AXIS Radar Data Visualizer

User manual

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About

AXIS Radar Data Visualizer is an application that combines 180° radar detection and 180° panoramic images for monitoring large open areas. Connecting a radar and a panoramic camera extends the detection distance of people up to 60 meters (200 feet) and vehicles up to 85 meters (280 feet). The application can then present the object class, distance and speed as visual, customizable overlays in the camera view. The data can also be used to trigger events.

Requirements

- The radar and the panoramic camera need to be mounted and configured according to their respective installation guide.

- The panoramic camera needs to be mounted over or under the radar at a maximum distance of 50 cm (1.6 feet) .

- For a list of compatible cameras see *AXIS Radar Data Visualizer | Axis Communications.*

- For a list of radars, go to *axis.com/products/radars.*

Get started

Calibrate the radar

When the radar is installed, the default live view of the radar will show the radar coverage and any detected movement, and you can add detection zones and rules right away. Before you set up the connection with the radar and configure the application overlays, calibrate the radar for the scene.

Check that the mounting height of the radar corresponds with the set height in the radar's web interface. If the radar is mounted on a different height, you need to calibrate the radar to compensate for the mounting height.

To calibrate the radar:

1. Log in to the radar's web interface.

2. Go to **Radar > Settings > General**

3. Enter the mounting height.

4. Under **Radar > Settings > Detection**, turn on **Ignore swaying objects** to exclude bushes, trees and signs from your scenarios. Avoid having a road sign just in front of the radar.

Note

If you for example only want statistics of vehicles, go to **Radar > Scenarios** and create a scenario. Edit your scenario, and under **Trigger on object type**, uncheck **Human**.

Map calibration
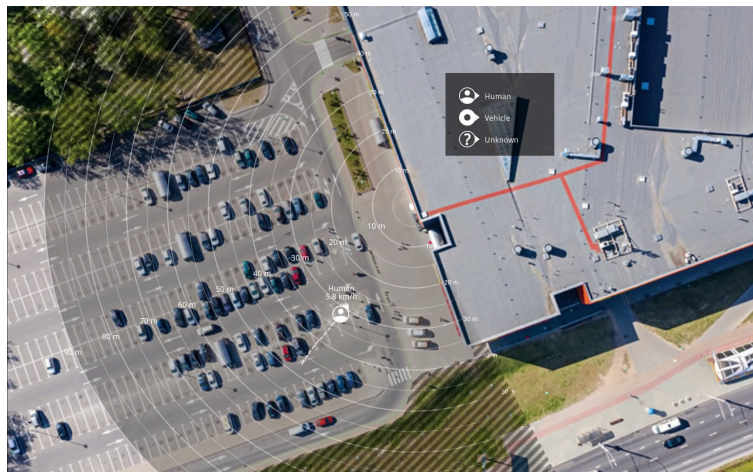
Example of a reference map in AXIS D2110-VE Security Radar.

To make it easier to see where objects are moving, upload a reference map, for example a ground plan or an aerial photo, that shows the area covered by the radar.

Image requirements:
- Supported file formats are jpeg and png.
- The image can be cropped in the radar.
- The orientation is not important, since the radar coverage shape will move to adapt to the image during calibration.

Go to **Radar > Map calibration** and follow the setup assistant to upload and calibrate your map.

For more information about the settings in the radar's web interface, see the user documentation for your radar on *axis.com*.

Select a radar profile

Axis radars have support for two different monitoring profiles; area monitoring and road monitoring. To use AXIS Radar Data Visualizer, select the area monitoring profile.

1. Log in to the radar's web interface.

2. Go to **Radar > Settings > Detection > Radar profile**

3. Select **Area monitoring** .
   The profile is optimized for tracking humans, vehicles, and unknown objects moving at speeds up to 55 km/h (34 mph).

For information about detection ranges, installation examples and use cases, see the radar's user manual at *help. axis.com*.

Download and install the application

To install the application, go to *axis.com/products/axis-radar-data-visualizer* and download the latest version. Log in to the panoramic camera you want to connect to the radar, and follow these steps:

1. Log in to the panoramic camera's web interface.

2. Go to **Apps**.

3. Click **Add app**.

4. Select the file in your downloads folder.

5. Click **Install**.

6. Turn on the app to activate the application.

Note

To upgrade the application, just install the new version. There is no need to uninstall the previous version.

Configuration

Pair the camera with a radar

For Radar Data Visualizer to work, you need to pair the panoramic camera to a radar. In the panoramic camera's web interface:

1. Open **AXIS Radar Data Visualizer** in **Apps**.

2. Click **Open edge-to-edge**.

3. Enter the radar's **IP address**, **username** and **password**.

4. Click **Connect**.

Configure bounding boxes and metadata

You can choose if you want to show or hide bounding boxes and metadata.

In AXIS Radar Data Visualizer:
1. Go to **Video stream settings**.

2. To show or hide the bounding boxes, turn on or off **Show bounding boxes**.

3. To include metadata, select **Show distance and vehicle speed**.

You can calibrate the bounding boxes to adjust an incorrect alignment in the vertical positioning of the boxes:

In AXIS Radar Data Visualizer:
1. Go to **Calibrate bounding boxes**.

2. Click the arrows to adjust the vertical position of the bounding box.

The default position is based on the configuration of the **Horizon straightening** setting configured in the panoramic camera.

> Note
>
> To calibrate the bounding boxes, a person or a vehicle needs to be present in the scene.

Select regional settings

Select the units for speed and distance in the application.

In AXIS Radar Data Visualizer:
1. Go to **Regional settings**.

2. Select if you want to show the speed in kilometers per hour (km/h) or miles per hour (mph).

3. Select if you want to show the distance in meters or feet.

Create detection zones

Create detection zones and set up the application to detect moving objects or speeding vehicles. With the event management system in Axis devices, or with third-party software, you can trigger actions based on the detections in the zones.

In AXIS Radar Data Visualizer:
1. Click **+ Detection zone**. A yellow box will appear on the live view.

2. To change the shape of the zone, click and drag the anchor points in the corners of the yellow box.

3. Type a name for zone.

4. Select what you want the zone to detect and trigger on:

    – **Trigger on moving objects** sends an event when a moving object is detected within the detection zone.

- **Trigger on vehicle speed** sends an event when detected vehicles in the detection zone drive within or outside of a set speed range.

Note

You can select one trigger only, or use both triggers simultaneously. They work independently from each other. For example, the object types you select in **Trigger on moving objects** will not affect the settings in **Trigger on vehicle speed**.

To trigger on moving objects in the zone:

5. Turn on **Trigger on moving objects**.

6. Select the object type, or types, to trigger on. The following types are available:

   - **Human**

   - **Vehicle**

   - **Unknown**

To trigger on vehicle speed:

7. Turn on **Trigger on vehicle speed**.

8. Define the speed at which you want to detect vehicles.

   - Use the slider to set a speed range, or type the minimum and maximum values for the range in the **From** and **To** fields.

   - To trigger on speeds outside the set range, click **Invert slider**. The **From** and **To** fields will automatically change to **Below** and **Above**.

To delete a zone, select the zone in the list and click **Remove detection zone**.

Note

To show the video stream without your added detection zones, go to **Video stream settings** and turn off **Show detection zones**.

Set up rules for events

You can create rules to make your device perform an action when certain events occur. A rule consists of conditions and actions. The conditions can be used to trigger the actions. For example, the device can start a recording or send an email when it detects motion, or show an overlay text while the device is recording.

To learn more, check out our guide *Get started with rules for events*.

Trigger an action

1. Go to **System > Events** and add a rule. The rule defines when the device will perform certain actions. You can set up rules as scheduled, recurring, or manually triggered.

2. Enter a **Name**.

3. Select the **Condition** that must be met to trigger the action. If you specify more than one condition for the rule, all of the conditions must be met to trigger the action.

4. Select which **Action** the device should perform when the conditions are met.

Note

If you make changes to an active rule, the rule must be turned on again for the changes to take effect.

Note

If you change the definition of a stream profile that is used in a rule, then you need to restart all the rules that use that stream profile.