



Guideline

MOBOTIX AI-TECH Video Analytics Apps - Message Events

© 2021 MOBOTIX AG



Table of Contents

Table of Contents	2
Support	3
Imprint	5
Legal Notes	6
About AI-TECH Video Analytics Apps	8
About MxMessageSystem	9
What is MxMessageSystem?	9
Facts about MxMessages	9
Licensing Certified Apps	10
Managing Licenses in MxManagementCenter	10
Activation of the Certified App Interface	17
Basic configuration: Processing the automatically generated app events	18
Advanced Configuration: How to process the meta data transmitted by apps	21

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**



Imprint

This document is part of the product (AI-TECH Video Analytics App) distributed by MOBOTIX AG. The document describes how to use and to configure the product and its components.

Subject to change without notice.

Copyright Information

This document is protected by copyright. Passing on information to others is not permitted without the prior written consent of MOBOTIX AG. Violations will be subject to criminal punishment.

Patent and Copy Protection

All rights reserved. Trademarks or registered trademarks belong to the corresponding owners.

Address

MOBOTIX AG
Kaiserstrasse
67722 Langmeil
Germany
Phone: +49 6302 9816-103
E-Mail: sales@mobotix.com
Internet: www.mobotix.com

Legal Notes

Special Export Regulations!

Cameras with thermal image sensors ("thermal cameras") are subject to the special export regulations of the U.S.A. and including the ITAR (International Traffic in Arms Regulation):

- According to the currently applicable export regulations of the U.S.A. and the ITAR, cameras with thermal image sensors or parts thereof must not be exported to countries embargoed by the U.S.A., except if a special permit can be presented. At present, this applies to the following countries: Crimea region of Ukraine, Cuba, Iran, North Korea, Sudan, and Syria. The same export ban applies to all persons and institutions listed in "The Denied Persons List" (see www.bis.doc.gov, "Policy Guidance > Lists of Parties of Concern"; <https://www.treasury.gov/resource-center/sanctions/sdn-list/pages/default.aspx>).
- Under no circumstances must the camera itself or its thermal image sensors be used in the design, the development or in the production of nuclear, biological or chemical weapons or in the weapons themselves.

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 AI-TECH Video Analytics App, 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 > 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 > 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 AI-TECH Video Analytics Apps

Cyber secure and individual applications

The extremely powerful and cyber-secure MOBOTIX 7 IoT system platform is the core of the MOBOTIX high-end camera series - the ultimate plus flexibility! MOBOTIX 7 includes Certified Apps developed on the basis of artificial intelligence and deep learning, which specifically cover numerous current industry requirements and thus open up completely new areas of application for a surveillance camera.

- All apps can be tested free of charge for 30 days
- Configuration and operation of the apps is done directly via the camera firmware
- Triggering of camera events and other actions by an app via MxMessageSystem
- Interfaces for direct integration of A.I. Tech App Events into the systems of Wavestore and Qognify Cayuga & Occularis
- Integrated web links to access A.I. Tech app documentation and training material directly from the app interface
- All apps meet the highest cyber security requirements
- Apps can be purchased and used individually or as App Bundles

Caution

Thermal sensors are not supported by this app.

About 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 an 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 an MxMessage within its own camera system (e.g. through a Certified App).
 - **Global:** the camera expects an 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.

Licensing Certified Apps

The following licenses are available for the AI-TECH Video Analytics App:

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

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

Note

For buying or renewing a license please 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.

Managing Licenses in MxManagementCenter

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

Activation of Certified Apps and events

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**.

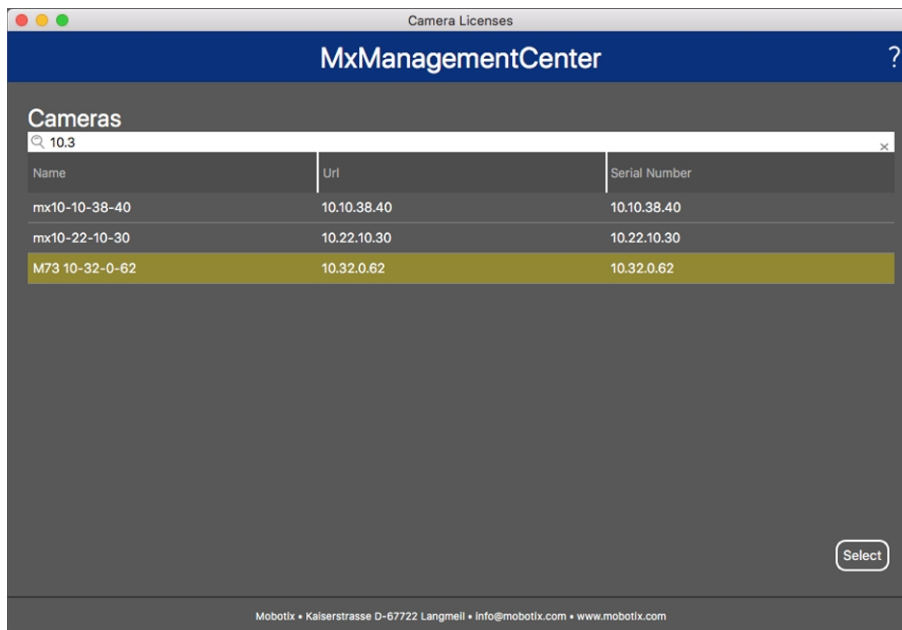


Fig. 1: Overview of Camera App Licenses in MxManagementCenter

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**.

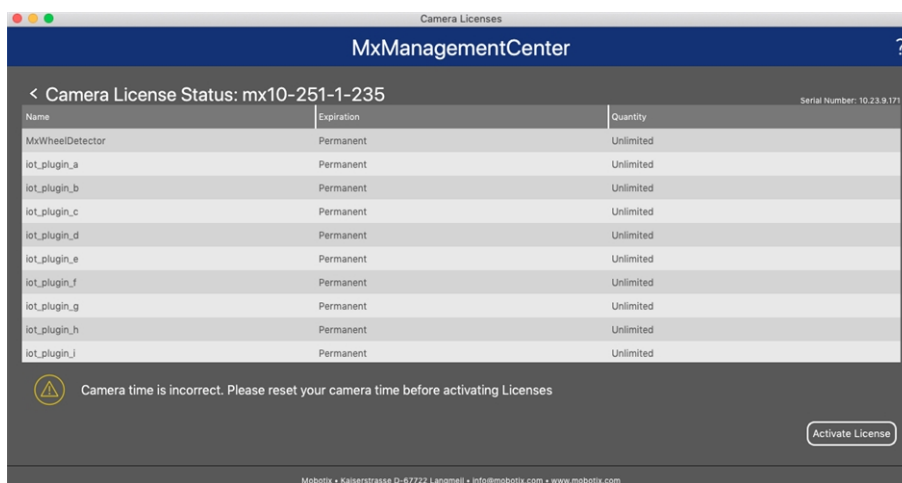


Fig. 2: Overview of the licenses installed on the camera

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.
4. 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.

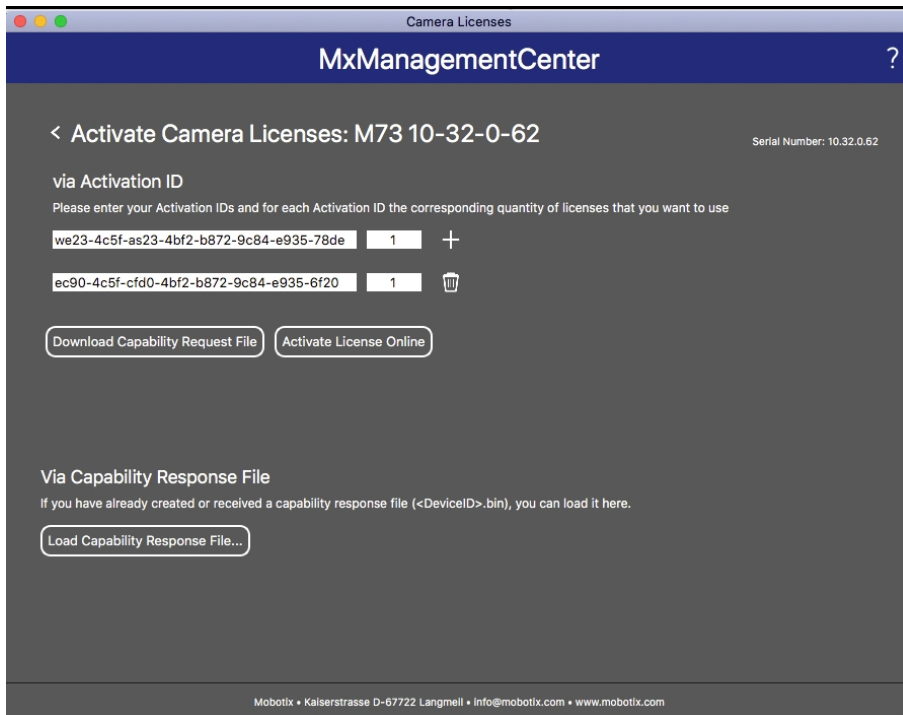


Fig. 3: Adding licenses

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**.

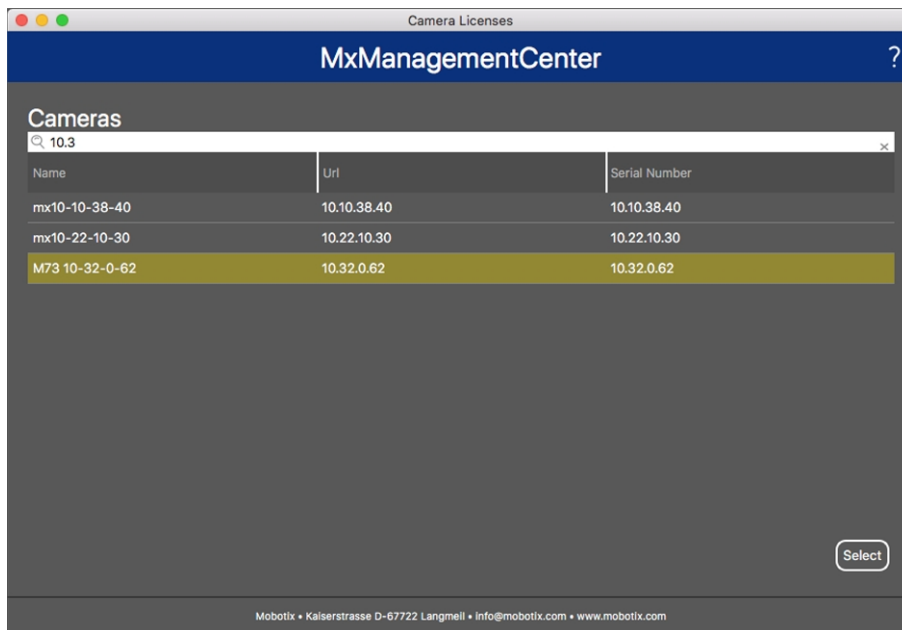


Fig. 4: Overview of Camera App Licenses in MxManagementCenter

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**.

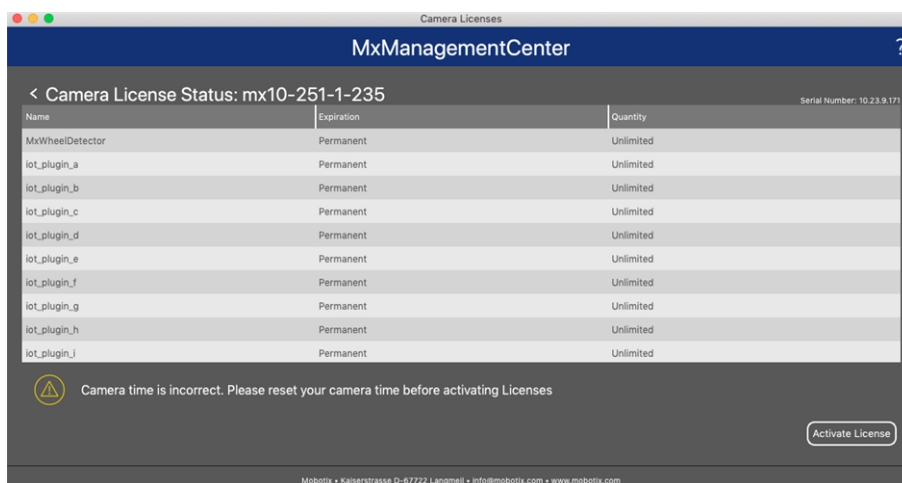


Fig. 5: Overview of the licenses installed on the camera

Note

If necessary, correct the time set on the camera.

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.

- 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.

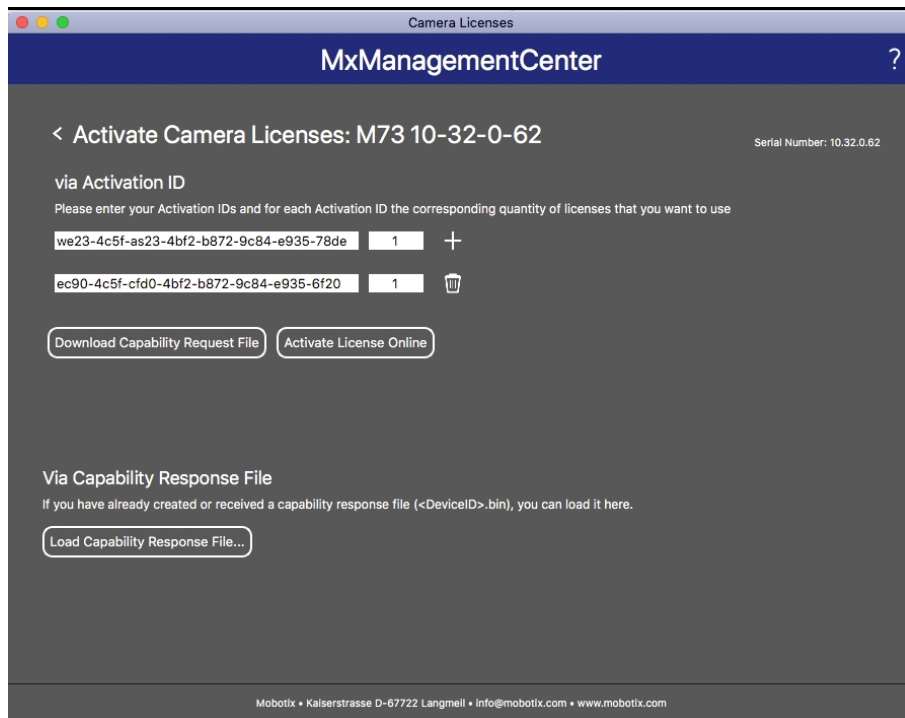


Fig. 6: Adding licenses

- 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.

Manage licenses

In the license management screen, you get a tabular overview of all licenses that have been activated for a camera.

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

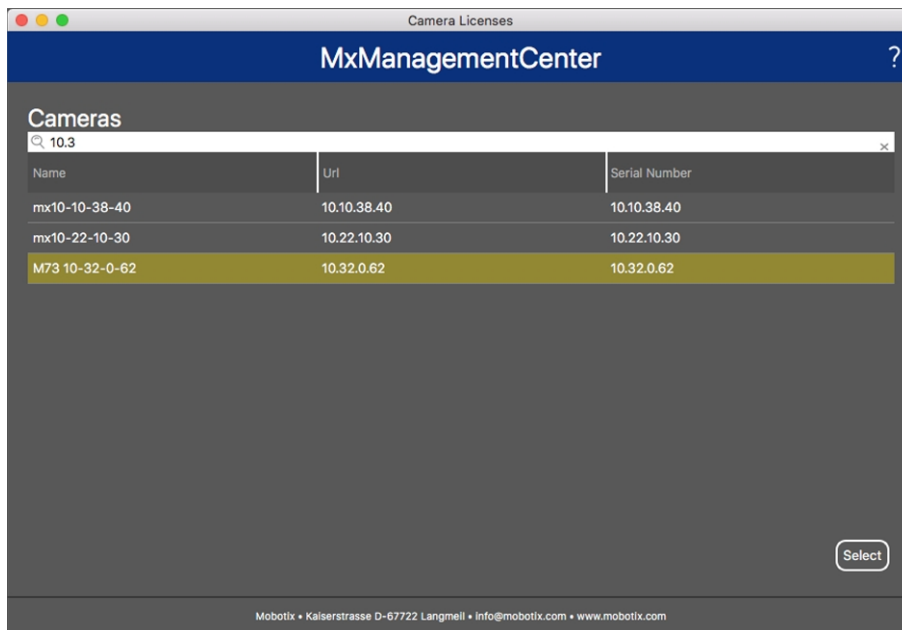


Fig. 7: Overview of Camera App Licenses in MxManagementCenter

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

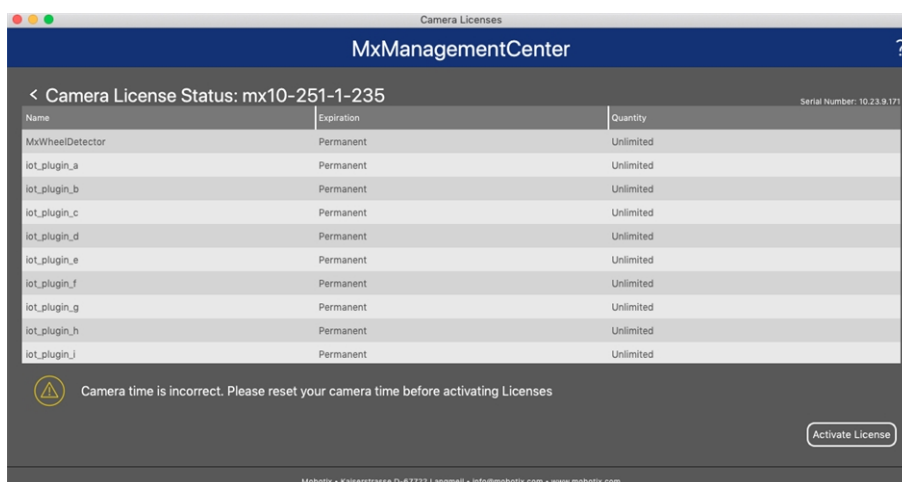


Fig. 8: Overview of the licenses installed on the camera

Note

If necessary, correct the time set on the camera.

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

Attention

The AI-TECH Video Analytics 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.

Activation of A.I. Tech Apps and events

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)).

Note

The default configuration password corresponds to the name of the app (e.g. AlBiodeep). MOBOTIX strongly recommends changing the default configuration password.

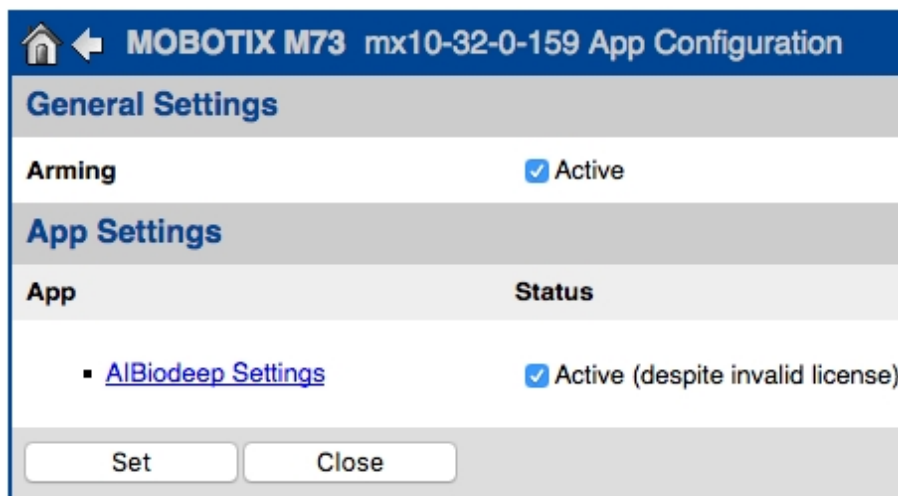


Fig. 9: Certified App: Settings

2. Under **General Settings** activate the **Arming** of the MOBOTIX interface (see screenshot).
3. Under **App Settings** activate the app.
4. Click on the name of the App to be configured **to open the Apps user interface**.
5. Go to the configuration interface and configure / calibrate the app as described In the A.I. Tech App documentation (see www.mobotix.com > **Support** > **Download Center** > **Marketing & Documentation**).
6. Save the configuration within the Apps user interface via **Configuration / Send configuration**.

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

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](#) , p. 17), a generic message event for this specific app is automatically generated in the camera.

- To check the event go to **Setup-Menu / Event Control / Event Overview**.
- The automatically generated message event profile is named after the application (e.g. AlBiodeep).

Fig. 10: Example: Generic message event from AI-Bio

Action handling - Configuration of an action group

Attention
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 A.I. Tech event.

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

Name	Arming	Events & Actions	Edit
VisualAlarm ☐ Delete	Enabled (No time table)	MSG VA	Edit...
AI Action ☐ Delete	Enabled (No time table)	(select all) -	Edit...

Add new group

Fig. 11: Configuration of Action Groups

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

General Settings	Value	Explanation
Action Group	AI Action Enabled (No time table)	Name: The name is purely informational. Arming: Controls this action group: <i>Enabled:</i> activate the group. <i>Off:</i> deactivate the group. <i>SI:</i> group armed by signal input. <i>CS:</i> group armed by custom signal as defined in General Event Settings . Time Table: Time table for this action profile (Time Tables).
Event Selection	Image Analysis: AS (Image Analysis: VM) (Image Analysis: VM2) Message: AlBiodeep (Signal: SI)	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 Simultaneously	Action Deadline: Time to wait [0..3600 s] before a new action can take place. Action Chaining: Choose how the status of each subaction influences the execution of all others.

Fig. 12: Configuring an Action Group

1. Activate **Arming** of the Action Group.
2. Select your message event in the **Event selection** list. To select multiple events, press the shift key.
3. Click **Add new Action**
4. Select a proper action from list **Action Type and Profile**.

Actions	Explanation
Action 1 ☐ Delete 0	Action Type and Profile: Select the Action Profile to be executed. Action Timeout or Duration: If this action runs longer than the time specified [0..3600 s], it is aborted and returns an error; 0 to deactivate. For <i>Image Profile</i> action, this is the duration and no error returns.

Add new action

Fig. 13: 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).

5. Click on the **Set** button at the end of the dialog box to confirm the settings.

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).

Storage Settings	Value	Explanation
Recording (REC)	Event Recording Snap Shot Recording Event Recording Continuous Recording	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> .
Start Recording	Image Analysis: AS (Image Analysis: VM) (Image Analysis: VM2) Message: AlBiodeep (Signal: SI) Signal: UC Max fps 0 30 s	Start Recording: Select the events which will start recording. Use [Ctrl]-Click to select more than one event. Events in parentheses need to be <i>activated</i> first. Event Frame Rate: Recording speed if an event is detected, in frames per second. Recording Time Before Event: Additional recording time before an event in seconds. Recording Time: Time to include in recorded stream after an event has occurred.

Fig. 14: Configuration of camera recording settings

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

Meta data transferred within 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 an MxMessage.

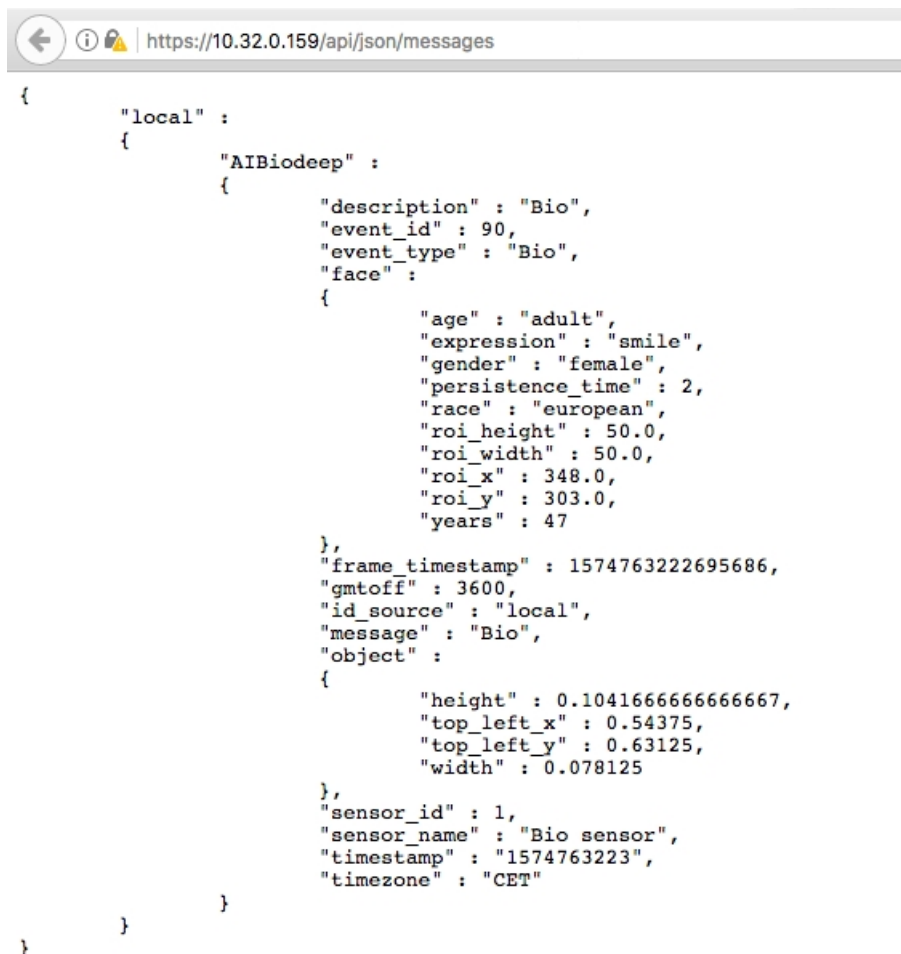


Fig. 15: Example: Meta data transmitted within an MxMessage of the AI-BIO app

Note

To view the metadata structure of the last App event, enter the following URL in the address bar of your browser: `http(s)://IPAddressOfYourCamera/api/json/messages`

Creating a Custom Message Event

In the camera web interface, open: **Setup Menu / Event Control / Event Overview**
(`http(s)://<Camera IP address>/control/event_msg`)

AlBiodeep

Inactive Delete

5

Event Dead Time:
Time to wait [0..3600 s] before the event can trigger anew.

Event Sensor Type:
Choose the message sensor.

Event Sensor Type

☐ IP Receive

☒ MxMessageSystem

Event on receiving a message from the MxMessageSystem.

AlBiodeep.face.age

Local

JSON Equal Compare

"adult"

Message Name:
Defines an MxMessageSystem name to wait for.

Message Range:
There are two different ranges of message distribution:
Global: across all cameras within the current LAN.
Local: camera internal.

Filter Message Content:
Optionally choose how to ignore messages containing *Filter Value*. Select *No Filter* to trigger on any message with defined *Message Name*.

Filter Value:
Define either a valid reference value as a string (in JSON format) without line breaks, or an extended regular expression. Open help for examples.
This parameter allows using [variables](#).

Fig. 16: Configuration of a user-defined event

1. Configure the parameters of the event profile as follows:
 - **Profile Name:** Enter an event related / application related profile name that illustrates the purpose of the profile.
 - **Message Name:** Enter the "Message Name" according to the event documentation of the corresponding app (see table [Examples for MxMessage Name & Filter Values - A.I. Tech App Bundles](#), p. 25 below)
 - **Message Range:**
 - Local: Default settings for A.I. Tech Apps
 - Global: (MxMessage is forwarded from another MOBOTIX camera in the local network.
 - **Filter Message Content:**
 - Generic Event: "No Filter"
 - Filtered Event: "JSON Equal Compare"

Filter Value: see table [Examples for MxMessage Name & Filter Values - A.I. Tech App Bundles](#), p. 25.

Attention

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 / bundle (e.g. AI Bio Deep)

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

Examples for message names and filter values of individual A.I. Tech Apps

AI-BIO	MxMessage Name	Filter Value
Generic Event	AlBiodeep	
Age Event	AlBiodeep.face.age	“child”, “young”, “adult”, “elder”
Gender Event	AlBiodeep.face.gender	“female”, “male”
Face Detection Event	AlBiodeep.face	

AI-CROWD	MxMessage Name	Filter Value
Generic Event	AlCrowd	
Number of People Event	AlCrowd.event_type.people_number	e.g. “10”

AI-FACEDTECT-DEEP	MxMessage Name	Filter Value
Generic Event	AlFacedetect	
Masked Face	AlFacedetect.face.type	“1”
Unmasked Face	AlFacedetect.face.type	“2”

AI-FIRE	MxMessage Name	Filter Value
Fire Event	AlFiredeep	

AI-PARKING	MxMessage Name	Filter Value
Generic Event	AlParkingdeep	
Spot Occupancy Event	AlParkingdeep.event_type.occupancy	e.g. “100”
Parking Spot-Change	AlParkingdeep.event_type	“FREE”, “BUSY”

AI-INTRUSION Pro	MxMessage Name	Filter Value
Intrusion Event	AlIntrusionpro	

Advanced Configuration: How to process the meta data transmitted by apps

Managing Licenses in MxManagementCenter

AI-PEOPLE	MxMessage Name	Filter Value
Generic Event	AIPeople	
Counting Event	AIPeople.event_type	“Counting”
Aggregate Event	AIPeople.event_type	“Aggregate”

AI-LOITERING	MxMessage Name	Filter Value
Loitering Event	AI Loitering	

AI-LOST	MxMessage Name	Filter Value
Lost Object Event	AILost	

AI-OCCUPANCY	MxMessage Name	Filter Value
Generic Event	AIOccupancy	
Percentage occupancy Event	AIOccupancy.event_type.occupancy	e.g. “90”

AI-OVERCROWD	MxMessage Name	Filter Value
Generic Event	AIOvercrowd	

AI-OVEROCCUPANCY	MxMessage Name	Filter Value
AI Overoccupancy Event	AIOveroccupancy	

AI-ROAD 3D	MxMessage Name	Filter Value
Generic Event	AIRoad3d	
Vehicle Type	AIRoad3d.vehicle_type	“TRUCK”, “CAR”

AI-SMOKE	MxMessage Name	Filter Value
Smoke Event	AI Smokedeep	

AI-SPILL	MxMessage Name	Filter Value
Spill Event	AIspill	

AI-INCIDENT	MxMessage Name	Filter Value
Generic Event	AIIncident	

Examples for MxMessage Name & Filter Values - A.I. Tech App Bundles

AI-SECURITY	MxMessage Name	Filter Value
Generic Event	AIsecurity3	
AI Intrusion-Event	AIsecurity3.description	"Intrusion"
AI Loitering Event	AIsecurity3.description	"Loitering"
AI Lost Event	AIsecurity3.description	"Lost"

AI-RETAIL	MxMessage Name	Filter Value
Generic Event	AIRetail	
AI People Event	AIRetail.description	"People"
AI Heat Event	AIRetail.description	"Heat"
AI Occupancy Event	AIRetail.description	"Occupancy"
AI Overoccupancy Event	AIRetail.description	"Overoccupancy"
AI Crowd Event	AIRetail.description	"Crowd"
AI Overcrowd Event	AIRetail.description	"Overcrowd"

AI-TRAFFIC	MxMessage Name	Filter Value
Generic Event	AITraffic	
AI Road Event	AITraffic.description	"Road"
AI Incident Event	AITraffic.description	"Heat"

AI-FIRE Plus	MxMessage Name	Filter Value
Generic Event	AlFireplus	
AI Fire Event	AlFireplus.description	“Fire”
AI Smoke Event	AlFireplus.description	“Smoke”

Caution

If the filter suitable for you is not listed above, simply create the message event individually using the listed MxMessage names and filter values.