicate through the firewall.

1.2 License Requirements

License	Name	Description
CACC-2000	Access control 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 controller.
CACC-1001	Access control single door license	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.
CACC-3000	Access control device bundle license (unlimited doors)	This license includes the **CACC-2000** access control device license, and also provides support for unlimited **CACC-1001** reader licenses.

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

A NOTE ON CAMERA CHANNELS

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

1.3 Integration Components

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

Device	The device is CathexisVision software's interface, which handles all the interaction between CathexisVision and the integrated hardware. When an integration is added to the CathexisVision system, a device is added. The messages received from the device are called Device Events.
Objects	Objects are the individual pieces of hardware that comprise the integration. There may be multiple "object types" under the objects group. For example, the main controller and door nodes of an access control system are both objects. They are different types of objects.

1.4 Features and Abilities

1.4.1 General Device Features

- The CathexisVision ACT integration communicates via TCP socket (port number is user defined) with the Cathexis ACT Server installed on the server running the ACT Enterprise software.
- The Cathexis ACT Server communicates with the ACT Enterprise software using Windows Communication Foundation framework.
- The ACT Enterprise software sends messages to the Cathexis ACT Server as specified in the hardware's Reporting settings, which can be configured in the Advanced Setup of ACTInstall.
- All device events are received as Alarm events, Door events, General events, and Reader events.
- Reader and Door events are databased.
- Camera overlays are supported for Reader and Door objects, which can indicate access granted/denied, cardholder photo, door states, etc.
- Device objects can be used to trigger events, and Door objects can be controlled as Event Actions.

1.4.2 Device Objects

Objects are populated automatically as soon as communication between the ACT Enterprise software, Cathexis ACT Server, and CathexisVision is established.

Object Type		Abilities
General		• This integration has Controller and Door objects. • Objects are automatically created as soon as communication between the CathexisVision unit and device is established. • Controller objects can't be controlled and only show the name of the controller and if the device is connected, or disconnected. • Door objects are displayed with Name, Global ID, Controller ID, Local ID, Door Contact, Door Lock, Connected, and Licensed.
Controller	Object Properties	• Name. • Is connected.
Door	Object Properties	• Name. • Global ID. • Controller ID. • Local ID. • Door Contact. • Door Lock • Connected. • Licensed.
	States	Door Contact States:

		• Closed.
		• Offline.
		• Open.
		Door Lock States:
		• Locked.
		• Offline.
		• Unlocked.
		Connected States:
		• True.
		• False.
		Licensed states:
		• True.
		• False.
	Commands	• Lock.
		• Normalise.
		• Pass.
		• Unlock.

1.4.3 Device Events

The CathexisVision Vanderbilt integration generates Alarm Events, Door Events, General Events, and Reader Events, which are triggered on the device and reflected in CathexisVision.

Event Element		Features/Abilities
General		• Events triggered on the device are sent to CathexisVision. • Device event types are Alarm, Door, General, and Reader.
Device Event Types	**Alarm**	• Alarm. • ACT Time. • Event. • Door ID. • Location.
	Door	• System Time. • ACT Time. • Event. • Door ID. • Location.
	General	• System Time. • ACT Time. • Event. • Category. • Door ID. • Location. • Username.

Reader	• System Time. • ACT Time. • Event. • Door ID. • Location. • Username.
CathexisVision Event Actions	A Door object may be controlled via a CathexisVision event action to perform one of the following commands: • Lock. • Normalise. • Pass. • Unlock.

1.4.4 Metadatabase

A unique metadatabase 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
General	• All device events are databased. • Database entries include the footage from the first camera linked to device objects. • Multiple cameras may be linked to multiple objects. • Device event metadata is displayed where applicable. • Databased device events may be viewed in the embedded video player, which includes the usual CathexisVision video review tools.
View Options	• Reader Events. • Door Events.
Sort Options	• Device event time.
Easy Search	• Door ID. • Door Location. • Event. • Username (only available in the Reader view).
Filter	• Time. • Door ID. • Door Location. • Event. • Username (only available in the Reader view).
Export	Database entries may be exported in CSV and PDF format.

1.4.5 Maps

The CathexisVision GUI provides for configurable site maps that feature multi-layered, hierarchical, interactive interfaces providing representation and control of a site and its resources.

Map Element	Features/Abilities
General	Device objects can be embedded in a site map, which offers multiple action options when messages are received from the device, the device triggers an event, and/or the user manually initiates a map action.
Map Action Triggers	- All device objects may be set to trigger a map action if the user left-clicks on map. - Some device objects may be set to trigger a map action if a state change message is received from the device. - All device objects may be set to perform a map action if a specific, or any event occurs on the device. - Device objects, which can be configured to trigger CathexisVision events, may also be set to perform a map action when specific states, or events are triggered.
Map Actions Options	When triggered (see above), objects may perform the following map actions (where applicable): - Connect to a site. - Perform an animation. - Go to a camera preset. - Load a map. - Set a PTZ relay output. - Show a popup menu. - Set a relay output. - Show an HTML block. - Show a block of text. - Show a device popup menu. - Show a device event notification.

USEFUL LINKS

*To view **tutorial videos** on CathexisVision setup, visit https://cathexisvideo.com/resources/videos*
*Find answers to Cathexis **Frequently Asked Questions**: https://cathexis.crisp.help/en/?1557129162258*

2. Device Addition and Configuration

This section will detail the procedure for setting up systems to effectively communicate with each other. The ACT integration requires that the relevant ACT Enterprise software, and the relevant Cathexis ACT server are running on the same computer.

2.1 CathexisVision Specific ACT Setup

There are a number of things that need to be set up before an ACT integration device can be successfully added to CathexisVision. The following need to be installed on the same computer:

1. The relevant ACT Enterprise software.
2. The relevant CathexisVision ACT Server. (Contact support@cat.co.za for this software.)

2.1.1 CathexisVision ACT Server Setup

The CathexisVision server will communicate between the ACT database, and the CathexisVision software.
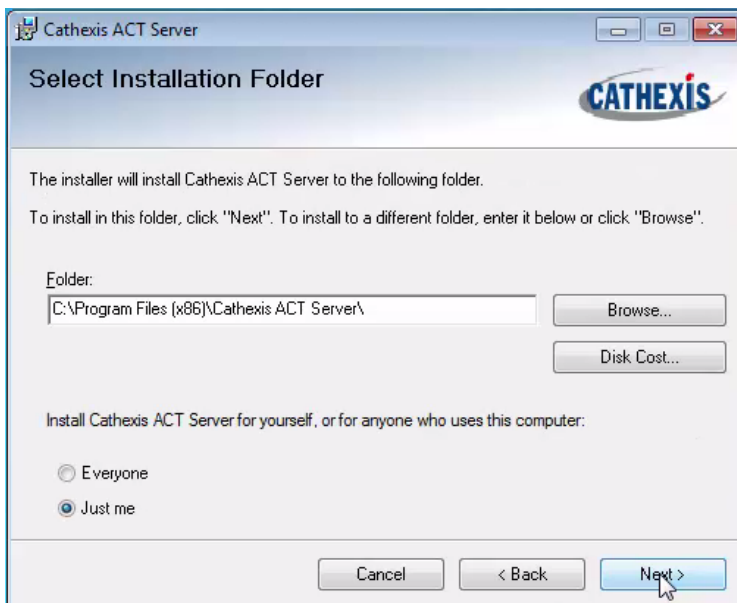
Once the server is installed, it can be opened via the desktop shortcut.

Or, the tray icon.

2.1.1.1 Setup the Server

While the server is running, default settings cannot be changed.

Click on **Stop**, in order to change these.
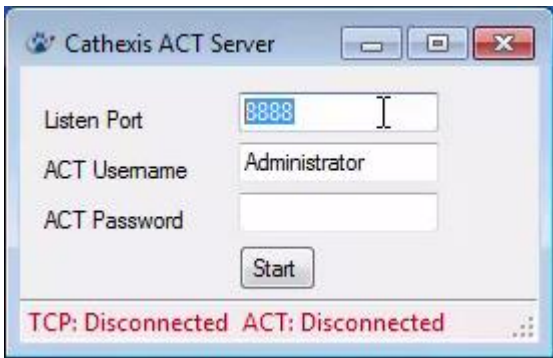
Once the server has stopped, change the port to whichever port required and change the ACT login details if required.

TCP: Displays the CathexisVision connection state.
ACT: Displays the connection state to the ACT Enterprise software.

The default username for the server is **Administrator.** There is no password for this default user.

Note: The port number will be needed again, for when the integration device is added to the CathexisVision software.

2.2 Add a New Device in CathexisVision

Integrations are added on a server-by-server basis. They are managed in the Integration Devices panel, under the Setup Tab of the servers to which they are added. To get to the Integration Panel follow this path:

2.2.1 The Integrations Panel
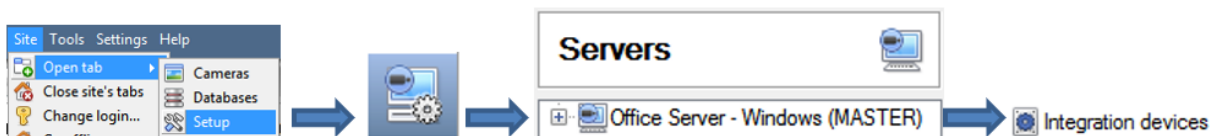
Notice two sections in the Integration Panel:

1. The **Devices** list will show the integration devices that are 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

New device | Once in the Integration Panel, in the devices section, click on New. This will open the addition window.

Select **ACT access control** from the list.
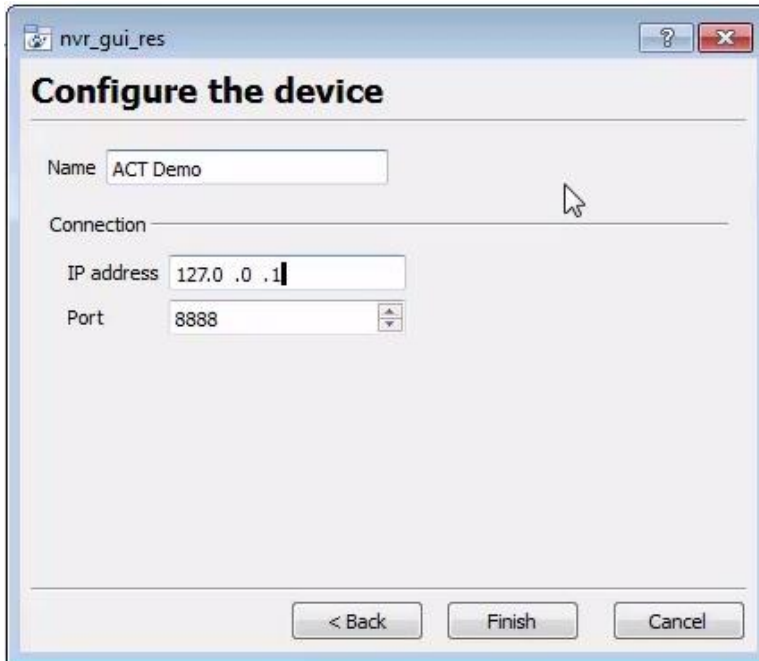
Give the device a descriptive **name**.

Set the **IP address** to the computer that has the ACT server, and ACT software running on it.

In the demonstration on the left, this unit is also running CathexisVision, so the loopback IP address has been given.

The **Port** number *must match* the port number that was entered into the Cathexis ACT server, above.

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.**
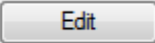
2.3.1 Object Configuration Tab
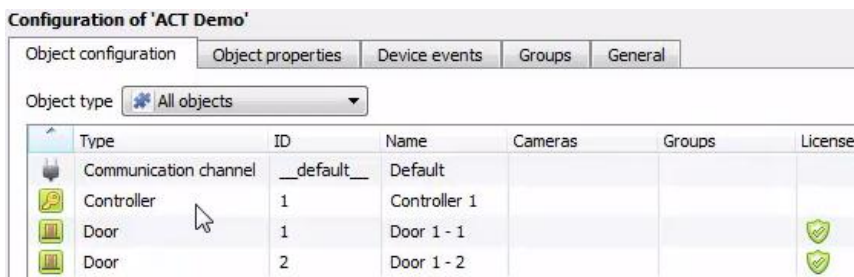
The object configuration tab is the tab where all the individual objects that comprise the integration are viewed.

With the ACT integration, all the devices should automatically be populated.

2.3.1.1. Object Configuration Buttons

New   Add a new object by clicking on New.

Edit   Click edit to change an existing object.

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

2.3.1.2 Object Configuration Right-click Options

New...
Disable
Prioritise license
Delete
Properties
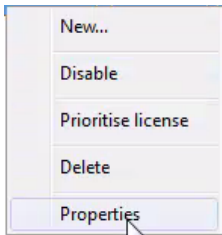
New will open up the dialogue to add a new object.
Disable/Enable allows manually enabling/disabling individual nodes.
Prioritise allows the user to give specific objects priority, when licenses are applied. (Useful, if there are currently less licenses, than objects.)
Delete will permanently remove this object from the list.
Properties will open up the object properties. Edit the object from here. (Specifically, assign cameras to this object, as well as define user access levels for it.)

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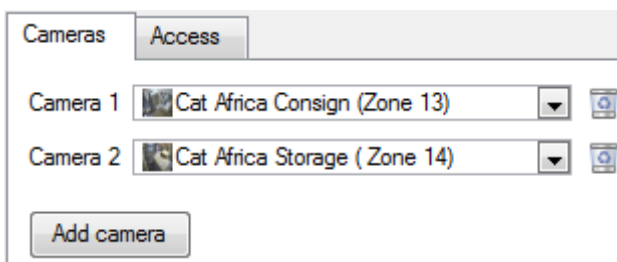
Adding a camera to an object will mean that, whenever there is an event on that object, the recording from that camera will be related to the time and date of the object event, in the Integration database.

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

To delete a camera, click on the trash icon.

Note: If there is no ***continuous recording*** setup, on associated cameras, there is the risk of zones (object) triggering while the cameras are not recording. To only record cameras, when an object triggers, setup **Events** that trigger a recording, when one of these objects is activated.

Properties: Access
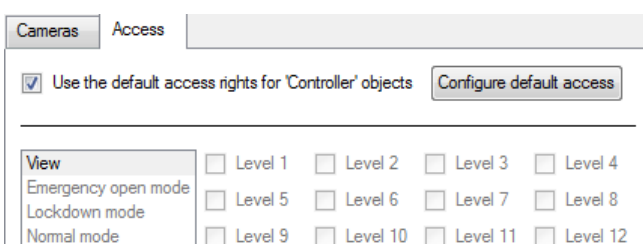
Access allows protecting sensitive objects, by only allowing certain levels users access to them.

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 Objects Properties Tab

The Object properties tab allows viewing objects, sorted by type. In the case of the ACT device, there is the option of viewing by **Controller,** and **Door**. Right-clicking on an object will give further options for each object.
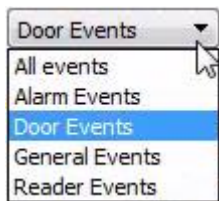
2.3.3 Device Events Tab

The Device Events tab, lists 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.

If there are too many events to easily sort through, or if only a specific subset of events is of interest, there is the option to sort the events by object type. The image to the left identifies the specific sorting objects available in the ACT integration.

2.3.4 Groups Tab
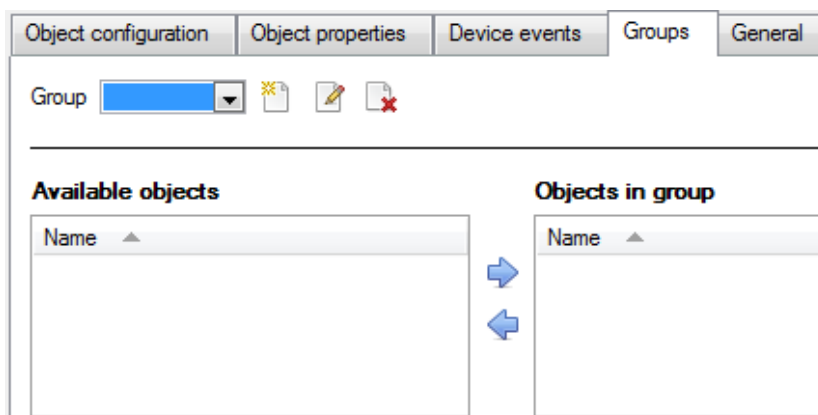
Groups of the same type of object can be created.

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 zones/partitions in that group is triggered.)

2.3.4.1 Create a Group

To create/edit a group click on ⧉/ ✏.

Note: Once a group has been created, the object type of the group may not be edited.
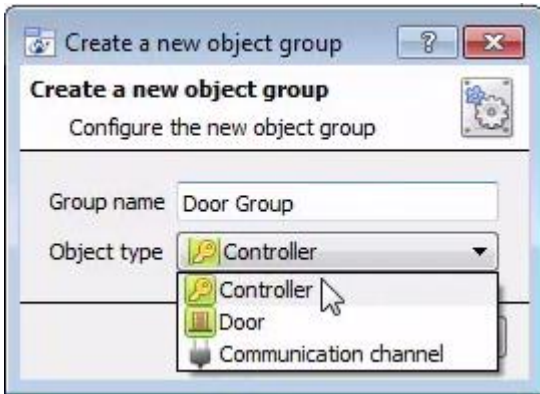
When creating a group, select the object type to include in the group. Once the group is created the available objects panel will fill up with all available objects of that type. From this list, choose which objects to use in the Group.

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

Click on the drop-down menu to select the **object type** to group.
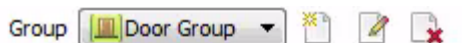
A list of Available Objects will then be visible. To add/remove these objects to the group select them (select multiple at a time), and click on ➡/⬅.

2.3.5 General Tab

Currently the general tab deals with the integration database. Here, select a pre-created database, or configure a new database.
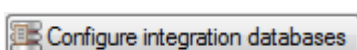
2.3.5.1 Select an Integration Database
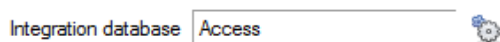
To select a database, click on the settings icon, and select the relevant database.

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

2.3.5.2 Configure a New Database

If there is no database created yet, clicking on this button will navigate to the integration database setup, as in the image below: Name the database, set the size and select the applicable driver.

A successfully added integration database will show up in the list like so:
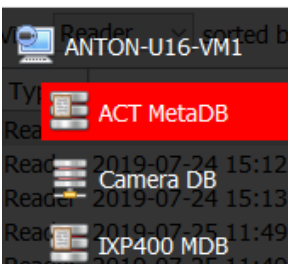
3. Database

The Database Tab allows one to navigate 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 also be launched from within the Database Tab.

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

3.1 Navigate to the Database
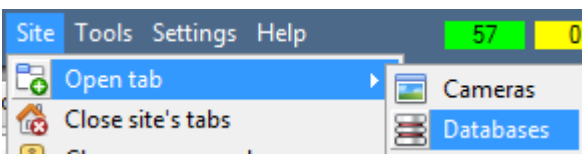
One may view the information stored in the Integration database, by following the path on the left, which leads to the Database Tab.

When the Database Tab 3.2 opens, select the relevant integration database from the database panel that opens on the left-hand side. The databases are ordered under the NVRs that they are attached to. See below for the ACT database.

3.2 Database Interface

① View	**View** changes the way the database is presented. Some integration databases have multiple view options.
② Sorted By	For the ACT integration, Events may only be sorted by **Time** .
③ Easy Search	The easy search option quickly searches the database within one of the following options: -- No EasySearch -- ∨ -- No EasySearch -- Door ID Door Location Event Username

④ Filter	Filter offers a more advanced manner of sorting information in the Integration Database table.
	
	Once the filters dialogue is open, these are the options:
	
	   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 .
	
	The options in this integration are**:**
	
	Note:
	   1. Multiple filters may be run simultanously.
	   2. The same perameter may be used more than once.
	   3. To change a filter click on the blue hyperlinked text. (For example, click on *Timestamp* to change the filter from Timestamp, to any of the other available options.)

⑤ Export	Generate metadatabase reports in PDF or CSV format. See below.
6 Manage Reports	Generate scheduled metadatabase reports. See below.
7 Go to Time	This navigates to a specific point in time, down to the second. To navigate to a timestamp set the time using the time and date boxes, and then click on the ➡ icon.

3.2.1 Viewing an Entry's Associated Recording

This integration uses the new video option where the video player is embedded in the database view. This player uses the same timeline features as the CathexisVision cameras tab.

- 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.

4. Events

A CathexisVision event has a trigger, which causes an action. Set integrated devices to act at triggers, or as actions. This document will detail the ACT specific aspects of Events. There is a comprehensive guide to CathexisVision Events in the main setup manual.

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

4.1 Creating an Event

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

1. Once in Events management click on **New**. This will open up the New Event window.
2. Once in this window, select the Triggers tab and click on the hyper link titled, *standard triggers*.
   a. From the menu that drops down, left-click the ACT device that will trigger the event.

4.1.1 While/When and Any/All

When triggering on a door, there is the option to trigger **while/when** a trigger is active. Multiple triggers can also be selected, and the user can define whether **all/any** of the triggers need to be active to set-off an event.
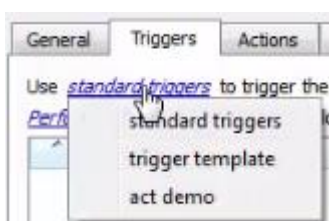

As usual, to change these settings click on the related, blue, hyperlinks.

4.2 Triggers

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

4.2.1 Set the Device as the Trigger

If creating a new event, the trigger type will default to: **Use** *standard triggers*. To define which device should trigger the event, click on the hyperlink after "use". To set it as the ACT device, click on the hyperlink, and select the relevant device name from the drop-down menu.

4.2.1.1 Trigger Types (Trigger Using)

It is useful to think of this as a **master trigger type**.
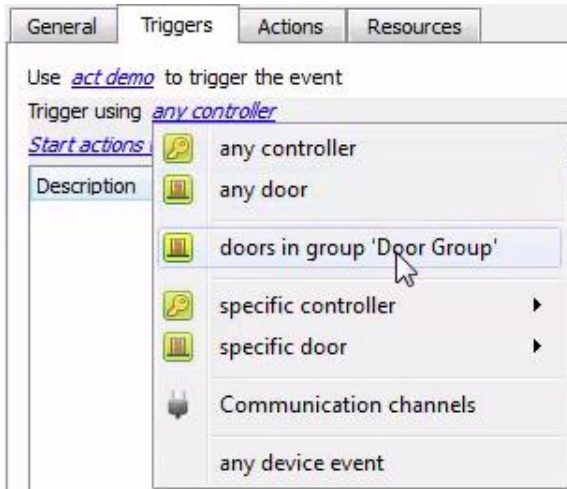
Any controller/door. Will trigger on any of the doors/controllers chosen.

Specific controller/door. Will trigger on a specific door/controller, chosen by the user.

Group options, will trigger based on the groups setup in the Integration addition stage.

Any device event will trigger, initially, when any event occurs on the device. Within the "any device event" setup, set "device event rules", which will constrain which events will trigger the event.

Note for group triggers: For this event to be databased under the name of a specific object, and not the name of the triggering group, modify the Description field in the **General Tab** of the Event setup.
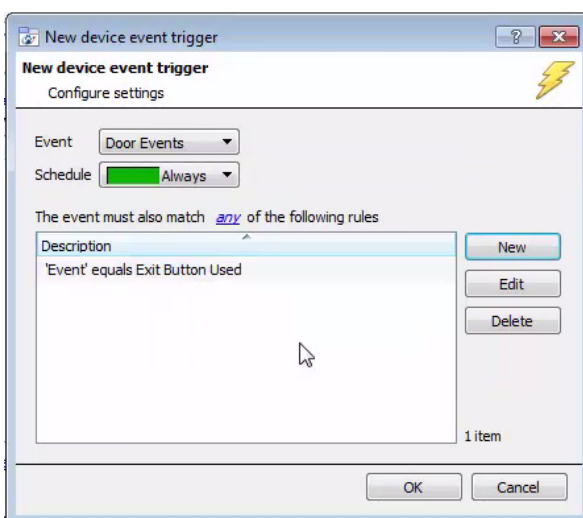
Click on the question mark icon to see a list of available descriptions. Below is an example, which will database the text "Door Name" along with the name of the *door object* that triggered the event:

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

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

4.2.1.2 Any Device Event

For example, within the *any device event* option, choose the type of device Event that will be a trigger. Choose from the drop-down menu. The ACT device offers **Alarm, Door, General**, and **Reader Events**.

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

Note: Multiple constraints may be set. Select if *any*, or *all* constraints need to be fulfilled to set off a trigger. If a constraint is not defined then every single device event will trigger this event.
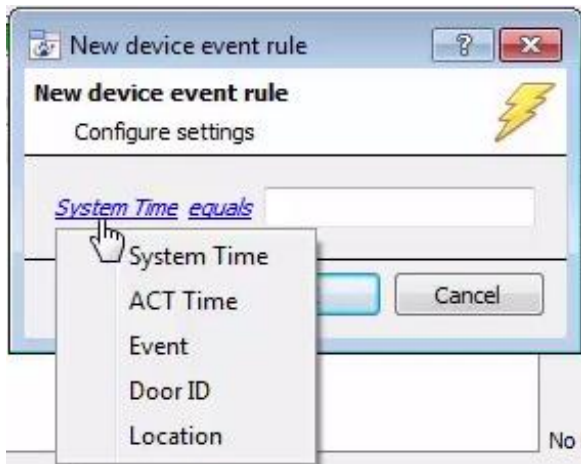

To change the constraint, click on the first hyperlink, this will bring up the full list of available rules.

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

Note: When all available options are known to CathexisVision, there will be a drop-down menu. When these variables are not pre-defined, fill them in. The information pulled through to the events is information sent to CathexisVision from the ACT device. See either the ACT settings, or the **Integration devices / Device Events**, for the strings needed here.

4.2.1.3 Any Door/Controller

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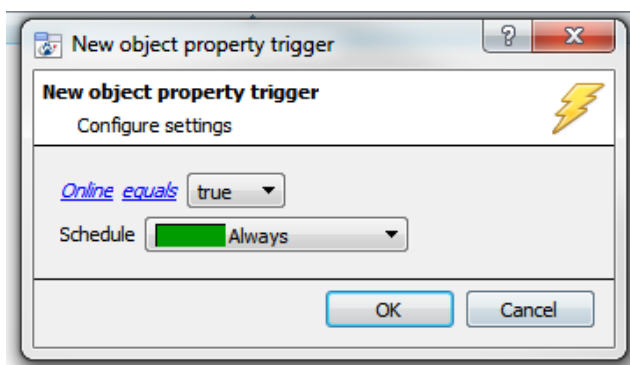

Since only using one type of object to trigger the event in this instance, the dialogue will appear as the **New Device Event Rule** window did previously.

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

4.3 Actions

Once the triggers that are going to initiate an event are defined, define some Actions. The ACT integration allows for control of the ACT device via the CathexisVision interface.
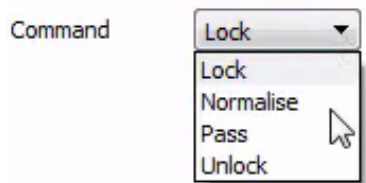
4.3.1 Add an ACT Control Action
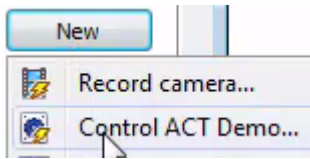
 Navigate to the **Actions** tab in the Event, click on **New**, and select the ACT device from the drop-down menu.
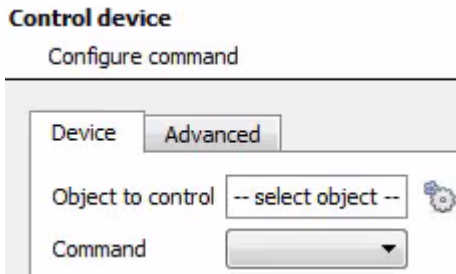
 Once the Act device dialogue is open, click on the settings icon to retrieve a list of ACT objects that are open to the CathexisVision system for control.

 Select the object to control, and click on **OK**.

 After an object has been selected in the **Command** drop-down menu, it will be populated with the available commands.

In this instance, pass any of the commands, to the left, to the ACT door that was chosen in the previous step.

5. Conclusion

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

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