

Guideline

MOBOTIX ActivitySensor AI App

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Before You Start

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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 AI App

Smart Activity Analytics

The app's artificial intelligence-based algorithms detect and classify user-defined motion and objects in up to 20 detection areas. Best suited for: Utilities, Health Care, Energy & Mining; Industry & Production; Government; Traffic & Transportation; Retail; Healthcare; Education & Science

- 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 MxManagementCenter Smart Data Interface
- Definition of up to 20 detection areas within the camera's field of view

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 AI App
Order Code	Mx-APP-MX-THD
Supported MOBOTIX Cameras	M73, S74, D71
Minimum Camera Firmware	v7.3.1.x
MxManagementCenter compatibility	<ul style="list-style-type: none"> ▪ min. MxMC v2.5 ▪ Configuration: Advanced Config license required ▪ Event Search: Smart Data Interface license included

Product Features

App Features	<ul style="list-style-type: none"> ▪ 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 wall-mounted
position (camera)

Recommended installation 2m - 5m
height (camera)

Recommended viewing 0° - 30° (wall mount perspective)
angle on object

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

The following licenses are available for the MOBOTIX ActivitySensor AI App:

- **30-day test license** pre-installed
- **permanent commercial license**

The usage period begins with activation of the app interface (see)

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.

License Activation of Certified Apps in MxManagementCenter

After a test period commercial licenses must be activated for use with a valid license key.

Online-Activation

After receiving the activation IDs, activate them in MxMC as follows:

1. Select from the menu **Window > Camera App Licenses**.
2. Select the camera on which you want to license apps and click **Select**.

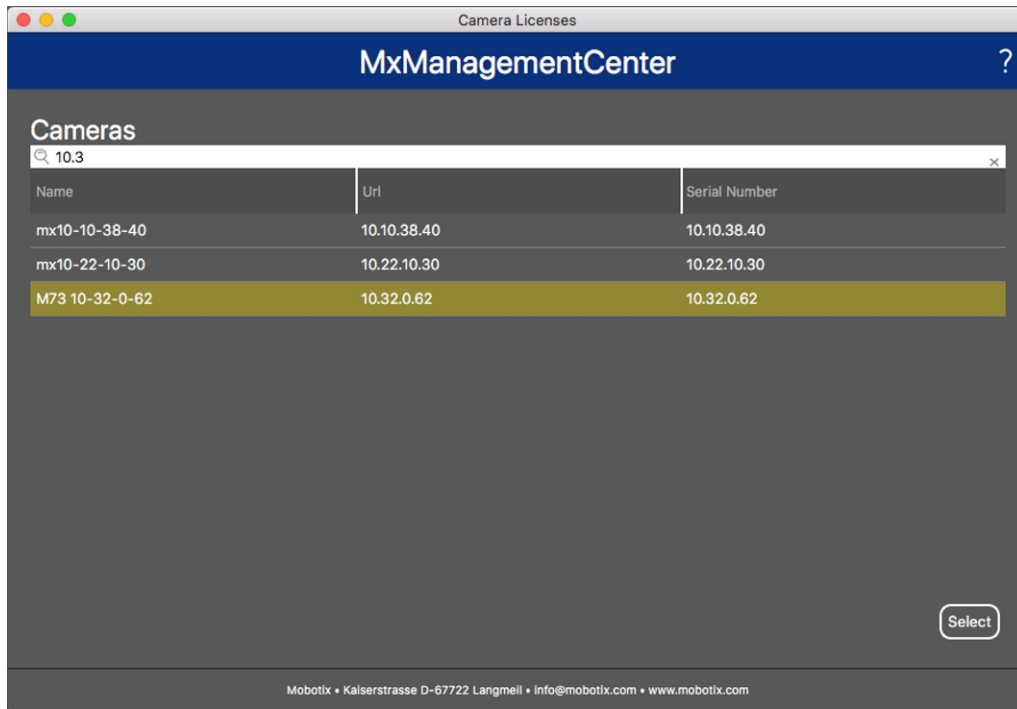


Fig. 1: Overview of Camera App Licenses in MxManagementCenter

NOTE! If necessary, correct the time set on the camera.

1. An overview of the licenses installed on the camera may be displayed. Click **Activate License**.

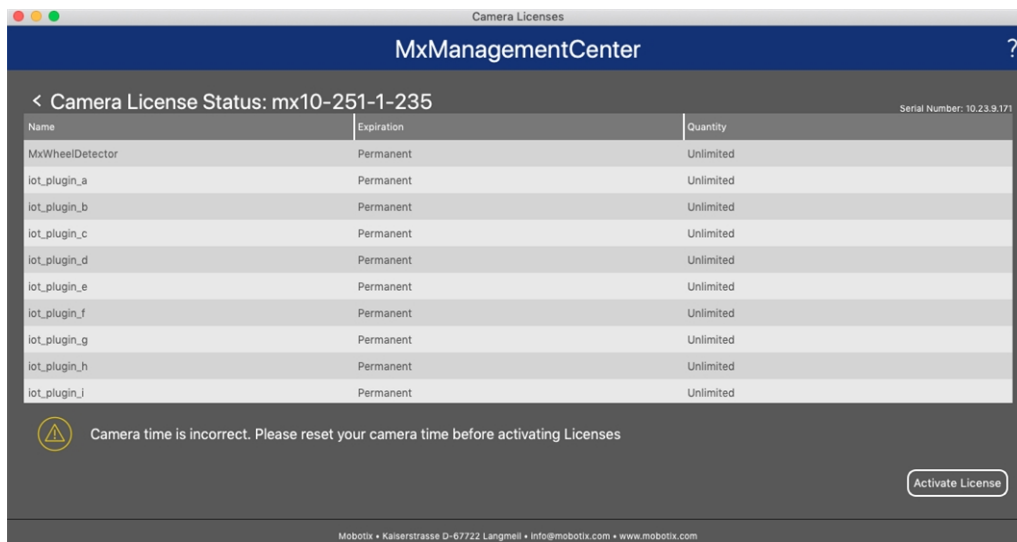




Fig. 2: Overview of the licenses installed on the camera

NOTE! If necessary, correct the time set on the camera.

2. Enter a valid Activation ID and specify the number of licenses to install on this computer.
3. If you want to license another product, click on . In the new row, enter the appropriate Activation ID and the number of licenses you want.

Licensing Certified Apps

License Activation of Certified Apps in MxManagementCenter

- To remove a line click .
- When you have entered all Activation IDs, click **Activate License Online**. During activation, **MxMC** connects to the license server. This requires an Internet connection.

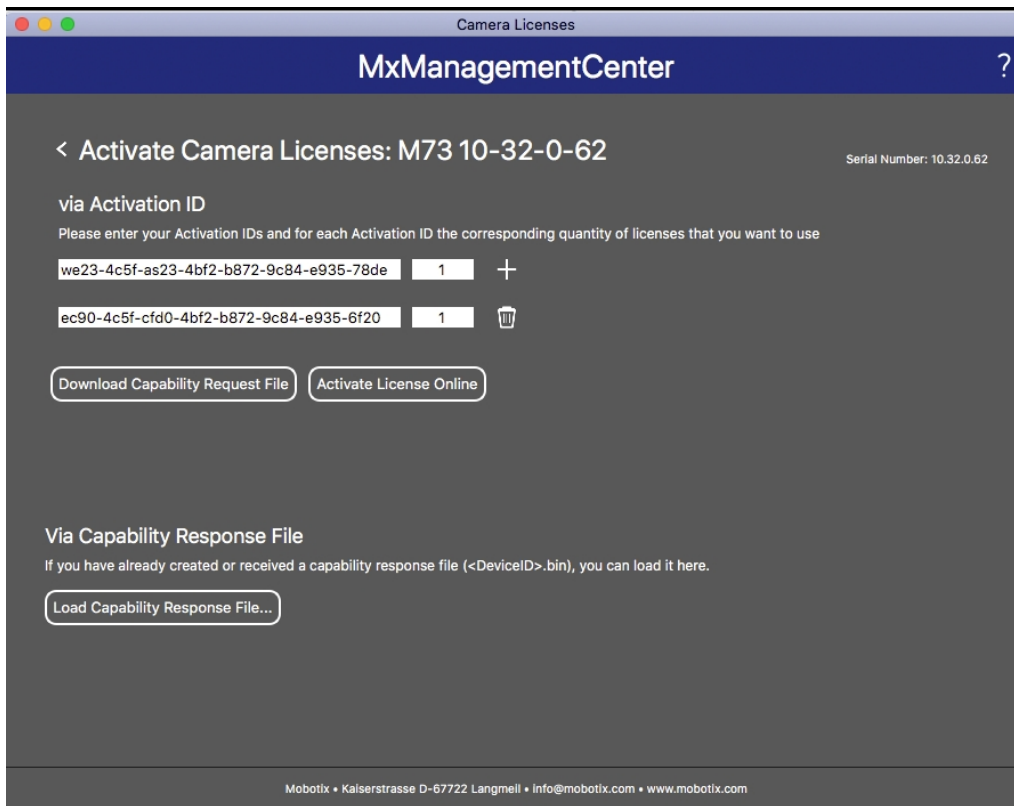


Fig. 3: Adding licenses

Successful activation

After successful activation, a new log in is required to apply the changes. Alternatively, you can return to license management.

Failed activation (missing internet connection)

If the license server cannot be reached, e.g. due to a missing internet connection, apps can also be activated offline. (see [Offline Activation](#), p. 12).

Offline Activation

For offline activation, the partner/installer from whom you purchased the licenses can generate a capability response (.bin file) on the license server to activate their licenses.

- Select from the menu **Window > Camera App Licenses**.
- Select the camera on which you want to license apps and click **Select**.

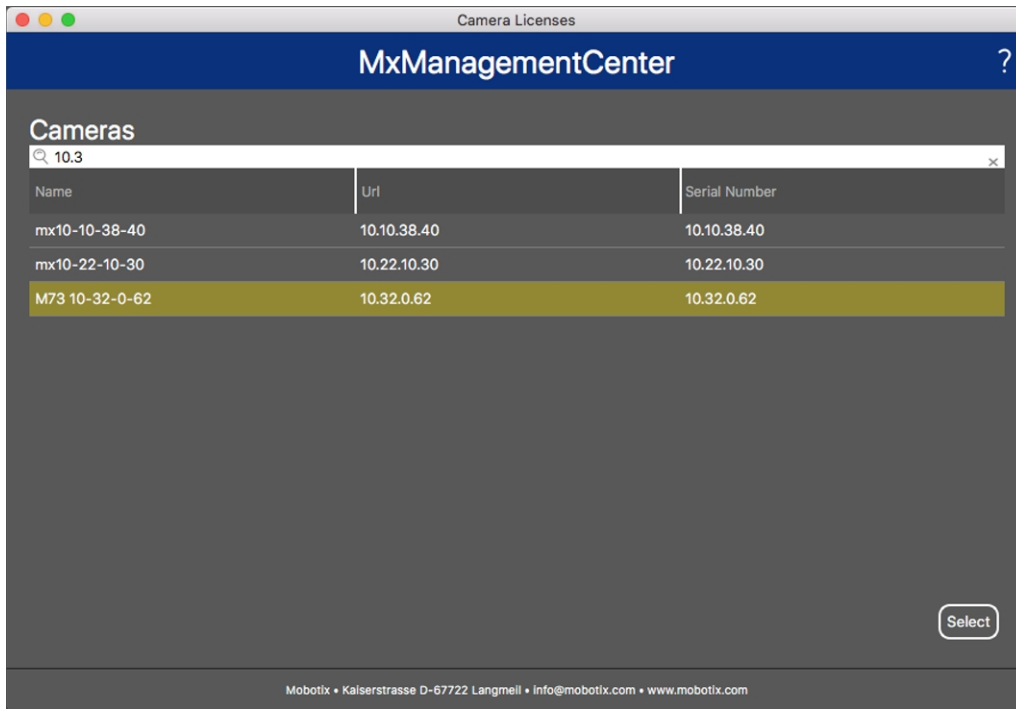


Fig. 4: Overview of Camera App Licenses in MxManagementCenter

NOTE! If necessary, correct the time set on the camera.

3. An overview of the licenses installed on the camera may be displayed. Click **Activate License**.





Fig. 5: Overview of the licenses installed on the camera

NOTE! If necessary, correct the time set on the camera.

Licensing Certified Apps

License Activation of Certified Apps in MxManagementCenter

4. Enter a valid Activation ID and specify the number of licenses to install on this computer.
5. If you want to license another product, click on . In the new row, enter the appropriate **Activation ID** and the number of licenses you want.
6. If necessary, click  to remove a line.
7. When you have entered all Activation IDs, click **Download Capability Request File (.lic)** and send it to your partner/installer.

NOTE! This file allows the partner / installer from whom you purchased the licenses to generate a capability response file (.bin) on the license server.

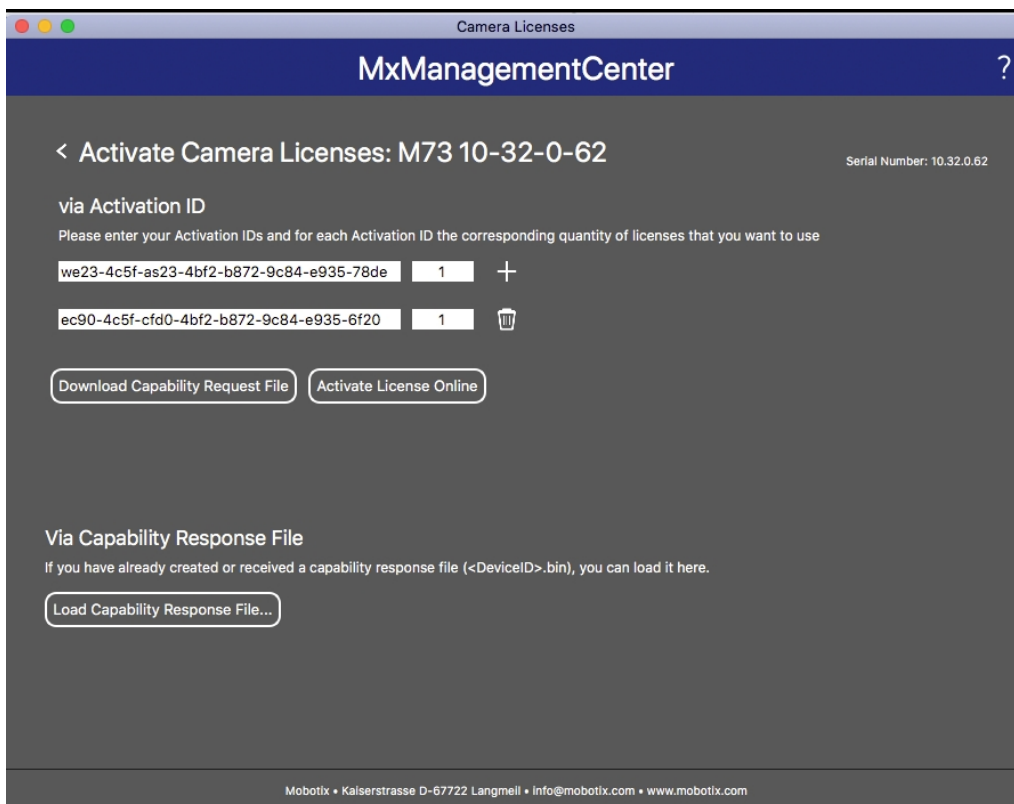


Fig. 6: Adding licenses

8. Click Load Capability Response File and follow the instructions.

Successful activation

After successful activation, a new log in is required to apply the changes. Alternatively, you can return to license management.

Managing Licenses in MxManagementCenter

In MxManagementCenter you can comfortably manage all licenses that have been activated for a camera.

1. Select from the menu **Window > Camera App Licenses**.
2. Select the camera on which you want to license apps and click **Select**.

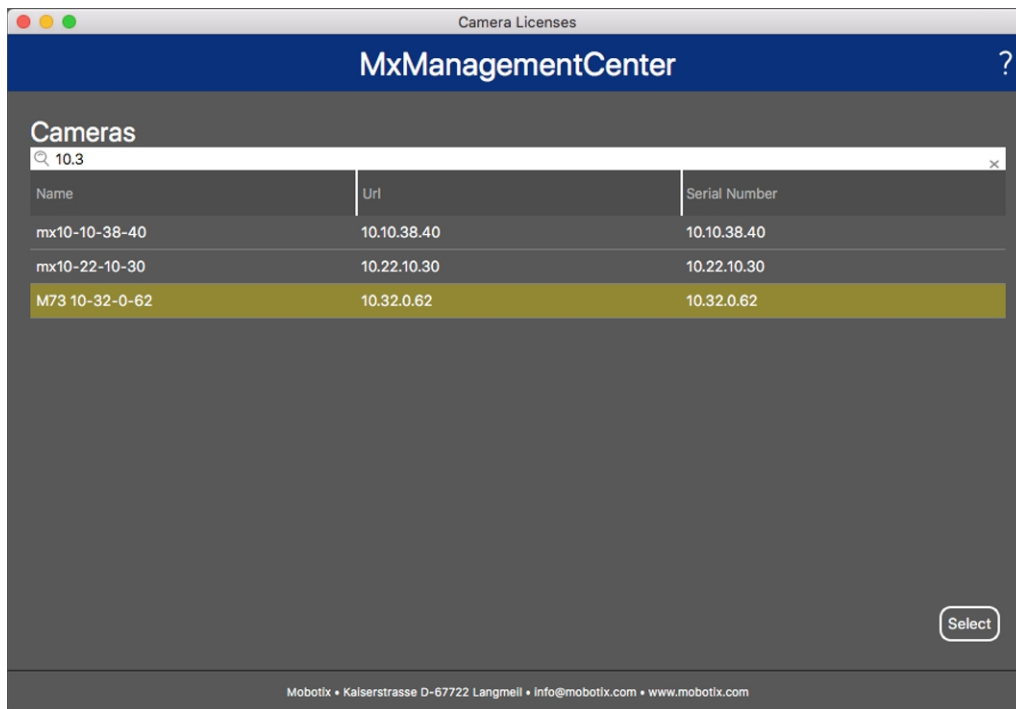


Fig. 7: Overview of Camera App Licenses in MxManagementCenter

An overview of the licenses installed on the camera may be displayed.

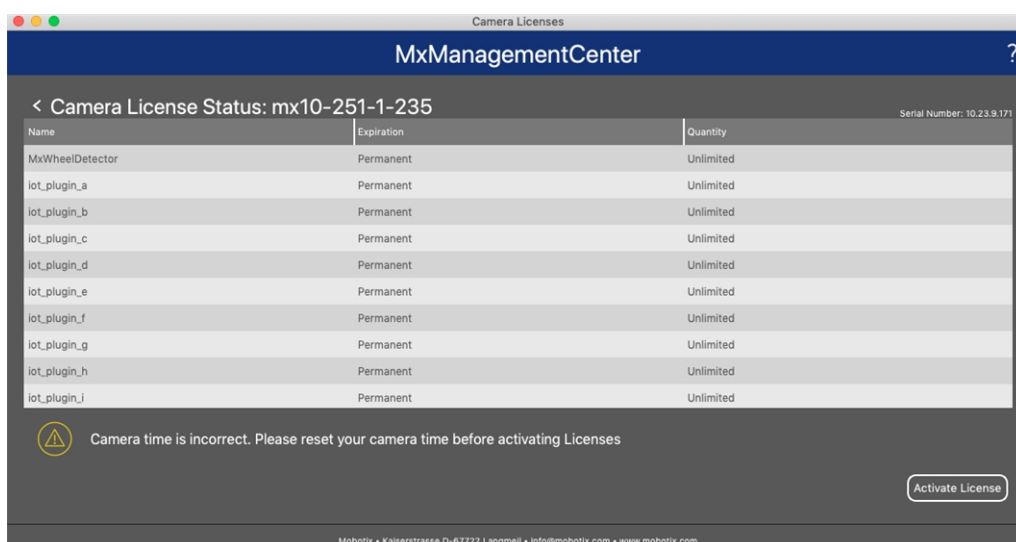


Fig. 8: Overview of the licenses installed on the camera

NOTE! If necessary, correct the time set on the camera.

Licensing Certified Apps

Managing Licenses in MxManagementCenter

Column	Explanation
Name	Name of the licensed app
Expiration	the time limit of the license
Quantity	Number of licenses purchased for a product.
Serial Number	Unique identification determined by MxMC for the device used. If problems occur during licensing, please have the device ID ready.

Synchronize licenses with server

When the program starts, there is no automatic comparison of the licenses between the computer and the license server. Therefore, click **Update** to reload the licenses from the server.

Update licenses

To update temporary licenses, click **Activate Licenses**. The dialog for updating/activating licenses opens.

NOTE! You need administrator rights to synchronize and update licenses.

Activation of the Certified App Interface

CAUTION! The MOBOTIX ActivitySensor AI 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](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](http(s)://<camera IP address>/control/app_config)).

MOBOTIX D71 mx10-32-75-149 Certified App Settings

General Settings

Arming Active Activate app service.

Note: It is not recommended to activate more than 2 apps.

Resource monitor Active Display camera actual load in live image.

Note: High performance impact. Use for testing purposes only.

Custom font Active Use custom font for the text displays in live image. To select or upload a custom font please go to [Manage Font File](#).

App Settings

Mobotix ActivitySensor Settings	<input checked="" type="checkbox"/>	No license required.	MxActivity Sensor	1.0.0	Data (0)	Delete application
Mobotix Analytics Settings	<input type="checkbox"/>	No license required.	MxAnalytics App	2.1.1	Data (1.6G)	Delete application
Object Recognition Settings	<input type="checkbox"/>	No license required.	Object Recognition	1.1.0	Data (0)	Delete application
Visage Technologies Face Recognition	Trial	Trial available.	Please update the license.	1.2.2	Data	Delete application
Vaxtor LPR	Trial	Trial available	Please update the license	1.4.4	Data	Delete

Set factory Restore Close

Activation of the Certified App Interface

Managing Licenses in MxManagementCenter

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 AI App, p. 19.](#)

Configuration of MOBOTIX ActivitySensor AI App

NOTE! The user must have access to the setup menu ([http\(s\)://<camera IP address>/control](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](http(s)://<camera IP address>/control/app_config)).
2. Click on the name of the **MOBOTIX ActivitySensor AI App**.

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

General Settings

The following configurations should be taken into account:

Mobotix ActivitySensor

General Settings ✖

Use AI component	<input checked="" type="checkbox"/>	The Object Recognition app needs to be available and running for this feature to work. When activated, the results of the object recognition will be used for analysis. Otherwise, the classical MxActivitySensor will be used.
Detect fast motion	<input type="checkbox"/>	By activating, you can improve the detection of fast moving objects. However, using this option can reduce the recognition results of small objects.
Desired framerate	<input type="text" value="15"/>	The desired frame rate at which MxAS should run
Use MxAS v2	<input type="checkbox"/>	By activating, you can improve the robustness to small lighting changes. However, using this option may slightly reduce the maximum frame rate.
Resolution	<input type="text" value="320x180"/>	Change the resolution on with the MxActivitySensor performs the analysis. This will require a restart of the plugin daemon.

Configuration of MOBOTIX ActivitySensor AI App

General Settings

Use AI component: Check, if the AI based video analytics should be used to recognize and classify Persons, Vehicles (Car, Truck, Bus, Motorcycle, Bicycle, Boat, Airplane, Train) and Animals: Bird, Cat, Dog, Horse, Sheep, Cow, Elephant, Bear, Zebra, Giraffe

NOTE! The AI component requires the Object Recognition App to run properly. To do so:

In the camera web interface, open **Admin Menu / Hardware Configuration / Camera Mode**

The screenshot shows the MOBOTIX camera web interface. At the top, there's a navigation bar with the MOBOTIX logo and several icons. Below that, the page title is "M73 mx10-32-6-96 Camera Mode". The main content area is titled "Camera Mode" and contains two configuration sections. The first section, "AI", has a dropdown menu set to "AI" (marked with a circled 1). The second section, "AI Settings", has a dropdown menu set to "Object Detection" (marked with a circled 2). At the bottom of the configuration area, there are two buttons: "Set" (marked with a circled 3) and "Close".

Set the Camera Mode to "AI" ① .

Set the AI Settings to "Object Detection" ② .

Click **Set**.

Reboot the camera.

Setup Menu / Certified App Settings activate "Object Recognition Settings".

Click **Set**.

NOTE! For further information about the MOBOTIX Object Recognition App see the Apps Guideline: www.mobotix.com > [Support](#) > [Download Center](#) > [Marketing & Documentation](#) > [Manuals](#).

Detect fast motion: Check to improve the detection of fast moving objects.

NOTE! Using this option can reduce the recognition results of small objects.

Desired framerate: Define the frame rate of the video stream to be analyzed by Mx Activity Sensor.

Use MxAS v2: Check to improve the robustness to small lighting changes.

NOTE! Using this option may slightly reduce the maximum frame rate.

Resolution: Select the resolution of the video stream to be analyzed by Mx Activity Sensor.

Detection Area Settings

The following configurations should be taken into account:

Detection Area Settings MxAS detection areas

Detection areas

Name

Active

Threshold 33

Area

780 x 510

780 x 510

780 x 510

Edit Polygon 1

Inverted 2

3

4

Up

Down

Left

Right

Filter Select All | Select None

Bear

Zebra

Giraffe

+

Advanced: Check to allow more detailed color selection.

Detection Areas: The following modes are available:

Name: Provide a meaningful name for the Detection Area.

Active: Check to activate the configured detection areas.

Threshold: Sensitivity of the activity detection algorithm.

Drawing a Detection Area:

1. Click **Edit Polygon** ① to switch into the live image.
2. In the live image click and drag a rectangular recognition area.
3. Drag the corner points to refine the recognition area.
4. In the top right corner of the live view click **Submit** to adopt the coordinates of the rectangle.
5. Optionally click **Invert** icon ② to invert the detection area.
6. Optionally click the **bin** icon ③ to delete the detection area.
7. Optionally click the **plus** icon ④ to define another Detection Area.

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

Up

Down

Left

Right

Filter: Select the objects which trigger an alarm when detected.

Object Recognition Settings

Here you can calibrate the object recognition algorithm.

Mobotix ActivitySensor		
General Settings		<input checked="" type="checkbox"/>
Detection Area Settings		<input checked="" type="checkbox"/>
Object Recognition Settings		<input checked="" type="checkbox"/>
Filter mode	Image	Choose mode used for combining results of Object Recognition with Mobotix Activity Sensor. image filter: filters the background detection results with an extra mask based on the object recognition results event filter: filters the emitted events based on the object recognition results
Padding	5	Number of extra pixels around the detected object to take into account for analysis.
Number of objects tracked	128	Maximum number of objects tracked per detection area. Only objects of the selected categories are tracked.
Max lost time	2	Maximum number of time (in seconds) a tracked object can be lost before being considered invalid.
Max lost frames	30	Maximum number of frames a tracked object can be lost before being considered invalid.
Max displacement	2	Maximum number of pixels a tracked object is allowed to move between detections before being considered invalid.
Min trigger	0	Minimum number of frames an object needs to be tracked before allowed to trigger an event.

Filter Mode: Filter mode used for combining results of object recognition with MOBOTIX Activity Sensor.

Image: filters the background detection results with an extra mask based on the object recognition results

Event: filters the emitted events based on the object recognition results

Padding: Number of pixels around the detected object to be taken into account for image analysis.

Number of objects tracked: Number of objects tracked. Only objects of the selected categories are tracked.

Max lost time: Maximum number seconds a tracked object can be lost before being considered invalid.

Max lost frames: Number of video frames a tracked object can be lost before being considered invalid.

Max displacement: Number of pixels a tracked object is allowed to move between detections before being considered invalid.

Min trigger: Number of video frames an object needs to be tracked before allowed to trigger an event.

Visualization Settings

Here you can define the visualization settings for detected objects.

Mobotix ActivitySensor		
General Settings		☑
Detection Area Settings		☑
Object Recognition Settings		☑
Visualization Settings		☒
Show direction indicator	<input type="checkbox"/>	Show the direction indicator in the live image
Show position indicator	<input type="checkbox"/>	Show the position indicator in the live image
Show detection area	<input type="checkbox"/>	Show the detection area in the live image
Show bounding boxes	<input type="checkbox"/>	Show the bounding boxes of objects detected. Only object types selected in one of the profiles will be shown.
Show labels	<input type="checkbox"/>	Show the labels of objects detected. Only object types selected in one of the profiles will be shown.

Show direction: Check to show the direction indicator in the live image.

Show position indicator: Check to show the position indicator in the live image.

Show detection area: Check to show the detection area in the live image.

Show bounding boxes: Check to show the bounding boxes of objects detected. Only object types selected in one of the profiles will be shown.

Show labels: Check to show the labels of objects detected. Only object types selected in one of the profiles will be shown.

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

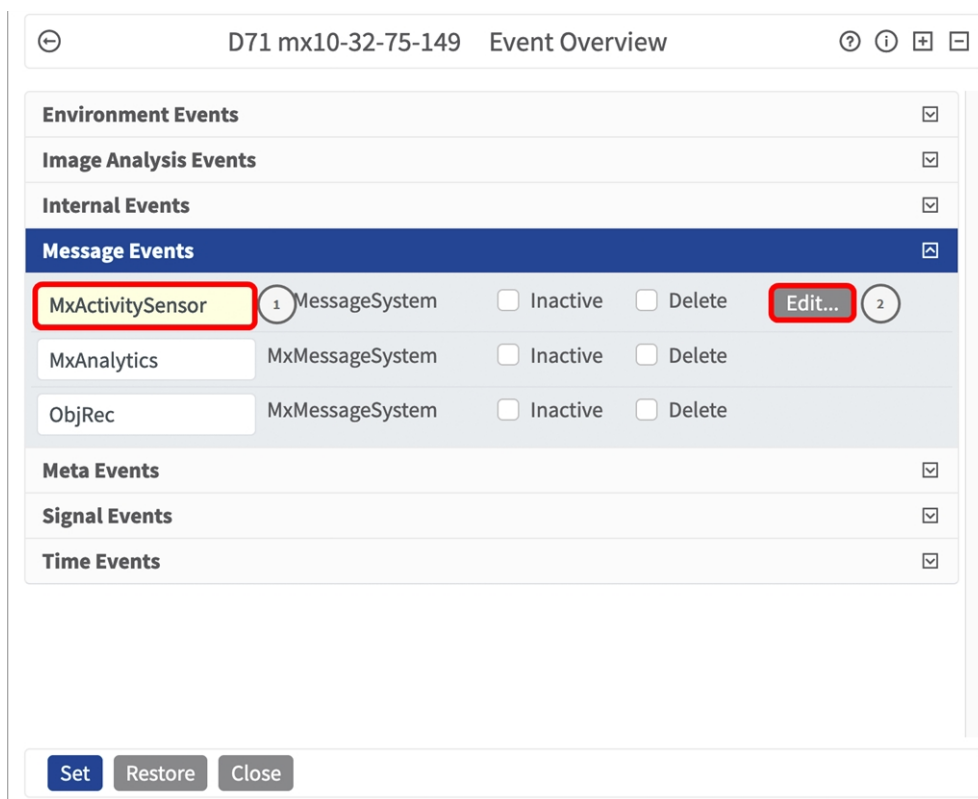
- 128-bit encryption ensures privacy and security of message content.
- MxMessages can be distributed from any camera of the Mx6 and 7 series.
- The message range can be defined individually for each MxMessage.
 - **Local:** Camera expects a MxMessage within its own camera system (e.g. through a Certified 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. 17](#)), 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. MxActivitySensor).



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

⊖ D71 mx10-32-75-149 Message Events ⓘ ⓘ + -

Attribute	Value	Explanation
IP Receive	8000	Port: TCP port to listen on.

Events	Value	Explanation
MxActivitySensor	<input type="checkbox"/> Inactive <input type="checkbox"/> Delete	
	5	Event Dead Time: Time to wait [0..3600 s] before the event can trigger anew.
Event Sensor Type	<input type="radio"/> IP Receive <input checked="" type="radio"/> MxMessageSystem	Event Sensor Type: Choose the message sensor.
Event on receiving a message from the MxMessageSystem.		
	MxActivitySensor	Message Name: Defines an MxMessageSystem name to wait for.
	Local	Message Range: There are two different ranges of message distribution: <i>Global:</i> across all cameras within the current LAN. <i>Local:</i> camera internal.
	No Filter	Filter Message Content: Optionally choose how to ignore messages containing <i>Filter Value</i> . Select <i>No Filter</i> to trigger on any message with defined <i>Message Name</i> .

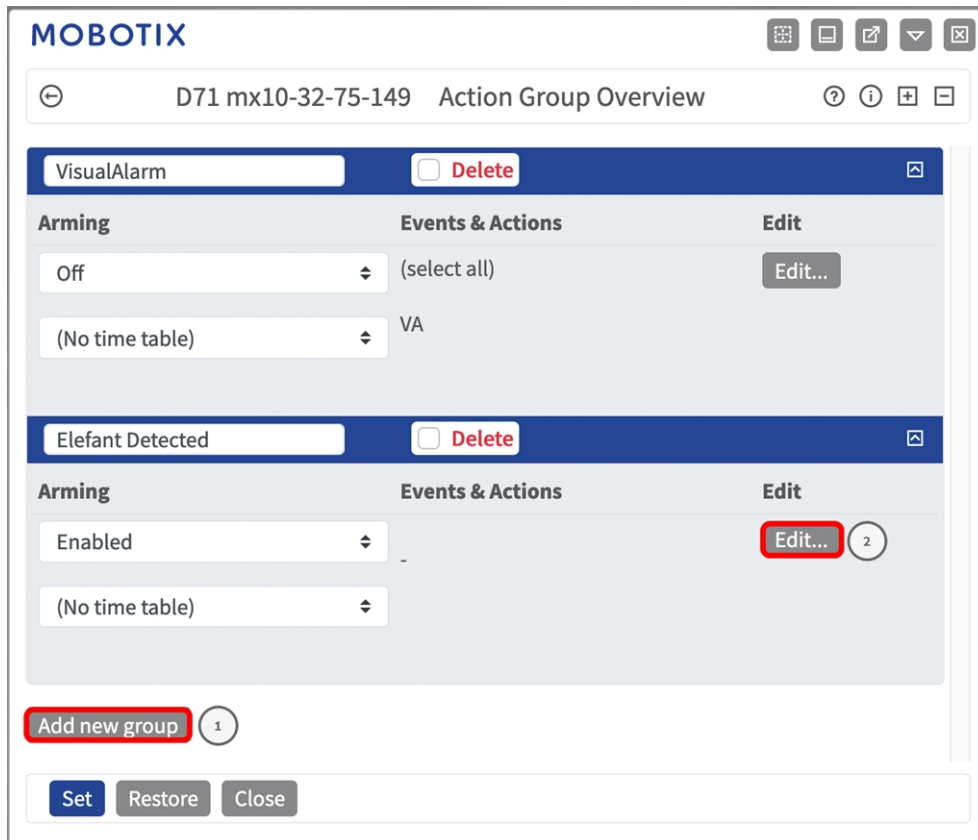
Set **Factory** **Restore** **Close**

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](http(s)/<camera IP address>/control/settings))

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

1. In the camera web interface, open: **Setup Menu / Event Control / Action Group Overview** ([http\(s\)://<camera IP address>/control/actions](http(s)://<camera IP address>/control/actions)).



2. Click **Add new group**① and give a meaningful name.

3. Click **Edit** ② , to configure the group.

MOBOTIX D71 mx10-32-75-149 Action Group Details

General Settings	Value	Explanation
Action Group	Elefant Detected	Name: The name is purely informational.
	Enabled ③	Arming: Controls this action group: <i>Enabled:</i> activate the group. <i>Off:</i> deactivate the group. <i>St:</i> group armed by signal input. <i>CS:</i> group armed by custom signal as defined in General Event Settings .
	(No time table)	Time Table: Time table for this action profile (Time Tables).
Event Selection	<ul style="list-style-type: none">(Image Analysis: VM)(Image Analysis: VM2)Message: MxActivitySensor ④Message: MxAnalyticsMessage: ObiRec	Event Selection: Select the events which will trigger the actions below. Use [Ctrl]-Click to select more than one event. Events in parentheses need to be activated first.
Action Details	5	Action Deadtme: Time to wait [0..3600 s] before a new action can take place.
	Simultaneously	Action Chaining: Choose how the status of each subaction influences the execution of all others. <i>Simultaneously:</i> All actions are executed simultaneously. <i>Simultaneously until first success:</i> Simultaneous execution, but as soon as one action succeeds (i.e. has been completed or the phone is picked up), all others are terminated. <i>Consecutively:</i> All actions are executed in the specified order. <i>Consecutively until first success:</i> Consecutive execution, but as soon as one action <i>succeeds</i> , the following actions are not executed. <i>Consecutively until first failure:</i> Consecutive execution, but as soon as one action <i>fails</i> , the following actions are not executed.

Actions	Value	Explanation
Add new action ⑤		

Set Factory Restore Close

4. Enable **Arming** ③ of the Action Group.

5. Select your message event in the **Event selection** list ④ . To select multiple events, hold the shift key.

6. Click **Add new Action** ⑤ .

7. Select a proper action from list **Action Type and Profile** ⑥ .

The screenshot shows the 'MOBOTIX' web interface for configuring an action group. The main title is 'D71 mx10-32-75-149 Action Group Details'. The interface is organized into several sections:

- General Settings:** Includes 'Action Group' (Elefant Detected), 'Enabled' (checked), and 'Time Table' (No time table).
- Event Selection:** A dropdown menu is open, showing a list of actions. The 'Device Out: ~IrLightToggle' option is highlighted with a blue bar and a circled '6'.
- Action Details:** This section is currently empty.
- Actions:** 'Action 1' is set to 'FTP: FTP-Webcam'. There is a 'Delete' button and a '0' value field.

At the bottom of the interface, there are buttons for 'Set' (circled '7'), 'Try', 'Restore', and 'Close' (circled '8'). A note at the bottom states: 'Note: You may need administration privileges to add or modify the action profiles: Signal Out, Visual Alarm, Phone Call, IP Notify, Image Profile, MxMessageSystem, FTP.'

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** ⑦ at the end of the dialog box to confirm the settings.
9. Click on **Close** ⑧ 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](http(s)://<camera IP address>/control/recording)).

The screenshot shows the 'Recording' configuration window for device 'D71 mx10-32-75-149'. It is organized into two main sections: 'General Settings' and 'Storage Settings'.

- General Settings:**
 - Arming:** A dropdown menu is set to 'Enabled' (indicated by a circled 1). The explanation states: 'Arm Recording: Controls camera recording. Enabled: activate recording. Off: deactivate recording. SI: recording armed by signal input. CS: recording armed by custom signal as defined in [General Event Settings](#). From Master: copies recording arming state from master camera.'
 - Time Table Profile:** A dropdown menu is set to '(No time table)'. The explanation states: 'Time Table Profile: Time table profile for time-controlled recording (Time Tables).'
- Storage Settings:**
 - Recording (REC):** A dropdown menu is set to 'Event Recording' (indicated by a circled 2). The explanation states: 'Recording Mode: Type of event and story recording. Snap Shot Recording: stores single JPEG pictures. Event Recording: stores stream files for every event using MxPEG codec. Continuous Recording: continuously streams video data to stream files using MxPEG codec. Events can be recorded with a higher frame rate using Start Recording, Retrigger Recording and Stop Recording.'
 - Record Audio Data:** A dropdown menu is set to 'Include audio'. The explanation states: 'Record Audio Data: Store audio data in stream file if available. Enable and configure [microphone](#).'
 - Start Recording:** A dropdown menu is open, showing a list of events: '(Image Analysis: VM2)', 'Message: MxActivitySensor' (highlighted in blue and indicated by a circled 3), 'Message: MxAnalytics', 'Message: ObjRec', and '(Signal: SI)'. The explanation states: 'Start Recording: Select the events which will start recording. Use [Ctrl]-Click to select more than one event. Events in parentheses need to be **activated** first.'

At the bottom of the dialog, there are several buttons: 'Set' (indicated by a circled 4), 'Factory', 'Restore', 'Close' (indicated by a circled 5), and 'More'.

2. Activate **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.

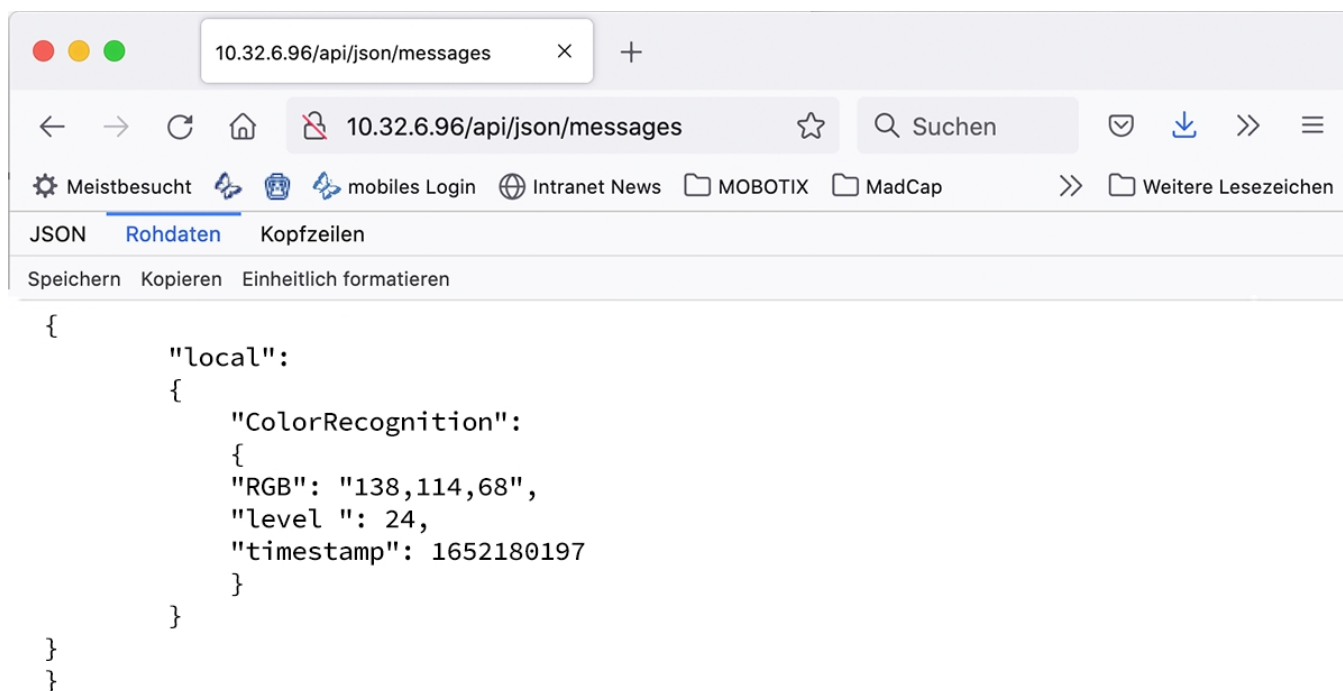
6. Click on **Close**⑤ to save your settings permanently.

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":
  {
    "ColorRecognition":
    {
      "RGB": "138,114,68",
      "level ": 24,
      "timestamp": 1652180197
    }
  }
}
```

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

The screenshot shows the 'Event Overview' interface for 'D71 mx10-32-75-149'. The interface is divided into several sections, each with a checkbox on the right:

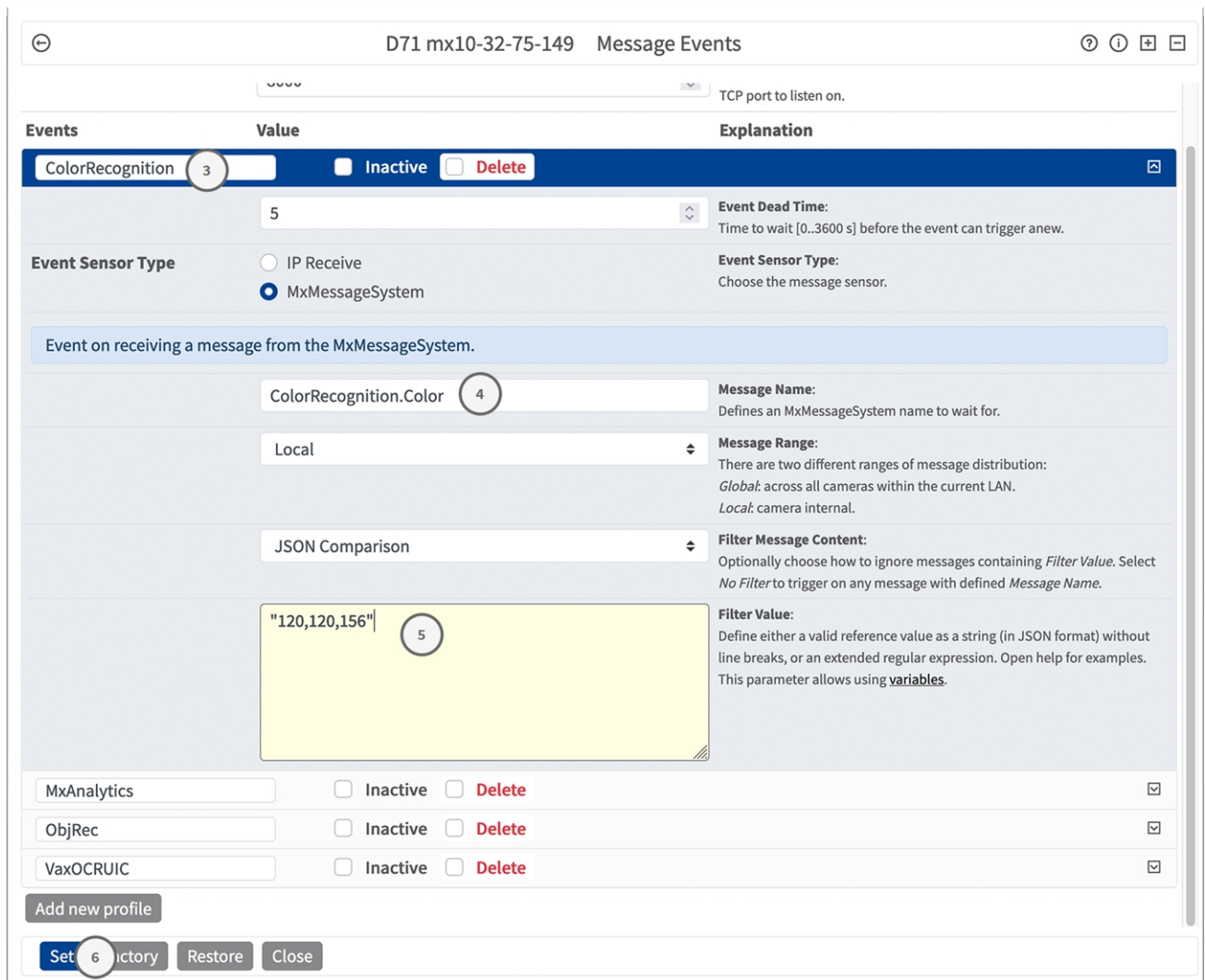
- Environment Events
- Image Analysis Events
- Internal Events
- Message Events**
- Meta Events
- Signal Events
- Time Events

The 'Message Events' section is expanded, showing a list of events:

Event Name	System	Inactive	Delete	Action
MxActivitySensor ①	MessageSystem	<input type="checkbox"/>	<input type="checkbox"/>	Edit... ②
MxAnalytics	MxMessageSystem	<input type="checkbox"/>	<input type="checkbox"/>	
ObjRec	MxMessageSystem	<input type="checkbox"/>	<input type="checkbox"/>	

At the bottom of the interface, there are three buttons: **Set**, **Restore**, and **Close**.

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 MOBOTIX ActivitySensor AI App, p. 37](#))
- **Message Range:**
 - Local: Default settings for the MOBOTIX ActivitySensor AI 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 see [Examples for message names and filter values of the MOBOTIX ActivitySensor AI App, p. 37](#).

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.

2. Click on **Set**⑥ at the end of the dialog box to confirm the settings.

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

	MxMessage-Name	Filter value
Generic Event	ColorRecognition	
Color Event	ColorRecognition.RGB	"120,155,99"
Level Event	ColorRecognition.level	"90"
Timestamp Event	ColorRecognition.timestamp	Date string e.g.: "2021-10- 11T11:48:52+0200"

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