Guideline

MOBOTIX ActivitySensor ONE App

BeyondHumanVision

MOBOTIX

V1.05_11/8/2024, Order Code: –/–

Table of Contents

1

Before You Start

Support

MOBOTIX Support

If you need technical support, please contact your MOBOTIX dealer. If your dealer cannot help you, he will contact the support channel to get an answer for you as quickly as possible.

If you have internet access, you can open the MOBOTIX help desk to find additional information and software updates.

Please visit **www.mobotix.com > Support > Help Desk**.

MOBOTIX eCampus

The MOBOTIX eCampus is a complete e-learning platform. It lets you decide when and where you want to view and process your training seminar content. Simply open the site in your browser and select the desired training seminar.

Please visit **www.mobotix.com/ecampus-mobotix**.

MOBOTIX Community

The MOBOTIX community is another valuable source of information. MOBOTIX staff and other users are sharing their information, and so can you.

Please visit **community.mobotix.com**.

Safety Notes

- This camera must be installed by qualified personnel and the installation should conform to all local codes.
- This product must not be used in locations exposed to the dangers of explosion.
- Do not use this product in a dusty environment.
- Protect this product from moisture or water entering the housing.
- Install this product as outlined in this document. A faulty installation can damage the product!
- Do not replace batteries of the camera. If a battery is replaced by an incorrect type, the battery can explode.
- External power supplies must comply with the Limited Power Source (LPS) requirements and share the same power specifications with the camera.
- When using a power adapter, the power cord shall be connected to a socket-outlet with proper ground connection.
- To comply with the requirements of EN 50130-4 regarding the power supply of alarm systems for 24/7 operation, it is highly recommended to use an uninterruptible power supply (UPS) for backing up the power supply of this product.

Legal Notes

Legal Aspects of Video and Sound Recording

You must comply with all data protection regulations for video and sound monitoring when using MOBOTIX AG products. Depending on national laws and the installation location of the cameras, the recording of video and sound data may be subject to special documentation or it may be prohibited. All users of MOBOTIX products are therefore required to familiarize themselves with all applicable regulations and to comply with these laws. MOBOTIX AG is not liable for any illegal use of its products.

Declaration of Conformity

The products of MOBOTIX AG are certified according to the applicable regulations of the EC and other countries. You can find the declarations of conformity for the products of MOBOTIX AG on www.mobotix.com under **Support > Download Center > Marketing & Documentation > Certificates & Declarations of Conformity**.

RoHS Declaration

The products of MOBOTIX AG are in full compliance with European Unions Restrictions of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive 2011/65/EC) as far as they are subject to these regulations (for the RoHS Declaration of MOBOTIX, please see www.mobotix.com, **Support > Download Center > Marketing & Documentation > Brochures & Guides > Certificates**).

Disposal

Electrical and electronic products contain many valuable materials. For this reason, we recommend that you dispose of MOBOTIX products at the end of their service life in accordance with all legal requirements and regulations (or deposit these products at a municipal collection center). MOBOTIX products must not be disposed of in household waste! If the product contains a battery, please dispose of the battery separately (the corresponding product manuals contain specific directions if the product contains a battery).

Disclaimer

MOBOTIX AG does not assume any responsibility for damages, which are the result of improper use or failure to comply to the manuals or the applicable rules and regulations. Our General Terms and Conditions apply. You can download the current version of the **General Terms and Conditions** from our website at www.mobotix.com by clicking on the corresponding link at the bottom of every page.

It is the User's responsibility to comply with all applicable local, state, national and foreign laws, rules, treaties and regulations in connection with the use of the Software and Product, including those related to data privacy, the Health Insurance Portability and Accountability Act of 1996 (HIPPA), international communications and the transmission of technical or personal data.

About MOBOTIX ActivitySensor ONE App

Unparalleled ACTIVITY SENSOR

The new MOBOTIX ActivitySensor ONE with AI-based object detection (movement and direction of people and vehicles) offers a professional HiRes video security solution for perimeter and property protection with extremely reliable intrusion detection. There are no more limitations as with traditional image analysis tools (video motion based).

- Motion detection of user-defined objects such as persons and/or vehicles
- Detection and classification of objects based on artificial intelligence
- Detection and specification of the motion direction events via MOBOTIX MxMessageSystem
- Consolidated event search via MxManagementCenter Smart Data Interface
- Definition of up to 20 detection areas within the camera's field of view
- Region of application: World-wide

CAUTION! Thermal sensors are not supported by this app.

Smart Data Interface to MxManagementCenter

This app has a Smart Data interface to MxManagementCenter.

With the MOBOTIX Smart Data System, transaction data can be linked to the video recordings made at the time of the transactions. Smart Data source can be e.g. MOBOTIX Certified Apps (no license required) or general Smart Data sources (license required) like POS systems or license plate recognition systems.

The Smart Data System in MxManagementCenter enables you to quickly find and review any suspicious activities. The Smart Data Bar and the Smart Data View are available for searching and analyzing transactions. The Smart Data Bar provides a direct overview of the most recent transactions (from the last 24 hours) and for this reason it is convenient to use it for reviews and searches.

NOTE! For information on how to use the Smart Data System, see the corresponding online help of the camera software and MxManagementCenter.

Technical Specifications

Product Information

Product Name	MOBOTIX ActivitySensor ONE App
Order Code	–/–
Supported MOBOTIX Cameras	M1A-S
Minimum Camera Firmware	v7.3.1.x
MxManagementCenter compatibility	■ min. MxMC v2.5 ■ Configuration: Advanced Config license required ■ Event Search: Smart Data Interface license included

Product Features

App Features	■ Motion detection of user-defined objects such as persons and/or vehicles ■ Detection and classification of objects based on artificial intelligence ■ Detection and specification of the motion direction MOBOTIX events via MxMessageSystem ■ Consolidated event search via MxManagementCenterSmart Data Interface ■ Definition of up to 20 detection areas within the camera's field of view
Maximum number of recognition areas	20
Recognized objects	Persons, Cars, Trucks, Buses, Motorcycles, Bicycles
Supported image sensor types	Day, Night, Day/Night
Dual / Multi Sensor usage	No (See Hardware Requirements below)
MxMessageSystem supported	Yes
MOBOTIX Events	Yes
ONVIF Events	Yes (Generic Message event)

Hardware / Scene Requirements

Camera Sensor Connector	Connector 1 **NOTE!** Only one image sensor can be used
Object Recognition as basis for MOBOTIX ActivitySensor AI	
Recommended installation position (camera)	wall-mounted
Recommended installation height (camera)	2m - 5m
Recommended viewing angle on object	0° - 30° (wall mount perspective)
Minimum object size	1/20 of image height (15px at CIF resolution)

Technical App Specifications

Synchronous / Asynchronous App	asynchronous
Processed frame rate	typ. 5 fps
Detection average accuracy	Persons: >90%; Vehicles: >85%

Licensing Certified Apps

There is no license required for MOBOTIX ActivitySensor ONE App.

The usage period begins with activation of the app interface (see Activation of the Certified App Interface, p. 11)

NOTE! For buying or renewing a license, contact your MOBOTIX Partner.

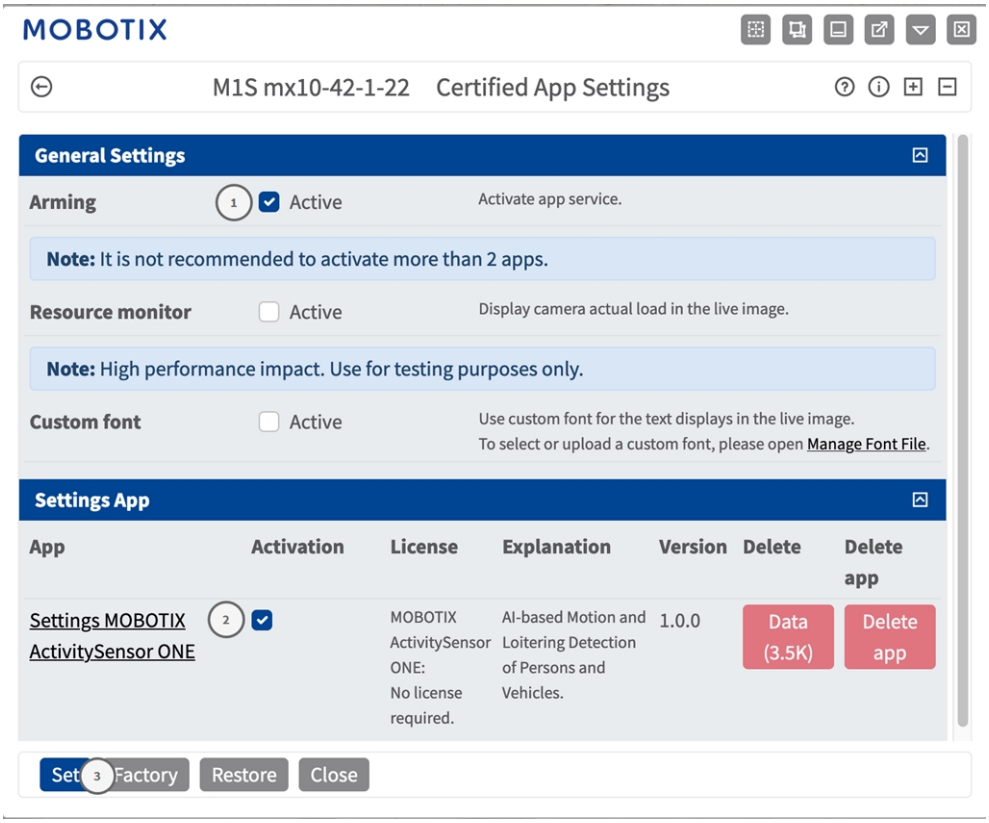
NOTE! Apps are usually pre-installed with the firmware. In rare cases, apps must be downloaded from the website and installed. In this case see **www.mobotix.com > Support > Download Center > Marketing & Documentation**, download and install the app.

Activation of the Certified App Interface

CAUTION! The MOBOTIX ActivitySensor ONE App does not consider obscure areas defined for the live image. Therefore there is no pixelation in obscure areas while configuring the app and during image analysis by the app.

NOTE! The user must have access to the setup menu (http(s)://<camera IP address>/control). Therefore check the user rights of the camera.

1. In the camera web interface, open: **Setup Menu / Certified App Settings** (http(s)://<camera IP address>/-control/app_config).



2. Under **General Settings** activate the **Arming**① of the app service.
3. Under **App Settings** check the **Active** option ② and click **Set**③ .
4. Click on the name of the App to be configured to open the Apps user interface.
5. For configuration of the App see Configuration of MOBOTIX ActivitySensor ONE App, p. 12.

Configuration of MOBOTIX ActivitySensor ONE App

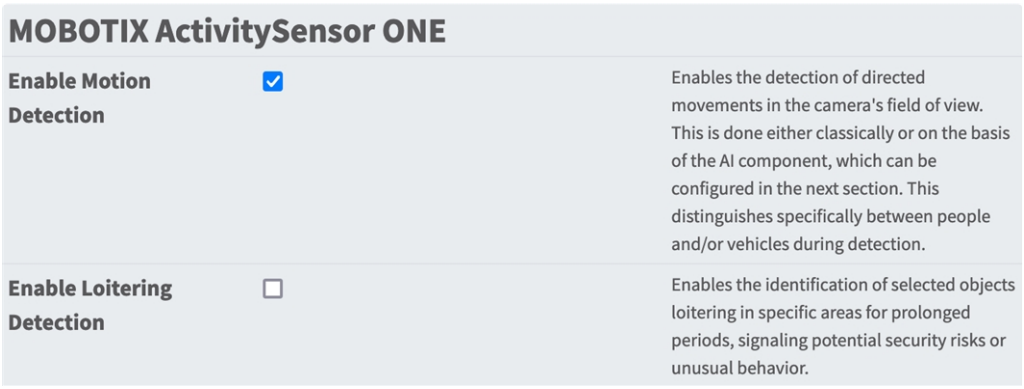
NOTE! The user must have access to the setup menu (http(s)://<camera IP address>/control). Therefore check the user rights of the camera.

1. In the camera web interface, open: **Setup Menu / Certified App Settings** (http(s)://<camera IP address>/-control/app_config).
2. Click on the name of the **MOBOTIX ActivitySensor ONE App**.

The configuration window of the app appears with the following options:

General Settings

The following configurations should be taken into account:

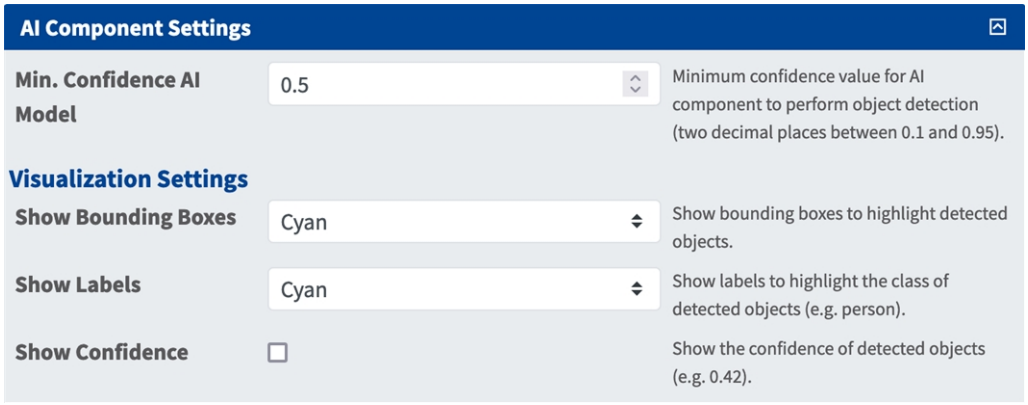


Enable Motion Detection: Check to enable the detection of directed movements in the camera's field of view. This is done either classically or on the basis of the AI Component Settings, p. 13, which can be configured in the next section. This distinguishes specifically between people and/or vehicles during detection.

Enable Loitering Detection: Check to enables the identification of selected objects loitering in specific areas for prolonged periods, signaling potential security risks or unusual behavior.

AI Component Settings

The following configurations should be taken into account:



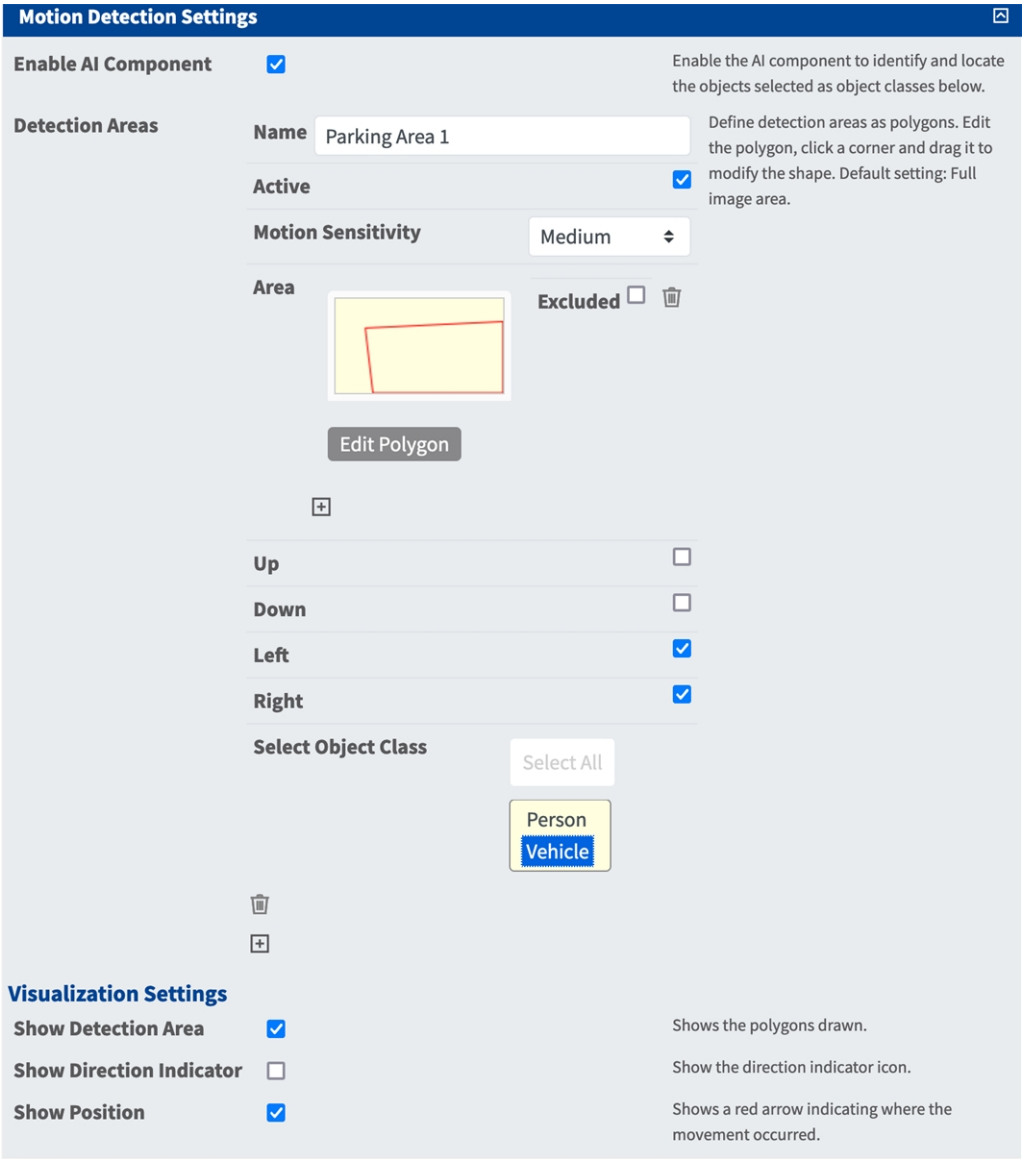
Min. Confidence AI Model: Set a minimum confidence value for AI component to perform object detection (two decimal places between 0.1 and 0.95).

Visualization Settings:

- **Show Bounding Boxes:** Select a color for bounding boxes to highlight detected objects.
- **Show Labels:** Select a color for labels to highlight the class of detected objects (e.g. person).
- **Show Confidence:** Check to display the confidence value of detected objects (e.g. 0.42).

Motion Detection Settings

In this section you can define the motion detection settings.



Enable AI Component: Check to identify and locate based on AI the objects selected as object classes below.

Detection Areas

Name: Provide a meaningful name for the Detection Area.

Active: Check to activate the configured detection areas.

Motion Sensitivity: Select a sensitivity for the apps motion detection algorithm.

Area: Each Detection Area is defined by polygon.

Excluded: Check if the area is to be excluded from the motion detection.

: Click to delete the Detection Area

Edit Polygon: Click to edit the polygon in the Live View(see Drawing a Polygon Area in the Live View, p. 15).

: Click to add an Detection Area.

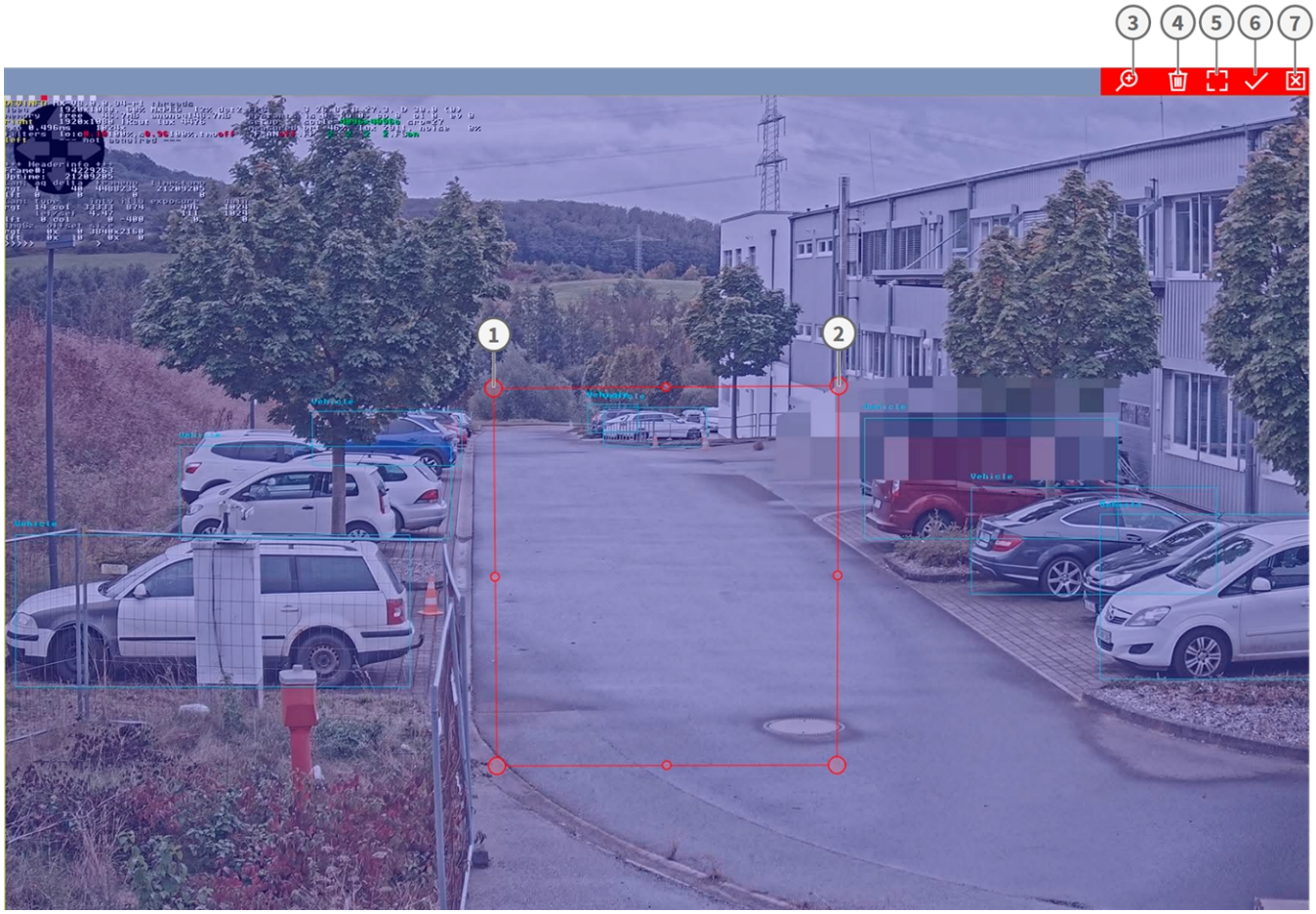
Motion Direction: Select the directions in which detected objects must move to trigger an alarm:

- **Up**
- **Down**
- **Left**
- **Right**

Select Object Class: Select the object classes which trigger an alarm when detected.

Drawing a Polygon Area in the Live View

In Live View you can draw areas based on polygons depending on the App. These areas are e.g. Detection Areas, Excluded Areas, Reference Areas, Ignore Areas etc.



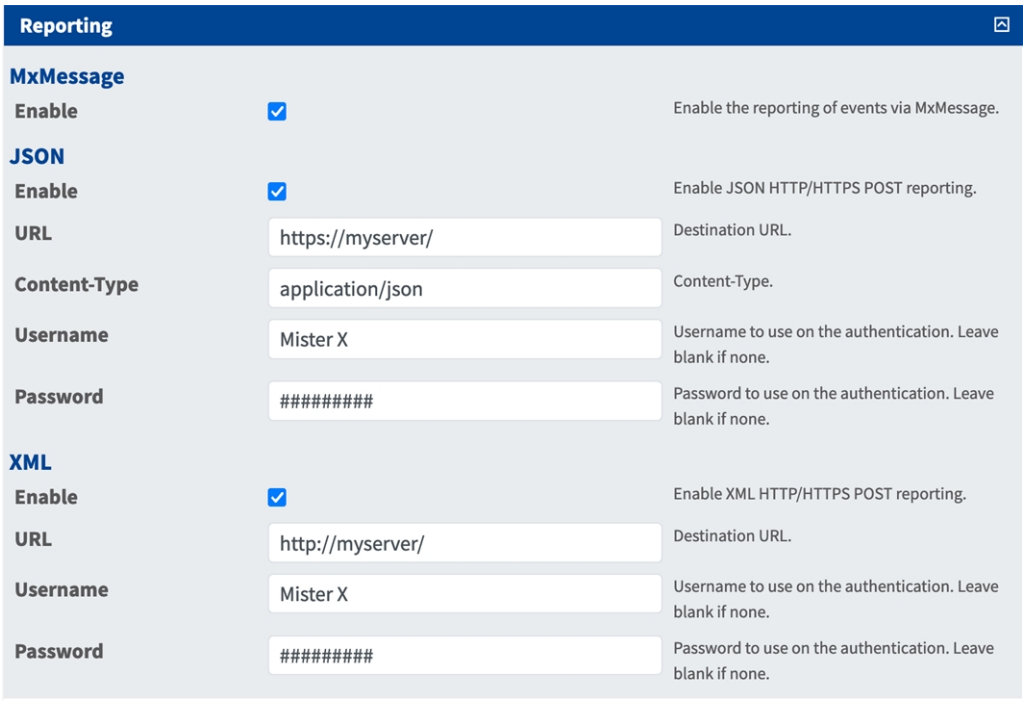
When you have clicked on the “Edit Polygon” button, the editor opens with a live image and a predefined polygon.

1. Drag the corner points ① of the polygon to the desired positions.
2. To add another corner point, drag a smaller point ② between two corner points on the contour of the area.

3. Click **Zoom in/out** ③ to zoom the live image in or out
4. Click **Delete** ④ to delete the polygon, then click and drag a new rectangular area.
5. Click **Maximize** ⑤ to extend the polygon to the entire camera image.
6. Click **Submit** ⑥ to save and adopt the coordinates of the polygon.
7. Click **Cancel** ⑦ to close the editor without saving any changes

Reporting

By selecting one of the listed protocols, a sub-menu will appear with fields for setting up parameters such as remote IP addresses etc.



MxMessage: Check **Enable** for activating the reporting of events via the MxMessage protocol.
JSON: Check **Enable** for activating the reporting of events in JSON format via HTTP/HTTPS POST

URL: Enter the destination URL (e.g., 3rd party server) where the generated meta data should be sent to.

Content-Type: Enter the MIME type for the JSON data.

Username: Username to be used for authentication (leave blank if no authentication is used).

Password: Password to be used for authentication (leave blank if no authentication is used).

XML: Check **Enable** for activating the reporting of events in XML format via HTTP/HTTPS POST

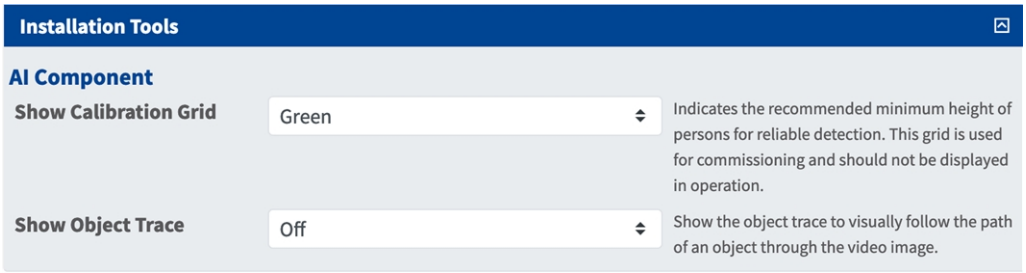
URL: Enter the destination URL (e.g., 3rd party server) where the generated meta data should be sent to.

Username: Username to be used for authentication (leave blank if no authentication is used).

Password: Password to be used for authentication (leave blank if no authentication is used).

Installation Tools

Here you can set some visualization options which can be helpful during the installation process.



Show Calibration Grid: If required select a color for the calibration grid. The calibration grid displays the recommended minimum height of persons for reliable detection.
Show Object Trace: If required select a color for the trace of detected objects to visually follow their path wihin the video image.

Storing the Configuration

To store the configuration you have the following options:

- Click **Set** to activate your settings and to save them until the next reboot of the camera.
- Click **Factory** to load the factory defaults for this dialog (this button may not be present in all dialogs).
- Click **Restore** to undo your most recent changes that have not been stored in the camera permanently.
- Click **Close** to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

After successfully saving the configuration, the event and meta data are automatically sent to the camera in case of an event.

MxMessageSystem

What is MxMessageSystem?

MxMessageSystem is a communication system based on name oriented messages. This means that a message must have a unique name with a maximum length of 32 bytes.

Each participant can send and receive messages. MOBOTIX cameras can also forward messages within the local network. This way, MxMessages can be distributed over the entire local network (see Message Area: Global).

For example, a MOBOTIX 7 series camera can exchange a MxMessage generated by a camera app with an Mx6 camera that does not support certified MOBOTIX apps.

Facts about MxMessages

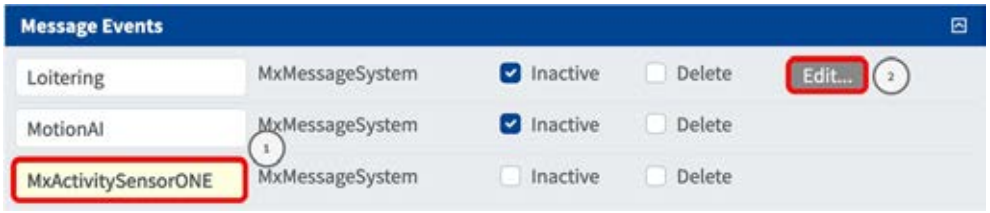
- 128-bit encryption ensures privacy and security of message content.
- MxMessages can be distributed from any camera of the Mx6 and 7 series.
- The message range can be defined individually for each MxMessage.
  - **Local:** Camera expects a MxMessage within its own camera system (e.g. through a Certified App).
  - **Global:** the camera expects a MxMessage that is distributed in the local network by another MxMessage device (e.g. another camera of the 7 series equipped with a certified MOBOTIX app).
- Actions that the recipients are to perform are configured individually for each participant of the MxMessageSystem.

MxMessageSystem: Processing the automatically generated app event

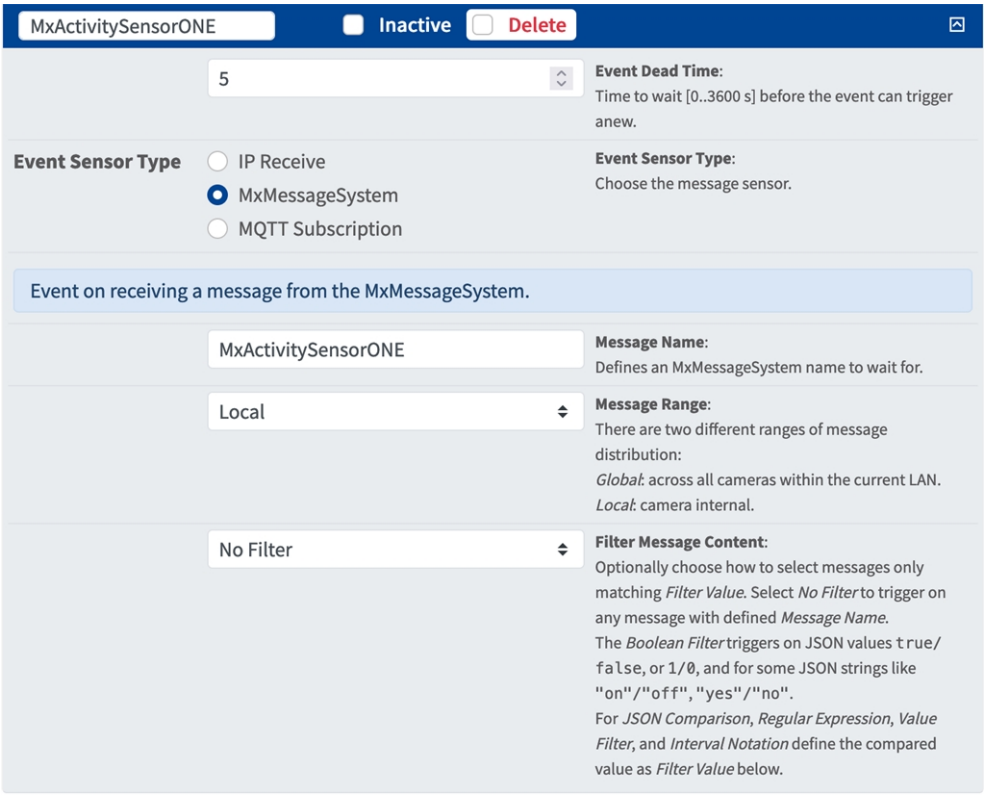
Checking automatically generated app events

NOTE! After successfully activating the app (see Activation of the Certified App Interface, p. 11), a generic message event for this specific app is automatically generated in the camera.

1. Go to **Setup-Menu / Event Control / Event Overview**. In section **Message Events** the automatically generated message event profile is named after the application ① (e.g. MxActivitySensorONE).



2. Click **Edit**② to display and configure the event properties in detail.

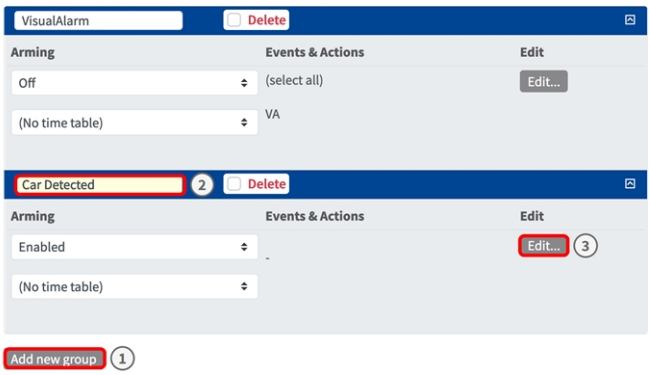


Action handling - Configuration of an Action Group

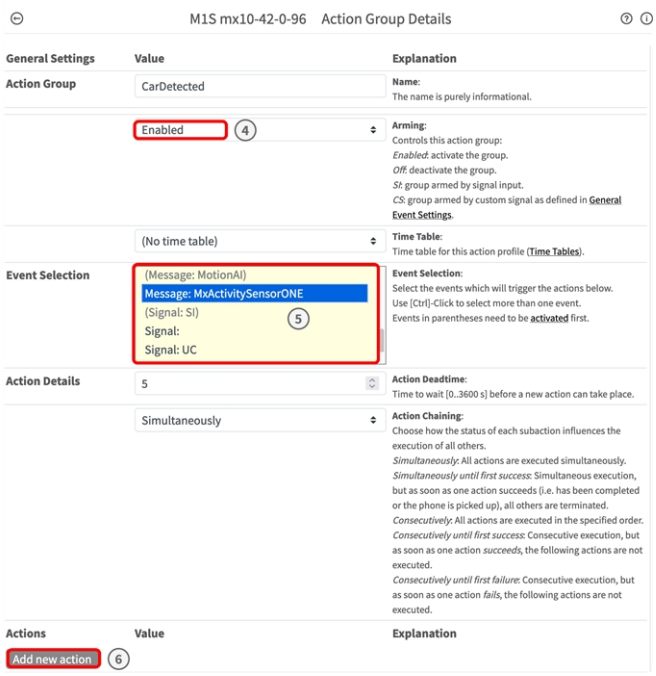
CAUTION! To use events, trigger Action Groups or record images the general arming of the camera must be enabled (http(s)/<camera IP address>/control/settings)

An Action Group defines which action(s) is (are) triggered by the MOBOTIX ActivitySensor ONE App event.

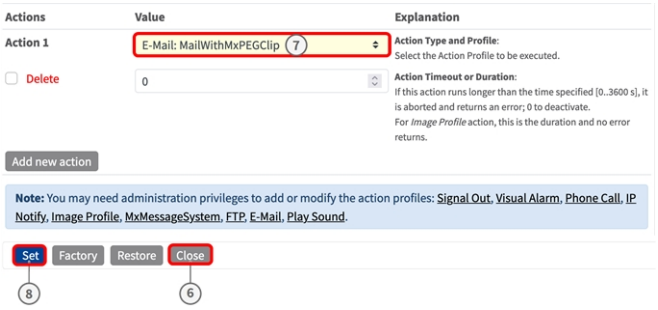
1. In the camera web interface, open: **Setup Menu / Event Control / Action Group Overview** (http(s)://<camera IP address>/control/actions).
2. Click **Add new group**① and give a meaningful ② name.



3. Click **Edit**④ , to configure the group.
4. Enable **Arming**④ of the Action Group.



5. Select your message event in the **Event selection** list ⑤ . To select multiple events, hold the shift key.
6. Click **Add new Action**⑥ .
7. Select a proper action from list **Action Type and Profile**⑦ .

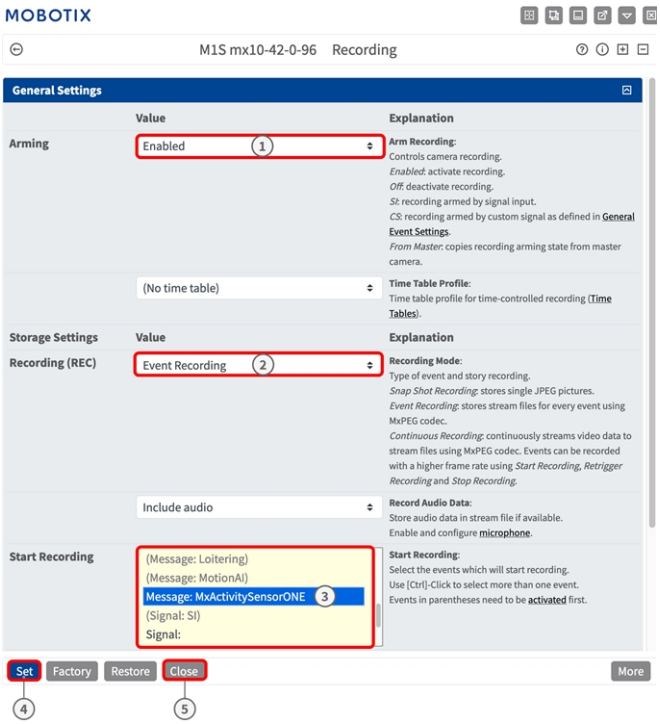


> **NOTE!** If the required action profile is not yet available, you can create a new profile in the Admin Menu sections "MxMessageSystem", "Transfer Profiles" and "Audio and VoIP Telephony".
>
> If necessary, you can add further actions by clicking the button again. In this case, please make sure that the "action chaining" is configured correctly (e.g. at the same time).

8. Click **Set**⑧ at the end of the dialog box to confirm the settings.
9. Click on **Close**⑨ to save your settings permanently.

Action settings - Configuration of the camera recordings

1. In the camera web interface, open: **Setup Menu / Event Control / Recording** (http(s)/<camera IP address>/control/recording).



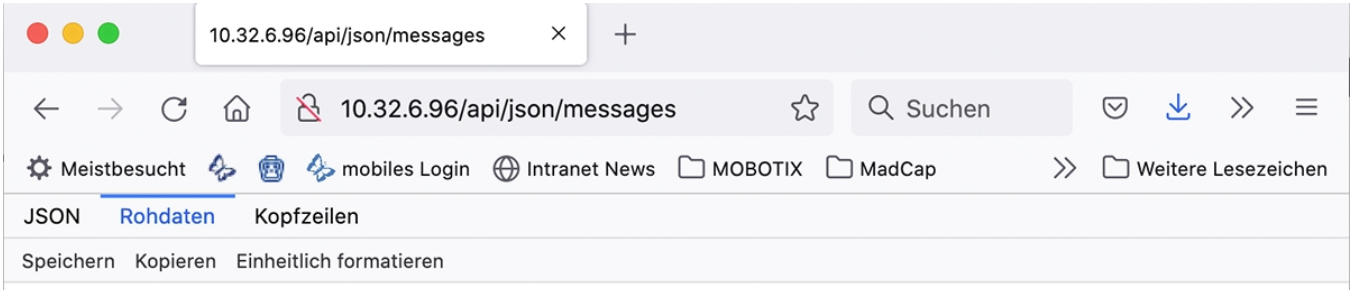
2. Enable **Arm Recording**① .
3. Under **Storage Settings** / **Recording (REC)** select a **Recording mode**② . The following modes are available:
   - Snap Shot Recording
   - Event Recording
   - Continuous Recording
4. In list **Start recording**③ select the message event just created.
5. Click on the **Set**④ button at the end of the dialog box to confirm the settings.
6. Click on **Close**⑤ to save your settings permanently.

NOTE! Alternatively, you can save your settings in the Admin menu under Configuration / Save current configuration to permanent memory.

MxMessageSystem: Processing the meta data transmitted by apps

Meta data transferred within the MxMessageSystem

For each event, the app also transfers meta data to the camera. This data is sent in the form of a JSON schema within a MxMessage.

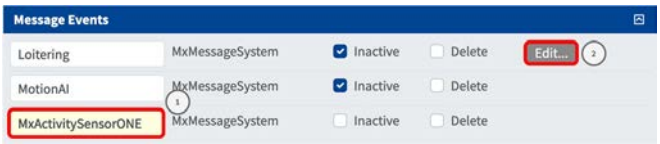



```
{
  "local" :
  {
    "MxActivitySensorONE" :
    {
      "motionAI" :
      [
        {
          "className" : "Person",
          "confidence" : 0.65000000000000002,
          "direction" : "right",
          "profile" : "Parking Area 1",
          "x" : 618,
          "xMax" : 677,
          "xMin" : 559,
          "y" : 190,
          "yMax" : 372,
          "yMin" : 8
        }
      ],
      "scene_summary" :
      {
        "detection" :
        {
          "Person" : 0,
          "Vehicle" : 0,
          "total" : 0
        },
        "loitering" :
        {
          "Person" : 0,
          "Vehicle" : 0,
          "total" : 0
        },
        "motion" :
        {
          "total" : 0
        },
        "motionAI" :
        {
          "Person" : 1,
          "Vehicle" : 0,
          "total" : 1
        }
      },
```

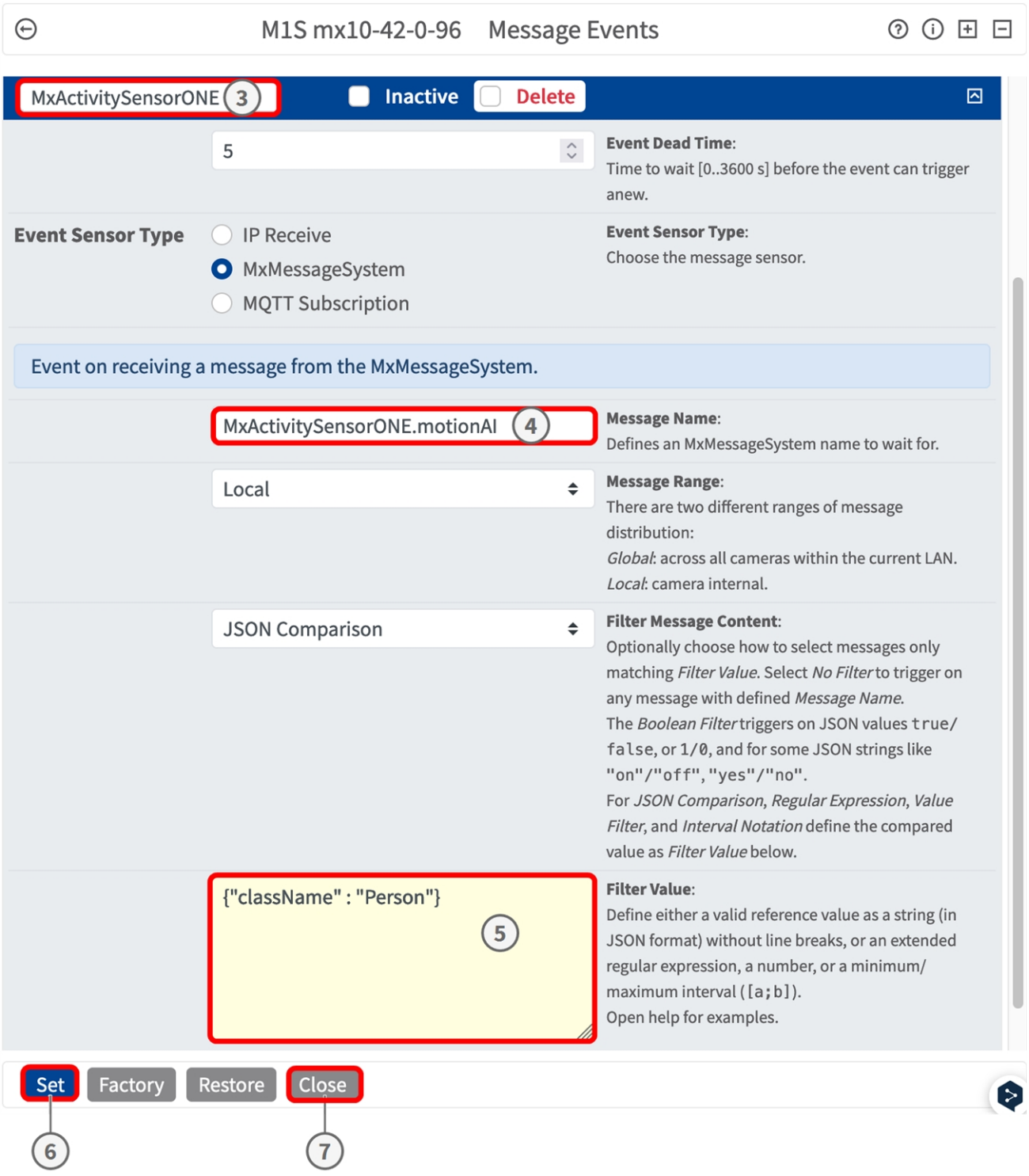
NOTE! To view the meta data structure of the last App event, enter the following URL in the address bar of your browser: http(s)://IPAddresseOfYourCamera/api/json/messages

Creating a Custom Message Event

1. Go to **Setup-Menu / Event Control / Event Overview**. In section **Message Events** the automatically generated message event profile is named after the application ① (e.g. MxActivitySensor).



2. Click **Edit**② to display and configure the event properties in detail.



3. Click on the event (e.g. MxActivitySensor) ③ to open the event settings.

4. Configure the parameters of the event profile as follows:
   - **Message Name:** Enter the "Message Name" ④ according to the event documentation of the corresponding app (see Examples for message names and filter values of the [%=CameraApps.ProductName)
   - **Message Range:**
     - Local: Default settings for the MOBOTIX ActivitySensor ONE App
     - Global: (MxMessage is forwarded from another MOBOTIX camera in the local network.
   - **Filter Message Content:**
     - **No Filter:** Trigger on any message according to the defined **Message Name**.
     - **JSON Comparison:** Select if filter values are to be defined in JSON format.
     - **Regular Expression:** Select if filter values are to be defined as regular expression.
   - **Filter Value:**⑤ seeExamples for message names and filter values of the MOBOTIX ActivitySensor ONE App, p. 28.

     CAUTION! “Filter Value“ is used to differentiate the MxMessages of an app / bundle. Use this entry to benefit from individual event types of the apps (if available).
     Choose “No Filter” if you want to use all incoming MxMessages as generic event of the related app.
5. Click on the **Set**⑥ button at the end of the dialog box to confirm the settings.
6. Click on **Close**⑦ to save your settings permanently.

Examples for message names and filter values of the MOBOTIX ActivitySensor ONE App

	MxMessage-Name	Filter value
Generic Event	MxActivitySensorONE	
MotionAI Generic Event	MxActivitySensorONE.motionAI	
MotionAI Class Name Event	MxActivitySensorONE.motionAI.className	e.g."Person"

	MxMessage-Name	Filter value
MotionAI Confidence Event	MxActivitySensorONE.motionAI.confidence	e.g."0.65000000000000002"
MotionAI Direction Event	MxActivitySensorONE.motionAI.direction	e.g."right"
MotionAI Profile Event	MxActivitySensorONE.motionAI.profile	e.g."Parking Area 1"

MOBOTIX

BeyondHumanVision

EN_11/24

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