

Guideline

MOBOTIX Thermal-Heat-Detection App

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Beyond Human Vision



V1.04_11/18/2022, Order Code: Mx-APP-MX-THD

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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.
- This equipment is to be connected only to PoE networks without routing to other networks.

NOTE! Observe the MOBOTIX MOVE Installation Hints document to ensure optimum performance of the camera features.

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-Heat-Detection App

MOBOTIX Thermal Heat Detection App

Approved by the CNPP. Suitable for early fire detection and reliable monitoring of critical areas. Monitor multiple temperature ranges with high accuracy on a single camera image and define different escalation levels. Connection to existing systems and integration into projects is a breeze.

- Extension of the temperature measurement functions of MOBOTIX Thermal Radiometry cameras (according to CNPP France 19005 certification)
- 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. covering the sensor)
- MOBOTIX events via MxMessageSystem
- Required for the installation of a CNPP-certified thermal camera

Best suited for the requirements of the following industries:

Utilities, Energy & Mining; Industry & Production, Government, Traffic & Transportation, Retail, Healthcare, Education & Science

NOTE! The Mobotix MOBOTIX Thermal-Heat-Detection App is designed to detect temperature according to the CNPP Technical Specifications ST-LPMES-DEC.19.005 (01/02/2019)

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.

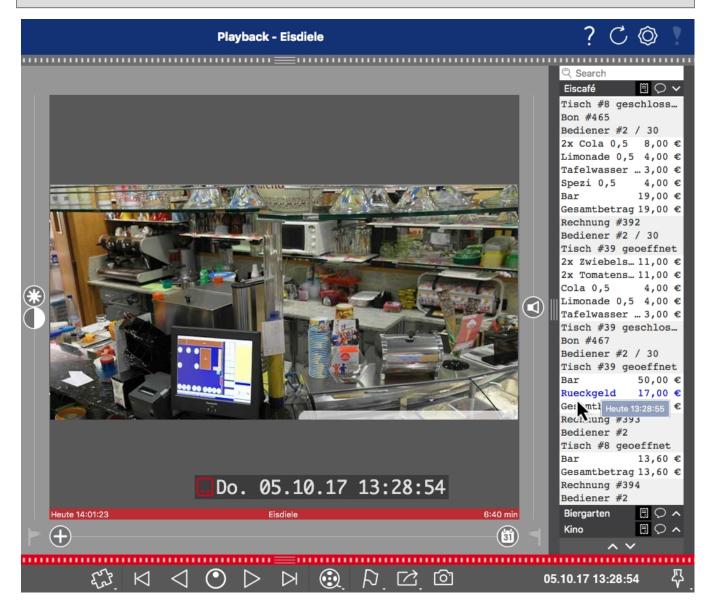


Fig. 1: : Smart Data Bar in MxManagementCenter (Example: POS System)

Technical Specifications

Product Information

Product Name	MOBOTIX Thermal-Heat-Detection App
Supported MOBOTIX Cameras	M73 (Thermal Radiometry Sensor required)
Minimum Camera Firmware	e V7.3.1.x
MxManagementCenter Integration	 min. MxMC v2.7 Advanced Config license required Event Search: Smart Data Interface license included
MOBOTIX HUB com- patibility	 min. MOBOTIX HUB version: 2021 R1 min. MOBOTIX HUB license level for Analytics Events: L2 min. MOBOTIX HUB license level for MOBOTIX Event Search Plug-In : L4
Trial license	30-day trial license pre-installed

Product Features

App Features	 Extension of the temperature measurement functions of MOBOTIX Thermal Radiometry cameras (CNPP 19005 compliant) 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
Maximum number of meas- urement areas	20
Supported thermal sensor types	Thermal Radiometry
Dual / Multi Sensor usage	Yes

MxMessageSystem sup- ported	Yes
Integration Interfaces	Milestone X-Protect (via XML)Generic 3rd party integration through XML, JSON and MODBUS/TCP
MOBOTIX events	Yes
ONVIF Events	Yes (Generic Message events)

Scene Requirements for Object Recognition

Recommended camera position no restrictions

Technical App Specifications

Synchronous /	Asynchronous
Asynchronous App	
Detection accuracy	Depending on the thermal sensor module used
Simultaneous execution of	Yes (depending on performance expectations)
other apps	

Hardware Requirements

CAUTION! To be compliant with CNPP 19005 Certification, no sensor cable length should exceed 3m

NOTE! Only Thermal Radiometry sensors can be used for this application

MOBOTIX M73

The MOBOTIX M73 camera with TR sensor, the associated app and certified power supply unit is CNPP-certified and can be integrated into a fire alarm system. If you already have an M73 installed, you can simply upgrade the components and install the MOBOTIX Thermal-Heat-Detection App - done. Additional optical sensors can also be used in the same device without invalidating the certification.



- Detects fires even before they occur
- Up to 20 measurement windows simultaneously from up to 72 m away
- Any number of escalation levels
- Makes fire sources and embers visible even when smoke and steam make visibility impossible
- Works even in total darkness

Order Number	Description
Mx-M73A-LSA	M73 Body with LSA Connector Box (white)
Mx-M73A-LSA-wg	M73 Body with LSA Connector Box (white-gray)
Mx-M73A-RJ45	M73 Body with RJ45 Connector Box (white)
Mx-M73A-RJ45-wg	M73 Body with RJ45 Connector Box (white-gray)

MOBOTIX M73 Sensors and Accessories

Order Number	Description
Mx-O-M73TB-336R100	Thermal module 336-R100 with front plate for M73 (B model)
Mx-O-M73TB-336R150	Thermal module 336-R150 with front plate for M73 (B model)

Order Number	Description
Mx-O-M73TB-336R280	Thermal module 336-R280 with front plate for M73 (B model)
Mx-O-M73TB-640R050	Thermal module 640-R050 with front plate for M73 (B model)
Mx-O-M73TB-640R080	Thermal module 640-R080 with front plate for M73 (B model)
Mx-O-M73TB-640R100	Thermal module 640-R100 with front plate for M73 (B model)
Mx-O-M73TB-640R150	Thermal module 640-R150 with front plate for M73 (B model)

MOBOTIX S74

Like the M73, existing systems can be converted into a CNPP-certified fire detector via app and with a suitable thermal sensor, even if this designation does not quite do justice to its performance. With its versatile connections and sensor housings, however, the MOBOTIX S74 scores particularly well in complex spatial conditions and wherever a single viewing angle is simply not enough.

- Detects fires even before they occur
- Up to 20 measurement windows simultaneously from up to 72 m away
- Any number of escalation levels
- Makes fire sources and embers visible even when smoke and steam make visibility impossible
- Works even in total darkness

Order Number	Description
Mx-S74A	S74 Body for 4 Sensor- and Functional Modules
Mx-F-S7A-RJ45-VDC	S74 RJ45 Network slide in board with 12/24 VDC Power Supply
Mx-F-S7A-INT01	S74 IO Slide in Board

MOBOTIX S74 Sensors and Accessories

Order Number	Description
Mx-O-M7SB-336RP100	S7x PTMount Thermal 336-R100 (B model)
Mx-O-M7SB-336RP150	S7x PTMount Thermal 336-R150 (B model)
Mx-O-M7SB-336RP280	S7x PTMount Thermal 336-R280 (B model)
Mx-O-M7SB-336RS100	S7x Thermal Module 336-R100 (B model)

Hardware Requirements MOBOTIX S74

Order Number	Description
Mx-O-M7SB-336RS150	S7x Thermal Module 336-R150 (B model)
Mx-O-M7SB-336RS280	S7x Thermal Module 336-R280 (B model)
Mx-O-M7SB-640RP050	S7x PTMount Thermal 640-R050 (B model)
Mx-O-M7SB-640RP080	S7x PTMount Thermal 640-R080 (B model)
Mx-O-M7SB-640RP100	S7x PTMount Thermal 640-R100 (B model)
Mx-O-M7SB-640RP150	S7x PTMount Thermal 640-R150 (B model)
Mx-O-M7SB-640RS050	S7x Thermal Module 640-R050 (B model)
Mx-O-M7SB-640RS080	S7x Thermal Module 640-R080 (B model)
Mx-O-M7SB-640RS100	S7x Thermal Module 640-R100 (B model)
Mx-O-M7SB-640RS150	S7x Thermal Module 640-R150 (B model)

Connecting the Camera

Please refer to the additional technical documents for the CNPP compliant cameras, especially the Technical Specifications and the Installation Instructions:

Camera	Technical Specifications	Quick Installation Guide	
M73	https://www.mobotix.com/media/2979	https://www.mobotix.com/media/3068	
S74	https://www.mobotix.com/media/3691	https://www.mobotix.com/media/3694	
CAUTION! To be compliant with CNPP 19005 Certification, a PoE+ power source according to EN54-4 is			

CAUTION! To be compliant with CNPP 19005 Certification, a PoE+ power source according to EN54-4 is mandatory.

CAUTION! To be compliant with CNPP 19005 Certification, no sensor cable length should exceed 3m

NOTE! Only Thermal Radiometry sensors can be used for this application

S74 - Connection Scheme

Optical sensor is optional.

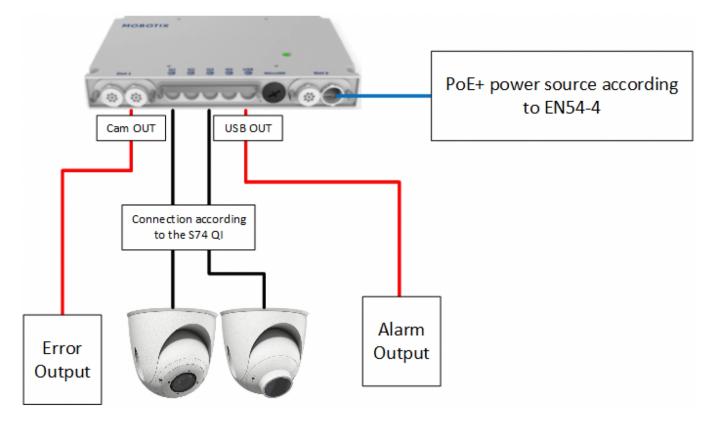


Fig. 2: CNPP compliant installation of the MOBOTIX S74

Connecting the Outputs



Fig. 3: CNPP compliant connection to the S74 Camera

- The Output for error messages must be connected to Slot 1 ① of the S74.
- The Ouput for alarm trigger must be connected to the USB OUT ② connector of the S74.

M73 - Connection Scheme

Optical sensor is optional.

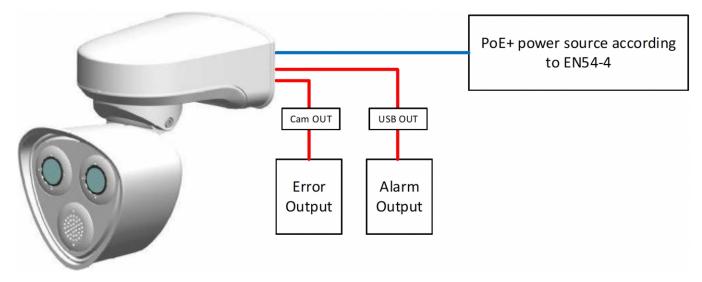


Fig. 4: CNPP compliant installation of the MOBOTIX M73

Connecting the Outputs

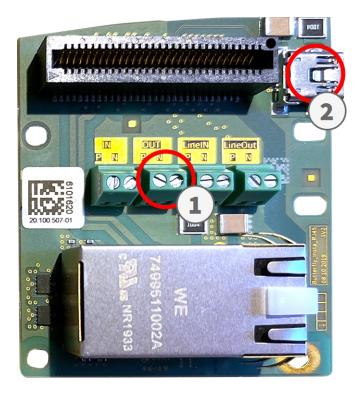


Fig. 5: CNPP compliant connection to the M73 Connector Box RJ45

- The Output for error messages must be connected to the Line Out of the M73 Connector Box RJ45.
- The Ouput for alarm trigger must be connected to the USB OUT connector of the M73 Connector Box RJ45.

Licensing Certified Apps

The following licenses are available for the MOBOTIX Thermal-Heat-Detection 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**.

• • •	Camera Licenses		
	MxManagementCenter		
Cameras			
ି 10.3		×	
Name	Url	Serial Number	
mx10-10-38-40	10.10.38.40	10.10.38.40	
mx10-22-10-30	10.22.10.30	10.22.10.30	
M73 10-32-0-62	10.32.0.62	10.32.0.62	
		Select	
Mobotix • Kaiserstrasse D-67722 Langmell • Info@mobotix.com • www.mobotix.com			

Fig. 6: 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.

	Camera License	95	
	MxManagemer	ntCenter	?
< Camera License Sta	itus: mx10-251-1-235		Serial Number: 10.23.9.171
Name	Expiration	Quantity	
MxWheelDetector	Permanent	Unlimited	
iot_plugin_a	Permanent	Unlimited	
iot_plugin_b	Permanent	Unlimited	
iot_plugin_c	Permanent	Unlimited	
iot_plugin_d	Permanent	Unlimited	
iot_plugin_e	Permanent	Unlimited	
iot_plugin_f	Permanent	Unlimited	
iot_plugin_g	Permanent	Unlimited	
iot_plugin_h	Permanent	Unlimited	
iot_plugin_i	Permanent	Unlimited	
Camera time is incorre	ect. Please reset your camera time before activating	a Licenses	
	,		
			Activate License
	Mobotix • Kaiserstrasse D-67722 Langmeil • info@	mobotix.com + www.mobotix.com	

Fig. 7: 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.

Licensing Certified Apps License Activation of Certified Apps in MxManagementCenter

- 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.

Camera Licenses	
MxManagementCenter	?
< Activate Camera Licenses: M73 10-32-0-62	Serial Number: 10.32.0.62
via Activation ID Please enter your Activation IDs and for each Activation ID the corresponding quantity of licenses that yo we23-4c5f-as23-4bf2-b872-9c84-e935-78de 1 ec90-4c5f-cfd0-4bf2-b872-9c84-e935-6f20 1	ou want to use
Download Capability Request File) (Activate License Online)	
Via Capability Response File If you have already created or received a capability response file (<deviceid>.bin), you can load it here. Load Capability Response File</deviceid>	
Mobotix • Kalserstrasse D-67722 Langmell • Info@mobotix.com • www.mobotix.c	om

Fig. 8: 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. 20).

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**.

• • •	Camera Licenses		
	MxManagementCenter		
Cameras			
ି 10.3		×	
Name	Url	Serial Number	
mx10-10-38-40	10.10.38.40	10.10.38.40	
mx10-22-10-30	10.22.10.30	10.22.10.30	
M73 10-32-0-62	10.32.0.62	10.32.0.62	
		Select	
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Fig. 9: 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**.

	Camera License	95	
	MxManagemer	ntCenter	?
< Camera License Sta	itus: mx10-251-1-235		Serial Number: 10.23.9.171
Name	Expiration	Quantity	
MxWheelDetector	Permanent	Unlimited	
iot_plugin_a	Permanent	Unlimited	
iot_plugin_b	Permanent	Unlimited	
iot_plugin_c	Permanent	Unlimited	
iot_plugin_d	Permanent	Unlimited	
iot_plugin_e	Permanent	Unlimited	
iot_plugin_f	Permanent	Unlimited	
iot_plugin_g	Permanent	Unlimited	
iot_plugin_h	Permanent	Unlimited	
iot_plugin_i	Permanent	Unlimited	
Camera time is incorre	ect. Please reset your camera time before activating	a Licenses	
	,		
			Activate License
	Mobotix • Kaiserstrasse D-67722 Langmeil • info@	mobotix.com + www.mobotix.com	

Fig. 10: 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.

Camera Licenses	
MxManagementCenter	?
< Activate Camera Licenses: M73 10-32-0-62	Serial Number: 10.32.0.62
via Activation ID	
Please enter your Activation IDs and for each Activation ID the corresponding quantity of licenses that you want to use	
we23-4c5f-as23-4bf2-b872-9c84-e935-78de	
ec90-4c5f-cfd0-4bf2-b872-9c84-e935-6f20	
Download Capability Request File) Activate License Online)	
Via Capability Response File	
If you have already created or received a capability response file (<deviceid>.bin), you can load it here.</deviceid>	
Load Capability Response File	
Mobotix + Kalserstrasse D-67722 Langmeli + Info@mobotix.com + www.mobotix.com	

Fig. 11: 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**.

	Camera Licenses	3	
	MxManagementCenter		?
Comoroo			
Cameras © 10.3			×
Name	Url	Serial Number	~
mx10-10-38-40	10.10.38.40	10.10.38.40	
mx10-22-10-30	10.22.10.30	10.22.10.30	
M73 10-32-0-62	10.32.0.62	10.32.0.62	
			Select
Mobotix • Kalserstrasse D-67722 Langmell • Info@mobotix.com • www.mobotix.com			

Fig. 12: Overview of Camera App Licenses in MxManagementCenter

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

• •	Camera License				
MxManagementCenter					
< Camera License Sta	tuo mu10 0E1 1 00E				
Name	atus: mx10-251-1-235	Quantity	Serial Number: 10.23.9.17		
MxWheelDetector	Permanent	Unlimited			
iot_plugin_a	Permanent	Unlimited			
iot_plugin_b	Permanent	Unlimited			
iot_plugin_c	Permanent	Unlimited			
iot_plugin_d	Permanent	Unlimited			
iot_plugin_e	Permanent	Unlimited			
iot_plugin_f	Permanent	Unlimited			
iot_plugin_g	Permanent	Unlimited			
iot_plugin_h	Permanent	Unlimited			
iot_plugin_i	Permanent	Unlimited			
iot_plugin_g iot_plugin_h iot_plugin_i	Permanent	Unlimited Unlimited	_		
			Activate Licens		
	Mobotix • Kaiserstrasse D-67722 Langmell • info@n	nobotix.com • www.mobotix.com			

Fig. 13: 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.

Camera Software Configuration

1. In the camera web interface, open: Admin Menu / Update System Software.

MOBC	ХІТС		
Θ	S74 mx10-32-24-156	Update System Software	0 i ± Ξ
🛆 Impo	rtant Notes		
file • Rea • A po curr • It is • The has • Onc brow • Tran sma ban by y	is encrypted, 7-bit clean and usually d the README.TXT file that is delive ower failure or network disconnect rently in the camera. recommended to reboot the came camera will free some resources fo rebooted. the upload has started, make sure wser windows until you get a messa insferring the software from your loc all upload file using an Ethernet con dwidth connection. While this trans your browser.	red with the .zip version of the upload while uploading the software can dama ra before the upload to wipe its memory or upload, so you will not get any live im- e that the transmission is not disrupted	I file. ge the firmware y. ages until the camera and do not touch any m some seconds for a upload file using a low- ually not be refreshed
Upload I	hermalHeatDetection_7_3154.app		Browse
	ftware Update 2		Browse

Fig. 14: Installing an MOBOTIX P7 App

- 2. In section Upload File browse for the MOBOTIX Thermal-Heat-Detection App 1 .
- 3. Click Start Software Update.
- 4. Reboot the camera.

Installing the MOBOTIX Thermal-Heat-Detection App

1. In the camera web interface, open: Admin Menu / Update System Software.

Activating the USB Output

мовс	ХІТХ		
Θ	S74 mx10-32-24-156	Update System Software	() ()
🔺 Impo	rtant Notes		
file i • Rea • A po curr • It is • The has • Onc brov • Trar sma ban	nera software updates and App pack s encrypted, 7-bit clean and usually d the README . TXT file that is delive over failure or network disconnect we ently in the camera. recommended to reboot the camera camera will free some resources for rebooted. e the upload has started, make sure wser windows until you get a messa isferring the software from your loc Il upload file using an Ethernet con dwidth connection. While this trans our browser.	y has a .mpl or .app file extension. red with the .zip version of the up while uploading the software can da ra before the upload to wipe its men r upload, so you will not get any live e that the transmission is not disrup use from the upload program. al computer to the camera will take nection to up to 30 minutes for a lar	load file. amage the firmware mory. e images until the camera oted and do not touch any e from some seconds for a rge upload file using a low-
Upload I		<u></u>	
	tware Update 2	(1)	Browse

Fig. 15: Installing a MOBOTIX P7 App

- 2. In section Upload File browse for the MOBOTIX Thermal-Heat-Detection App .
- 3. Click Start Software Update.
- 4. Reboot the camera.

Activating the USB Output

1. In the camera web interface, open: Admin Menu / Hardware Configuration / Manage Hardware Expansions.

10801	TIX		l	
Ð	S74 mx10-32-24-156	Manage Hare	dware Expansions	? () + ⊟
USB Conne	ector			
۲	USB RS232 Se	erial Stick	Allows connecting an FTDI-to-USE standard RS232 devices.	3 adapter for attaching
	<i>This device ca</i> <i>connected at i</i>		USB RS232 Serial Stick would con USB Power Output.	flict with active device
۲	USB Stick / Fla State Drive	ash-based Solid	Allows connecting a USB stick or a drive for event download or event select this option if you want to co	t recording. Do not
	<i>This device ca</i> <i>connected at i</i>		<i>USB Stick / Flash-based Solid Stat with active device USB Power Out</i>	
۲	External USB	Harddisk	Allows connecting an external US download or event recording. Do you want to connect a Flash-base state drive. Note that the camera externally powered USB harddis bring their own power supply).	not select this option if d USB stick or solid only supports
	<i>This device ca</i> <i>connected at</i>		External USB Harddisk would con USB Power Output.	flict with active device
۲	MX-232-IO-Bo	x USB	Select this option to connect an N interface.	IX-232-IO-Box via USB
	<i>This device ca</i> <i>connected at i</i>		MX-232-IO-Box USB would conflic Power Output.	t with active device USB
Disco	nnect 1 USB Power O	utput	Select this option to use USB Pow Assign Wires.	er as a signal output in
SD Card Sl	ot			$\mathbf{\nabla}$

Fig. 16: Installing a MOBOTIX P7 App

- 2. In section USBPower Output click Connect O .
- 3. Click Start Software Update.
- 4. Click **Set** O to apply the changes then **Close** O to close the window.

Setting the Signal Out Profiles

1. In the camera web interface, open: Admin Menu / Hardware Configuration / Signal Out Profiles.

Setting the default Output

MOBOTIX			
\odot	S74 mx10-32-24-156 Sign	al Out	Profiles ⑦ 🛈 🗄 🖃
Signal Out Profile	L USB Out]	Delete
Profiles & Options	Value		Explanation
Signal Out Action (SO)	Camera: USB Power	¢	Signal Output Pin: Select output device and pin for this action (check Manage Hardware Expansions).
	On on alarm with timer	\$	Signal Output Mode: State of output pin on alarm. If you want to set a specific state after booting, add a new default for this pin in the <u>Assign Wires</u> dialog. For more information, open the <u>Assign Wires</u> help topic.
	5	\$	Signal Output Duration : Switch signal output for the desired duration [186400s].
	100	\$	Power Level: If applicable, set a power level for illumination. The maximum and default value is 100%.
Signal Out Profile 2	2 Cam Out		Delete
Profiles & Options	Value		Explanation
Signal Out Action (SO)	Camera: OUT (2	¢	Signal Output Pin: Select output device and pin for this action (check <u>Manage Hardware Expansions</u>).
	On on alarm with timer	¢	Signal Output Mode: State of output pin on alarm. If you want to set a specific state after booting, add a new default for this pin in the <u>Assign Wires</u> dialog. For more information, open the <u>Assign Wires</u> help topic.
	5	Ŷ	Signal Output Duration : Switch signal output for the desired duration [186400s].
	100	\$	Power Level: If applicable, set a power level for illumination. The maximum and default value is 100%.
Set Factory	Restore Close		

Fig. 17: Setting Signal Out Profiles

- 2. Add two profiles one for **USB Out** and one for **Camera IO output**.
- 3. For USB OUT: as Signal Out Action select Camera: USB Power 0 .
- 4. For Camera IO output: as Signal Out Action select Camera: Out².
- 5. Click **Set** ③ to apply the changes then **Close** ④ to close the window.

Setting the default Output

1. In the camera web interface, open: Admin Menu / Hardware Configuration / Assign Wires.

MOBOTIX			
\ominus	S74 mx10-32-24-156	Assi	gn Wires 🧿 🛈
Door Release Actuator	Not connected	\$	Signal Output: Select the Signal Output connected with the door release. The internal action profile ~Door in the <u>Action Group Overview</u> will use this selection. Test Open Door
Lights	Not connected	\$	Signal Output: Select the Signal Output connected with external lights. The internal action profiles ~LightTimer, ~LightOff, ~LightOn, and ~LightToggle in the <u>Action</u> <u>Group Overview</u> will use this selection. Test Light On/Off
IR Lights	Not connected	\$	Signal Output: Select the Signal Output connected with IR illuminator. The internal action profiles ~IrLightOff, ~IrLightOn, and ~IrLightToggle in the <u>Action Group</u> <u>Overview</u> will use this selection. Test IR Light On/Off
Output	Default		Explanation
-	al output to be On at camera boot ti puts without a corresponding defai Camera: OUT 2		
Delete	Off	¢	Default: Select the output's state at camera boot time.
Add new default	4		
Set Factory	Restore Close		More

Fig. 18: Setting Signal Out Profiles

- 2. Click Ad new default
- 3. As signal Output select Camera Out ${}^{\textcircled{O}}$.
- 4. Click **Set** ③ to apply the changes then **Close** ④ to close the window.

Activation of the Certified App Interface

CAUTION! The MOBOTIX Thermal-Heat-Detection 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). Therefore check the user rights of the camera.

 In the camera web interface, open: Setup Menu / Certified App Settings (http(s)://<Camera IP address>/control/app_config).

MOBOTIX					88		
⊕ :	S74 mx10-32-24	4-156 Ce	rtified App Set	tings		() () () ()	
General Settings						E	
Arming	1 🗹 Active		Activate app service.				
Note: It is not recommended to activate more than 2 apps.							
Resource monitor	Active		Display camera actu	al load in liv	e image.		
Note: High perfor	mance impact. Use	e for testing p	ourposes only.				
Custom font	Active		Use custom font for To select or upload a				
App Settings						٩	
App Settings App	Activation	License	Explanation	Version	Delete	Delete application	
		License 2022-12-09 (30 days trial).	Explanation Mobotix Thermal Heat Detection	Version	Delete Data (4.0K)	Delete	
App Mobotix Thermal H		2022-12-09 (30 days	Mobotix Thermal		Data	Delete application Delete	
App Mobotix Thermal H Detection Settings Object Recognition	eat 🗹 💈	2022-12-09 (30 days trial). No license	Mobotix Thermal Heat Detection Detect and classify	1.0.0	Data (4.0K) Data	Delete application Delete application Delete	

Fig. 19: Certified App: Settings

- 2. Under **General Settings** activate the **Arming** \bigcirc of the app service.
- 3. Under App Settings check the Active option O and click Set G.
- 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-Heat-Detection App, p. 30.

Configuration of MOBOTIX Thermal-Heat-Detection App

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

- In the camera web interface, open: Setup Menu / Certified App Settings (http(s)://<Camera IP address>/control/app_config).
- 2. Click on the name of the **MOBOTIX Thermal-Heat-Detection App**.

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

Detection Area Settings

NOTE! Before defining Detection Areas the live image size should be set to or 4:3 format (e.g. Mega). Otherwise the areas might not appear in the expected place.

Multiple Detection Areas with individual parameters can be defined.

ΜΟΒΟΤΙΧ							
Θ S74	mx10-32-24-156 Mob	otix Tl	hermal He	at De	tection Settings		
Mobotix Thermal	Heat Detection						
Detection Area	ID	ID 1			Define multiple detection areas as polygons.		
	Select sensor		nt Sensor	\$	Important: Set the live image size to Mega or any other 4:3 format before defining detection areas.		
	Emissivity	1	it ochool	•	Otherwise, the areas may not appear at the desired locations. Polygon points : Set the position (X,Y) of a polygon		
	Humidity (percent)	10		\$	point in pixels, with (0,0) being the top left corner of the live image. Allowed values for X (01280), for Y (0960).		
	Distance to scene (me no correction)		= 5	¢			
	Background temperat	ture 2	0	$\hat{\cdot}$			
	Atmospheric temperature (°C)	2	0	$\hat{\cdot}$			
	Temperature threshol triggering events (°C)		50	$\hat{\mathbf{v}}$			
	Threshold tolerance f continuing to trigger (°C)	or	5	÷			
	When to trigger events	Tem	perature ab	DV€≑			
		How long the condition needs to 5 0 be met to trigger the event (seconds)					
	Percentage of pixels v that need to fulfill the trigger the event (0 m pixel suffices)	condit	ion to	$\hat{\mathbf{v}}$			
	Show arrow to hottes	Show arrow to hottest spot					
	Show arrow to coldes	t spot					
	Show measured temperatures	C	Off	\$			
	Polygon points	0	x 0				
		0	x 960				
			280 x 960				
		_		2			
	+1		(
Set Factory Restor							

Fig. 20: Event Profiles

ID:Select or enter an unique numeric ID for the current 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.

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 (percent): 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.

Temperature threshold for triggering events (°C): This temperature must either be exceeded or not reached in order to trigger an event.

Threshold tolerance for continuing to trigger events (°C): The tolerance is a fixed value that is offset against the threshold once the **Trigger condition** is met. From this moment on, only the new threshold needs to be met for the profile to continue triggering.

When to trigger events: Select when a profile triggers an event. The choices for this option differ depending on the profile type.

Temperature above threshold: n The profile triggers when the highest temperature measured in the detection area exceeds the threshold value.

Temperature below threshold: The profile triggers when the highest temperature measured in the detection area drops below the threshold value.

How long the condition needs to be met to trigger the event (seconds): specify the minimum duration in seconds during which the corresponding trigger condition must be fulfilled for the profile to trigger. If the parameter is left at "0", the profile triggers immediately if the condition is met. If the countdown is set to "5", for example, the condition must be fulfilled continuously for at least 5 seconds. The countdown is reset again if the trigger condition is no longer fulfilled in the meantime.

Percentage of pixels within the area that need to fulfill the condition to trigger the event: Specify the percentage of pixels within the detection area that must meet the trigger condition for the profile to trigger. If this value is set to "0", a single pixel for which the condition is met triggers the profile.

Show arrow to hottest spot: Check to show an arrow to the hottest spot within the Detection Area in the

Live View

Show arrow to coldest spot:Check to show an arrow to the coldest spot within the Detection Area in the Live View

Show measured temperatures: Select where the measured temperatures should be displayed in the Live View

- Off
- Top Left
- Top Right
- Bottom Left
- Bottom Right
- Centered

Polygon Points: The defined 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. 33).

Adding an Detection Area

- 1. Click Add Area 0 to switch into the live image.
- 2. In the live view simply click and drag a rectangular excluded area.
- 3. Drag the corner points to refine the Excluded area.
- 4. In the top right corner of the live view click **Submit** to adopt the coordinates of the rectangle.
- 5. Optionally click the **bin** icon O to delete the recognition area.

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.

Storing the Configuration

To store the configuration you have the following options:



- Click on the **Set** button to activate your settings and to save them until the next reboot of the camera.
- Click on the Factory button to load the factory defaults for this dialog (this button may not be present in all dialogs).
- Click on the **Restore** button to undo your most recent changes that have not been stored in the camera permanently.
- Click on the Close button 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, p. 29), 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. MxThermalHeatDetection).

MOBOTIX				
⊖ :	S74 mx10-32-24-156	Event Overvi	ew	⑦ () ± [
Environment Events				E
Image Analysis Event	s			
Internal Events				
Message Events				E
MxActivitySensor	MxMessageSystem	Inactive	Delete	Edit 1
MxAnalytics	MxMessageSystem	Inactive	Delete	
MxBarcodeReader	MxMessageSystem	Inactive	Delete	
MxThermalHeatDetect	ti MxMessageSystem	Inactive	Delete	
ObjRec	MxMessageSystem	Inactive	Delete	
Meta Events				
Signal Events				
Time Events				

Fig. 22: Example: Generic message event from MOBOTIX Thermal-Heat-Detection App

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

ΜΟΒΟΤΙΧ			
Θ	S74 mx10-32-24-156 Mess	age Event	s 0 0 ± 5
Attribute	Value	Ex	planation
IP Receive	8000	C Por	t: P port to listen on.
Events	Value	Ex	planation
MxActivitySensor	Inactive Delete		
MxAnalytics	Inactive Delete		
MxThermalHeatDetec	tion Inactive Delete		
	5		nt Dead Time: e to wait [03600 s] before the event can trigger anew.
Event Sensor Type	 IP Receive MxMessageSystem MQTT Subscription 		nt Sensor Type: Hose the message sensor.
Event on receiving a r	nessage from the MxMessageSystem.		
	MxThermalHeatDetection		ssage Name: ines an MxMessageSystem name to wait for.
	Local	The	ssage Range: re are two different ranges of message distribution: ba£ across all cameras within the current LAN. ra£ camera internal.
	No Filter	Opt Vali Me: The and For	er Message Content: ionally choose how to ignore messages containing Filter to Select Vo Filter Utger on any message with defined scage Name. Booloan Filter Utggers on JSON values true; /f alse, or 1/0, for some JSON strings like "on", "or ft", "yes", "no". JSON Comparison, Regular Expression, Undhe Filter, and visual Notation define the compared value as Filter Value below
ObjRec	Inactive Delete		
Add new profile			

Fig. 23: Example: Generic message event details - no filter

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)

An action group defines which action(s) is (are) triggered by the MOBOTIX Thermal-Heat-Detection App event.

1. Go to Setup-Menu / Event Control / Action Group Overview (http(s)://<Camera

IP address>/control/actions).

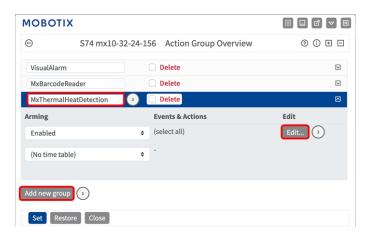


Fig. 24: Defining Action Groups

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

General Settings	Value		Explanation
Action Group	MxThermalHeatDetection		Name: The name is purely informational.
	Enabled (*)	¢	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 <u>General Event</u> Settings.
	(No time table)	٥	Time Table: Time table for this action profile (<u>Time Tables</u>).
Event Selection	(select all) (select none) Image Analysis: AS (Image Analysis: VM)		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 [03600 s] before a new action can take place.
	Simultaneously	÷	Action Chainlaing: Choose how the status of each subaction influences the execution of all others. <i>Simultaneously</i> : All actions are executed simultaneously. <i>Simultaneously</i> : and life success: Simultaneous security on the spicked up), all others are terminated. Consecutively: all actions are executed in the specified order. <i>Consecutively</i> : until first success: Consecutive execution, but as soon as one action asceeds, the following actions are not accuted. <i>Consecutively until first success</i> : Consecutive execution, but as soon as one action naive the following actions are not executed.
Actions Add new action	Value		Explanation

Fig. 25: Configuring an Action Group

- 4. Enable **Arming** ④ of the Action Group.
- 5. Select your message event in the **Event selection** list ③ . To select multiple events, hold the shift key.
- 6. Click Add new Action 6 .
- 7. Select a proper action from list **Action Type and Profile** \odot .

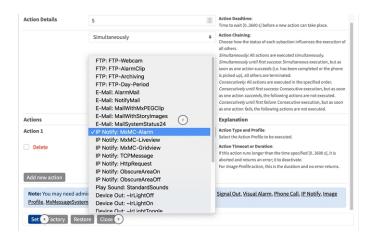


Fig. 26: Select Action Type- and Profile

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** ^(®) 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).

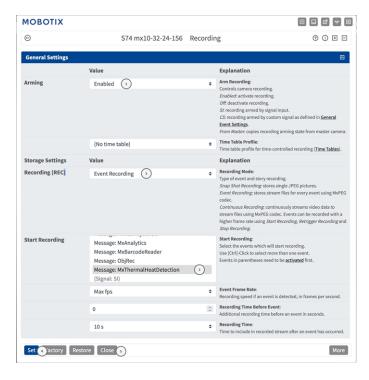


Fig. 27: Configuration of camera recording settings

- 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** 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.



Fig. 28: Example: Meta data transmitted within a MxMessage of the MOBOTIX Thermal-Heat-Detection App

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)/IPAddresseOfYourCamera/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. MxThermalHeatDetection).

иовот	X					∇
Θ	S	74 mx10-32-24-156	Event Overvi	ew	0	÷ -
Environmer	t Events					
Image Analy	sis Events					\checkmark
Internal Eve	nts					\checkmark
Message Eve	ents					
MxActivityS	ensor	MxMessageSystem	Inactive	Delete	Edit 1	
MxAnalytics		MxMessageSystem	Inactive	Delete		
MxBarcode	Reader	MxMessageSystem	Inactive	Delete		
MxThermall	HeatDetecti	MxMessageSystem	Inactive	Delete		
ObjRec		MxMessageSystem	Inactive	Delete		
Meta Events						
Signal Even	ts					\checkmark
Time Events	;					\checkmark

Fig. 29: Example: Generic message event from MOBOTIX Thermal-Heat-Detection App

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

мовотіх		H	
Θ	M73 mx10-32-4-98 Messag	e Events	00 =
MxAnalytics	Inactive Delete		
MxThermalHeatDetec	tion 1 🔹 🔲 Inactive 🗌 Delete		
	5	 Event Dead Time: Time to wait [03600 s] before the event can trigge 	er anew.
Event Sensor Type	 IP Receive MxMessageSystem MQTT Subscription 	Event Sensor Type: Choose the message sensor.	
Event on receiving a n	nessage from the MxMessageSystem.		
	MXThermalTRAdvanced.event_triggered (2)	Message Name: Defines an MxMessageSystem name to wait for.	
	Local	Message Range: There are two different ranges of message distribu <i>Global</i> : across all cameras within the current LAN. <i>Local</i> : camera internal.	
	JSON Comparison	B Hiter Message Content: Optionally choose how to ligner messages contail Select No Filter to trigger on any message with de Name. The Boolean Filter triggers on JSON values true/ and for some JSON strings like "on", "off", "ye For JSON Comparison, Regular Expression, Value Interval Notation define the compared value as T	fined Message false, or 1/0, s"/"no". Filter, and
	3 ()	Filter Value: Define either a valid reference value as a string (in without line breaks, or an extended regular expres or a minimum/maximum interval ([a;b]). Open help for examples.	
ObjRec	Inactive Delete		
Add new profile			
Set 4 Factory Re	istore Close s		

Fig. 30: Example: Heat detection triggered

- 3. Click on the event (e. g. MxThermalHeatDetection) to open the event settings.
- 4. 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-Heat-Detection App, p. 41)
 - Message Range:
 - Local: Default settings for the MOBOTIX Thermal-Heat-Detection 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-Heat-Detection App, p. 41.

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-Heat-Detection App

Event	MxMessage Name	Filter Value	Explanation
Temperature Event	MXThermalTRAdvanced.event_ triggered	" <detection win-<br="">dow ID>"</detection>	Temperature Event
Failure Event	MXThermalTRAdvanced.sensor_ masked	"0"	Failure Event



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