

Guideline

MOBOTIX Thermal Validation App

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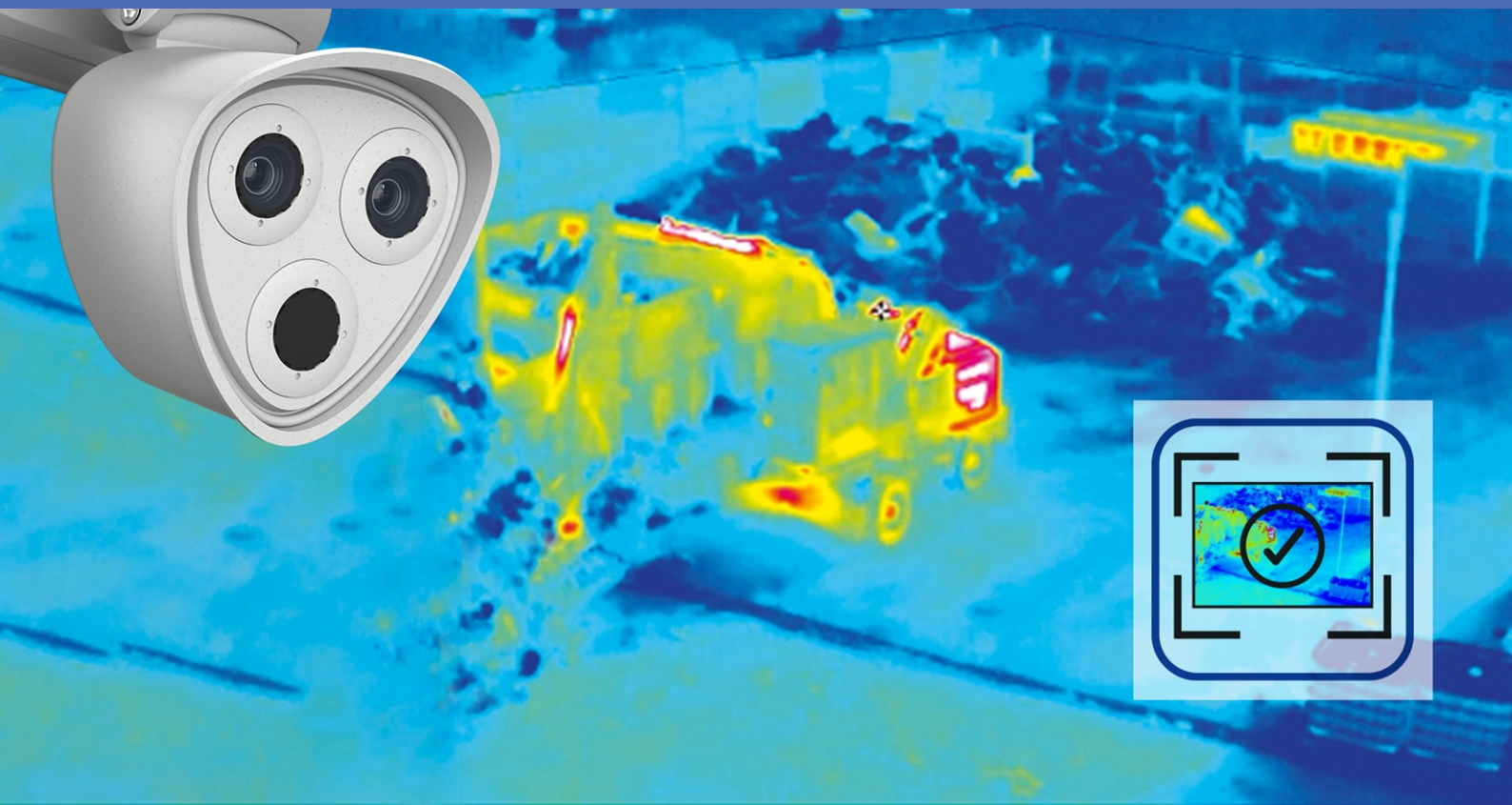


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Before You Start

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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](#)



Safety Notes

- 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!
- This equipment is not suitable for use in locations where children are likely to be present.
- When using a Class I 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.

About MOBOTIX Thermal Validation App

MOBOTIX Thermal Validation App

The MOBOTIX Thermal Validation app detects and filters out warm objects that appear in the camera image but are not critical to the application at hand; one example of this would be a vehicle with a hot engine driving through the monitored area.

- Expands on the temperature measurement functions of MOBOTIX TR cameras
- Filters out vehicles as a non-critical heat sources (e.g. hot body parts or exhaust)
- Up to 20 temperature measurement ranges within the camera's field of view
- Each temperature measuring range (e.g., emissivity) can be calibrated individually
- Detects physical manipulations of the thermal sensor (e.g. covering the sensor)
- MOBOTIX events using MxMessageSystem
- Temperature data and threshold value status of the measuring ranges are transmitted via MODBUS/TCP and JSON/XML via HTTP(S)

NOTE! this app can only be used with thermal sensors in linear operating mode. If an event profile is defined for a sensor that is either not a thermal sensor or is not in linear mode, the corresponding definition has no effect. If supported by the thermal sensor, you can activate the linear mode in the Thermal Sensor Settings of the camera.

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.

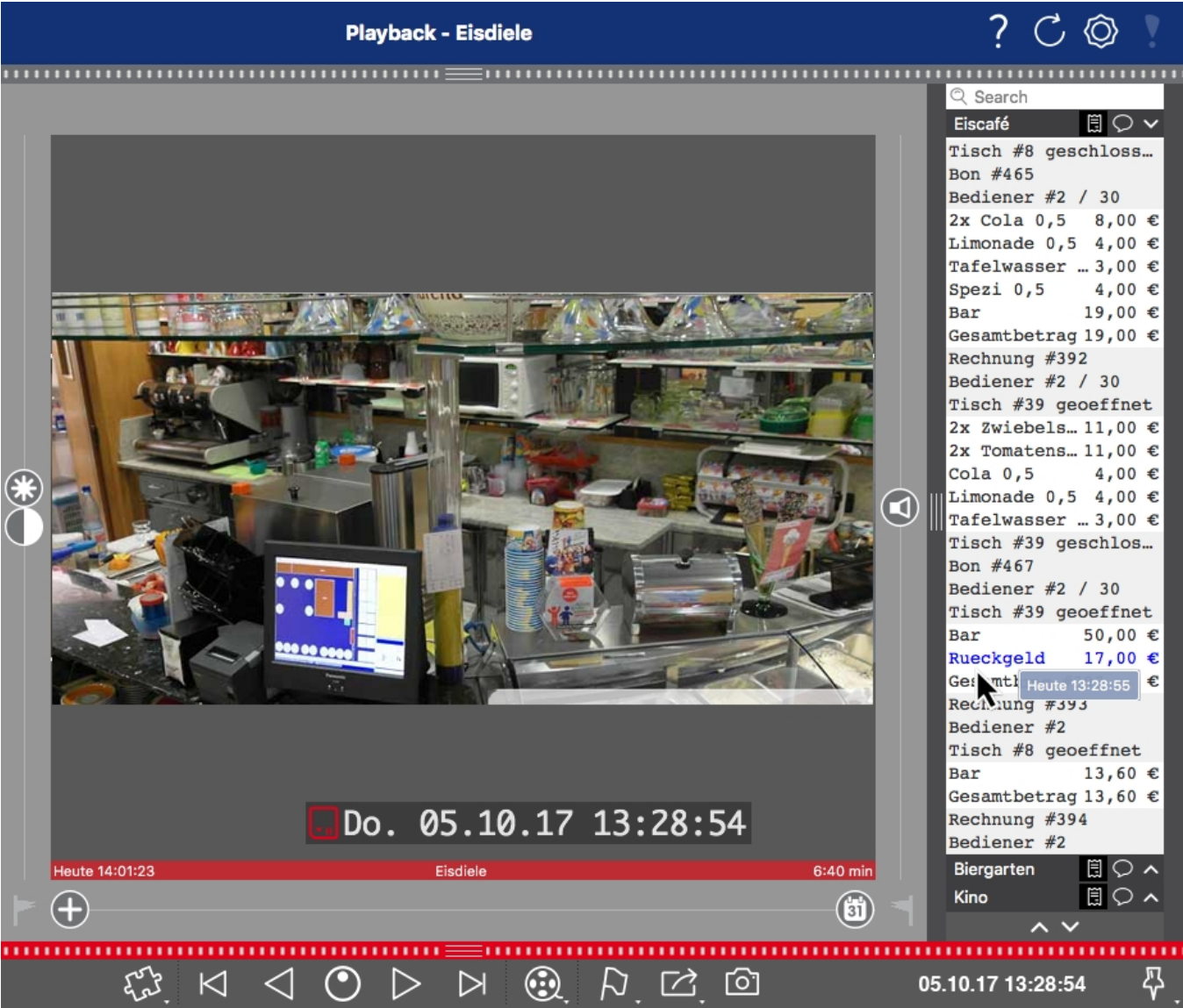


Fig. 1: : Smart Data Bar in MxManagementCenter (Example: POS System)

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">min. MxMC v2.7Advanced Config license requiredEvent Search: Smart Data Interface license included
MOBOTIX HUB com- patibility	<ul style="list-style-type: none">min. MOBOTIX HUB version: 2021 R1min. MOBOTIX HUB license level for Analytics Events: L2min. MOBOTIX HUB license level for MOBOTIX Event Search Plug-In: L4
Trial license	30-day trial license pre-installed

Product Features

App Features	<ul style="list-style-type: none"> ■ App optimizes MOBOTIX Thermal Radiometry cameras for use in the fields of waste management and logistics ■ 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) ■ Extension of the temperature measurement functions of MOBOTIX Thermal Radiometry cameras ■ Definition of up to 20 temperature measurement areas within the field of view of the camera ■ individual calibration of each temperature measurement area (e.g. emissivity values) ■ Temperature events when defined temperature thresholds are exceeded ■ Detection of physical manipulation of the thermal sensor (e.g. sensor covered) ■ MOBOTIX events via MxMessageSystem ■ Reporting of temperature data and threshold status of each area via MODBUS/TCP and JSON / XML via HTTP(S)
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"> ■ Milestone X-Protect (via XML) ■ Generic 3rd party integration through XML, JSON and MODBUS/TCP
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
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Technical App Specifications

Synchronous / Asynchronous App	Asynchronous
Simultaneous execution of other apps	Yes (depending on performance expectations)

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)

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**.

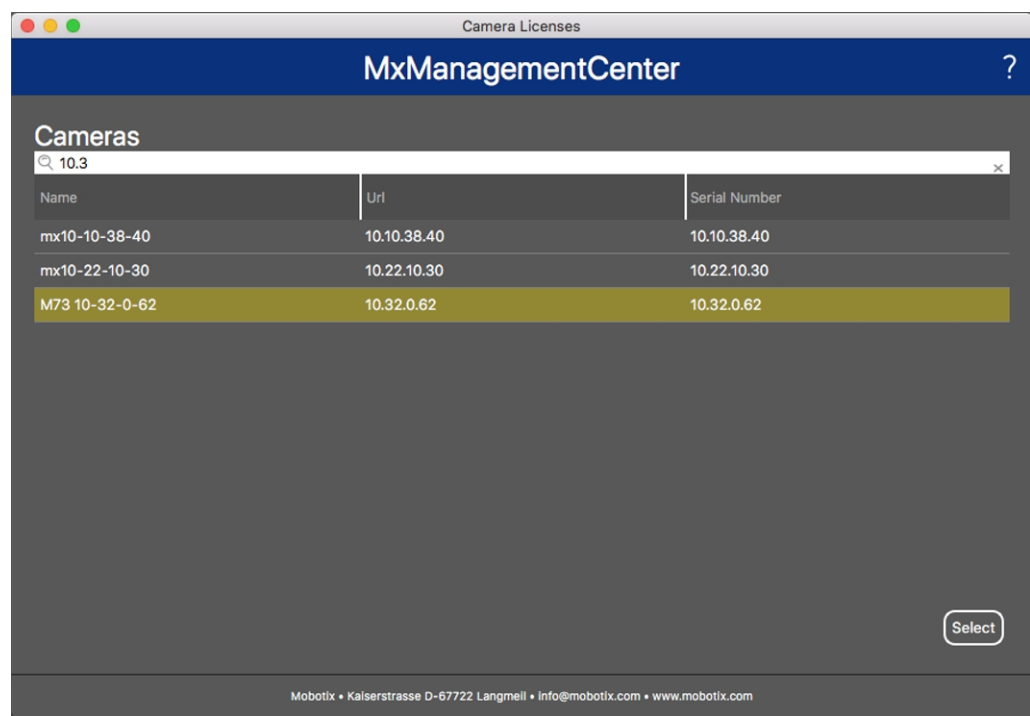


Fig. 2: Overview of Camera App Licenses in MxManagementCenter

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**.

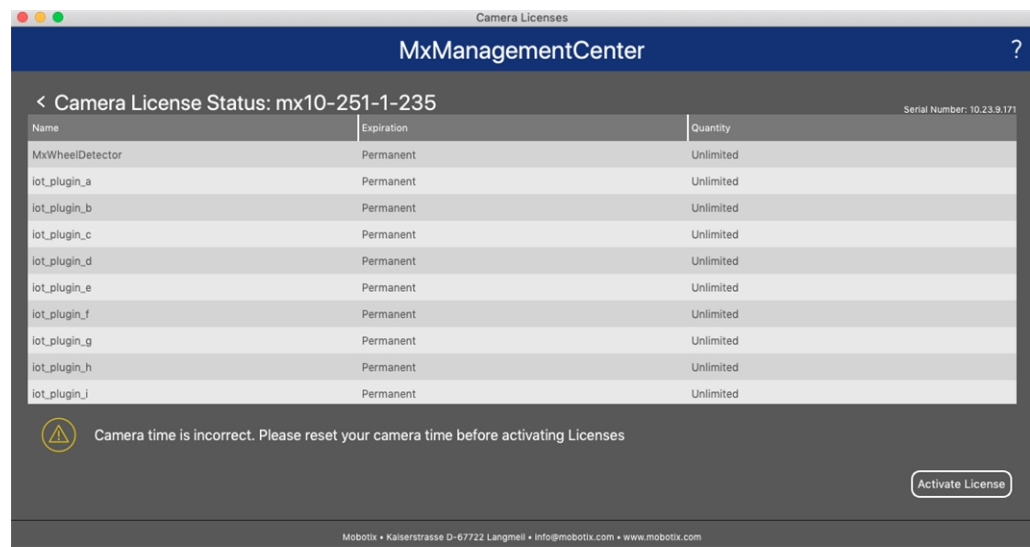



Fig. 3: Overview of the licenses installed on the camera

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.

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.

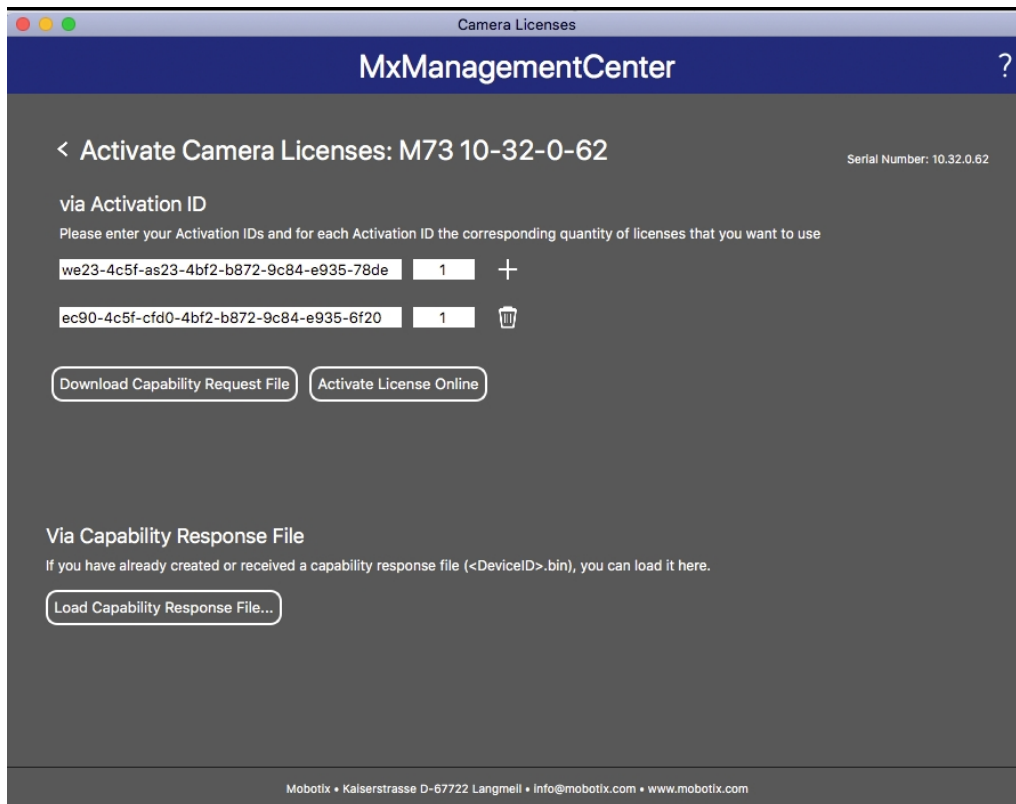


Fig. 4: Adding licenses

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. 13).

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**.

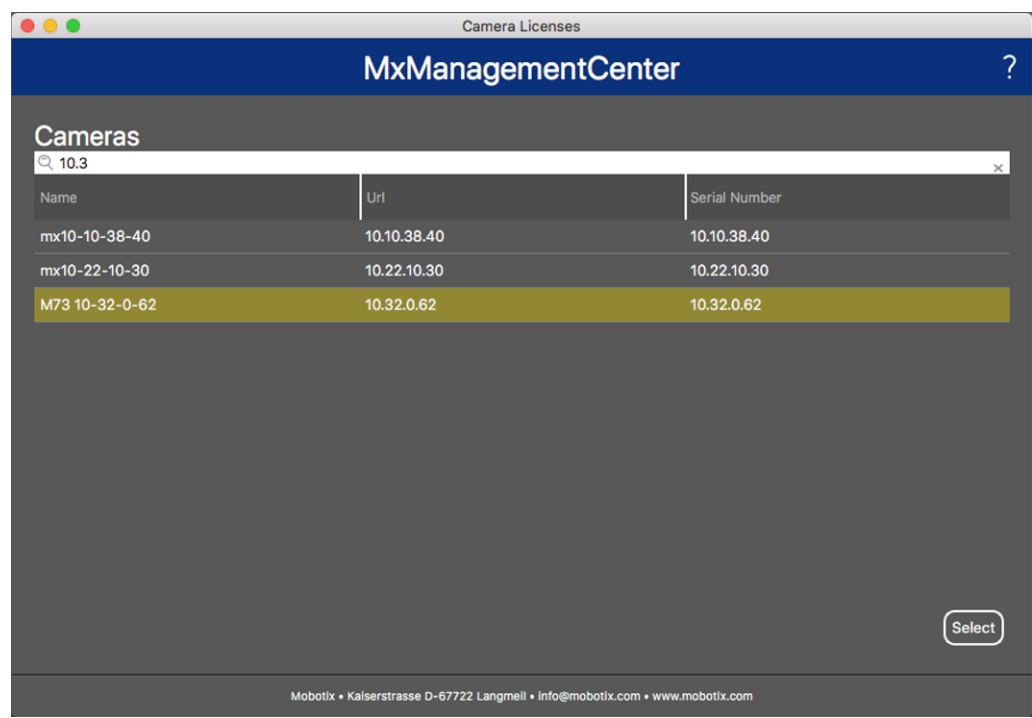


Fig. 5: Overview of Camera App Licenses in MxManagementCenter

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**.

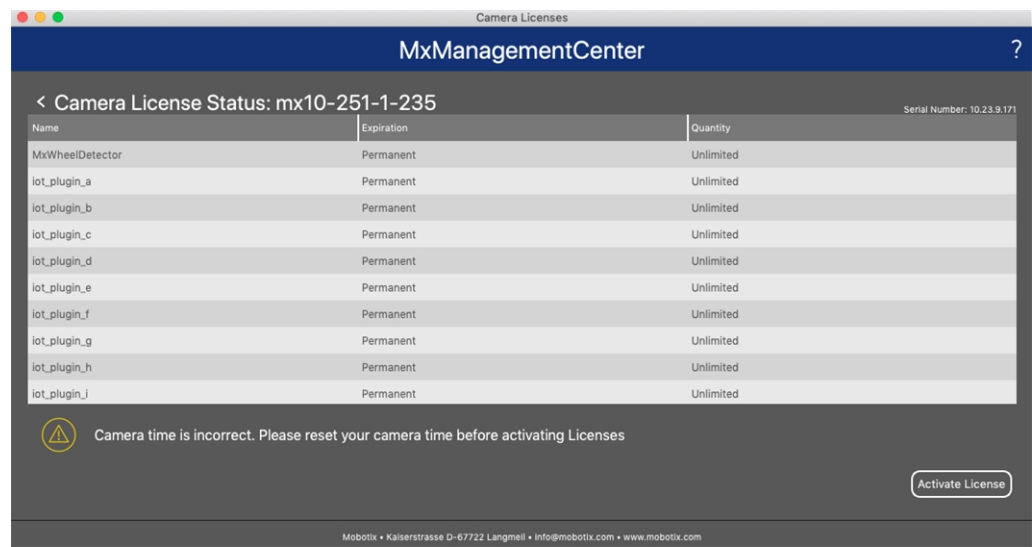




Fig. 6: Overview of the licenses installed on the camera

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

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.

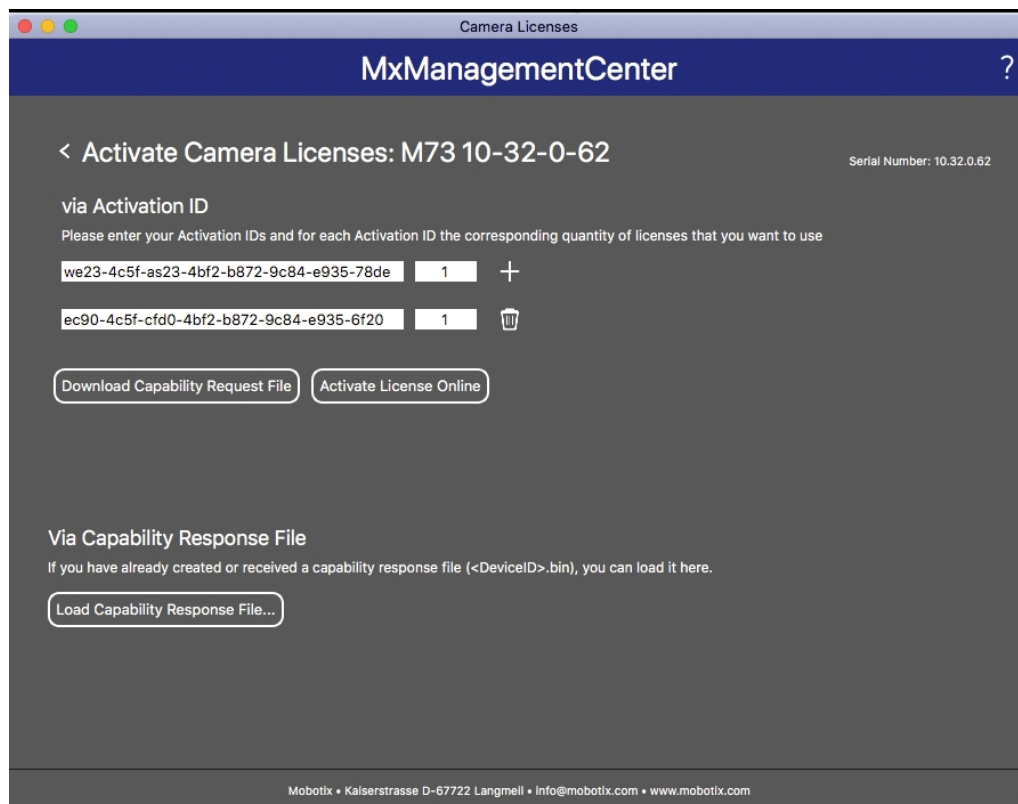


Fig. 7: Adding licenses

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**.

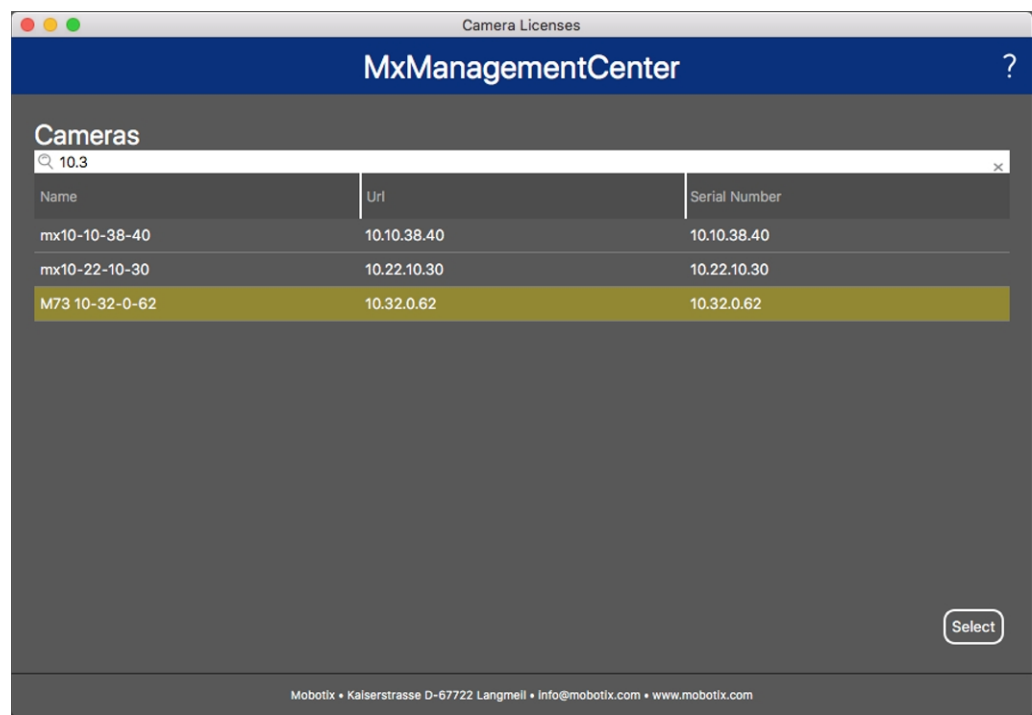


Fig. 8: Overview of Camera App Licenses in MxManagementCenter

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

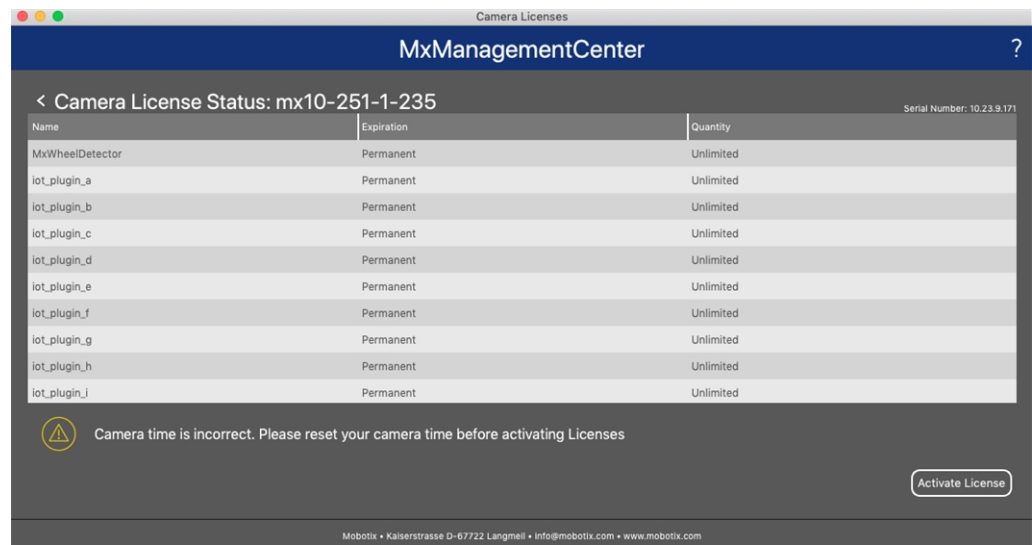


Fig. 9: Overview of the licenses installed on the camera

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

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 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: **Setup Menu / Certified App Settings** ([http\(s\)://<Camera IP address>/control/app_config](http(s)://<Camera IP address>/control/app_config)).

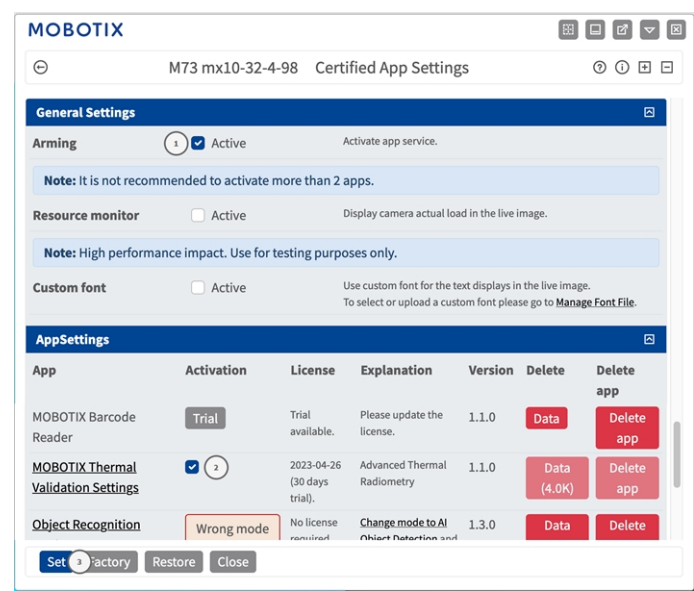


Fig. 10: Certified App: Settings

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. 19](#).

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 Validation Profiles

You can create multiple Thermal Radiometry Profiles with individual settings. The following configurations should be taken into account:

The screenshot displays the 'MOBOTIX Thermal Validation Settings' window. The title bar shows 'M73 mx10-32-4-98 MOBOTIX Thermal Validation Settings'. The main content area is titled 'MOBOTIX Thermal Validation' and includes a sidebar on the left labeled 'Thermal Radiometry Profiles'. The main configuration area contains the following fields and controls:

- Profile Name:** A text input field containing 'Engine 1'.
- Sensor:** A dropdown menu currently set to 'Right Sensor'.
- Polygon points:** Three input fields for defining the detection area: '200 x 200', '200 x 760', and '1080 x 760'. Below these is an 'Edit Polygon' button.
- Temperature threshold:** A numeric input field set to '50'.
- Event Dead Time:** A numeric input field set to '5'.
- Advanced Sensor Parameters:** A checkbox that is currently unchecked.

At the bottom of the window, there are four buttons: 'Set', 'Factory', 'Restore', and 'Close'. A note on the right side of the configuration area reads: 'Create Thermal Radiometry profiles with individual settings for detection area, thresholds and so on.'

Profile Name: Enter a meaningful name for the Thermal Radiometry Profile.

Sensor Selection: If the camera has multiple image sensors, select the one that provides the video stream to be analyzed for the current Detection Area.

Polygon Points: 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. 20](#)).

Temperature Threshold: This temperature in degrees must either be exceeded or not reached in order to trigger an event.

Event Dead Time: to be clarified

Advanced Sensor Parameters: When activated the following parameter are available to configure:

Emissivity (percent): Set a percentage value that indicates which part of the heat radiation emitted by an object actually originates from this object and is not due to reflections. This value depends on the material of the object that is being measured. Reflective surfaces have a low emissivity, matte surfaces have a high emissivity.

A value of "100" disables this correction. In this case, no correction is made based on emissivity.

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

A value of "0" disables this correction. In this case, no correction is made based on distance, air humidity and air temperature.

Background temperature: Set the temperature of other objects near the object being measured. This value is relevant if the emissivity of the object to be measured is low and the objects in the environment have a significantly higher or lower temperature.

Atmospheric temperature (degrees): Set the temperature of the air between the sensor and the object. The relevance of this parameter increases with higher humidity and distance from the object.

Adding a Profile

1. Click the **plus icon** ① to add a profile.

Deleting a Profile

1. Click the **bin** icon ② to delete the current profile.

Drawing a Polygon Area in the Live View

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

1. In the Live View simply click and drag a rectangular area.
2. Drag the corner points to the desired position.
3. To add another corner point, drag a smaller point between two corner points on the contour of the area.
4. In the top right corner of the live view click **Submit** to adopt the coordinates of the polygon.
5. Optionally click the **bin** icon to delete the recognition area.

Analysis Settings

The following configurations should be taken into account::

MOBOTIX

M73 mx10-32-4-98 MOBOTIX Thermal Validation Settings

Analysis Settings

Temperature Unit	°C	Select temperature unit (°C or °F).
Exclude Moving Objects	<input checked="" type="checkbox"/>	Enables the analysis of moving objects, such as vehicles in the scene, to reduce the possible number of false alarms.
Exclude rapid temperature rise	<input type="checkbox"/>	Enables the analysis of rapid temperature rises, like reflections and light spots that can be interpreted as hot spots, to reduce the possible number of false alarms. The activation of this parameter may result in ignoring some real fires that start very quickly.

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

Temperature Unit: Select temperature unit (°C or °F).

Exclude Moving Objects: Enables the analysis of moving objects, such as vehicles in the scene, to reduce the number of false alarms.

Exclude rapid temperature rise: Enables the analysis of rapid temperature rises, like reflections and light spots that can be interpreted as hot spots, to reduce the possible number of false alarms.

CAUTION! The activation of this parameter may result in ignoring some real fires that start very quickly.

Visualization Settings

The following configurations should be taken into account::

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M73 mx10-32-4-98

MOBOTIX Thermal Validation Settings

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Visualization Settings

Show the detection area

☒

Display detection areas.

Show bounding box

☐

Display bounding box detections of hot spots.

Show recorded track

☐

Display the track followed by detected hot spots.

Show measured temperatures

Off

⌵

Position to display the measured temperatures with respect to the detected hot spot.

Overlay text color

Black

⌵

Color in which the overlay text will be drawn.

Set

Factory

Restore

Close

- Show the Detection Area: Check to display the Area in the Camera Image.
- Show bounding box: Check to display bounding boxes around detected hot spots.
- Show recorded track: Check to display the track followed by detected hot spots.
- Show measured temperatures: Select a position within the camera image to display the measured temperatures with respect to the detected hot spot.
- Overlay text color: Select the overlay text color.

Data Export Settings

The following configurations should be taken into account:

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M73 mx10-32-4-98

MOBOTIX Thermal Validation Settings

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Data Export Settings

Send MxMessages

☒

Each profile will send camera-internal MxMessages. These messages can be used to trigger camera events.

Send MxHub Messages

☐

Each profile will send MxHub compatible messages to the specified server.

Enable Modbus TCP Server

☐

Activates the Modbus TCP server of the camera that will provide the current app results to any client.

Send as Modbus TCP Client

☐

Activates the Modbus TCP client of the camera that will submit the current app results to the specified server.

Send HTTP(S) JSON Messages

☐

Each profile will send JSON-compatible messages via HTTP(S) to the specified server.

Set

Factory

Restore

Close

Send MxMessages: When activated, each profile will send camera-internal MxMessages which can be used to trigger camera events.

Send Hub Messages: When activated, each profile will send MxHub compatible XML messages containing the current temperature values to the specified server.

Use the camera as a Modbus TCP client: When activated, the camera can establish a client connection via Modbus TCP and submit the current temperature values to the server.

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

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

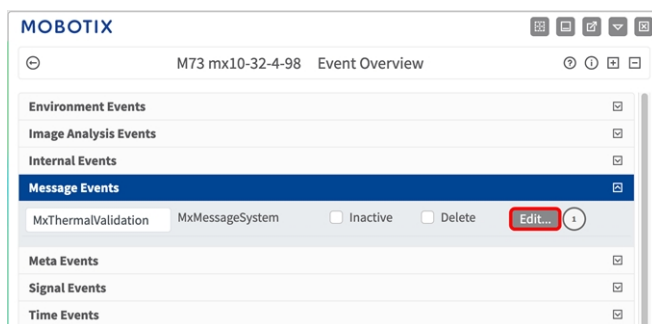
- 128-bit encryption ensures privacy and security of message content.
- MxMessages can be distributed from any camera of the Mx6 and 7 series.
- The message range can be defined individually for each MxMessage.
 - **Local:** Camera expects a MxMessage within its own camera system (e.g. through a Certified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

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. MxAdvancedRadiometry).



2. Click **Edit**① to display a selection of all configured message events.

The screenshot shows the 'Message Events' configuration window for a device 'M73 mx10-32-4-98'. It features a table with columns 'Attribute', 'Value', and 'Explanation'. The 'IP Receive' attribute is set to '8000'. Below this, there's a section for 'Events' with a table showing 'MxThermalValidation' as 'Inactive'. A detailed configuration for 'MxThermalValidation' is shown below, including 'Event Dead Time' (5), 'Event Sensor Type' (MxMessageSystem), 'Message Name' (MxThermalValidation), 'Message Range' (Local), and 'Filter Message Content' (No Filter). A 'Delete' button is visible next to the event name. At the bottom, there's an 'Add new profile' button.

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)).

The screenshot shows the 'Action Group Overview' window for a device 'M73 mx10-32-4-98'. It displays a table with columns 'Arming', 'Events & Actions', and 'Edit'. The first row shows 'VisualAlarm' with 'Arming' set to 'Off' and 'Events & Actions' set to '(select all)'. The second row shows 'MxThermalValidation' with 'Arming' set to 'Enabled' and 'Events & Actions' set to '-'. A red box highlights the 'Edit...' button next to 'MxThermalValidation'. At the bottom, there's an 'Add new group' button.

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

MOBOTIX M73 mx10-32-4-98 Action Group Details

General Settings	Value	Explanation
Action Group	MxThermalValidation	Name: The name is purely informational.
	Enabled ①	Arming: Controls this action group: Enabled activate the group. Off deactivate the group. SI group armed by signal input. CS 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	<div> <div>(Image Analysis: VM)</div> <div>(Image Analysis: VM2)</div> <div>Message: MxThermalValidation ⑤</div> <div>(Signal: SI)</div> <div>(Signal: UC)</div> </div>	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 Deadtime: 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. Simultaneously: All actions are executed simultaneously. Simultaneously until first success: Simultaneous execution, but as soon as one action succeeds (i.e. has been completed or the phone is picked up), all others are terminated. Consecutively: All actions are executed in the specified order. Consecutively until first success: Consecutive execution, but as soon as one action succeeds, the following actions are not executed. Consecutively until first failure: Consecutive execution, but as soon as one action fails, the following actions are not executed.
Actions	Add new action ⑥	

Fig. 11: Configuring an Action Group

- Enable **Arming** ④ of the Action Group.
- Select your message event in the **Event selection** list ⑤ . To select multiple events, hold the shift key.
- Click **Add new Action** ⑥ .
- Select a proper action from list **Action Type and Profile** ⑦ .

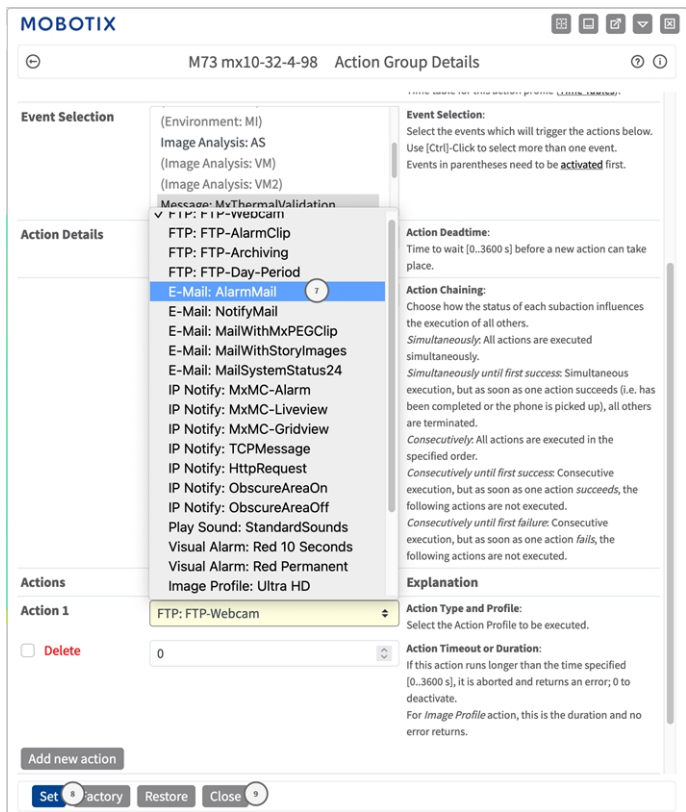


Fig. 12: Select Action Type- and Profile

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)).

MOBOTIX

M73 mx10-32-4-98 Recording

General Settings

Value	Explanation
Arming: Enabled ^①	Arm Recording: Controls camera recording. <i>Enabled:</i> activate recording. <i>Off:</i> deactivate recording. <i>SI:</i> recording armed by signal input. <i>CS:</i> recording armed by custom signal as defined in General Event Settings . <i>From Master:</i> copies recording arming state from master camera.
(No time table)	Time Table Profile: Time table profile for time-controlled recording (Time Tables).

Storage Settings

Value	Explanation
Recording (REC): Event Recording ^②	Recording Mode: Type of event and story recording. <i>Snap Shot Recording:</i> stores single JPEG pictures. <i>Event Recording:</i> stores stream files for every event using MxPEG codec. <i>Continuous Recording:</i> continuously streams video data to stream files using MxPEG codec. Events can be recorded with a higher frame rate using <i>Start Recording</i> , <i>Retrigger Recording</i> and <i>Stop Recording</i> .
Include audio	Record Audio Data: Store audio data in stream file if available. Enable and configure microphone .

Start Recording

Value	Explanation
Start Recording: Message: MxThermalValidation ^③	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.
Max fps	Event Frame Rate: Recording speed if an event is detected, in frames per

Buttons: Set ^④, Factory, Restore, Close ^⑤, More

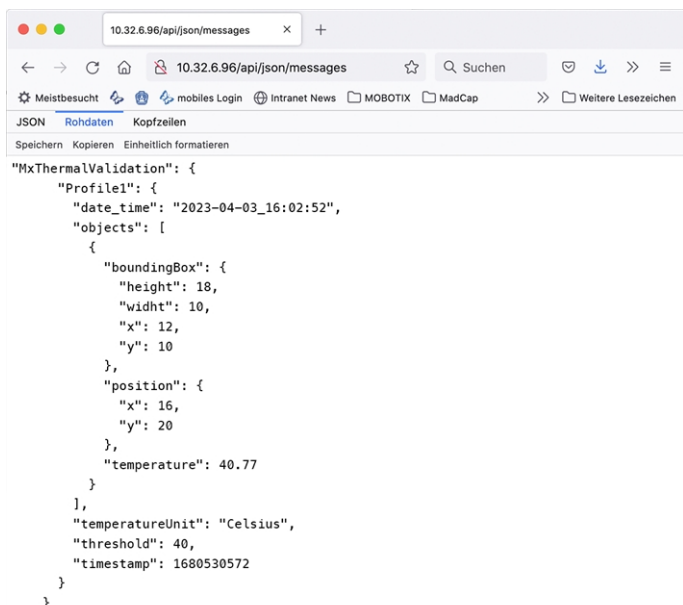
2. Activate **Arm Recording** ^① .
3. Under **Storage Settings / Recording (REC)** select a **Recording mode** ^② . The following modes are available:
 - Snap Shot Recording
 - Event Recording
 - Continuous Recording
4. In list **Start recording** ^③ select the message event just created.
5. Click on 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.

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.

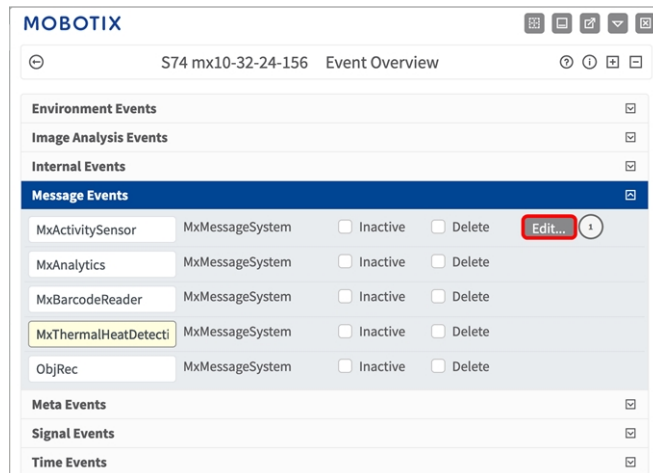


```
"MxThermalValidation": {
  "Profile1": {
    "date_time": "2023-04-03_16:02:52",
    "objects": [
      {
        "boundingBox": {
          "height": 18,
          "width": 10,
          "x": 12,
          "y": 10
        },
        "position": {
          "x": 16,
          "y": 20
        },
        "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 a selection of all configured message events.

MOBOTIX

M73 mx10-32-4-98
Message Events

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

Events	Value	Explanation
MxThermalValidation ①	<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 <input type="radio"/> MQTT Subscription	Event Sensor Type: Choose the message sensor.
Event on receiving a message from the MxMessageSystem.		
	MxThermalValidation.profile.id ②	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.
	JSON Comparison	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> . The <i>Boolean Filter</i> triggers on JSON values <i>true/false</i> , or <i>1/0</i> , and for some JSON strings like <i>"on"/"off"</i> , <i>"yes"/"no"</i> . 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	Filter Value: 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. 33](#))

- **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. 33](#).

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
Objects	MxThermalValidation.profile.objects		List of detected hot spots that could be potential fires

Advanced Configuration: Processing the meta data transmitted by apps

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

Event	MxMessage Name	Filter Value (example)	Explanation
	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.position.y		
	MxThermalValidation.profile.objects.temperature	"40.77"	Temperature of the hot spot
Temperature unit	MxThermalValidation.profile.temperatureUnit	"Celsius"	Temperature unit defined in the profile (Celsius or Fahrenheit)

Event	MxMessage Name	Filter Value (example)	Explanation
Temperature threshold	MxThermalValidation.profile.threshold	"40"	Temperature threshold defined for the profile
Time when profile event triggered	MxThermalValidation.profile.timestamp	"1680530572"	UNIX time stamp



EN_05/23

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