

Guideline

AI-TECH Video Analytics App - Message Events

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TOC

Support	3
Imprint	5
About MxMessageSystem	6
What is MxMessageSystem?	6
Facts about MxMessages	6
Activation of the Certified App Interface and configuration of corresponding apps	7
Activation of A.I. Tech Apps and events	7
Basic configuration: How to process the automatically generated app events	8
Checking automatically generated app events	8
Action handling - Configuration of an action group	8
Action settings - Configuration of the camera recordings	10
Advanced Configuration: How to process the meta data transmitted by apps	11
Meta data transferred within MxMessageSystem	11
Creating a Custom Message Event	11
Examples for message names and filter values of individual A.I. Tech Apps	13
Examples for MxMessage Name & Filter Values - A.I. Tech App Bundles	15

Support

If you need technical support, please contact your MOBOTIX-dealer. If your questions cannot be answered immediately, your reseller will forward your inquiries through the appropriate channels to ensure a quick response.

If you have Internet access, you can download additional documentation and software updates from the MOBOTIX-helpdesk. Please visit:

www.mobotix.com



Imprint

This document is part of products by MOBOTIX AG, hereinafter referred to as the manufacturer, and describes the use and configuration of AI-TECH Apps on the camera and its components. Changes, errors and misprints excepted.

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Address

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

Support

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

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.

Activation of the Certified App Interface and configuration of corresponding apps

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)).

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

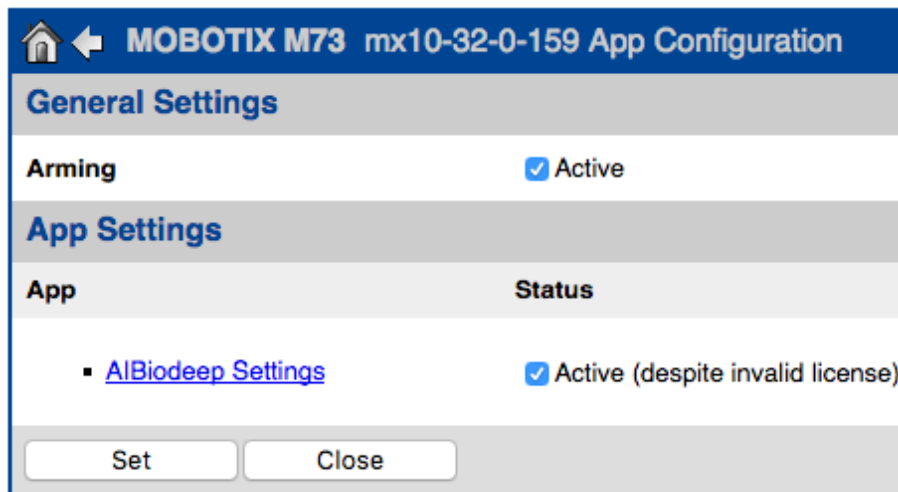


Fig. 1: Certified App: Settings

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 > Support > Download Center > 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: How to process the automatically generated app events

Checking automatically generated app events

After successfully activating the app (siehe [Activation of the Certified App Interface and configuration of corresponding apps, S. 7](#)), 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. AlBiodeep).

The screenshot shows the configuration page for an event named 'AlBiodeep'. At the top, there is a dropdown menu with 'AlBiodeep' selected, and buttons for 'Inactive' and 'Delete'. Below this is a numeric input field set to '5', with a label 'Event Dead Time: Time to wait [0..3600 s] before the event can trigger anew.'. The 'Event Sensor Type' section has two radio buttons: 'IP Receive' (unselected) and 'MxMessageSystem' (selected). Below this, a text field contains 'AlBiodeep' and a dropdown menu is set to 'Local'. Further down, another dropdown menu is set to 'No Filter'. On the right side, there are three explanatory sections: 'Event Sensor Type: Choose the message sensor.', 'Message Name: Defines an MxMessageSystem name to wait for.', and 'Filter Message Content: Optionally choose how to ignore messages containing Filter Value. Select No Filter to trigger on any message with defined Message Name.'

Fig. 2: Example: Generic message event from AI-Bio

Action handling - Configuration of an action group

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)).

The screenshot shows the 'Action Group Overview' page. The title bar includes a home icon, a back arrow, the camera model 'MOBOTIX M73', the IP address 'mx10-32-0-159', and the page title 'Action Group Overview'. There are help and info icons on the right. The main content is a table with four columns: 'Name', 'Arming', 'Events & Actions', and 'Edit'. There are two rows of data. The first row is for 'VisualAlarm', which is 'Enabled' with '(No time table)' below it, and has 'MSG VA' in the 'Events & Actions' column. The second row is for 'AI Action', which is also 'Enabled' with '(No time table)' below it, and has '(select all)' in the 'Events & Actions' column. Each row has a 'Delete' checkbox and an 'Edit...' button. At the bottom of the page, there is an 'Add new group' button.

Name	Arming	Events & Actions	Edit
VisualAlarm <input type="checkbox"/> Delete	Enabled (No time table)	MSG VA	Edit...
AI Action <input type="checkbox"/> Delete	Enabled (No time table)	(select all) -	Edit...

Add new group

Fig. 3: 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	Name: The name is purely informational.
	Enabled	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 .
	(No time table)	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	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.

Fig. 4: 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	Action Type and Profile: Select the Action Profile to be executed.
<input type="checkbox"/> Delete	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.
	specified order. <i>Consecutively until first success:</i> Consecutive execution, but as soon as one action <i>succeeds</i> , the following actions are not executed. <i>Consecutively until first failure:</i> Consecutive execution, but as soon as one action <i>fails</i> , the following actions are not executed.

Fig. 5: Select Action Type- and Profile

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](http(s)://<Camera IP address>/control/recording)).

Storage Settings	Value	Explanation
Recording (REC)	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="background-color: #f0f0f0; padding: 2px;">Event Recording</div> <div style="padding: 2px;">Snap Shot Recording</div> <div style="background-color: #e0e0e0; padding: 2px;">✓ Event Recording</div> <div style="padding: 2px;">Continuous Recording</div> </div>	<p>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>.</p>
Start Recording	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="background-color: #f0f0f0; padding: 2px;">Image Analysis: AS (Image Analysis: VM) (Image Analysis: VM2)</div> <div style="background-color: #e0e0e0; padding: 2px;">Message: AlBiodeep (Signal: SI) Signal: LIC</div> <div style="padding: 2px;">Max fps</div> <div style="padding: 2px;">0</div> <div style="padding: 2px;">30 s</div> </div>	<p>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.</p> <p>Event Frame Rate: Recording speed if an event is detected, in frames per second.</p> <p>Recording Time Before Event: Additional recording time before an event in seconds.</p> <p>Recording Time: Time to include in recorded stream after an event has occurred.</p>

Fig. 6: 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.

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 metadata 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. 7: Example: Meta data transmitted within an MxMessage of the AI-BIO app

To view the metadata 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

In the camera web interface, open: **Setup Menu / Event Control / Event Overview**
 ([http\(s\)://<Camera IP address>/control/event_msg](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. 8: 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, S. 15](#) 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, S. 15](#).

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	

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

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

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"

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