

Axxon One Integration Note v1.1.0



Chapter 1

Introduction

1.1 Prerequisites

- VCAserver version 2.0 or greater.
- Axxon One VMS version 1.0.4 or greater.

1.2 Supported features

- TCP events with metadata available via tokens.
- Annotated RTSP.

1.3 Architecture

In this web UI integration, the Axxon Next VMS receives the annotated RTSP stream from the VCAserver and the alarms are sent through the TCP action with VCA tokens containing details about the event.



Chapter 2

VCAserver Configuration

2.1 Confirming the RTSP port used for transmitting video footage

Check, and change if required, the RTSP port used by VCA for external connections to the channels within the VCA service.

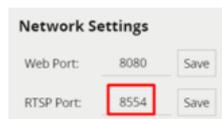
1. From the main screen, click the **system cog** in the top right.



2. Then, click on **System**.



3. In **Network Settings**, you can see the RTSP port used by the VCAserver to send the RTSP stream of its channels. Change it if necessary and click **Save**.



Note: The syntax for connecting to these channels is: `rtsp://<device_ip>:<RTSP_port>/channels/<chan`

Example: `rtsp://192.168.1.10:8554/channels/27`.

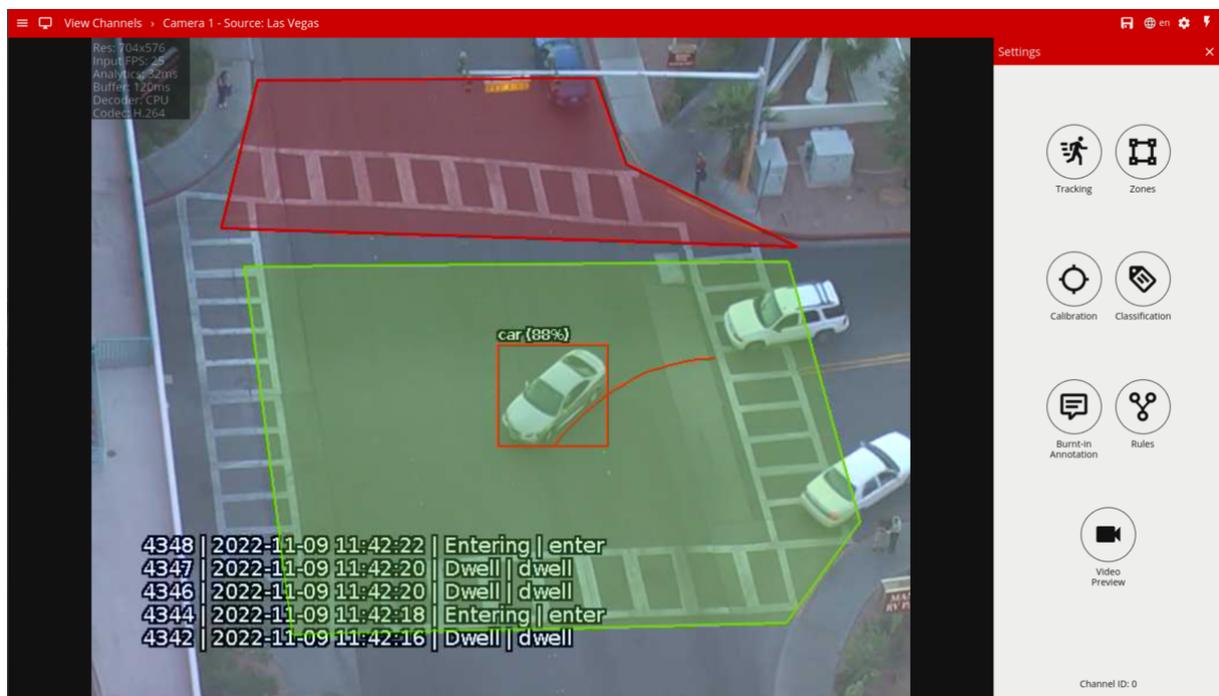
2.2 Creating a Channel

Configure the VCAserver as required with the appropriate channel and logical rules. A basic setup is detailed below as an example:

1. Configure a source to connect to a camera.

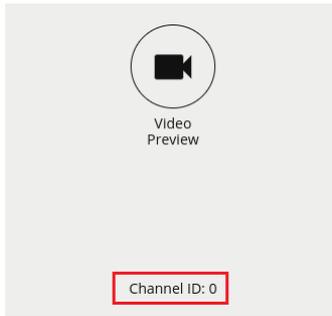
Note: the recommended settings for the camera stream to VCA is a maximum resolution of D1 (640 x 480) with a frame rate of 15 frames per second. A lower resolution and frame rate will reduce the analytic accuracy, a higher resolution and frame rate will result in high CPU usage and can reduce analytical accuracy.

2. Configure a **zone** for the channel.
3. Configure **rules or filters** to trigger an event on object detection in the zone.



4. Note the **Channel ID** as this will be needed when connecting to the RTSP stream from the Axxon server.

Note: The channel ID can be located at the bottom of the channels menu.



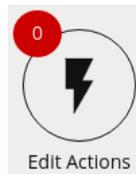
For more information on creating and configuring channels in VCA please refer to the VCA core manual.

2.3 Creating an Action

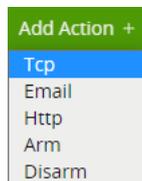
1. Click the **system cog** in the top right to access the settings.



2. Click **Edit Actions**.



3. Then, click **Add Action** and select **TCP** from the list of available actions.



4. Enter a descriptive name for the action.
5. Click the arrow on the right of the action to expand the TCP configuration options.
 - **URI:** Enter the IP address of the Axxon server.
 - **Port:** Enter the TCP port configured for the Event Source of Axxon.

- **Body:** Select **Custom** from the drop-down menu and add some tokens.
- **Sources:** Click **Add Source +** to display a list of the available rules and filters and select the rules created for the source you want to send to the Axxon server.

The screenshot shows a configuration window for an Event Source. The 'Type' is 'Tcp' and the 'Name' is 'Axxon One 1.0.4 - Event Source Alarms'. The 'URI' is '192.168.1.119' and the 'Port' is '2555'. The 'Body' is set to 'None'. The 'Line Endings' are 'Unix (LF)'. The 'Always Trigger' checkbox is unchecked. The 'Sources' section shows two sources: '[0]: Camera 1 - Source: Las Vegas - Dwell' and '[0]: Camera 1 - Source: Las Vegas - Left'. A green bar at the bottom indicates 'Test: Test passed'.

For this integration, the following Tokens were used to send an alert containing information on the camera, zone and rule type that triggered the event and time.

Where:

- **Event:** Represents the beginning of the message configured for the Event Source in Axxon.
- `{{start.iso8601}}`: The start time of the event. The `iso8601` property is a date string in the ISO 8601 format.
- `{{ip}}`: The IP address of the device that generated the event.
- `{{host}}`: The hostname of the device that generated the event.
- `{{#Channel}}{id}{/Channel}}`: The id of the channel that the event occurred on.
- `{{#Channel}}{name}{/Channel}}`: The name of the channel that the event occurred on.
- `{{#Object}}{#DLClassification}{/DLClassification}{/Object}`: The classification generated by a deep learning model (e.g. Deep Learning Filter or Deep Learning Object Tracker). This token is a property of the object token. The algorithm must be enabled in order to produce this token. It has the following sub-properties:
 - `{{class}}`: What the object has been classified as (person, vehicle).
- **End:** Represents the end of the message configured for the Event Source in Axxon.

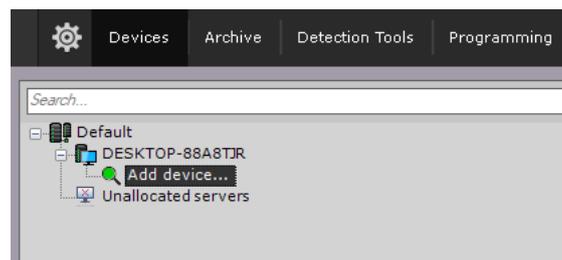
Chapter 3

Axxon One Configuration

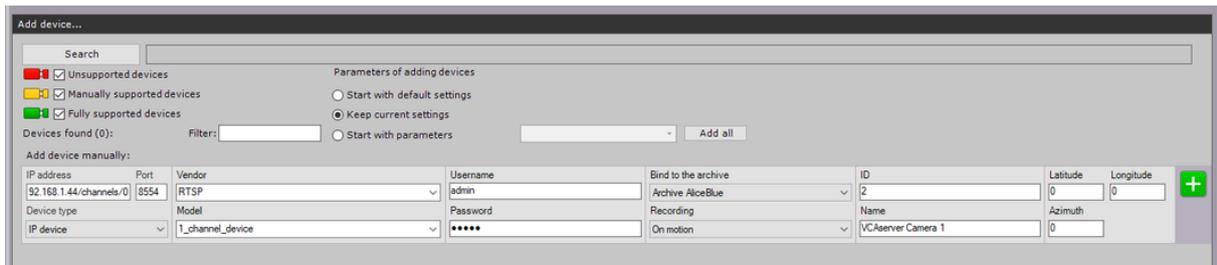
3.1 Configuring the VCAserver

First, we configure a new device into the system.

1. From the **Configuration management** page, click **Devices** located top. Then, click **Add device...** in the left menu.



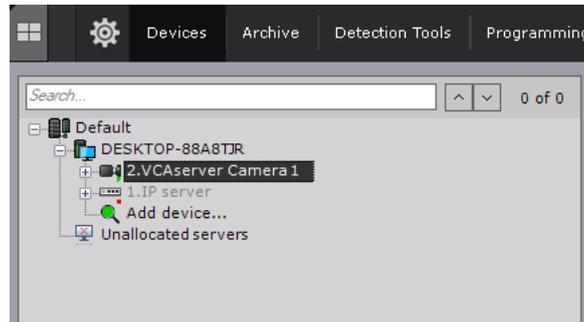
2. In the **Add device...** page, configure the new device as follows:
 - **Vendor:** Select **RTSP** from the drop down list.
 - **Model:** Select the number of channel you want to configure.
 - **IP Address:** Enter the RTSP URL of the VCA channel. In general form, the address is as follows: `rtsp://<IP_address>/<channels>/<channel_id>`.
 - **Port:** Enter the RTSP port configured in the VCAserver.
 - Enter the **username** and **password** to access the VCAserver.
 - **ID:** Enter an ID for the device.
 - **Name:** Enter a descriptive name for the device.
 - Click the green plus + button on the right side to add the new device.



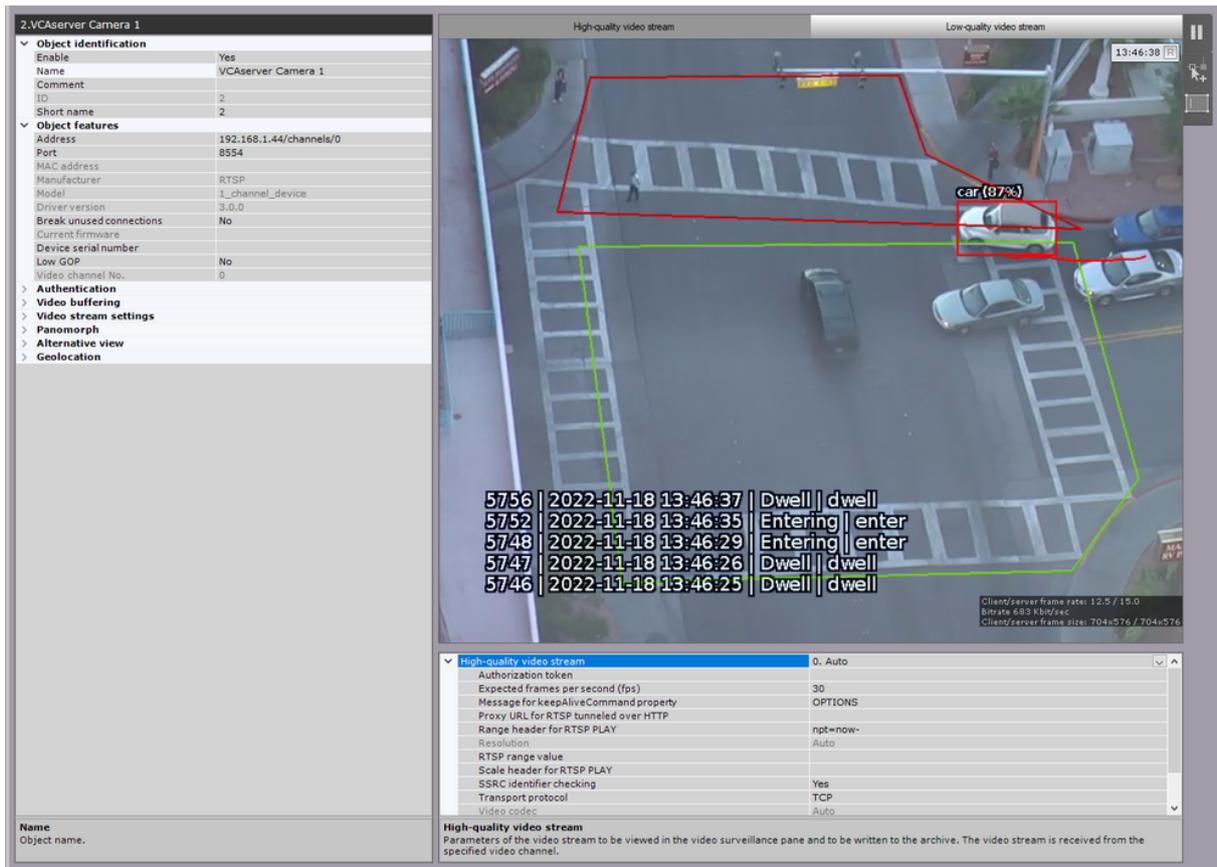
3. Click **Apply** located bottom to confirm the settings.

3.1.1 Verifying the VCA RTSP Stream

1. Click the new device in the left menu and click the 'plus' on the left of the device to expand the configuration options and select the camera.



2. The preview window will display a live image of the VCA channel alongside the settings.



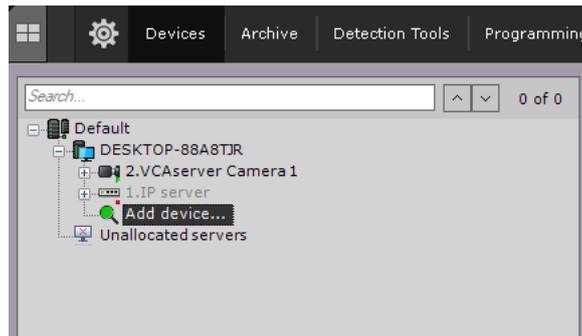
3.1.1.1 Assertions

1. The annotated RTSP stream is displayed in the camera preview window.
 - The live image of the VCA channel is displayed in the Axxon One client.
 - The VCA annotations are displayed in the Axxon One client:
 - Zones.
 - Objects with bounding box.
 - VCAserver Event Log: event ID, event time, rule name and rule type.

3.2 Adding the Event Source

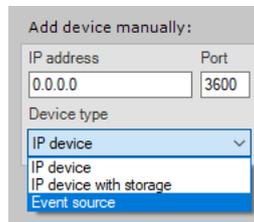
Now, we add the Event Source that will receive the TCP events from the VCAserver.

1. Click **Add device** in the left menu.

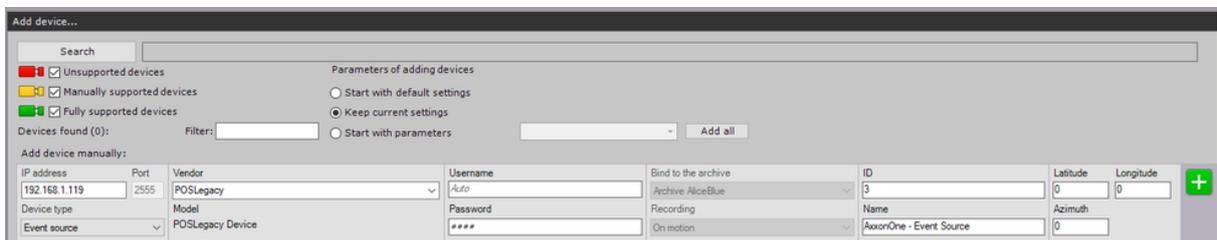


2. In the **Add device...** page, configure the new device as follows:

- **Device Type:** Select Event Source form the drop down menu.



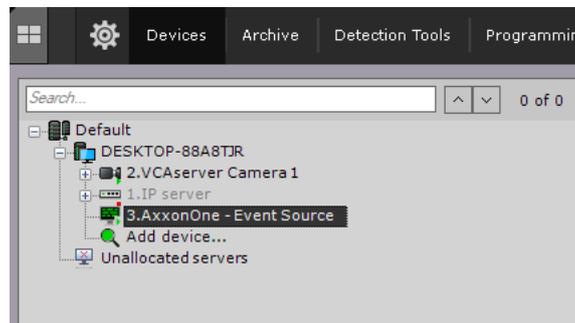
- **Vendor:** Select POSLegacy from the drop down list.
- **IP Address:** Enter the IP address of the Axxon server.
- **Port:** The default port is **2555**.
- **ID:** Enter an ID for the Event Source.
- **Name:** Enter a descriptive name for the device.
- Click the green plus **+** button on the right side to add the new device.



3. Click **Apply** located bottom to confirm the settings.

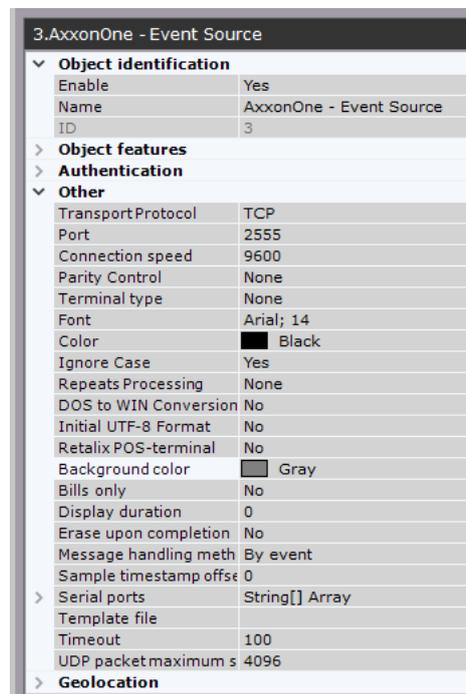
3.2.1 Configuring the Event Source

1. Click the new Event Source device in the left menu.

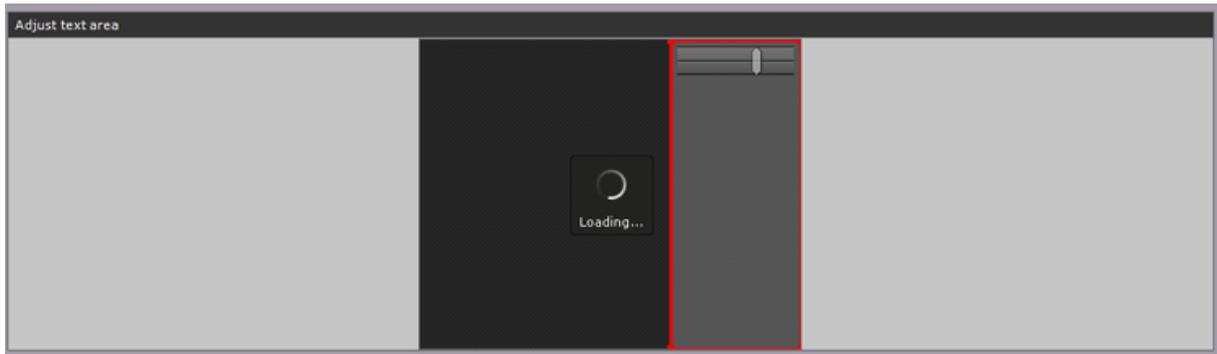


2. In the **Event Source** page, configure **Other** as follows:

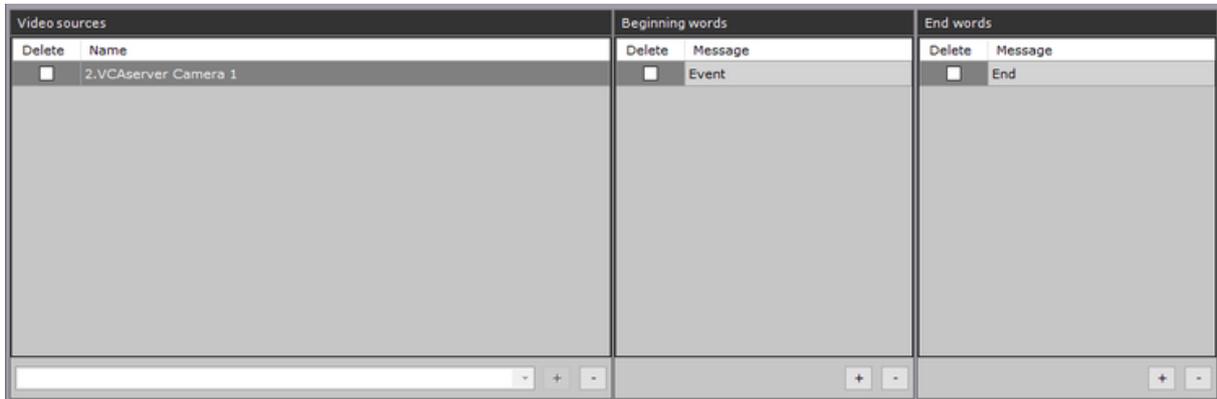
- **Transport Protocol:** Select **TCP** from the available options.
- **Port** The default port of the Event Source device (*this is the same port configured in the TCP action of the VCA server*).
- Select the **Font** and **Colour** as required.



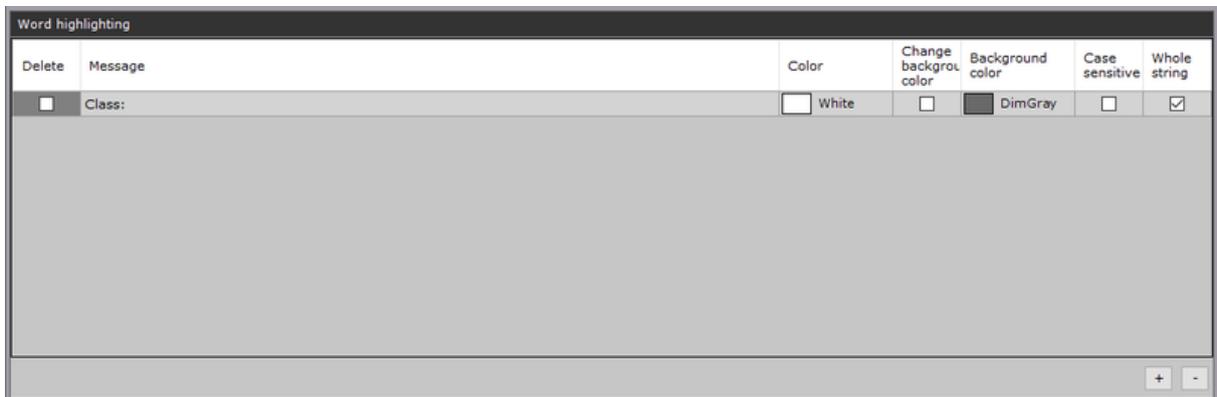
- In **Adjust text area**, adjust the red box and opacity accordingly (*the text will appear as an overlay on the video*).



- In **Video sources**, select the device that will display the events as an overlay.
- In **Beginning words**, enter the word that represents the beginning of the events.
- In **End words**, enter the word that represents the end of the events.



- In **Word highlighting**, enter the words you want to highlight when the events occur and select a colour to identify them.

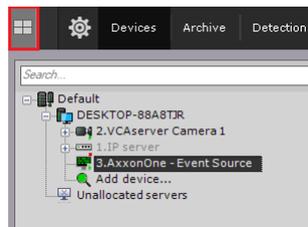


3. Click **Apply** located bottom to confirm and save the settings.

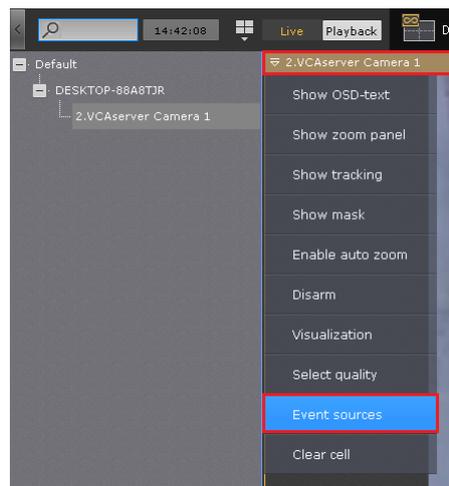
Make sure the port is opened on all intermediate firewalls and not used by any other software on the server machine.

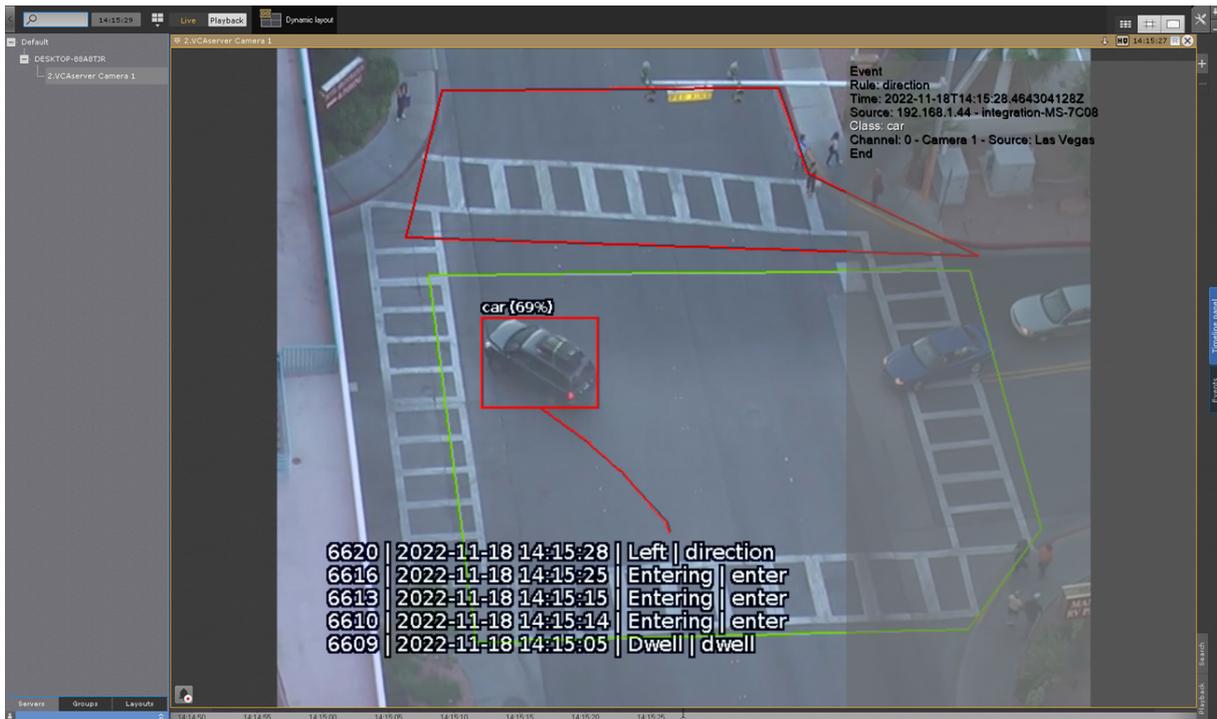
3.3 Verifying VCA Events

Click the **Live page** button located top left.



Then, validate that the VCA events are shown as an overlay in the video (click top left corner of the channel and select **Event Source** from the list)





3.3.1 Assertions

- The Event Source overlay notification is displayed on the Axxon One Live page when the VCAserver triggers a rule or filter:
 - Event:
 - Rule type.
 - Source:
 - * IP.
 - * Host.
 - Class:
 - * DL classification of the object.
 - Channel:
 - * Channel ID.
 - * Channel name.
 - End.
- The annotated RTSP stream is displayed in the Axxon One Live page.