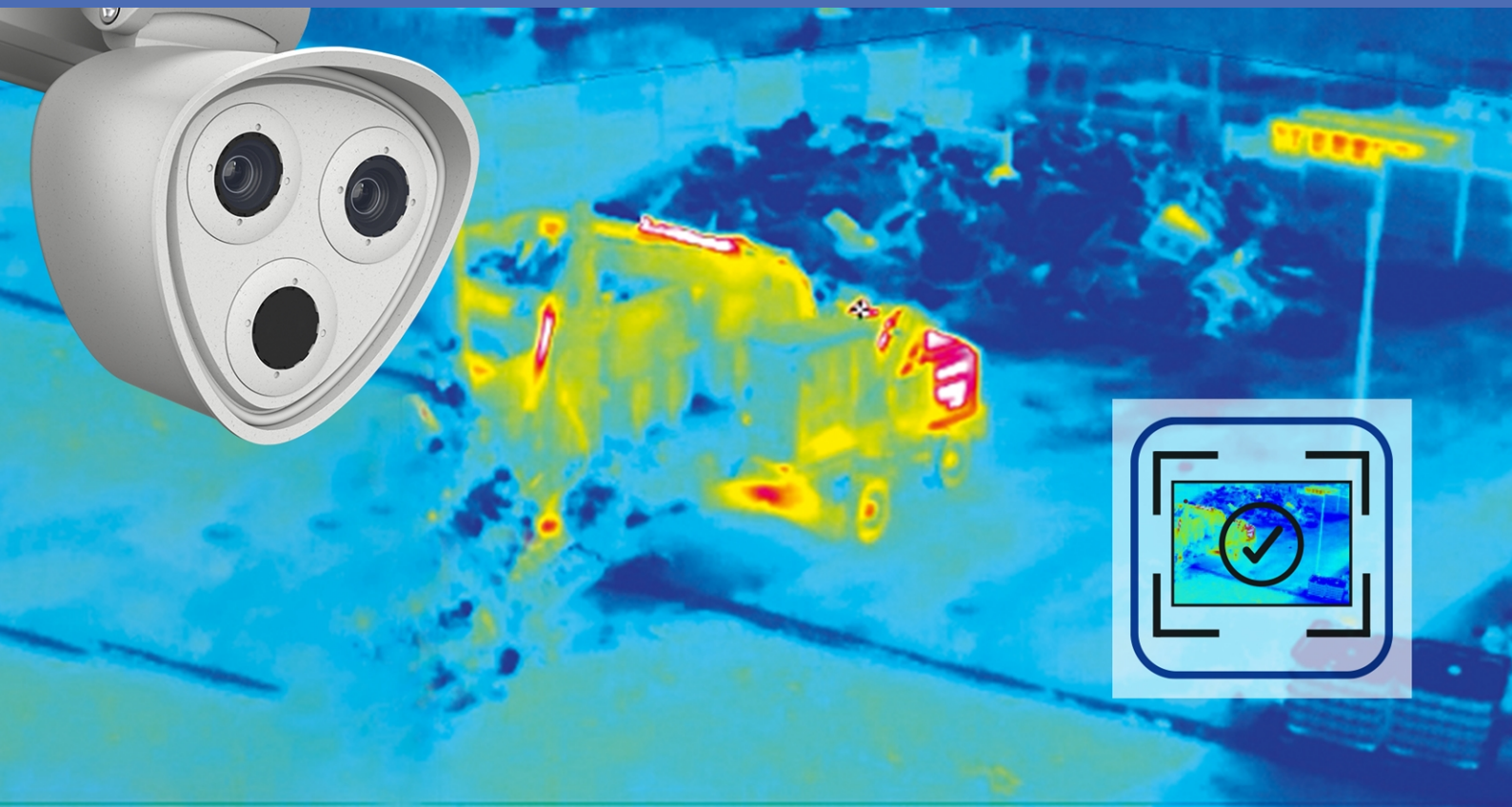


# Guideline

## MOBOTIX Thermal Validation App

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BeyondHumanVision

**MOBOTIX**

# Table of Contents

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<b>Table of Contents</b> .....	<b>2</b>
<b>Before You Start</b> .....	<b>3</b>
Support .....	4
MOBOTIX Support .....	4
MOBOTIX eCampus .....	4
MOBOTIX Community .....	4
Safety Notes .....	5
Legal Notes .....	6
<b>About MOBOTIX Thermal Validation App</b> .....	<b>8</b>
Smart Data Interface to MxManagementCenter .....	8
<b>Technical Specifications</b> .....	<b>9</b>
<b>Licensing Certified Apps</b> .....	<b>12</b>
License Activation of Certified Apps in MxManagementCenter .....	12
<b>Activation of the Certified App Interface</b> .....	<b>17</b>
<b>Configuration of MOBOTIX Thermal Validation App</b> .....	<b>18</b>
Thermal Radiometry Profiles .....	18
Drawing a Polygon Area in the Live View .....	22
Analysis Settings .....	23
Visualization Settings .....	23
Data Export Settings .....	24
Storing the Configuration .....	25
<b>MxMessageSystem</b> .....	<b>26</b>
What is MxMessageSystem? .....	26
Facts about MxMessages .....	26
<b>Basic configuration: Processing the automatically generated app events</b> .....	<b>27</b>
Checking automatically generated app events .....	27
Action handling - Configuration of an Action Group .....	29
Action settings - Configuration of the camera recordings .....	31
<b>Advanced Configuration: Processing the meta data transmitted by apps</b> .....	<b>33</b>
Meta data transferred within the MxMessageSystem .....	33
Creating a Custom Message Event .....	34
Examples for message names and filter values of the MOBOTIX Thermal Validation App .....	36

## Before You Start

This section contains the following information:

<b>Support</b> .....	<b>4</b>
<b>Safety Notes</b> .....	<b>5</b>
<b>Legal Notes</b> .....	<b>6</b>

# 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 > Services > Help Desk](http://www.mobotix.com > Services > 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](http://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](http://community.mobotix.com).



## Safety Notes

- This product 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 device. 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.
- 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

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All product names, trademarks, logos, and brands referenced in this document are the property of their respective owners. These may include, but are not limited to, trademarks and certification marks of third-party organizations. The use of such marks is for identification and informational purposes only and does not imply any affiliation with or endorsement by the respective trademark owners. MOBOTIX AG acknowledges the rights of all trademark holders and makes no claim to trademarks owned by third parties.

### 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](http://www.mobotix.com) under **Services > 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/EU) as far as they are subject to these regulations (for the RoHS Declaration of MOBOTIX, please see [www.mobotix.com](http://www.mobotix.com), **Services > 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](http://www.mobotix.com) by clicking on the corresponding link at the bottom of every page.

# About MOBOTIX Thermal Validation App

## MOBOTIX Thermal Validation App

The MOBOTIX Thermal Validation App expands the temperature measurement functions of MOBOTIX TR cameras. It detects and filters out non-critical heat sources in the camera image, such as vehicles with hot engines passing through the monitored area.

- Extends the temperature measurement capabilities of MOBOTIX TR cameras
- Filters out non-critical heat sources, such as vehicles, hot surfaces, or exhaust emissions
- supports up to 20 independent temperature measurement areas within the camera's field of view
- Allows individual calibration of each measurement area (e.g., emissivity settings)
- Detects tampering with the thermal sensor, such as covering or obstructing the lens
- Generates events via the MOBOTIX MxMessageSystem
- Transmits temperature data and measurement status via MODBUS/TCP and JSON/XML over HTTP(S)

### NOTE!

This app requires a thermal radiometry sensor operating in linear mode. Event profiles configured for non-radiometric thermal sensors or sensors not operating in linear mode will not be executed. If supported by the sensor, linear mode can be enabled in the camera's Thermal Sensor Settings.

## 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 Thermal Validation App
Supported MOBOTIX Cameras	M73, S74 (Thermal Radiometry Sensor required)
Minimum Camera Firmware	V7.3.2.x
MxManagementCenter Integration	<ul style="list-style-type: none"><li>▪ min. MxMC v2.7</li><li>▪ Advanced Config license required</li><li>▪ Event Search: Smart Data Interface license included</li></ul>
MOBOTIX HUB compatibility	<ul style="list-style-type: none"><li>▪ min. MOBOTIX HUB version: 2021 R1</li><li>▪ min. MOBOTIX HUB license level for Analytics Events: L2</li><li>▪ min. MOBOTIX HUB license level for MOBOTIX Event Search Plug-In: L4</li></ul>
Trial license	30-day trial license pre-installed

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## Product Features

App Features	<ul style="list-style-type: none"> <li>■ App optimizes MOBOTIX Thermal Radiometry cameras for use in the fields of waste management, recycling and logistics.</li> <li>■ Enables filtering of vehicles (e.g. construction vehicles and forklifts) as a non-critical source of high temperatures (e.g. by measuring hot body parts such as the exhaust or engine cover).</li> <li>■ Differentiation between hot spots caused by thermal reflections and valid temperature events to further reduce false alarms.</li> <li>■ Thermal flame detection as an additional measure to ensure reliable alarming of various fire classes.</li> <li>■ Extension of the temperature measurement functions of MOBOTIX Thermal Radiometry cameras (CNPP 19005 compliant).</li> <li>■ Definition of up to 20 temperature measurement areas within the field of view of the camera.</li> <li>■ Individual calibration of each temperature measurement area (e.g. emissivity values).</li> <li>■ Temperature events when defined temperature thresholds are exceeded.</li> <li>■ Detection of physical manipulation of the thermal sensor (e.g. sensor covered or changed field of view).</li> <li>■ MOBOTIX events via MxMessageSystem.</li> <li>■ Reporting of temperature data and threshold status of each area via MODBUS/TCP and JSON / XML via HTTP(S)</li> </ul>
Maximum number of measurement areas	20
Supported thermal sensor types	Thermal Radiometry
Meta Data / Statistic formats	JSON
Integration interfaces	<ul style="list-style-type: none"> <li>■ Milestone X-Protect (via XML)</li> <li>■ Generic 3rd party integration through XML, JSON and MODBUS/TCP</li> </ul>
MxMessageSystem supported	Yes
MOBOTIX events	Yes
ONVIF events	Yes (Generic Message events)
Trial license	30-day trial license pre-installed

## Scene Requirements for Object Recognition

Recommended camera position	no restrictions
-----------------------------	-----------------

## Technical App Specifications

Synchronous /  
Asynchronous App

Asynchronous

Simultaneous execution of other apps Yes (depending on performance expectations)

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# Licensing Certified Apps

The following licenses are available for the MOBOTIX Thermal Validation App:

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

The usage period begins with activation of the app interface (see [Activation of the Certified App Interface](#), p. 17)

#### 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](http://www.mobotix.com) > [Services](#) > [Download Center](#) > [Marketing & Documentation](#), download and install the app.

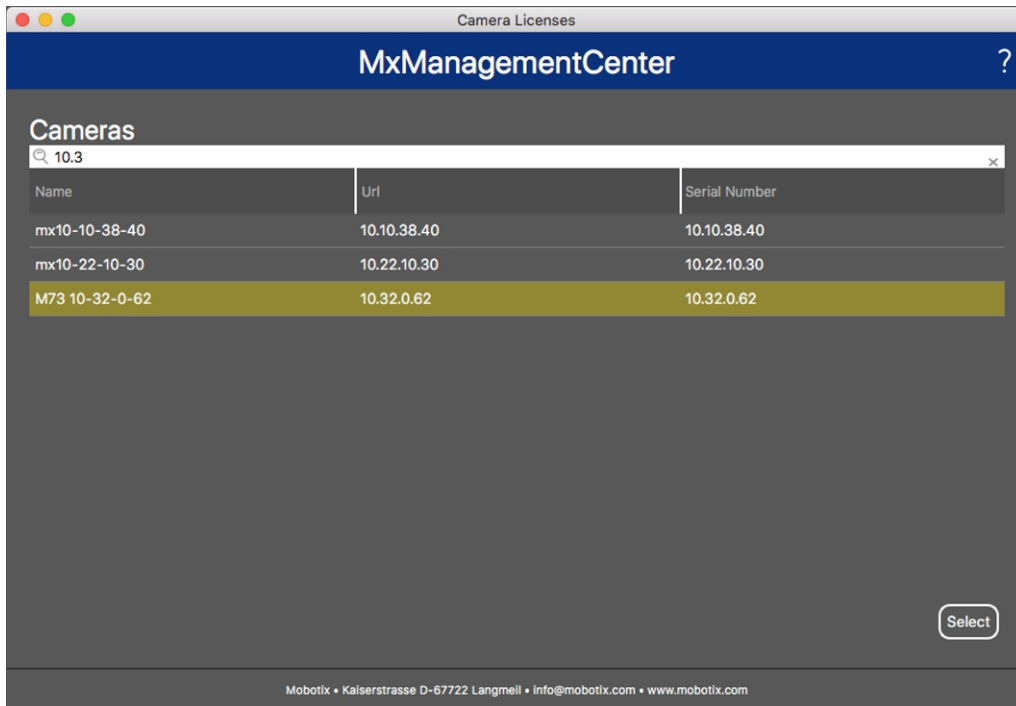
## License Activation of Certified Apps in MxManagementCenter

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**.



**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**.



**NOTE!**


If necessary, correct the time set on the camera.

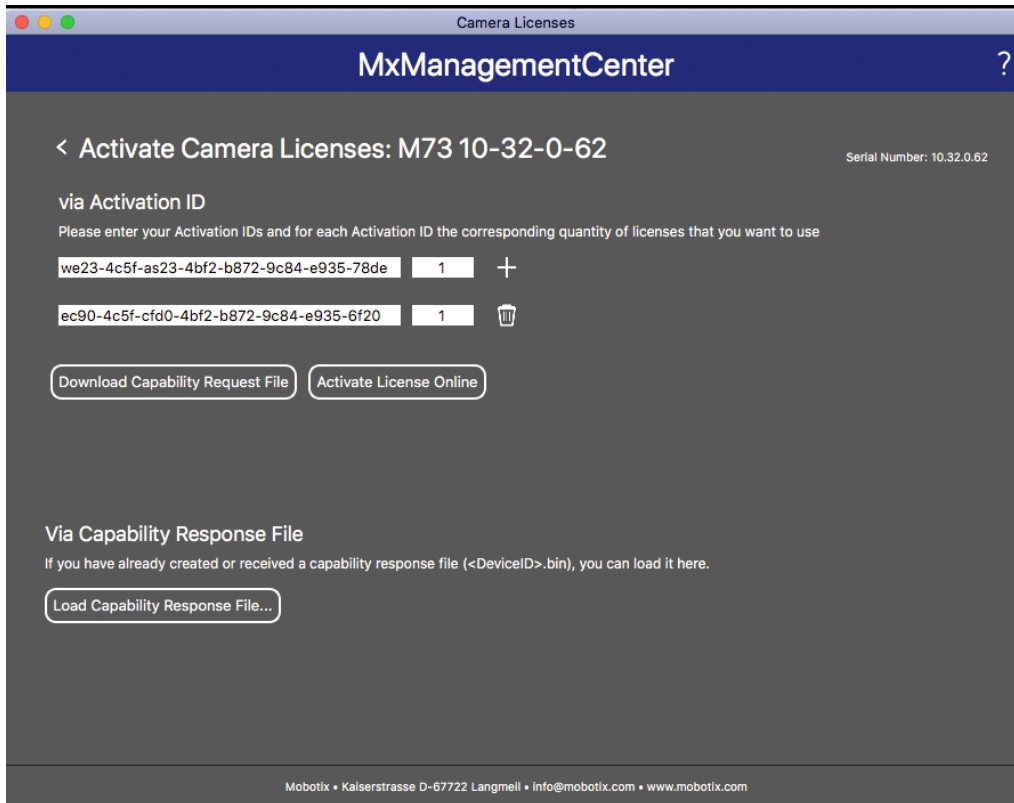
2. Enter a valid Activation ID and specify the number of licenses to install on this computer.
3. If you want to license another product, click on . In the new row, enter the appropriate Activation ID and the number of licenses you want.

## Licensing Certified Apps

### License Activation of Certified Apps in MxManagementCenter

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4. To remove a line click .
5. 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. 1: Adding licenses**

#### Successful activation

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

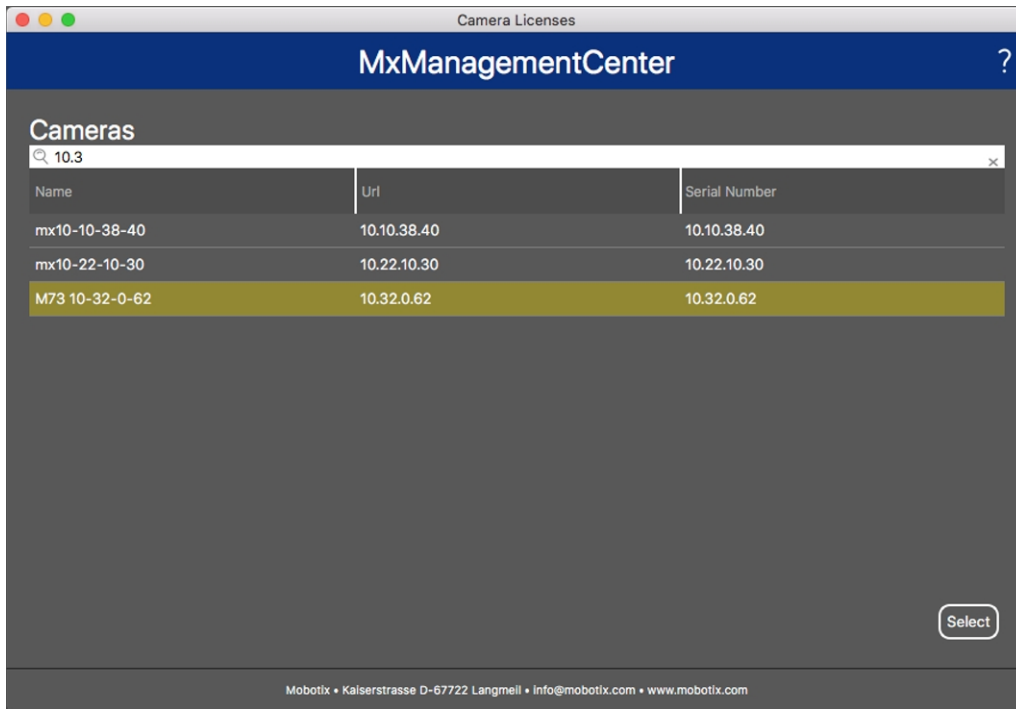
#### Failed activation (missing internet connection)

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. 14).

## 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.

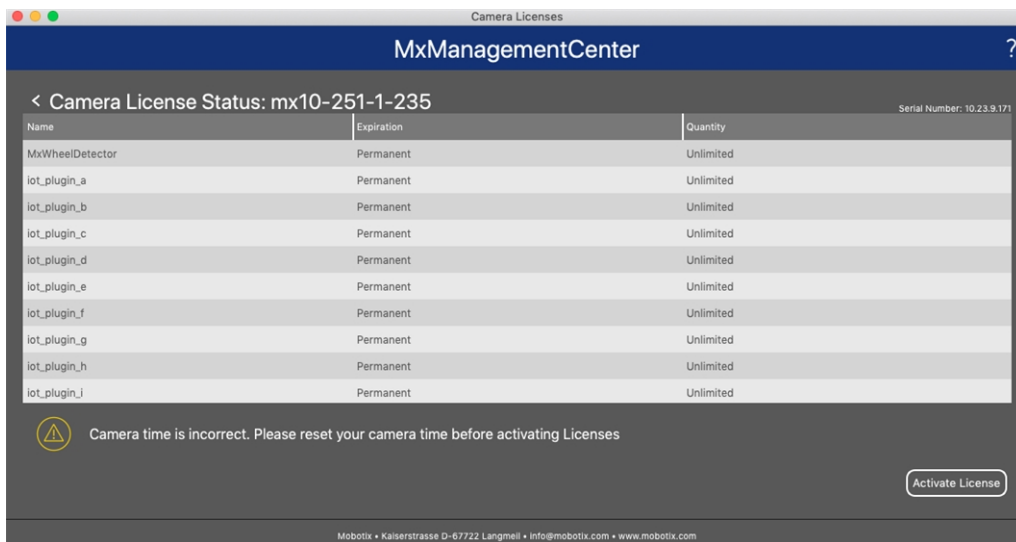
1. Select from the menu **Window > Camera App Licenses**.
2. Select the camera on which you want to license apps and click **Select**.



**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**.





**NOTE!**

If necessary, correct the time set on the camera.

## Licensing Certified Apps

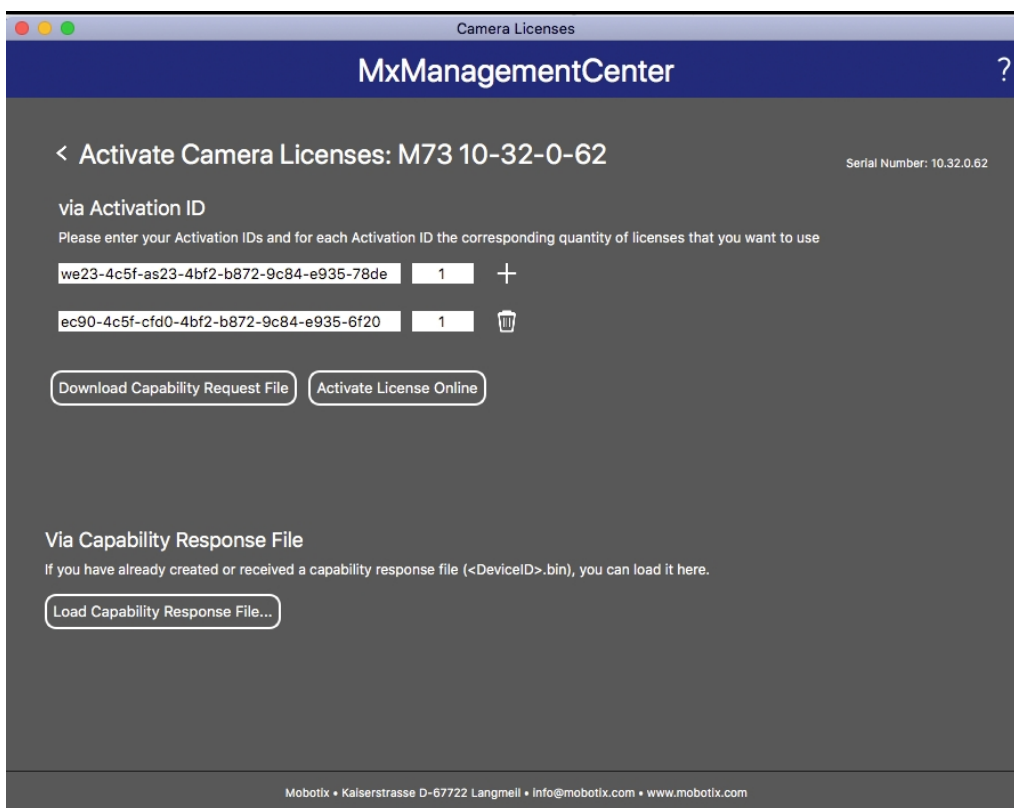
### License Activation of Certified Apps in MxManagementCenter

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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.



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.

# Activation of the Certified App Interface

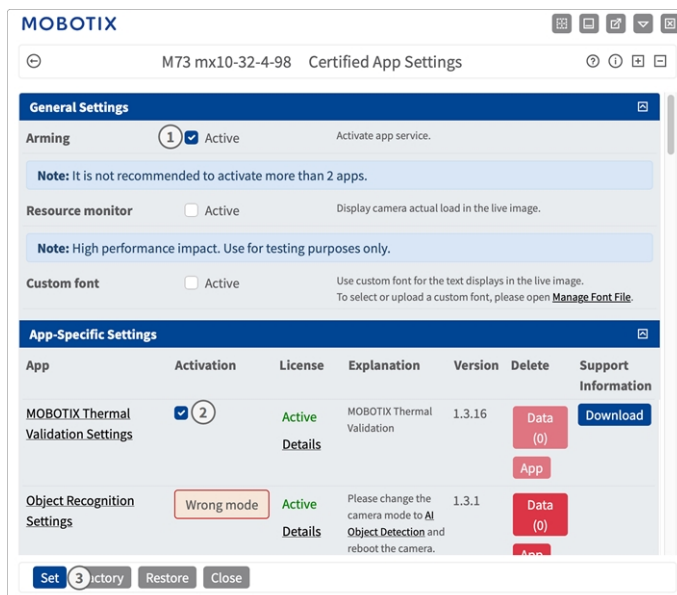
## CAUTION!

The MOBOTIX Thermal Validation 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 the **App Menu** ([http\(s\)://<camera IP address>/control/app\\_config](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 Thermal Validation App, p. 18](#).

# Configuration of MOBOTIX Thermal Validation App

## NOTE!

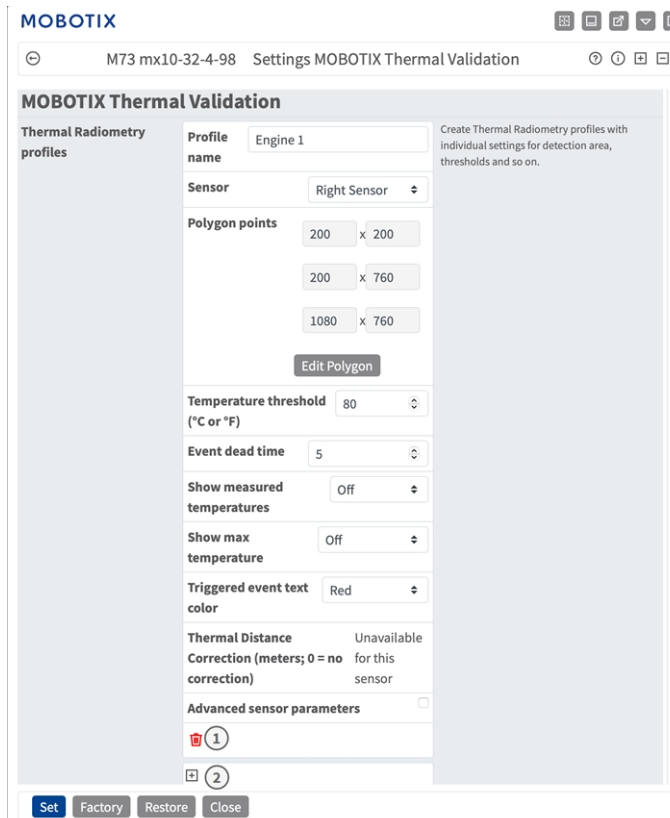
The user must have access to the setup menu ([http\(s\)://<camera IP address>/control](http(s)://<camera IP address>/control)). Therefore check the user rights of the camera.

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 Thermal Validation App**.

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

## Thermal Radiometry Profiles

You can create multiple Thermal Radiometry Profiles with individual settings. The following parameters should be considered when configuring a profile:



**Profile Name:** Enter a name for the Thermal Radiometry Profile. This name helps distinguish between profiles when events are triggered. While not required, using unique names for each profile is recommended.

**Sensor:** If the camera has multiple image sensors, select the sensor that provides the video stream to be analyzed for the selected detection area.

**NOTE!** If a profile is assigned to a sensor that is not a thermal radiometry sensor or is not operating in linear mode, the profile will have no effect.

**Polygon Points:** Define the corner points of the detection area. Click **Edit Polygon** to draw the Detection Area in the Live View (see [Drawing a Polygon Area in the Live View, p. 22](#)).

**NOTE!** These values are independent of the image resolution and are automatically scaled to the maximum pixel dimensions of the live image.

**Temperature Threshold:** Defines the temperature limit that must either be exceeded or remain below the configured value in order to trigger an event.

**Event Dead Time:** Defines the minimum time that must elapse after an event has been triggered before a new event can be generated. Set to 0 to trigger only once.

**Show measured temperature:** Show measured temperatures at the selected location (Off, Top-left, Top-right, Bottom-left, Bottom-right, Centered).

**Show max temperature:** Show the maximum temperature at the selected location (Off, Top-left, Top-right, Bottom-left, Bottom-right, Centered).

**Triggered event text color:** Select the color you want to use for displaying the overlay text if the hot-spot triggered an event.

**Thermal Distance Correction:** For Radiometry Sensor+ sensors, you can set the distance between the sensor and the objects of the measurement area in meters to compensate for distance-related effects. Entering 0 will not use thermal distance correction.

**Advanced Sensor Parameters:** These optional parameters are used to adapt the measurement to the ambient conditions and allow more accurate results:

Advanced sensor parameters <input checked="" type="checkbox"/>	
<b>Emissivity</b>	100 <input type="text"/>
<b>Humidity</b>	10 <input type="text"/>
<b>Distance</b>	5 <input type="text"/>
<b>Background temperature (°C or °F)</b>	20 <input type="text"/>
<b>Atmospheric temperature (°C or °F)</b>	20 <input type="text"/>

**Emissivity (%):** Specifies the percentage of thermal radiation that is emitted by the measured object rather than reflected from its surroundings. The appropriate value depends on the material being measured. Reflective surfaces typically have low emissivity, while matte surfaces generally have high emissivity.

Setting this value to **100** disables emissivity correction.

**Humidity):** A percentage value for the (air) humidity that refers to the area between the sensor and the object to be measured. The relevance of this parameter increases with higher atmospheric temperature and greater distance between camera and object.



**Distance to scene:** Set the distance to the scene in meters

**NOTE!** Setting this value to **0** disables compensation for distance, humidity, and atmospheric temperature.

**Background temperature (°C or °F):** Specifies the temperature of surrounding objects near the measured object. This parameter is particularly relevant when the measured object has a low emissivity and nearby objects are significantly warmer or cooler.

**Atmospheric temperature (°C or °F):** Specifies the temperature of the air between the sensor and the measured object. The influence of this parameter increases with higher humidity levels and greater distances.

### Adding a Profile

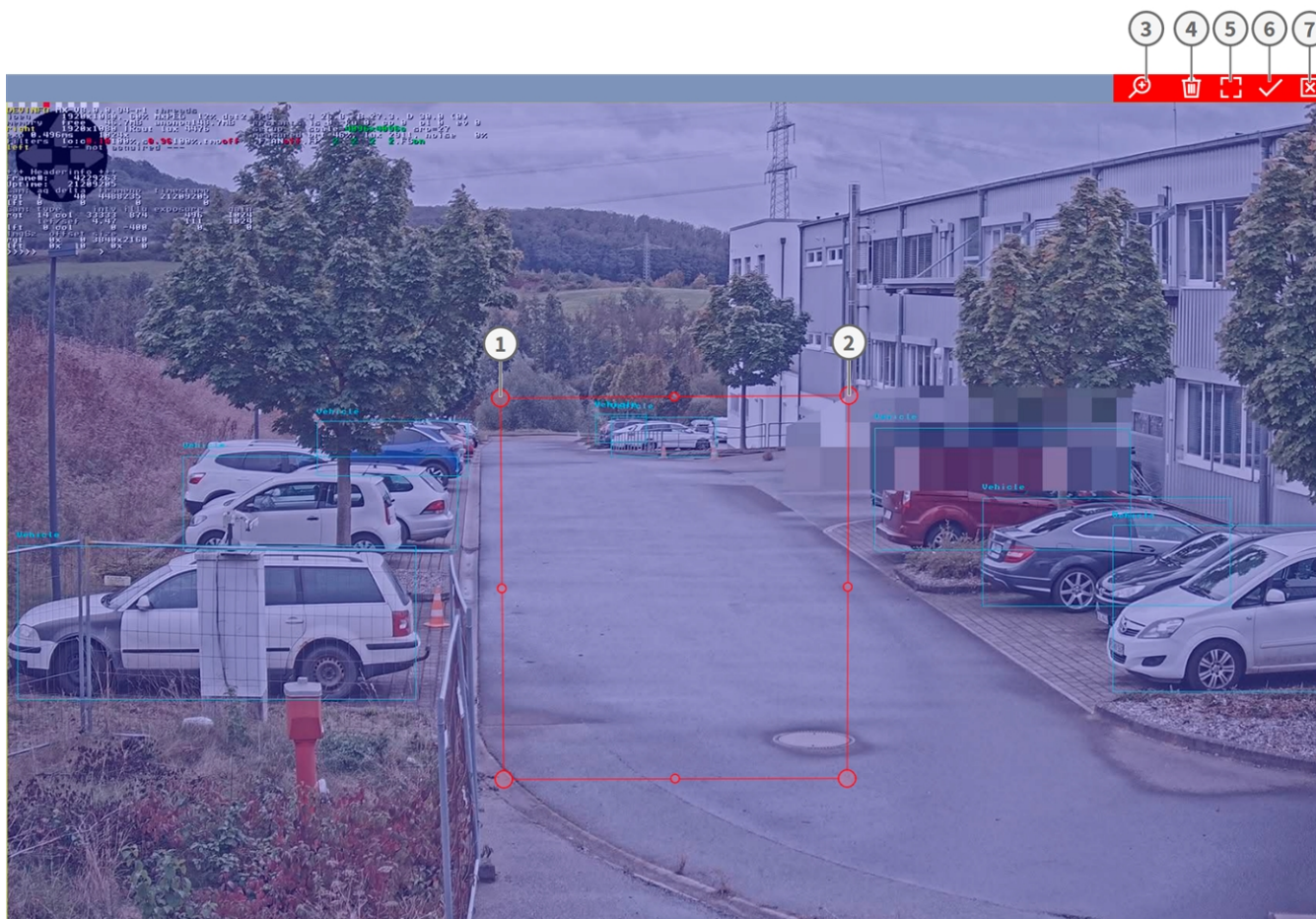
1. Click   to create a new profile.

### Deleting a Profile

1. Click  ② to delete the current profile.

## 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

## Analysis Settings

The following settings can be configured:

Analysis Settings	
<b>Temperature unit</b>	<input type="text" value="°C"/> Select temperature unit (°C or °F).
<b>Exclude moving objects</b>	<input checked="" type="checkbox"/> Enables the analysis of moving objects, such as vehicles in the scene, to reduce the possible number of false alarms.
<b>Enable reflection filter</b>	<input type="checkbox"/> The Reflection Filter is designed to reduce false alerts caused by sudden reflections on reflective surfaces. However, enabling this filter may increase the risk of missing sudden fire events (such as explosion like fire events) that exhibit similar thermal characteristics to reflections. Use with caution and consider your specific risk scenario and installation.

**Temperature Unit:** Select the temperature unit used for all measurements and thresholds (°C or °F).

**Exclude Moving Objects:** Filters out moving heat sources, such as vehicles, from the analysis to reduce the likelihood of false alarms.

**Enable Reflection Filter:** Reduces false alarms caused by thermal reflections. Depending on the application, this may increase the risk of missed detections for events that exhibit similar thermal patterns. Use with caution.

## Visualization Settings

The following settings can be configured:

Visualization Settings		
<b>Show detection area</b>	<input checked="" type="checkbox"/>	Display detection areas.
<b>Show bounding box</b>	<input type="checkbox"/>	Display bounding box detections of hot spots.
<b>Show recorded track</b>	<input type="checkbox"/>	Display the track followed by detected hot spots.
<b>Overlay text color</b>	Black	Color in which the overlay text will be drawn.

**Show the Detection Area:** Displays the configured detection area in the camera image.

**Show bounding box:** Displays bounding boxes around detected hot spots.

**Show recorded track:** Displays the movement path of detected hot spots.

**Overlay text color:** Defines the color of overlay text.

## Data Export Settings

The following configurations should be taken into account:

Data Export Settings		
<b>Send MxMessages</b>	<input checked="" type="checkbox"/>	Each profile will send camera-internal MxMessages. These messages can be used to trigger camera events.
<b>Send MxHub messages</b>	<input type="checkbox"/>	Each profile will send MxHub compatible messages to the specified server.
<b>Enable Modbus TCP server</b>	<input type="checkbox"/>	Activates the Modbus TCP server of the camera that will provide the current app results to any client.
<b>Send as Modbus TCP Client</b>	<input type="checkbox"/>	Activates the Modbus TCP client of the camera that will submit the current app results to the specified server.
<b>Send HTTP(S) JSON messages</b>	<input type="checkbox"/>	Each profile will send JSON-compatible messages via HTTP(S) to the specified server.

**Send MxMessages:** When enabled, the profiles send camera-internal MxMessages that can be used to trigger camera events.

**Send Hub Messages:** When enabled, the profiles send MxHub-compatible XML messages containing the current temperature values to the specified server.

**Enable Modbus TCP Server:** When enabled, the camera acts as a Modbus TCP server and provides the current application data to connected Modbus TCP clients.

**Send as Modbus TCP Client:** When enabled, the camera acts as a Modbus TCP client and transmits the current application data to the configured Modbus TCP server.

**Use the camera as a Modbus TCP server:** When enabled, the camera hosts a server to be addressed via Modbus TCP and will provide the current temperature values to any client.

**Send HTTP(S) JSON Messages:** When enabled, the profiles send JSON-formatted application data to the configured server via HTTP or HTTPS.

## Storing the Configuration

Use the following buttons to manage the configuration:



**Set:** Applies the current settings and stores them until the next camera reboot.

**Factory:** Restores the factory default settings for this dialog (not available in all dialogs).

**Restore:** Discards all unsaved changes and restores the last saved configuration.

**Close:** Closes the dialog. If unsaved changes are detected, you will be prompted to save the configuration permanently.

After the configuration has been saved, event and metadata information is automatically generated and transmitted when an event is triggered.

# 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.

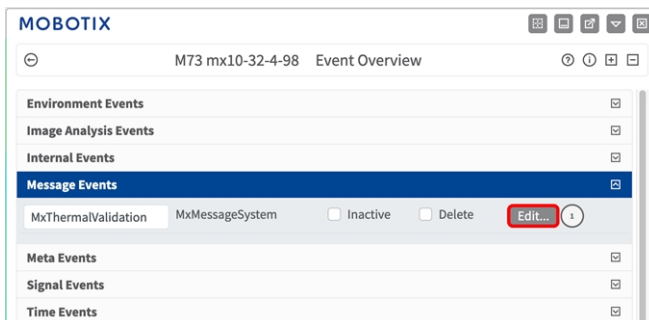
# Basic configuration: Processing the automatically generated app events

## Checking automatically generated app events

### NOTE!

After successfully activating the app (see [Activation of the Certified App Interface](#)), 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 (e.g. MxThermalValidation).



## Basic configuration: Processing the automatically generated app events

### Checking automatically generated app events

2. Click **Edit** ① to display and configure the event properties in detail.

The screenshot shows the MOBOTIX configuration interface for 'Message Events' on device 'M73 mx10-32-4-98'. The interface is divided into several sections:

- Attribute Table:** A table with columns 'Attribute', 'Value', and 'Explanation'. It contains one entry: 'IP Receive' with a value of '8000' and an explanation 'Port: TCP port to listen on.'
- Events Table:** A table with columns 'Events', 'Value', and 'Explanation'. The first row is highlighted in blue and contains 'MxThermalValidation', 'Inactive' (with a checkbox), and 'Delete' (with a checkbox). Below this, there is a dropdown menu set to '5' and an explanation 'Event Dead Time: Time to wait [0..3600 s] before the event can trigger anew.'
- Event Sensor Type:** A section with three radio buttons: 'IP Receive', 'MxMessageSystem' (which is selected), and 'MQTT Subscription'. The explanation is 'Event Sensor Type: Choose the message sensor.'
- Event Description:** A blue box containing the text 'Event on receiving a message from the MxMessageSystem.'
- Message Name:** A text input field containing 'MxThermalValidation' and an explanation 'Message Name: Defines an MxMessageSystem name to wait for.'
- Message Range:** A dropdown menu set to 'Local' and an explanation 'Message Range: There are two different ranges of message distribution: Global: across all cameras within the current LAN. Local: camera internal.'
- Filter Message Content:** A dropdown menu set to 'No Filter' and a detailed explanation: 'Filter Message Content: Optionally choose how to ignore messages containing Filter Value. Select No Filter to trigger on any message with defined Message Name. The Boolean Filter triggers on JSON values true/false, or 1/0, and for some JSON strings like "on"/"off", "yes"/"no". For JSON Comparison, Regular Expression, Value Filter, and Interval Notation define the compared value as Filter Value below.'

At the bottom left, there is a button labeled 'Add new profile'.

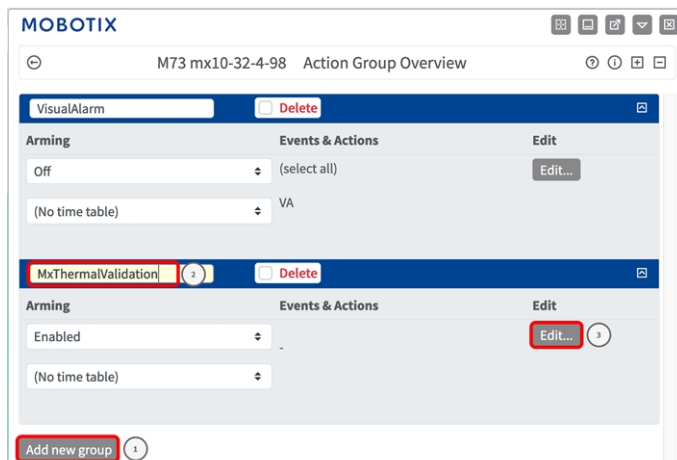
# Action handling - Configuration of an Action Group

## CAUTION!

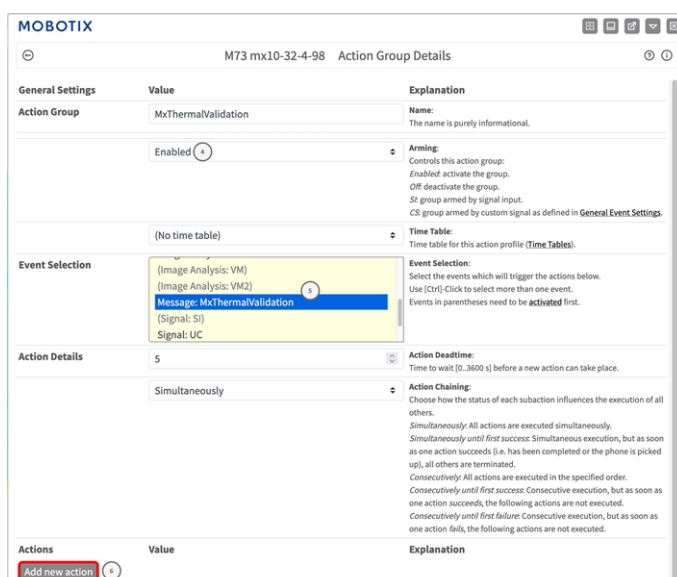
To use events, trigger Action Groups or record images the general arming of the camera must be enabled ([http\(s\)/<camera IP address>/control/settings](http(s)/<camera IP address>/control/settings))

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

1. Go to **Setup-Menu / Event Control / Action Group Overview** ([http\(s\)://<camera IP address>/control/actions](http(s)://<camera IP address>/control/actions)).



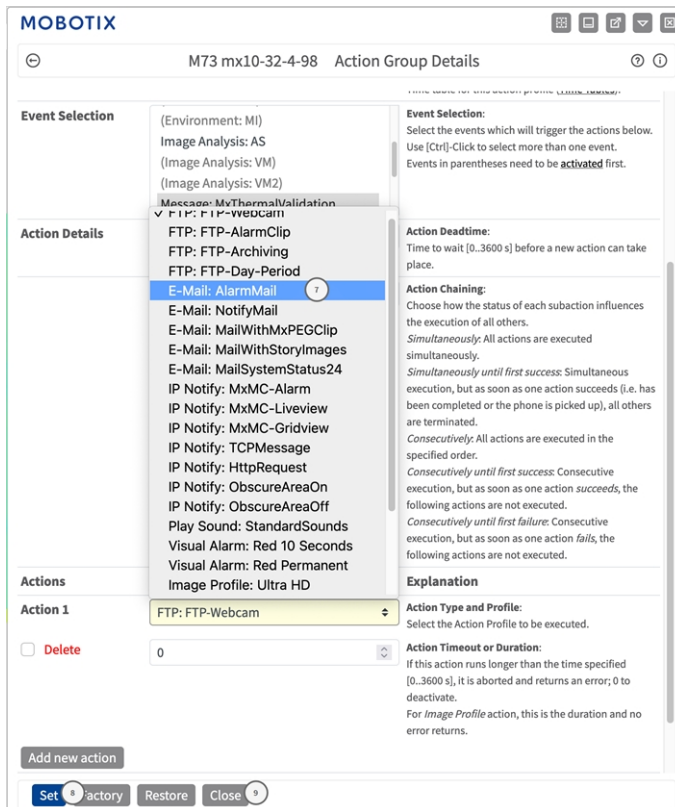
2. Click **Add new group** ① and give a meaningful name ② .
3. Click **Edit** ③ , to configure the group.



## Basic configuration: Processing the automatically generated app events

### Action handling - Configuration of an Action 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!

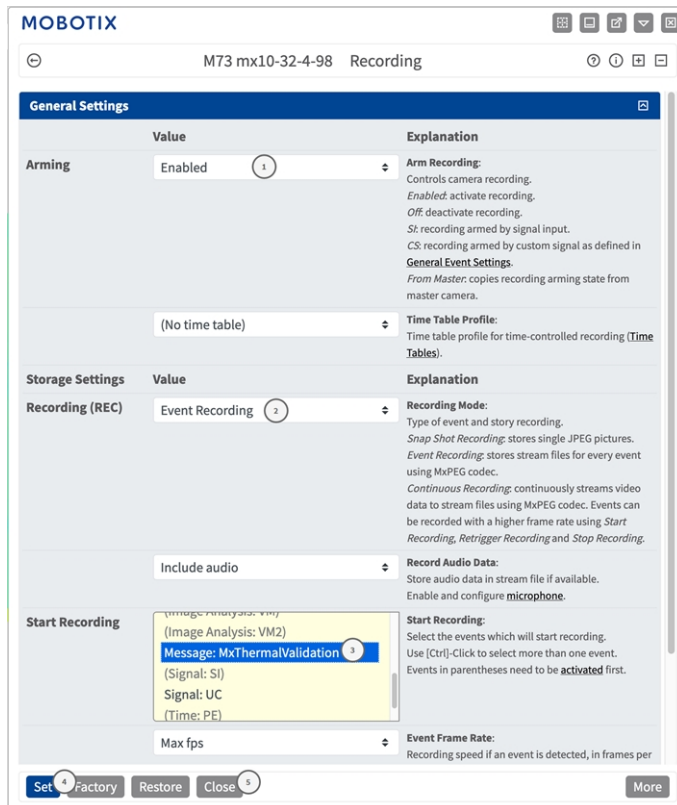
If the required action profile is not yet available, you can create a new profile in the Admin Menu sections "MxMessageSystem", "Transfer Profiles" and "Audio and VoIP Telephony".

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 on the **Set** ⑧ button 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. Go to **Setup Menu / Event Control / Recording** ([http\(s\)/<camera IP address>/control/recording](http(s)/<camera IP address>/control/recording)).



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.

## Basic configuration: Processing the automatically generated app events

### Action settings - Configuration of the camera recordings

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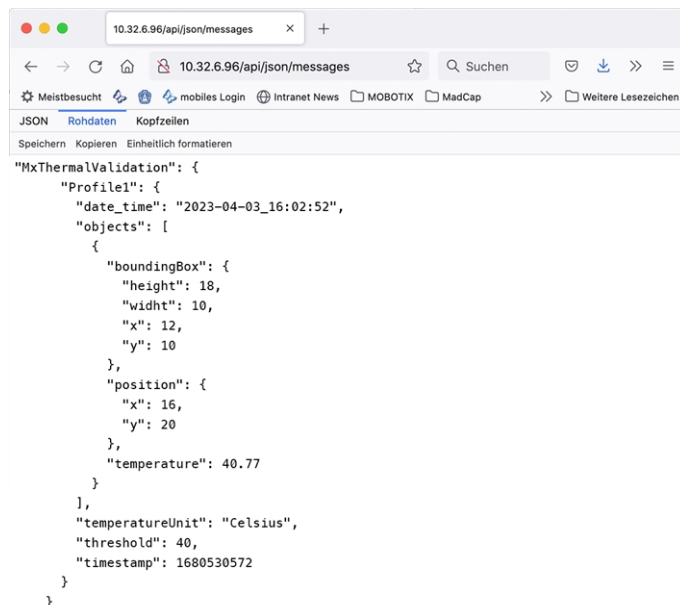
#### **NOTE!**

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

# Advanced Configuration: 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.



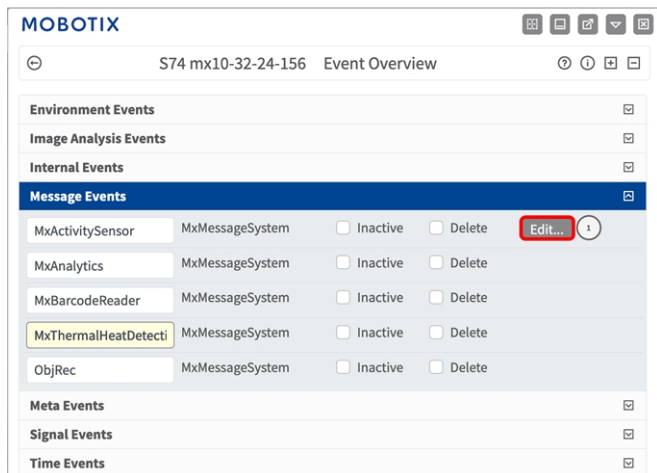
```
"MxThermalValidation": {
  "Profile1": {
    "date_time": "2023-04-03_16:02:52",
    "objects": [
      {
        "boundingBox": {
          "height": 18,
          "width": 10,
          "x": 12,
          "y": 10
        },
        "position": {
          "x": 16,
          "y": 20
        },
        "temperature": 40.77
      }
    ],
    "temperatureUnit": "Celsius",
    "threshold": 40,
    "timestamp": 1680530572
  }
}
```

### 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 (e.g. MxAdvancedRadiometry).



- Click **Edit** ① to display and configure the event properties in detail.

**MOBOTIX** M73 mx10-32-4-98 Message Events

Attribute	Value	Explanation
IP Receive	8000	<b>Port:</b> TCP port to listen on.
Events	Value	Explanation
MxThermalValidation ①	<input type="checkbox"/> Inactive <input type="checkbox"/> Delete	
	5	<b>Event Dead Time:</b> Time to wait [0..3600 s] before the event can trigger anew.
<b>Event Sensor Type</b>	<input type="radio"/> IP Receive <input checked="" type="radio"/> MxMessageSystem <input type="radio"/> MQTT Subscription	<b>Event Sensor Type:</b> Choose the message sensor.
Event on receiving a message from the MxMessageSystem.		
	MxThermalValidation.profile.id ②	<b>Message Name:</b> Defines an MxMessageSystem name to wait for.
	Local	<b>Message Range:</b> There are two different ranges of message distribution: <i>Global:</i> across all cameras within the current LAN. <i>Local:</i> camera internal.
	JSON Comparison	<b>Filter Message Content:</b> 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> . The <i>Boolean Filter</i> triggers on JSON values <code>true/false</code> , or <code>1/0</code> , and for some JSON strings like <code>"on"/"off"</code> , <code>"yes"/"no"</code> . For <i>JSON Comparison</i> , <i>Regular Expression</i> , <i>Value Filter</i> , and <i>Interval Notation</i> define the compared value as <i>Filter Value</i> below.
	"5" ③	<b>Filter Value:</b> Define either a valid reference value as a string (in JSON format) without line breaks, or an extended regular expression, a number, or a minimum/maximum interval

Set ④ Factory Restore Close ⑤

- Click on the event (e.g. MxThermalValidation) to open the event settings.
- Configure the parameters of the event profile as follows:
  - Message Name:** Enter the "Message Name" ② according to the event documentation of the corresponding app (see [Examples for message names and filter values of the MOBOTIX Thermal Validation App](#), p. 36)

- **Message Range:**
  - Local: Default settings for the MOBOTIX Thermal Validation 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:**③ see [Examples for message names and filter values of the MOBOTIX Thermal Validation App, p. 36.](#)

#### 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**④ at the end of the dialog box to confirm the settings.
3. Click on **Close**⑤ to save your settings permanently.

## Examples for message names and filter values of the MOBOTIX Thermal Validation App

Event	MxMessage Name	Filter Value (example)	Explanation
Generic Event	MxThermalValidation		
Event with a profile	MxThermalValidation.profile		
Id of the profile	MxThermalValidation.profile.id	“5”	Numeric profile ID
Current time	MxThermalValidation.profile.date_time	"1667573558"	UNIX time stamp

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Event	MxMessage Name	Filter Value (example)	Explanation
Objects	MxThermalValidation.profile.objects		List of detected hot spots that could be potential fires
	MxThermalValidation.profile.objects.boundingBox		Rectangle of the hot spot
	MxThermalValidation.profile.objects.boundingBox.height	"18"	Height of the hot spot bounding box
	MxThermalValidation.profile.objects.boundingBox.width	"10"	Width of the hot spot bounding box
	MxThermalValidation.profile.objects.boundingBox.x	"16"	X coordinate of the bounding box corner point
	MxThermalValidation.profile.objects.boundingBox.y	"20"	Y coordinate of the bounding box corner point
	MxThermalValidation.profile.objects.position		Center of the hot spot
	MxThermalValidation.profile.objects.position.x	"16"	X coordinate of the center of the hot spot
	MxThermalValidation.profile.objects.position.y	"20"	Y coordinate of the center of the hot spot
	MxThermalValidation.profile.objects.temperature	"40.77"	Temperature of the hot spot

## Advanced Configuration: Processing the meta data transmitted by apps

### Examples for message names and filter values of the MOBOTIX Thermal Validation App

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<b>Event</b>	<b>MxMessage Name</b>	<b>Filter Value (example)</b>	<b>Explanation</b>
Temperature unit	MxThermalValidation.profile.temperatureUnit	"Celsius"	Temperature unit defined in the profile (Celsius or Fahrenheit)
Temperature threshold	MxThermalValidation.profile.threshold	"40"	Temperature threshold defined for the profile
Time when profile event triggered	MxThermalValidation.profile.timestamp	"1680530572"	UNIX time stamp

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# MOBOTIX

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