



# Dahua Thermal Camera 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. The integration hardware and firmware used are current at the time of the integration development and newer versions of such may not be compatible with the integration.

# 1. Introduction

This document details the integration of the Dahua Thermal Camera, with CathesisVision software. Functionally, this integration will entail the triggering of standard CathesisVision Events, based on the triggers from the Dahua Thermal Camera. Cathesis receives temperature trigger messages from the camera, and those trigger messages can be used to set up custom and pre-defined events with the following actions:

*Custom Events:*

- Play Audio Clip
- Display Message for a certain time
- Display pop-up for a certain time

*Pre-defined Events*

- Call Base-station
- Record a camera
- Play Audio
- Send Email
- Controlling a device input and other integration device

## 1.1 Model and Firmware

The following camera models and firmware were used to test this integration:

Model	Firmware
TPC-BF3221-TBYZ	2.631.134V000.0.T:2020-04-24
DH-TPC-BF3221-T	2.631.134V000.0.T:2020-04-24

## 1.2 Requirements

- CathesisVision 2020.3 and later
- Win 10-64bit and later, Win Server 2008 R2 and later.
- Minimum 4 GB of RAM required.

**Note:** For information regarding the regular operation of a Dahua Thermal Camera, please consult the relevant Dahua documentation.

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

### A NOTE ON CAMERA CHANNELS

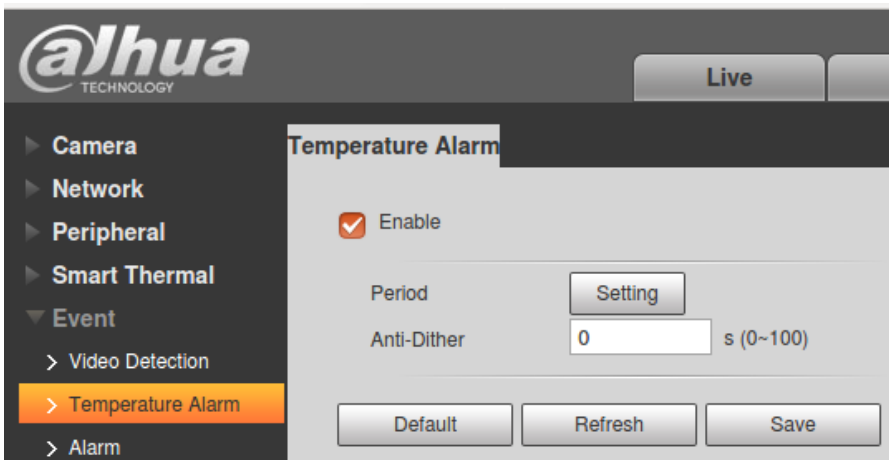
The CathesisVision software packages have **limits on camera channels**. A multi-head camera is physically a single device (camera) but it **requires a camera channel for each one of the internal cameras**. The same applies to an encoder: a 16-channel encoder will account for 16 camera channels on the CathesisVision software, even though it is a single device.

## 2. Device Addition and Configuration

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

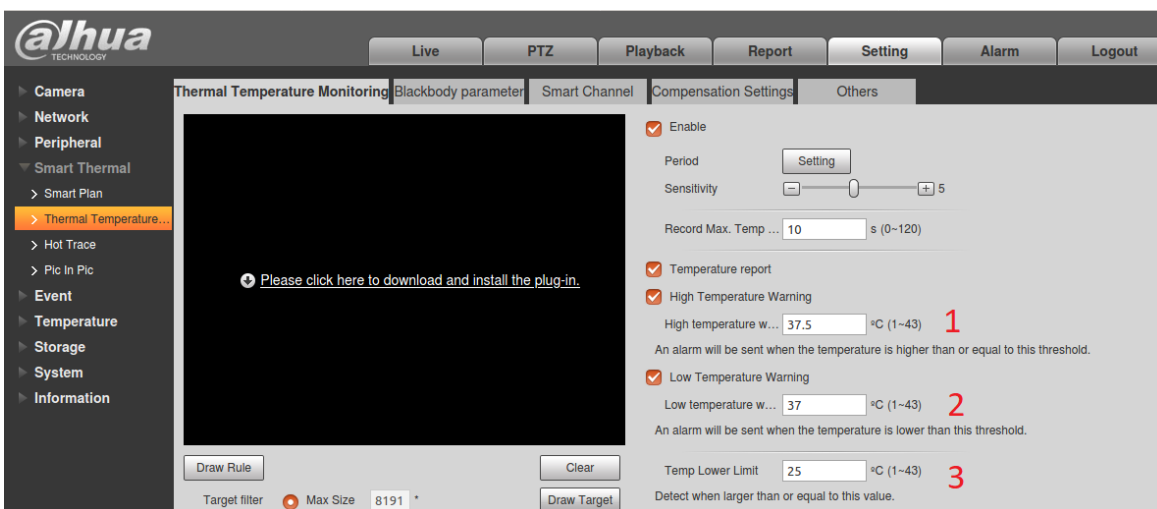
### 2.1 Dahua Web Interface Setup

1. Log in to the Dahua camera web interface with the user’s camera credentials and go to the Settings Tab.
2. Go to the Even menu found on the left-hand side, then Temperature Alarm. Ensure **enable** is ticked.



**Note:** In order for CathexisVision to receive the temperature triggers, they must be enabled in Dahua Camera Web interface.

3. Go to **Smart Thermal** on the left-hand menu, then **Smart Plan** to visit the **smart plan setup menu**.
4. Go to **Smart Thermal** on the left-hand side menu, then **Thermal Temperature Enable** and set up the **Thermal Temperature Monitoring Rules**.



**Figure A:** Thermal Temperature Monitoring Rules

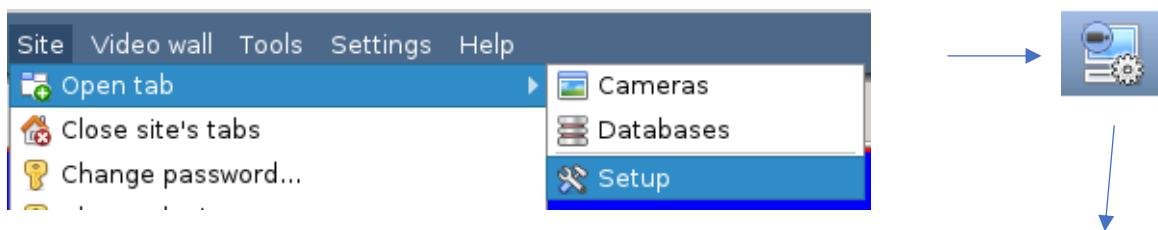
Figure A shows the setup menu for temperature rules. Numbers in red can be seen from 1-3 where:

1. Higher temperature detection can be setup here, so if a temperature is higher than, or equals the set value then STARTANOTOMYTEMPDETECTOVER trigger will be active.
2. Lower temperature detection is setup here, so if a temperature is lower than or equals the set value then STARTANOTOMYTEMPDETECTUNDER trigger will be active.
3. The lower temperature limit is set here, so when the temperature is lower than the temperature lower limit and low temperature warning is enabled, the low temperature trigger won't be active.

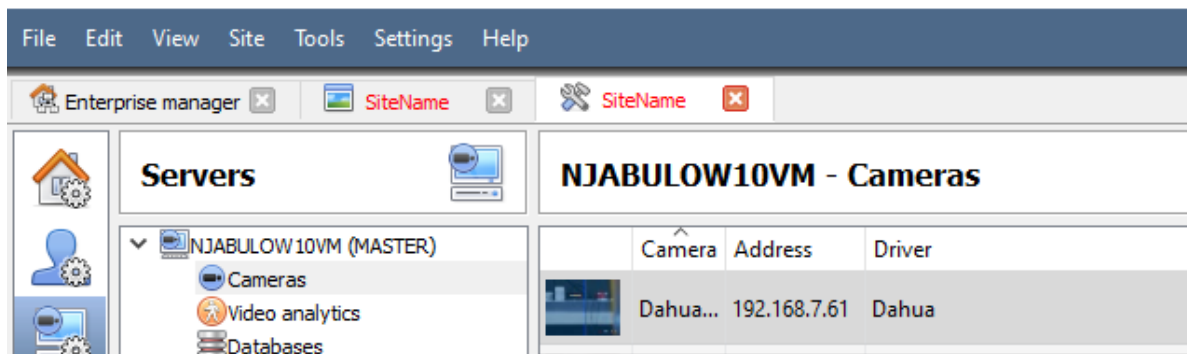
**Note:** Make sure option 1 and 2 are enabled. This is necessary for them to function.

## 2.2 Cathexis Camera Setup

1. Go to **Site** tab / **Open tab** / **Setup**



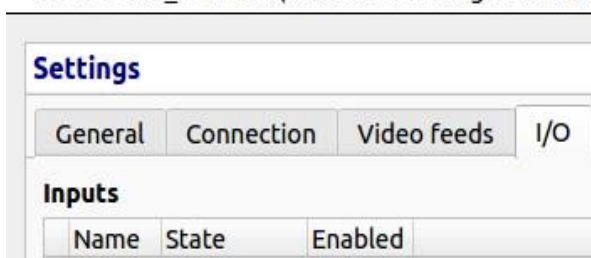
2. Click the **server icon**. Choose the **server** that has the Dahua thermal camera. Then choose **cameras** tab.



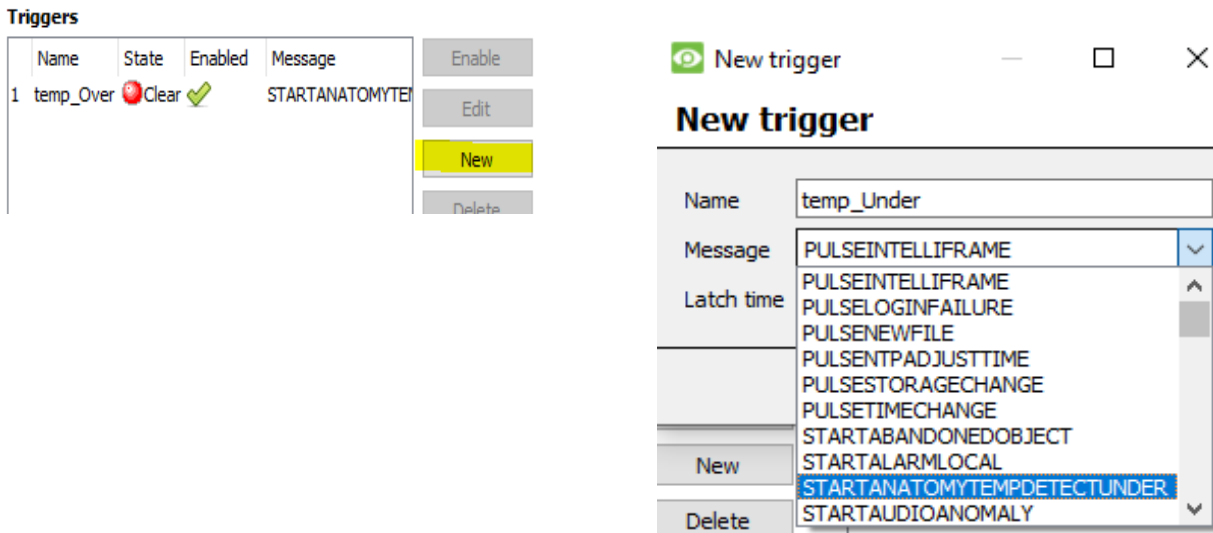
3. Double-click on the Dahua camera to go to camera edit menu and go to the **I/O** tab.

### Camera settings

Edit Dahua\_Thermal (camera recordings are DISA)



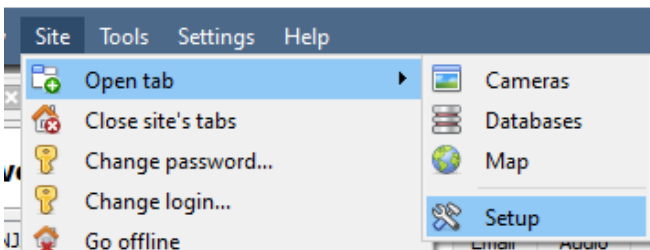
- Go to Triggers, then click **new** to configure new trigger.



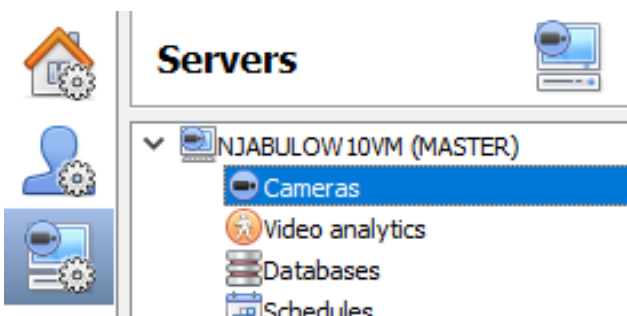
- Give it a descriptive name. Choose **STARTANOTOMYTEMPDETECTUNDER** for temperature low trigger or **STARTANOTOMYTEMPDETECTOVER** for temperature high trigger.
- Click OK to save the new trigger and OK to save and exit the camera edit menu.

## 2.3 Add a Camera in CathesisVision

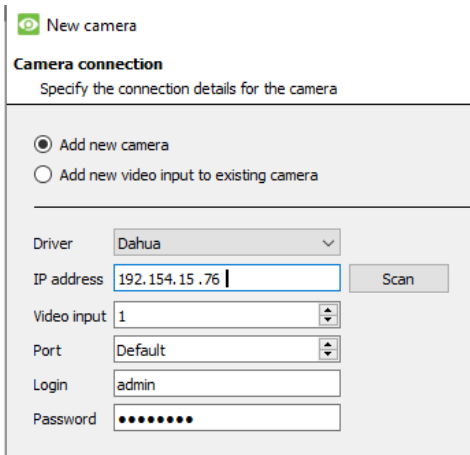
- To add a camera in CathesisVision, go to **Site/ Open tab / Setup**.



- Go to **Server / Server name / Cameras**.

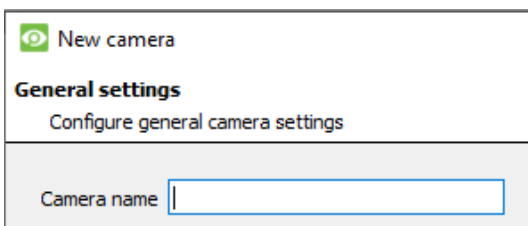


3. Click New to add a new camera.
4. Choose the **driver as Dahua** and enter connection details.



The screenshot shows the 'New camera' configuration window with the 'Camera connection' tab selected. The window title is 'New camera'. Below the title is the section 'Camera connection' with the subtitle 'Specify the connection details for the camera'. There are two radio buttons: 'Add new camera' (selected) and 'Add new video input to existing camera'. Below this are several input fields: 'Driver' (a dropdown menu set to 'Dahua'), 'IP address' (a text box containing '192.154.15.76' and a 'Scan' button), 'Video input' (a dropdown menu set to '1'), 'Port' (a dropdown menu set to 'Default'), 'Login' (a text box containing 'admin'), and 'Password' (a text box with masked characters).

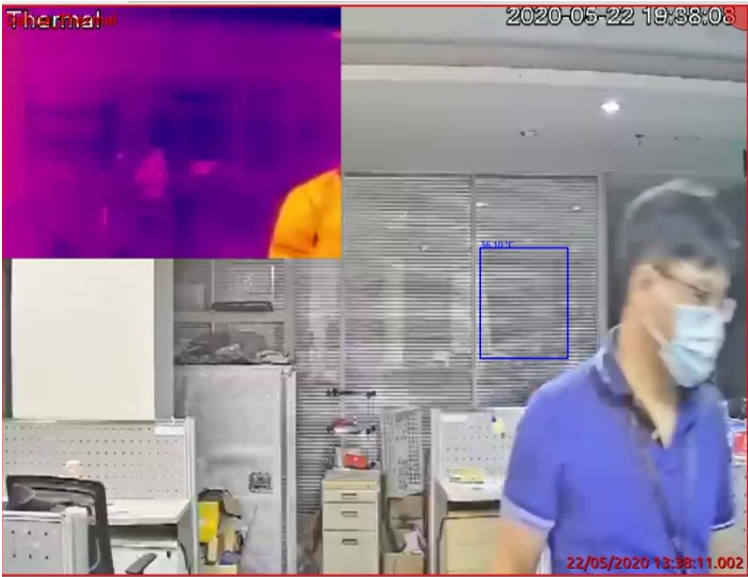
5. If successful, **give the camera a descriptive name**. Then click Next.



The screenshot shows the 'New camera' configuration window with the 'General settings' tab selected. The window title is 'New camera'. Below the title is the section 'General settings' with the subtitle 'Configure general camera settings'. There is one input field: 'Camera name' (a text box).

6. **Configure the camera as per the site specification**, then click OK to save when done.

### 3. Camera Tab Overlay Setup



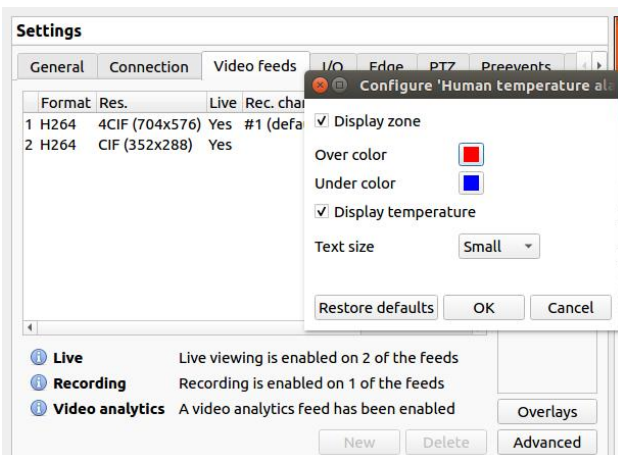
Once all the relevant settings have been configured, the Thermal overlay can be pulled through over the appropriate camera feed.

#### 3.1 Overlay Configuration



The overlays can be enabled by going to the overlay tab, camera and choose Human temperature alarm. The overlays can also be enabled by going to the camera feed, right-clicking, selecting overlays, camera, and Human temperature alarm.

When the temperature is High/Low as per the settings, there will be a square overlay with the corresponding colour. By default, the red colour is used to display High temperature and the Blue colour is used to display Low temperature. **Note:** the overlay colour and text size can be changed in cameras settings.



1. On the camera tab, click Edit Camera. Then go to the Video feeds tab.
2. On the overlays, the edit icon will be displayed. Click on it, modify the settings, then click OK to save.

**Note:** if the camera overlay is not working by default, go to Advanced and enable it.



## 4. Events

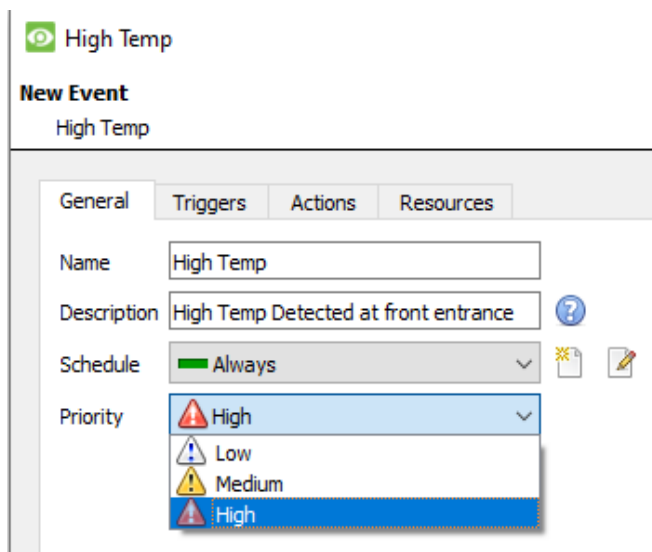
A CathesisVision event has a trigger, which causes an action. Set integrated devices to act as triggers, or as actions. This document will detail the Dahua Thermal Camera integration specific aspects of Events. There is a comprehensive guide to CathesisVision Events in the main setup manual.

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.

### 4.1 Creating an event

#### 4.1.1 Setting up Cathesis Pre-defined Events

1. To configure events, go to Server settings, then Events tab.
2. Click New.
3. Give the event a descriptive name and priority level.

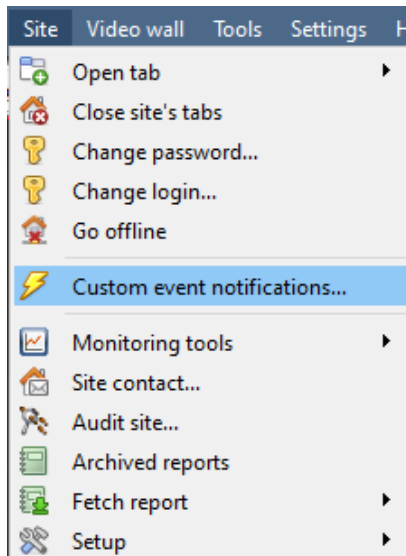


The screenshot shows the 'New Event' configuration window for an event named 'High Temp'. The window has a title bar with a green play button icon and the text 'High Temp'. Below the title bar, the text 'New Event' and 'High Temp' is displayed. The main area contains a tabbed interface with 'General', 'Triggers', 'Actions', and 'Resources' tabs. The 'General' tab is active and contains the following fields:

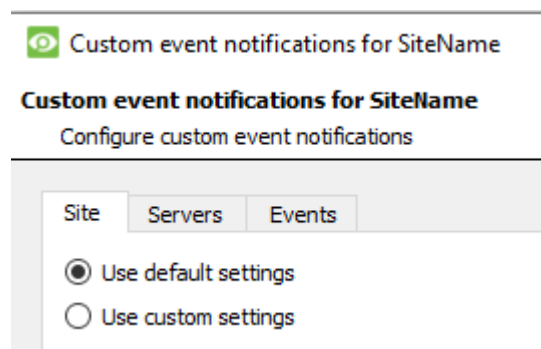
- Name:** High Temp
- Description:** High Temp Detected at front entrance (with a help icon)
- Schedule:** Always (with a calendar icon and an edit icon)
- Priority:** High (with a dropdown menu showing options: High, Low, Medium, High)

## 4.1.2 Setting up Cathexis Custom Events

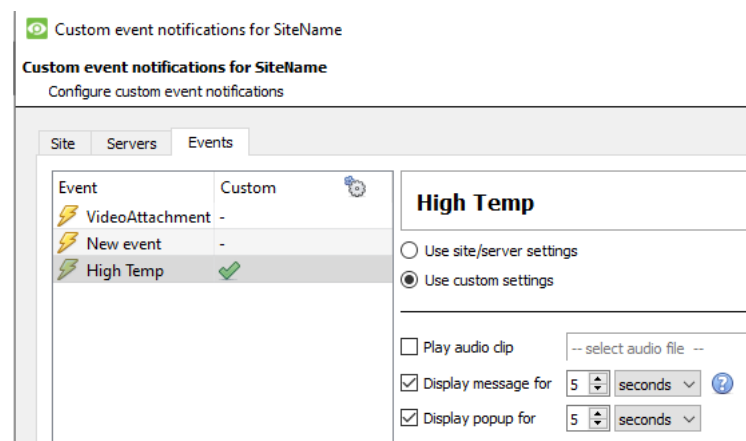
1. To set up Custom events, go to Site, then choose Custom event notification.



2. Leave Site tab as default.



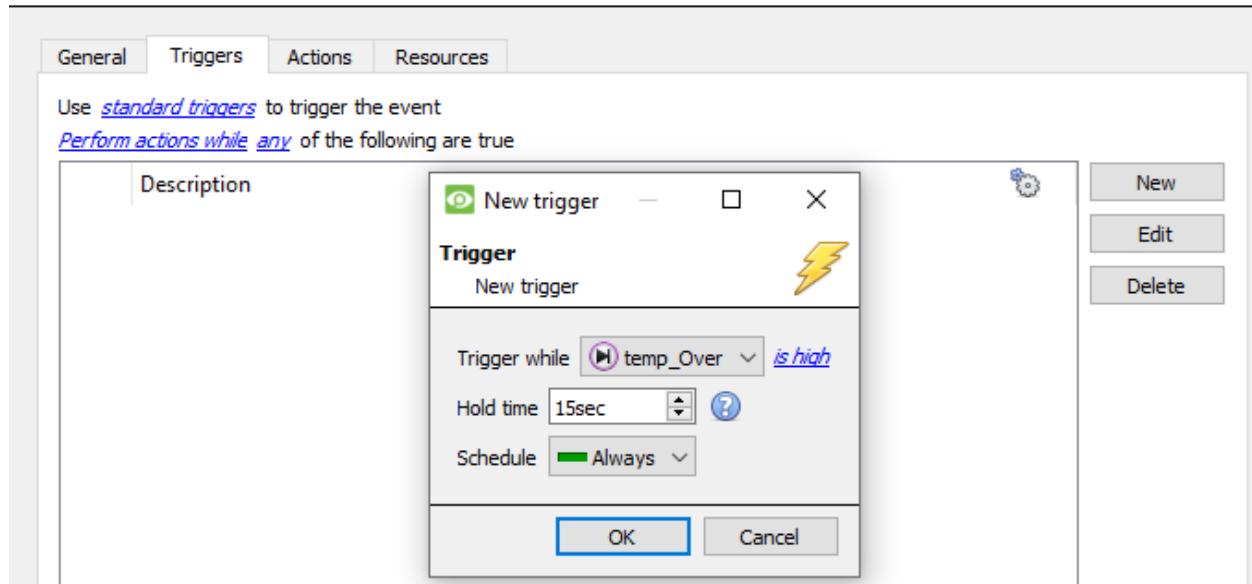
3. Move to **Events** tab. Select the **event name** and then choose **Use custom settings**.



4. Choose the notification and adjust the duration as per the specifications. Then click OK to save.

## 4.2 Triggers

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).

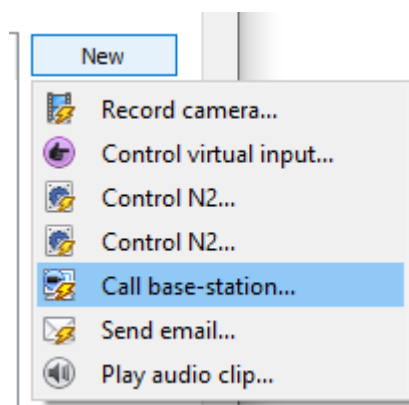


1. Move to the **Trigger tab** and click **new** to set a new trigger.
2. Choose a trigger to use.
3. Make sure it is triggered while “triggername” is true, or else conditions will be inverted.
4. Then click **OK**.

## 4.3 Actions

Once the triggers that are going to initiate the event are defined, define some Actions.

1. Move to the Actions tab
2. Click new to choose new action/s
3. Define action/s rule and click OK to save.



### 4.3.1 Actions (Pre-defined Events)

Note two actions: **Call base-station** and **record camera**.

With base-station, review the recorded footage and clear the alarm.

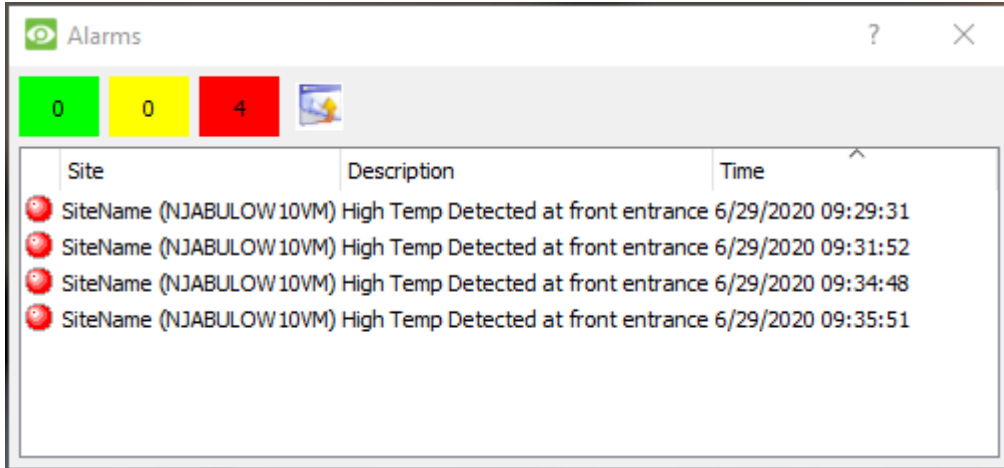


Figure B: Showing Alarm triggered by high temperature.

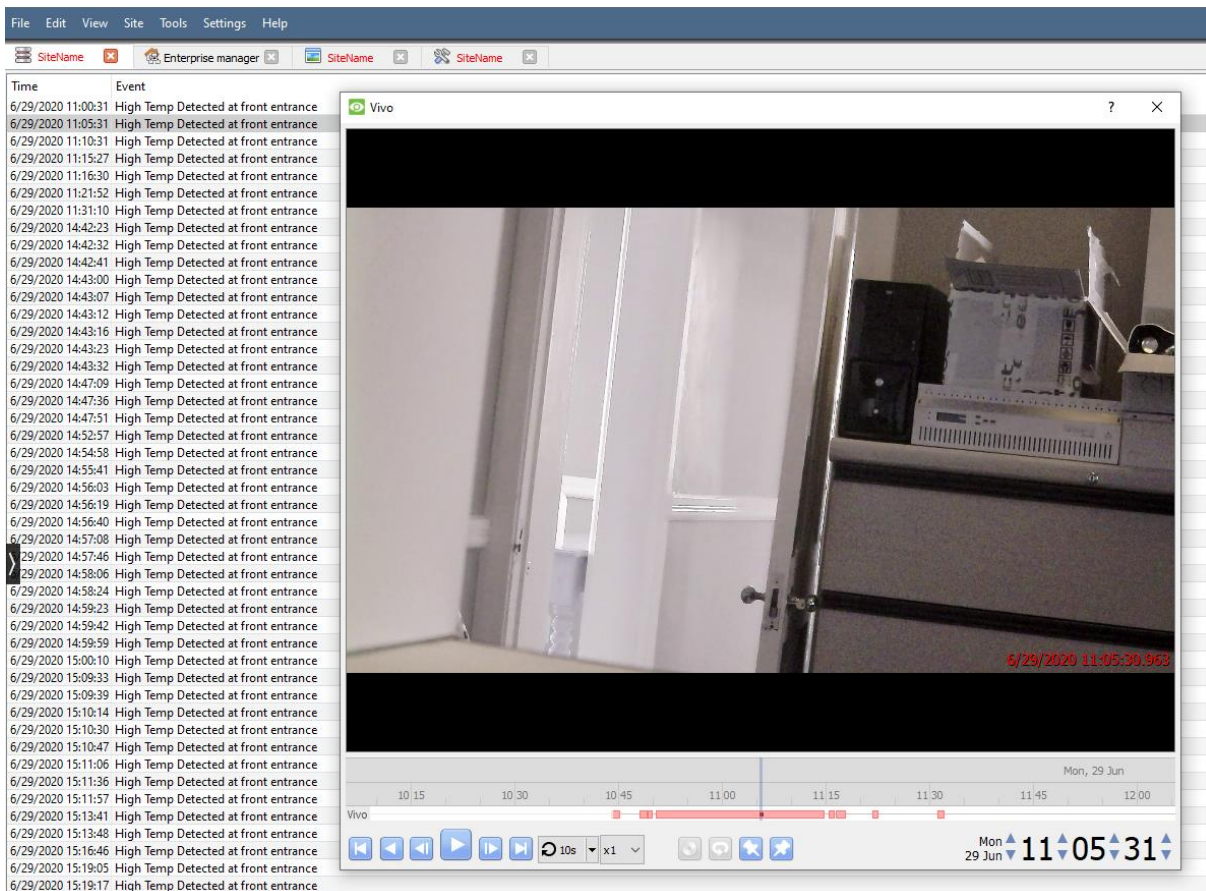
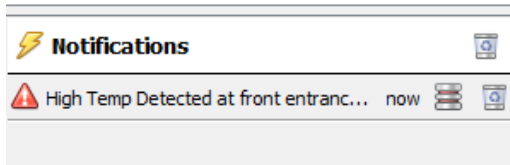


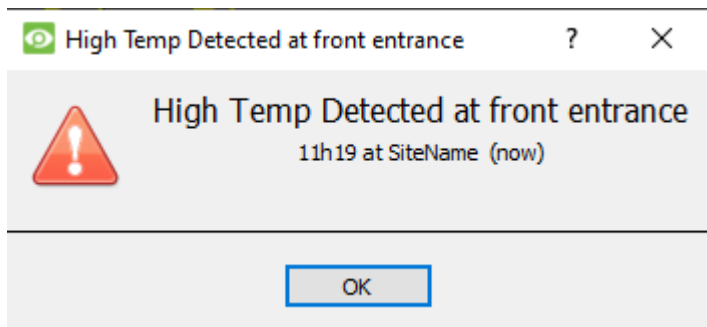
Figure C: Recorded footage on the database.

### 4.3.2 Actions (Custom Events)

There are two actions: **Display message** and **Display popup**:



**Figure D:** Display message action for custom events.



**Figure E:** Display popup action for custom events.

## 5. Conclusion

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

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

### 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>