

# Durban Sugar Terminal Weighbridge Integration App-note



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## 1. Introduction

The Durban Sugar Terminal Weighbridge driver sends and receives messages through the Event directory.

**Note**: For information regarding the regular operation of a Durban Sugar Terminal Weighbridge device, please consult the relevant Durban Sugar Terminal Weighbridge 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

- Windows 7, 64-bit and later, Windows Server 2008 R2 and later.
- Ubuntu 12 and Ubuntu 16.
- Linux supported.

## 1.2 CathexisVision Requirements

## 1.2.1 Software Requirements

CathexisVision 2020.4 and later.

**Note**: SAST is using SampleManager version 11.0 with the weighbridge module being customised for SAST. This software interfaces with the CathexisVision software via TCP/IP communication. The CathexisVision NVR IP address and port are configurable in SampleManager.

## 1.2.2 License Requirements

The Durban Sugar Terminal Weighbridge integration license requirements are as follows:

License	Name	Description
CDST-2000	Durban Sugar Terminal Weighbridge Device	This license is the "base" license to integrate with a weighbridge system. It is applied to the server to which the weighbridge is connected.
CDST-1001	Durban Sugar Terminal Weighbridge	These licenses apply to the weighbridges. The CDST-1001 will license a weighbridge, and may be added on a weighbridge-by-weighbridge basis.
CDST-3000	Durban Sugar Terminal Weighbridge Bundle	This license includes the CDST-2000 weighbridge device license, and also provides support for unlimited CDST-1001 weighbridge licenses.

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



#### 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 and Features

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 multiple "object types" under the objects group. For example, the main controller and do nodes of an access control system are both objects. They are different types of objects.	

### 1.4 Features and Abilities

This section indicates the features/abilities of the Durban Sugar Terminal weighbridge when integrated with CathexisVision.

## 1.4.1 General Device Features

- Messages are communicated from the files generated on the user's weighbridge and placed into the event directory of the integration.
- The Event device event messages are used to trigger Cathexis system events.

## 1.4.2 Device Objects

Object Type	Feature	
		<ul> <li>Displays information about the associated</li> <li>Weighbridge</li> </ul>
General		Events on the device can be used to trigger
		CathexisVision system events.
		<ul> <li>Supports camera overlays.</li> </ul>
Weighbridge	States	N/A. No state information for Weighbridge.



Object Properties	<ul><li>ID and Name.</li><li>Cameras</li><li>Object Groups</li><li>License</li></ul>
Commands	N/A. Communication channel cannot be commanded.

### 1.4.3 Device Events

<b>Event Element</b>	Features/Abilities
General	<ul> <li>Event messages generated by the device will generate device event messages in CathexisVision.</li> <li>These device event messages can be used to trigger system events.</li> </ul>
Event	The following device event messages are received from the device and displayed in the CathexisVision device events tab and integration metadatabase:  • Time  • Intake ID  • Weighbridge  • Vehicle  • Mass

## 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	<ul> <li>All device events are sent to the integration metadatabase.</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 CathexisVision video review tools.</li> </ul>
View Options	The metadatabase may be viewed by the following:  • Event.
Sort Options	The metadatabase may be sorted by:  • Time.  The available sort options depend on the selected view.



Eagy Sparch	The metadatabase may be searched specifically for:
Easy Search	Weighbridge
	The metadatabase may be filtered according to:
	Start Time.
Filter	End Time.
	Line Item
	The available sort options depend on the selected view.
Export	Database entries may be exported in CSV and PDF format.

## **USEFUL LINKS**

To view **tutorial videos** on CathexisVision setup, visit <a href="https://cathexisvideo.com/resources/videos">https://cathexisvideo.com/resources/videos</a>

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 adding the device to Cathexis Vision.

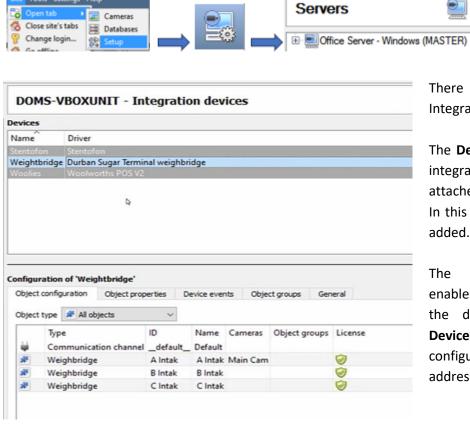
## 2.1 Specific Setup

- A file is generated on the weighbridge and is directed to the Event directory set up at the start of the integration.
- This information is used for data in CathexisVision software.
- The CathexisVision NVR IP address and port are configurable in SampleManager.
- The default port is 5000.

### 2.2 Add the Device in Cathexis Vision

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 Navigate to the Integrations Panel



There are two sections in the Integration Panel:

Integration devices

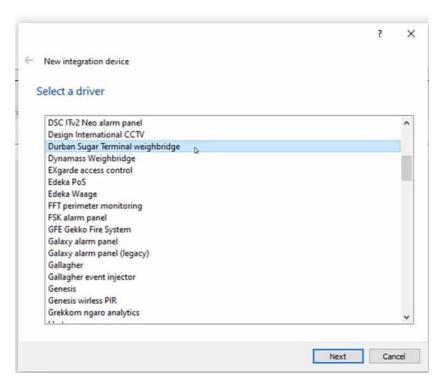
The **Devices** list will specify the integration devices that are attached to the selected server. In this section, new devices are added. This is addressed below.

The **Configuration** section enables reviewing and editing the device selected in the **Devices** section. The configuration section is addressed in section 3.

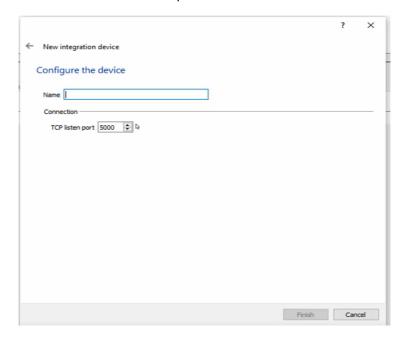


#### 2.2.1.1 Device Addition

- 1. Once in the Integration Panel, click on New device in the Devices section. This will open the addition dialogue.
- 2. Select Durban Sugar Terminal Weighbridge driver from the list.



3. Give the device a descriptive name.



4. Click OK when done.

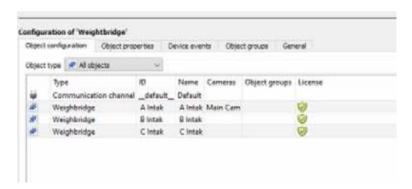


## 3. Integration Configuration Section (Tabs)

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

The System device object (representing the connected weighbridge system) will populate once communication is established with the system. The Weighbridge objects will populate once device events are received.

## 3.1 Object Configuration Tab



The object configuration tab is where all the individual objects that comprise the integration may be viewed. If necessary, objects may be added manually.

Durban Sugar Terminal has one object type: **Weighbridge**.

## 3.1.1 Object Configuration Buttons and Right-Click Options

#### 3.1.1.1 Object Configuration Buttons



Add a new object by clicking on **New**.

Open up an existing object for editing.

**Delete** an existing object from the CathexisVision configuration.

#### 3.1.1.2 Right-click Options



New will open up the dialogue to add a new object. Disable/Enable allows objects to be manually enabled/disabled. Prioritise license 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 editing window.

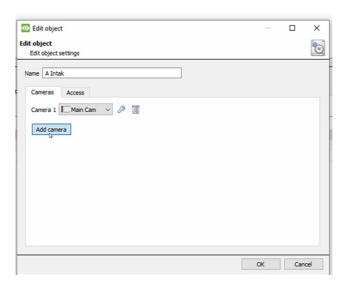


## 3.1.2 Edit Object

Open **object editing window** by selecting object and clicking **Edit button**, or **right-click > Properties**.

This window is where cameras are added to objects, overlays are configured, and access rights to the integration are added. These are dealt with in two tabs: **Cameras** and **Access**.

#### **3.1.2.1 Cameras Tab**



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.

Click on **Add Camera**, and select the relevant camera from the drop-down menu.



To Configure overlays for this specific object, click the settings icon (explained below).



To delete a camera, click the trash icon.

#### Note:

Up to four cameras can be added to Weighbridge objects and will be linked in the integration database.

If **continuous recording** is not set up on associated cameras, device objects run the risk of 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.

#### **3.1.2.2** Access Tab



Access allows for the protection of sensitive objects, by only allowing certain user levels access to them.

Under View, access levels can be set.

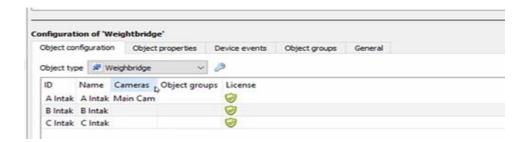
**Note**: If **Use default access rights** is checked, ensure that those default rights have been correctly defined. Click on **Configure default access** to do this.



## 3.1.3 Configure Overlays

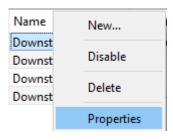
Overlays are supported for **Weighbridge** objects. Overlays may be configured by default for all objects, or individually for selected objects. The path to follow for opening the configuration window for default or individual overlays is different, however the overlay configuration is the same.

### 3.1.3.1 Configure Default Overlays



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

#### 3.1.3.2 Configure Individual Overlays



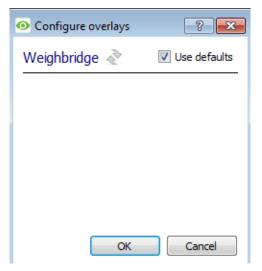
Right-click object and select **Properties** to edit the object.



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



#### **Default/Individual Options**

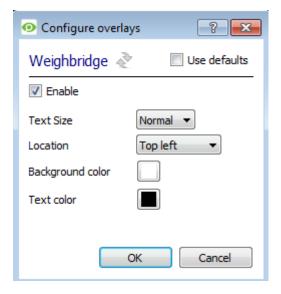


**Use Defaults**: This option is only available when editing individual overlays. Check this box to use the default configurations. Uncheck to edit overlays for the specific object.

**Enable**: This option is available in default and individual overlay configuration. In both cases, check the box to enable overlay configuration.

Click to reset values.

## Overlay Configuration for Individual and Default



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

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

Define the **Background color** of the overlay stream.

Set a custom Text color.

## 3.2 Object Properties Tab

The Object properties tab allows the device object properties to be viewed and sorted by type.

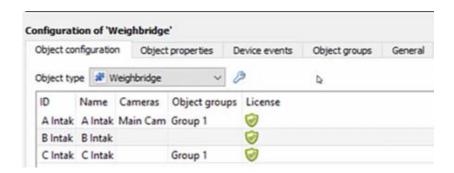
### 3.2.1 System Objects

**Note**: This system does not check for heartbeats and does not check if it is online/offline. It reads the information that is directed into the Evert directory.

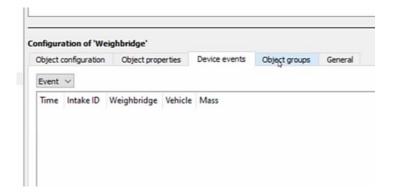


## 3.2.2 Weighbridge

This object links the cameras viewing the physical weighbridge to events and overlays.



## 3.3 Device Events Tab



Real-time device events are displayed here and can be used to check if the integration is working. Once device events are received, the relevant Weighbridge objects will also populate (Object Configuration and Object Properties tabs).

## 3.4 Object Groups Tab



Groups of the same types of object may be created. This is useful when setting up Events, because Events can be triggered by an Object group. (e.g. a group will trigger, if any of the devices in that group is triggered).



## 3.4.1 Create a Group



To create/edit a group click on  $^{\text{\tilde{1}}}$ /  $^{\text{\tilde{2}}}$ .

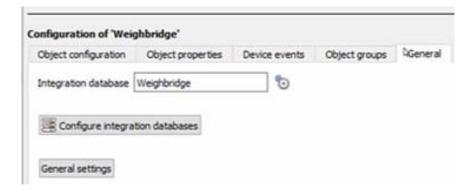
**Note**: Once a group has been created, the group's object type may not be edited.

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

Click on the drop-down menu to select the **Object type**. Only objects of this type can be added to the group.

A list of Available Objects will then populate. To add/remove these objects to the group select them (multiple may be selected), and click on  $\frac{1}{2}$ /  $\frac{1}{2}$ .

#### 3.5 General Tab



Currently the general tab deals with the **Integration database**.

Select an existing database or create a new one.

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

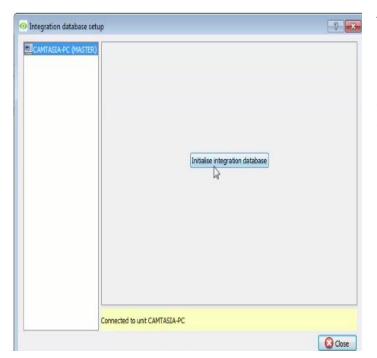
## 3.5.1 Configure a New Database



If there is no existing database for the current integration, clicking on this button will open the integration database setup.



#### 3.5.1.1 Initialise Integration Database

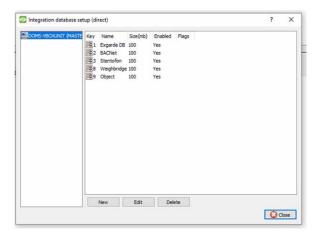


To create databases for specific integrations, the general integration databases must be initialised. If this has not already been done, initialise by clicking the "Initialise integration database" button.

**Note:** Once the size of the database has been set, the initial size cannot be increased.

#### 3.5.1.2 Configure Integration Database

If the general integration database has been initialised, or after initialising (3.5.1.1), create a new integration database for the current integration.



Select the unit that the database should be added to from the list on the left, and click **New** to create a new integration database.

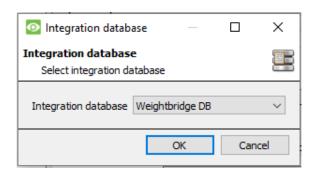
Give the database a Name.

Set the database Size.

Select the **Weighbridge** driver from the drop-down menu.

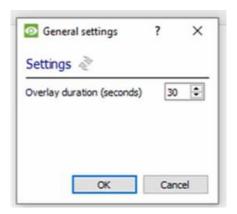


### 3.5.1.3 Select the Integration database



Integration database -- select integration database -- 
Once a database has been created the user may select it by clicking on the settings icon, and selecting it in the dialogue that appears. Only databases which relate to the device being added

## 3.5.1.4 Adjust General Settings



Adjust Weighbridge Overlay timeout as desired.

should appear.

Adjust overlay timeout as desired.



# 4. Camera Tab Overlay Setup

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



## **4.1 Video Feed Options Panel**



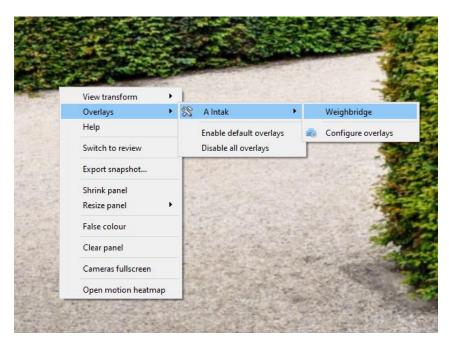
To bring up the overlay, click the arrow to the left of the screen. This will pop out the Video feed options panel.

The Video feed options panel will present a number of options specific to the settings configured for that video feed.

Right-clicking will also bring up overlay options.



## 4.1.1 Select the Overlay

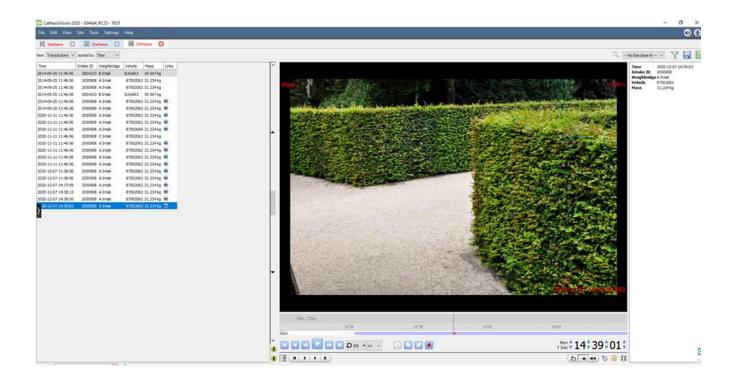


Through the right-click option, one can select the overlay and it will appear over the video feed, as above.

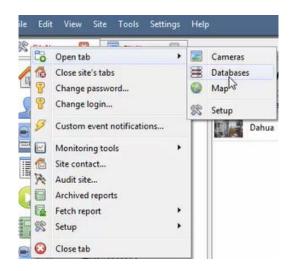


## 5. Database

The database tab allows database entries to be sorted, filtered, reviewed, and exported. Most integrations will have a different database presentation, and unique filters, due to the different parameters sent to CathexisVision by the integrated device.



## **5.1 Navigate to the Database**



To open database, follow one of two paths:

- 1. Site Menu  $\rightarrow$  Open Tab  $\rightarrow$  Databases.
- 2. Right-click site tab → Open Tab → Databases.



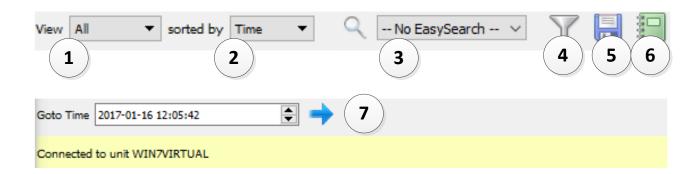


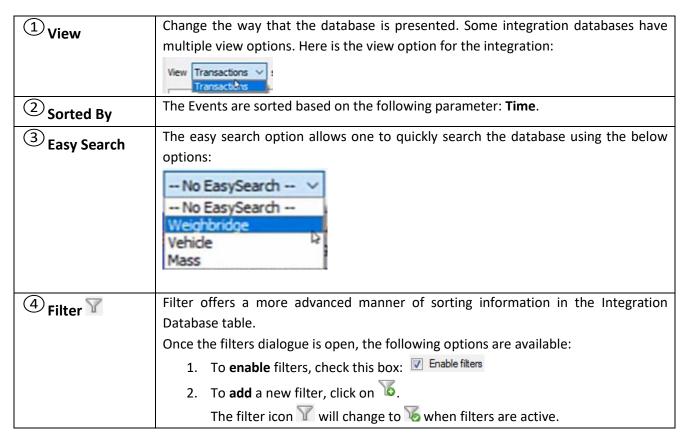
When the database tab opens, select the relevant integration database from the database panel that opens on the left-hand side. The databases are ordered under the NVRs that they are attached to.

To open and close this list, click on the arrow in the centre of the list:

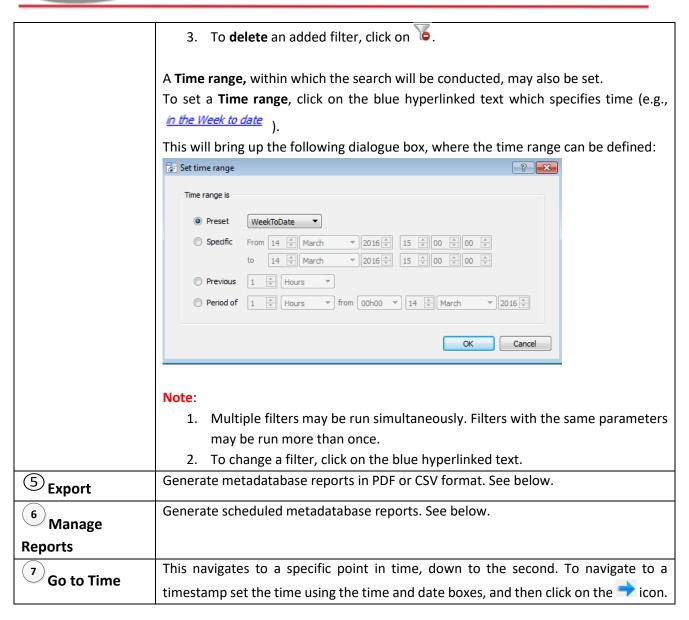


## **5.2 Database Interface**





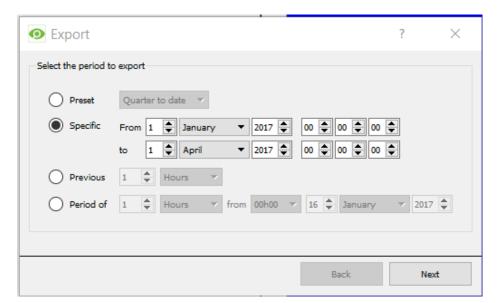






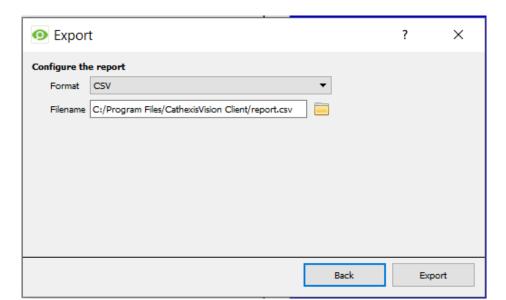
## **5.2.1 Generate Metadatabase Reports**

Click the save icon to open the Export window.



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

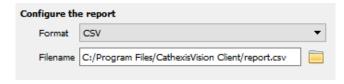
Click Next.



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

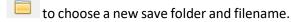
See below for the two options.

### **5.2.1.1 Export CSV**



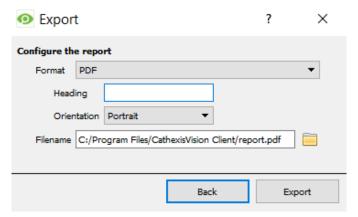
Select CSV Format.

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





#### **5.2.1.2 Export PDF**



Select PDF Format.

Give the PDF a Heading.

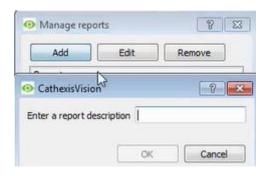
Select either Landscape or Portrait **Orientation** of the PDF.

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

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

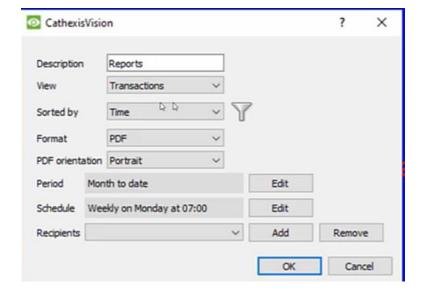
## **5.2.2 Manage Reports**

Metadatabase reports may be auto-generated according to a user-defined schedule.



Click **Add** to add a new report. Once added, reports will populate the list.

Double-click the selected report (or select and click **Edit**) to configure the parameters of the scheduled report. See below.



Give the report a descriptive name.

Select the default presentation of the database entries by selecting desired options for View and Sort Index.

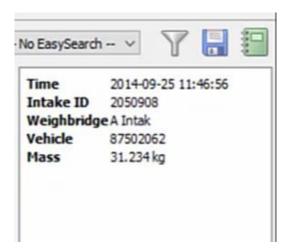
Select the format (PDF/CSV) of the report, as well as the orientation of the report (if PDF selected).

Select the period to report, and the Schedule according to which reports will be auto-generated.

Add report recipients by clicking **Add** and entering the relevant email address. Multiple recipients may be added. To remove a recipient, select the entry from the drop-down menu and click **Remove**.

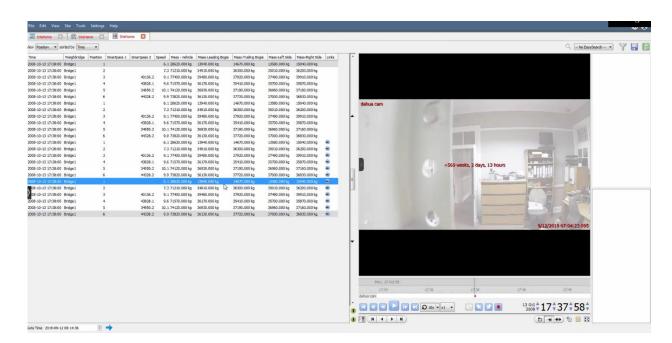


### 5.2.3 Metadata



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

## 5.2.4 Viewing an Entry's Associated Recording



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



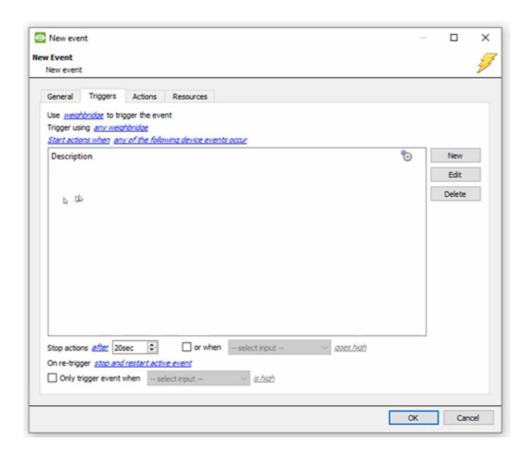
## 6. Events

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

### 6.1 Event Window

Events in CathexisVision are setup via the Event Window. This has 4 tabs. In the **General Tab**, an event is given a name, description, schedule, and priority. In the **Triggers Tab**, the trigger/s for the event are defined. In the **Actions Tab**, the action/s which the event takes are defined. In the **Resources Tab**, the various site resources, which can be used as part of an event, are defined.





## **6.2 Creating an Event**

To create an event using the Weighbridge device, open the Events panel in Configure Servers. Follow the path: Site menu / Open tab / Setup / Configure servers / Select server / Events

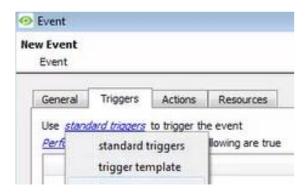


Once in Events management click on New . This will open up the New Event window.

## 6.3 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).

## 6.3.1 Set the Device as the Trigger

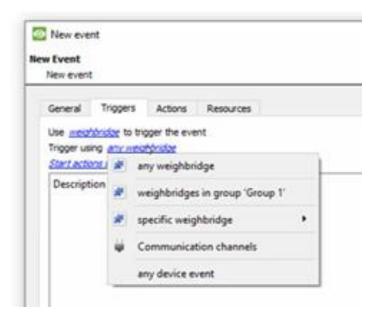


If creating a new event, the trigger type will default to:

Use <u>standard triggers</u>. To define which device should trigger the event, click on the hyperlink after "use". Select the relevant device name from the drop-down menu.



## 6.3.2 Trigger Types



**Any system** will trigger when any of the system objects sends the selected trigger.

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

**Specific weighbridge...** will trigger an event from the specific object selected.

**Communication channels** will trigger only on the Communication channels.

Any device event will trigger on any event that occurs on the device. Within the "any device event" setup, set "device event rules", which will constrain which device 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 to see a list of available descriptions.

## 6.3.3 While/When and Any/All

When triggering on an object, there is the option 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 start an event.

Use <u>weighbridge</u> to trigger the event

Trigger using <u>any weighbridge</u>

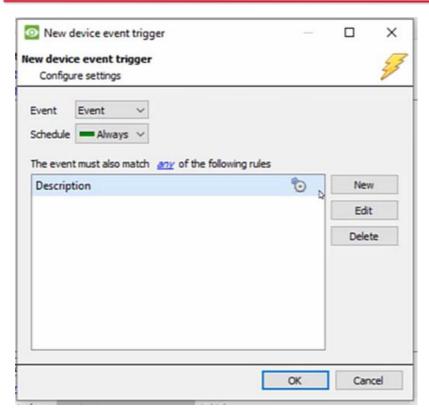
<u>Start actions when any of the following device events occur</u>

To change these settings, click on the blue hyperlinks.

## 6.3.4 Define the Trigger

After selecting a master trigger type, it is necessary to add a trigger to the event. Click on Triggers tab. This will bring up the dialogue box below:





For example, within the any device event option, choose what type of device Event will be the trigger. Choose an event type from the drop-down menu.

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

Choose if m, or constraints need to be fulfilled to set off a trigger.

**Note**: Multiple constraints (**Device Event Triggers**) may be set. If a constraint is not defined, 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 display 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 Durban Sugar Terminal device, see the Durban Sugar Terminal settings for the strings needed here.



#### 6.3.4.1 Event Example

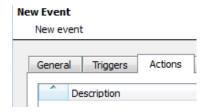
Use <u>weighbridge</u> to trigger the event

Trigger using <u>any weighbridge</u>

<u>Start actions when any of the following device events occur</u>

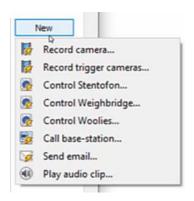
In this example, an event is configured which will trigger when the state of the weighbridge system equals 'any weighbridge'.

## 6.4 Actions



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

## 6.4.1 New Action



To create a new Event Action, click on New

**Note**: With many integrations there will be the option to control the integrated device, as one of the actions. This is not the case with the weighbridge device. The option is presented in the menu, but it is not advisable to control the weighbridge device as a system action.



# 3. Conclusion

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

For support, contact <a href="mailto:support@cat.co.za">support@cat.co.za</a>.