

# Guideline

MOBOTIX AI-TECH Video Analytics App

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BeyondHumanVision

**MOBOTIX**

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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](http://www.mobotix.com) > [Support](#) > [Help Desk](#)





# Imprint

This document is part of the camera manufactured by MOBOTIX AG (called manufacturer in the following); the document describes how to use and to configure the camera and its components.

Subject to change without notice.

## Copyright Information

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## Support

See [Support](#), p. 3.

# 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: Syria, Iran, Cuba, North Korea, Sudan and Krim. The same export ban applies to all persons and institutions listed in "The Denied Persons List" (see [www.bis.doc.gov](http://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](http://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](http://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](http://www.-mobotix.com) by clicking on the corresponding link at the bottom of every page.

# 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 and configuration of corresponding apps, S. 1](#)).

## 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](http://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**.

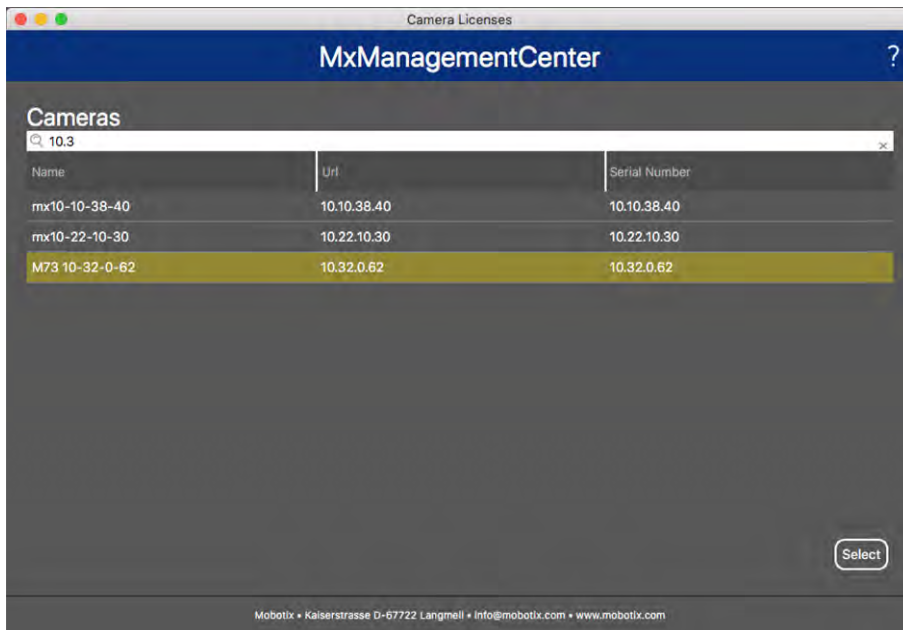


Fig. 1: Overview of Camera App Licenses in MxManagementCenter

### Note

If necessary, correct the time set on the camera.

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

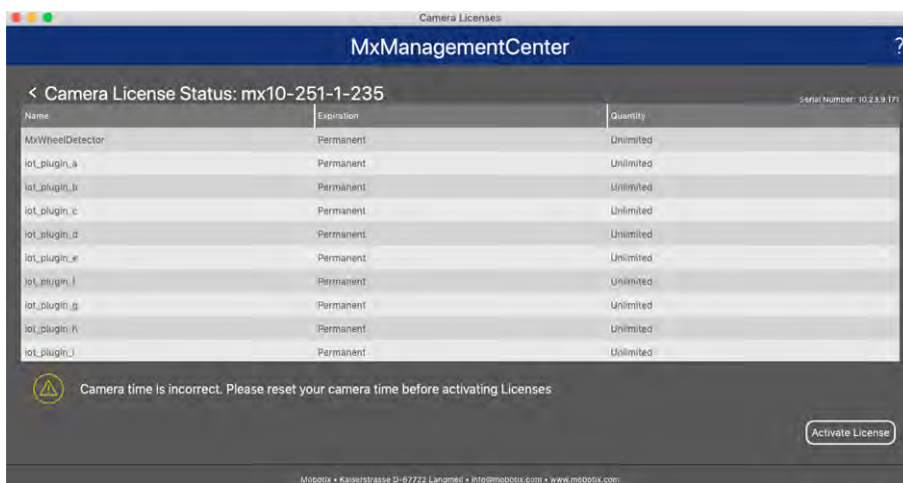


Fig. 2: Overview of the licenses installed on the camera

### Note

If necessary, correct the time set on the camera.

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. To remove a line click **🗑**.

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

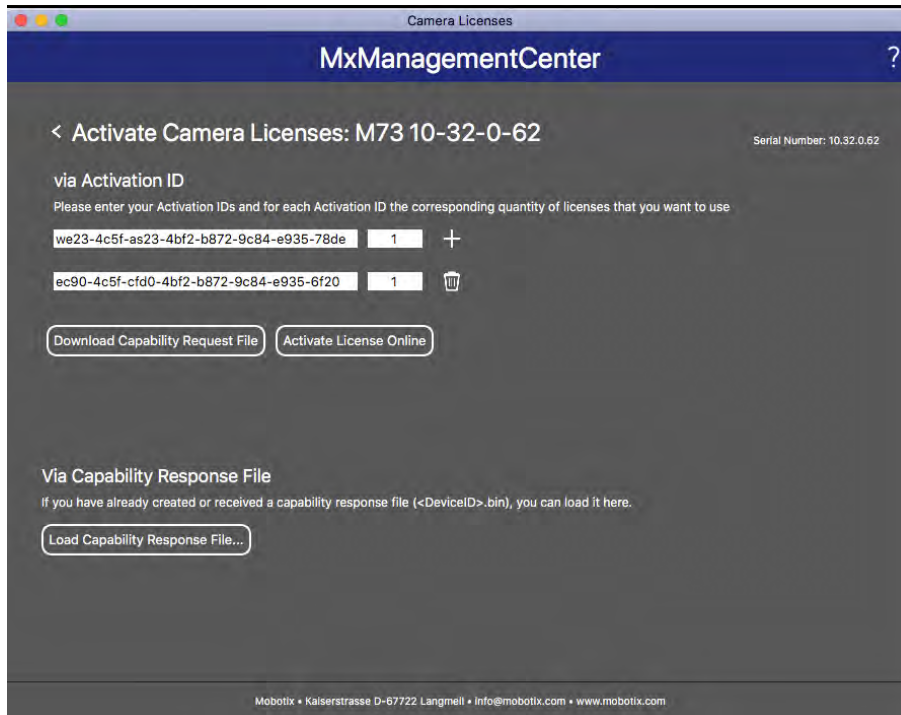


Fig. 3: Adding licenses

### 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. 11).

## 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**.

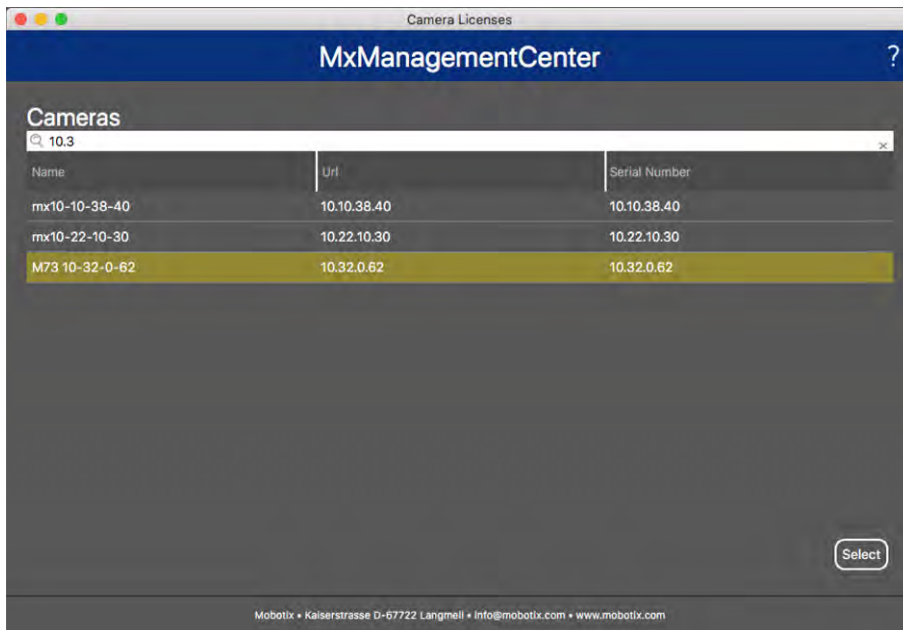


Fig. 4: Overview of Camera App Licenses in MxManagementCenter

### Note

If necessary, correct the time set on the camera.

- 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.

- Enter a valid Activation ID and specify the number of licenses to install on this computer.
- 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.
- 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.

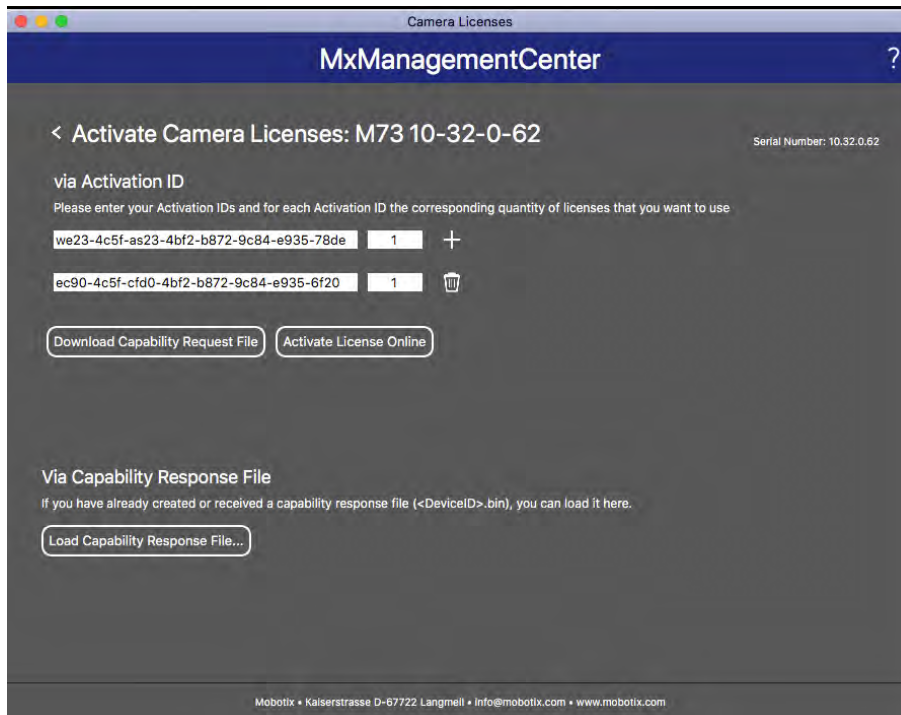


Fig. 6: Adding licenses

- 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**.

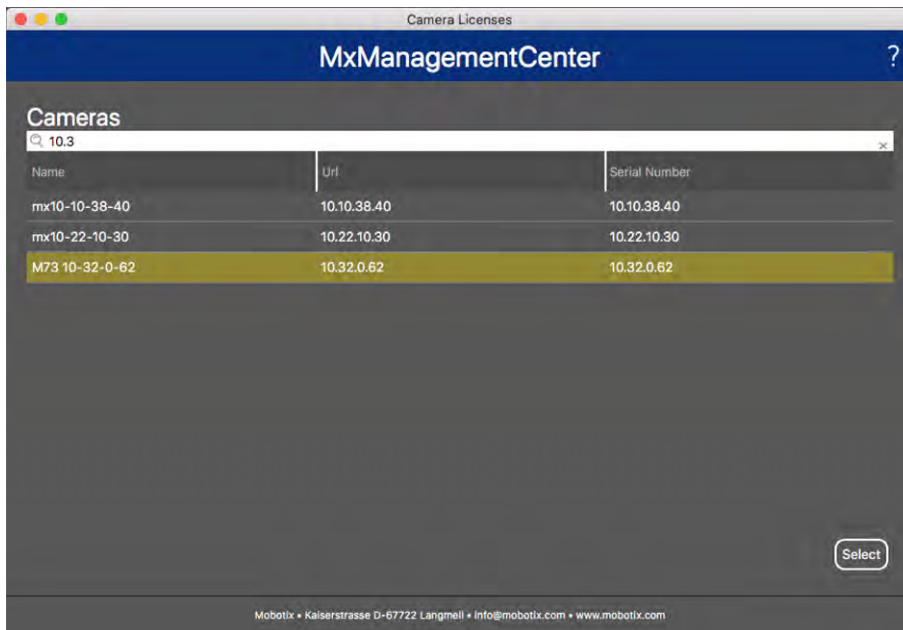


Fig. 7: Overview of Camera App Licenses in MxManagementCenter

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

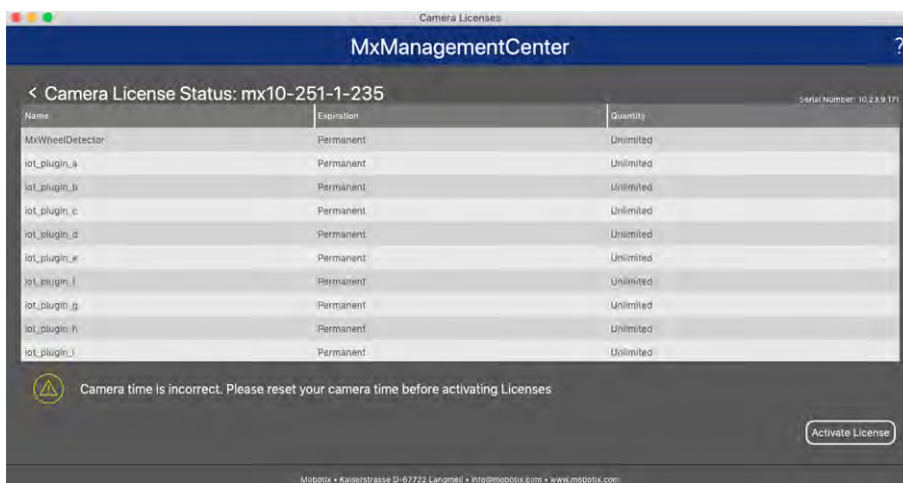


Fig. 8: Overview of the licenses installed on the camera

**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.

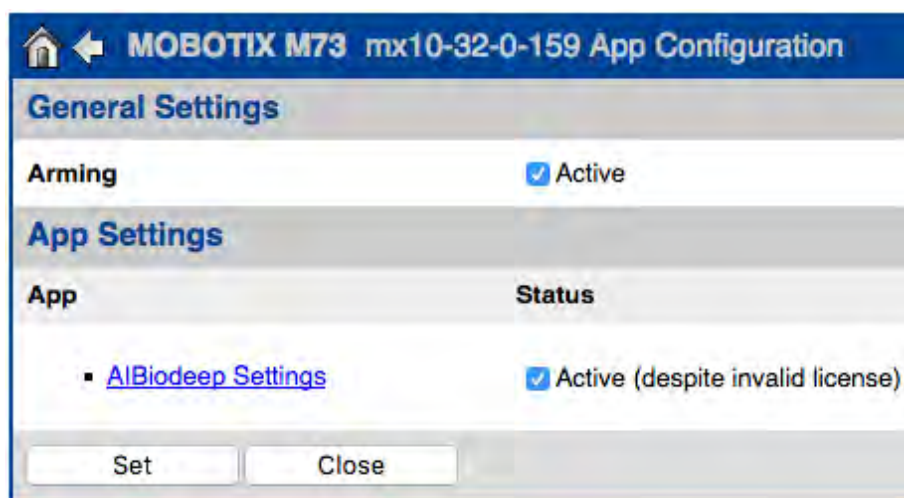


Fig. 9: Certified App: Settings

2. Under **General Settings** activate the **Arming** of the MOBOTIX interface (see Screenshot).
3. Under **App Settings** activate **App (despite invalid license)**.
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](http://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. 16), 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 (z.B. AIBiodeep).

The screenshot shows the configuration page for an event named "AIBiodeep". At the top right, there are "Inactive" and "Delete" buttons. Below the event name, there is a dropdown menu showing "5" for the "Event Dead Time". The "Event Sensor Type" is set to "MxMessageSystem" (selected with a blue dot). The event description is "Event on receiving a message from the MxMessageSystem.". The "Message Name" is set to "AIBiodeep". The "Message Range" is set to "Local". The "Filter Message Content" is set to "No Filter". On the right side, there is explanatory text for "Message Range" and "Filter Message Content".

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)).

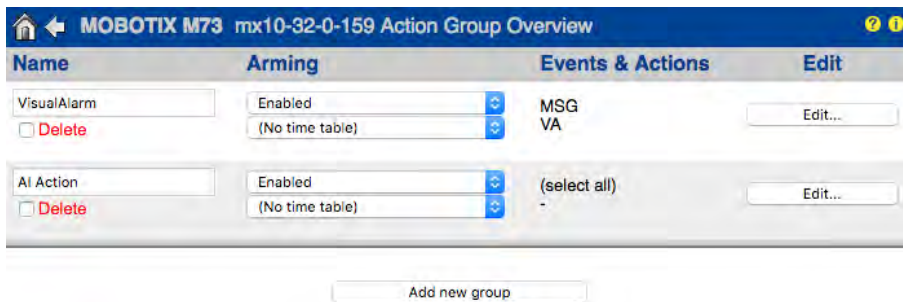


Fig. 11: Configuration of Action Groups

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

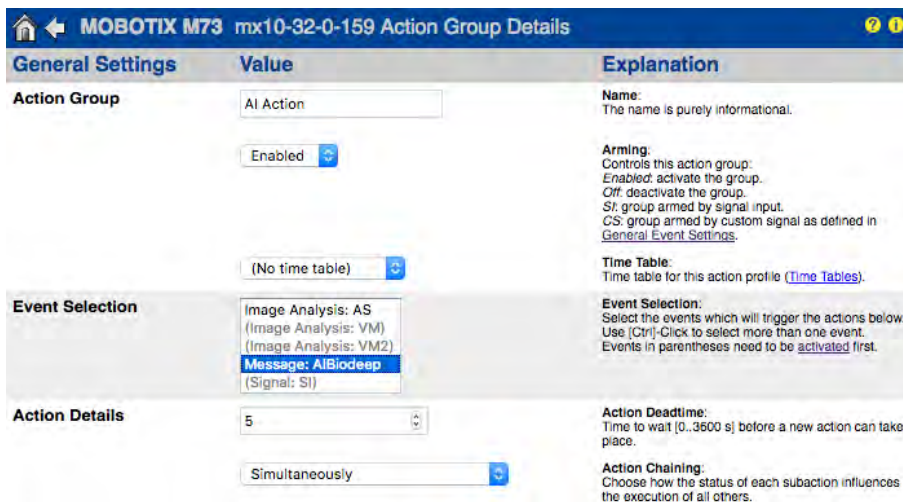


Fig. 12: Configuring an Action Group

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**.

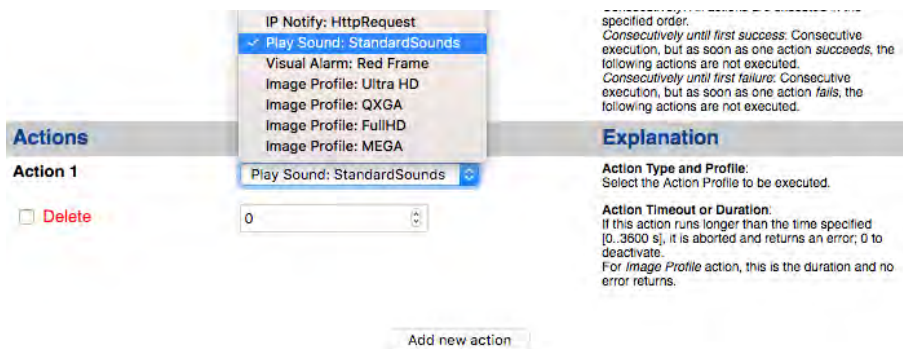


Fig. 13: Select Action Type- and Profile

**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).

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

## Action settings - Configuration of the camera recordings

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

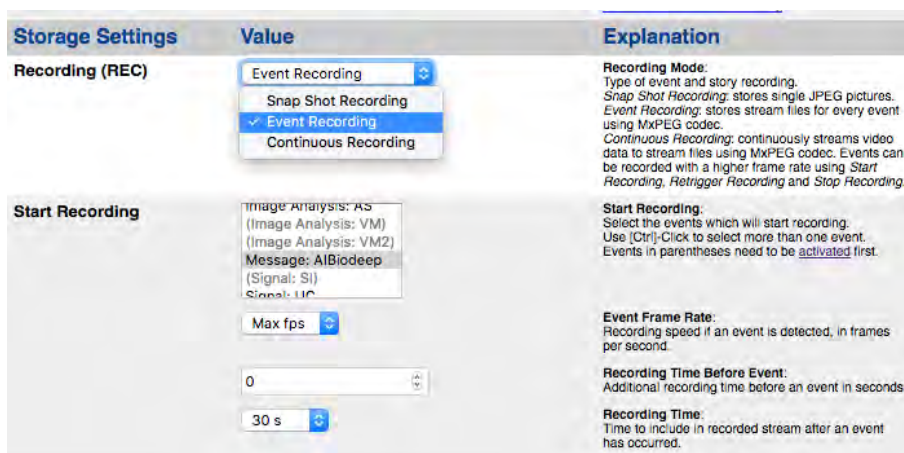


Fig. 14: Configuration of camera recording settings

- Activate **Arm Recording**.
- Under **Storage Settings / Recording (REC)** select a **Recording mode**. The following modes are available:
  - Snap Shot Recording
  - Event Recording
  - Continuous Recording
- In list **Start recording** select the message event just created.
- Click on the **Set** button at the end of the dialog box to confirm the settings.
- 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.



```
{
  "local" :
  {
    "AIBiodeep" :
    {
      "description" : "Bio",
      "event_id" : 90,
      "event_type" : "Bio",
      "face" :
      {
        "age" : "adult",
        "expression" : "smile",
        "gender" : "female",
        "persistence_time" : 2,
        "race" : "european",
        "roi_height" : 50.0,
        "roi_width" : 50.0,
        "roi_x" : 348.0,
        "roi_y" : 303.0,
        "years" : 47
      },
      "frame_timestamp" : 1574763222695686,
      "gmtoff" : 3600,
      "id_source" : "local",
      "message" : "Bio",
      "object" :
      {
        "height" : 0.10416666666666667,
        "top_left_x" : 0.54375,
        "top_left_y" : 0.63125,
        "width" : 0.078125
      },
      "sensor_id" : 1,
      "sensor_name" : "Bio sensor",
      "timestamp" : "1574763223",
      "timezone" : "CET"
    }
  }
}
```

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)://<Camera IP address>/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

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.

Inactive Delete

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. 24 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. 24.

#### 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 People	MxMessage Name	Filter Value
Generic Event	AIPeople	
Counting Event	AIPeople.event_type	“Counting”
Aggregate Event	AIPeople.event_type	“Aggregate”

AI Occupancy	MxMessage Name	Filter Value
Generic Event	AIOccupancy	
Prozentuale Belegung Event	AIOccupancy.event_type.occupancy	e.g. “90”

AI Overoccupancy	MxMessage Name	Filter Value
AI Overoccupancy Event	AIOveroccupancy	

AI Crowd	MxMessage Name	Filter Value
Generic Event	AICrowd	
Number of People Event	AICrowd.event_type.people_number	e.g. “10”

AI Overcrowd	MxMessage Name	Filter Value
Generic Event	AIOvercrowd	

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

AI Intrusion Pro	MxMessage Name	Filter Value
Intrusion Event	AllIntrusionpro	

AI Lost	MxMessage Name	Filter Value
Lost Object Event	AllLost	

AI Loitering	MxMessage Name	Filter Value
Loitering Event	AllLoitering	

AI Fire	MxMessage Name	Filter Value
Fire Event	AllFiredeep	

AI Smoke	MxMessage Name	Filter Value
Smoke Event	AllSmokedeep	

AI Spill	MxMessage Name	Filter Value
Spill Event	AllSpill	

AI Road 3D	MxMessage Name	Filter Value
Generic Event	AllRoad3d	
Vehicle Type	AllRoad3d.vehicle_type	"TRUCK", "CAR"

AI Incident	MxMessage Name	Filter Value
Generic Event	AllIncident	

AI Incident	MxMessage Name	Filter Value
Generic Event	AllParkingdeep	
Spot Occupancy Event	AllParkingdeep.event_type.occupancy	e.g. "100"
Parking Spot-Change	AllParkingdeep.event_type	"FREE", "BUSY"

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

AI Security	MxMessage Name	Filter Value
Generic Event	AI Security3	
AI Intrusion-Event	AI Security3.description	"Intrusion"
AI Loitering Event	AI Security3.description	"Loitering"
AI Lost Event	AI Security3.description	"Lost"

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

AI Traffic	MxMessage Name	Filter Value
Generic Event	AI Traffic	
AI Road Event	AI Traffic.description	"Road"
AI Incident Event	AI Traffic.description	"Heat"

AI Fire	MxMessage Name	Filter Value
Generic Event	AI Fireplus	
AI Fire Event	AI Fireplus.description	"Fire"
AI Smoke Event	AI Fireplus.description	"Smoke"

### Attention

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