

[AN033]



ADVANCED
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Interfacing AND Devices with Mobotix Cameras

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Static Electric Warning



TROUBLESHOOTING AND ADDITIONAL RESOURCES

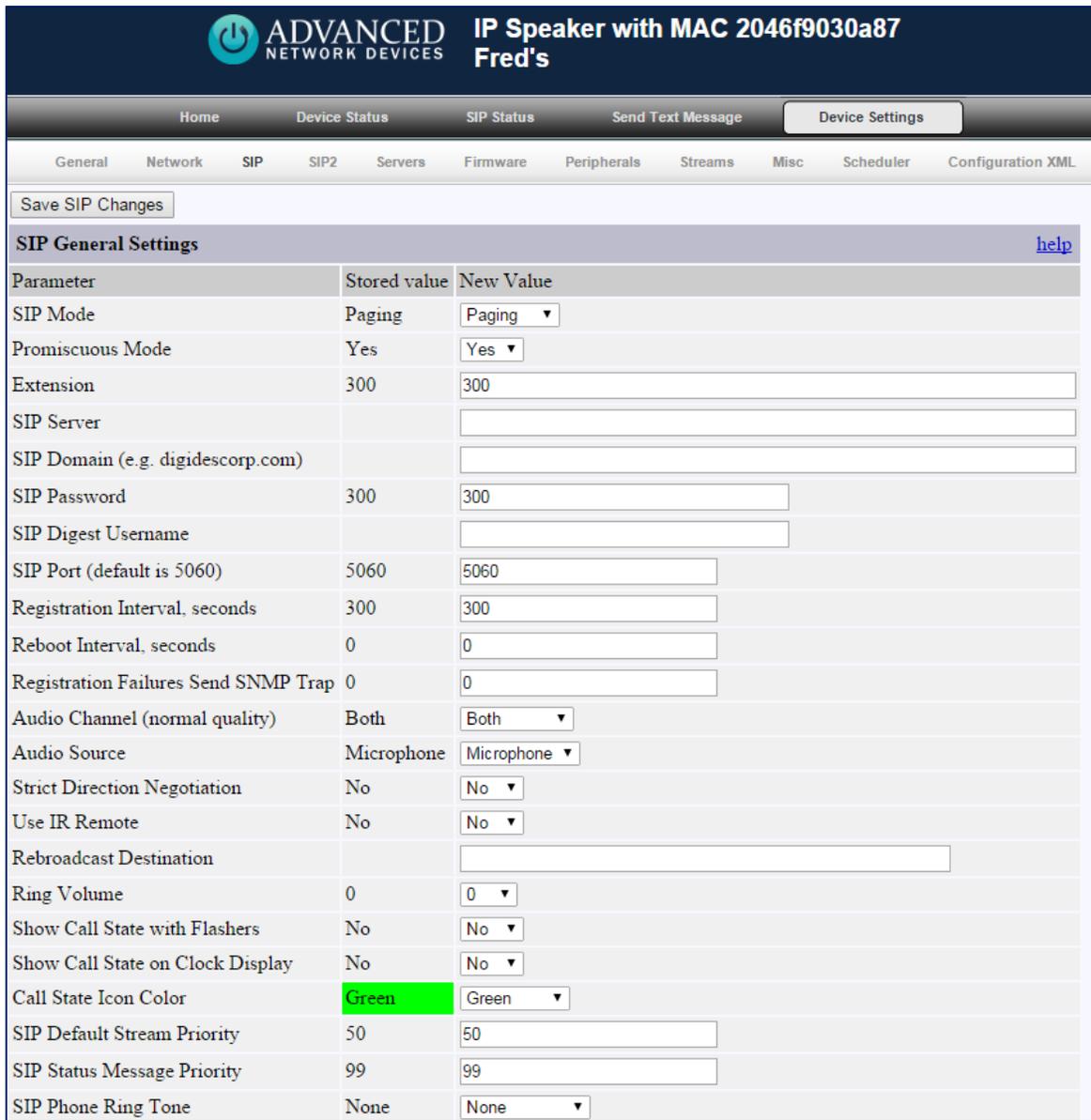
Complete Support Site with User Guides & Help: <http://www.anetdsupport.com/>
Additional App Notes: <http://www.anetdsupport.com/AppNotes>
Customer Feedback Survey: <http://www.anetdsupport.com/survey>
AND Legal Disclaimer: <http://www.anetd.com/legal>

OVERVIEW

This application note describes how to interface an AND device with a Mobotix Q25M camera. Other Mobotix cameras have similar interfaces. To send audio from the Mobotix camera to the devices, the system will establish a SIP call, which will send the audio using the standard SIP protocols. This feature does not require a SIP server, as it runs in peer-to-peer mode.

CONFIGURING THE AND DEVICE

Configure the AND device via **Device Settings** → **SIP**. Below shows a typical configuration.



The screenshot shows the web interface for an AND device, specifically an IP Speaker with MAC 2046f9030a87, owned by Fred's. The interface is in the 'Device Settings' section, with the 'SIP' tab selected. A 'Save SIP Changes' button is visible at the top left. The 'SIP General Settings' section contains a table of parameters, their current stored values, and their new values in the configuration form.

Parameter	Stored value	New Value
SIP Mode	Paging	Paging ▼
Promiscuous Mode	Yes	Yes ▼
Extension	300	300
SIP Server		
SIP Domain (e.g. digidescorp.com)		
SIP Password	300	300
SIP Digest Username		
SIP Port (default is 5060)	5060	5060
Registration Interval, seconds	300	300
Reboot Interval, seconds	0	0
Registration Failures Send SNMP Trap	0	0
Audio Channel (normal quality)	Both	Both ▼
Audio Source	Microphone	Microphone ▼
Strict Direction Negotiation	No	No ▼
Use IR Remote	No	No ▼
Rebroadcast Destination		
Ring Volume	0	0 ▼
Show Call State with Flashers	No	No ▼
Show Call State on Clock Display	No	No ▼
Call State Icon Color	Green	Green ▼
SIP Default Stream Priority	50	50
SIP Status Message Priority	99	99
SIP Phone Ring Tone	None	None ▼

You must set *Promiscuous Mode* to "Yes" so that the Mobotix camera can command the device to listen to a call (and not just a valid SIP server).

This example includes no SIP server. This setup causes the device to not register with any SIP server, which works fine for this application. If the device registers with a SIP server on the network, this functionality still works without complication.

The Mobotix menu will use the device's extension setting (300 in this example).

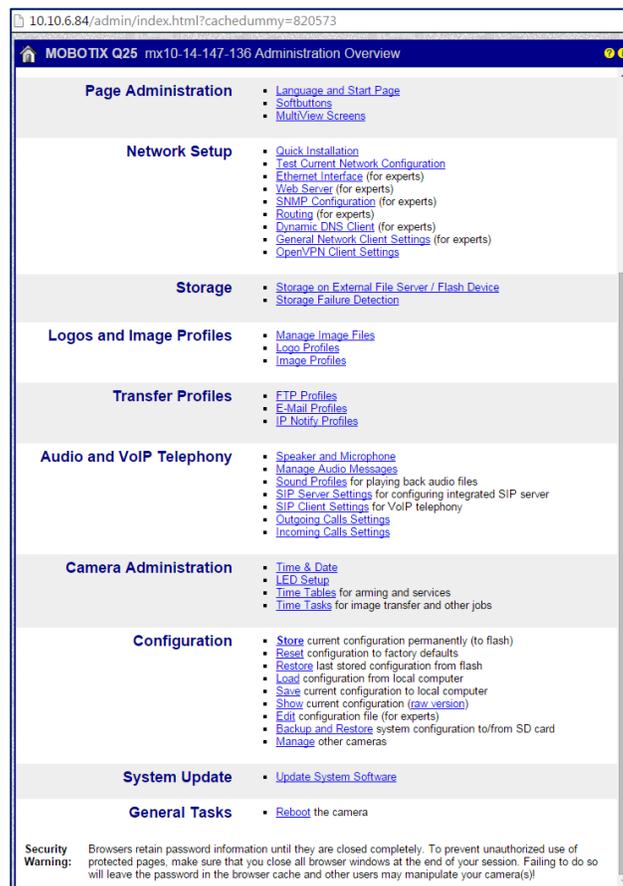
CONFIGURING THE MOBOTIX CAMERA

The Mobotix Camera has two main menu interfaces: the *Admin Menu* and the *Setup Menu*.

Accessing the *Admin Menu* requires entry of the Camera's valid account and password. Factory settings set *user* to "admin" and *password* to "meinsm".

Mobotix Camera SIP and Calling Subsection

1. Pull up the *Administration Overview* menu (see below).



2. Click on *SIP Client Settings* (see below).

10.10.6.84/admin/voipconfig

MOBOTIX Q25 mx10-14-147-136 SIP Client Settings

You can view the current status and detailed messages of the SIP Client in the [SIP Client: Messages, Calls, Status](#) dialog.

General Phone Settings

SIP Client: Enable or disable SIP Client.

Hangup on Outgoing Calls: Hang up an ongoing call, if an outgoing call is triggered.

Parallel Dialing: Enable or disable simultaneous calls to multiple phones.

SIP Accounts

SIP Address		Authentication		Server		Available as Proxy	Use as Registrar	Register Expiration
User Name	Domain	User Name	Password	Hostname / Address	Port			
<input type="button" value="Add new SIP account"/>								

Network Settings

NAT Traversal: NAT traversal mode to use.

NAT Address or STUN server: The DNS or IP address of the router using NAT or the STUN server.

Router Address Refresh Time: When using the NAT address, the camera will update the router address after this time.

SIP Port: Port to use for the SIP protocol.

Audio RTP Port: Port to use for transmitting the audio data using the RTP protocol.

Video RTP Port: Port to use for transmitting the video data using the RTP protocol.

Audio Data Timeout: The camera hangs up the call if there is no incoming audio data for this time.

Audio Message Settings

Welcome Message for Inbound Calls: Enable or disable welcome message for inbound calls.

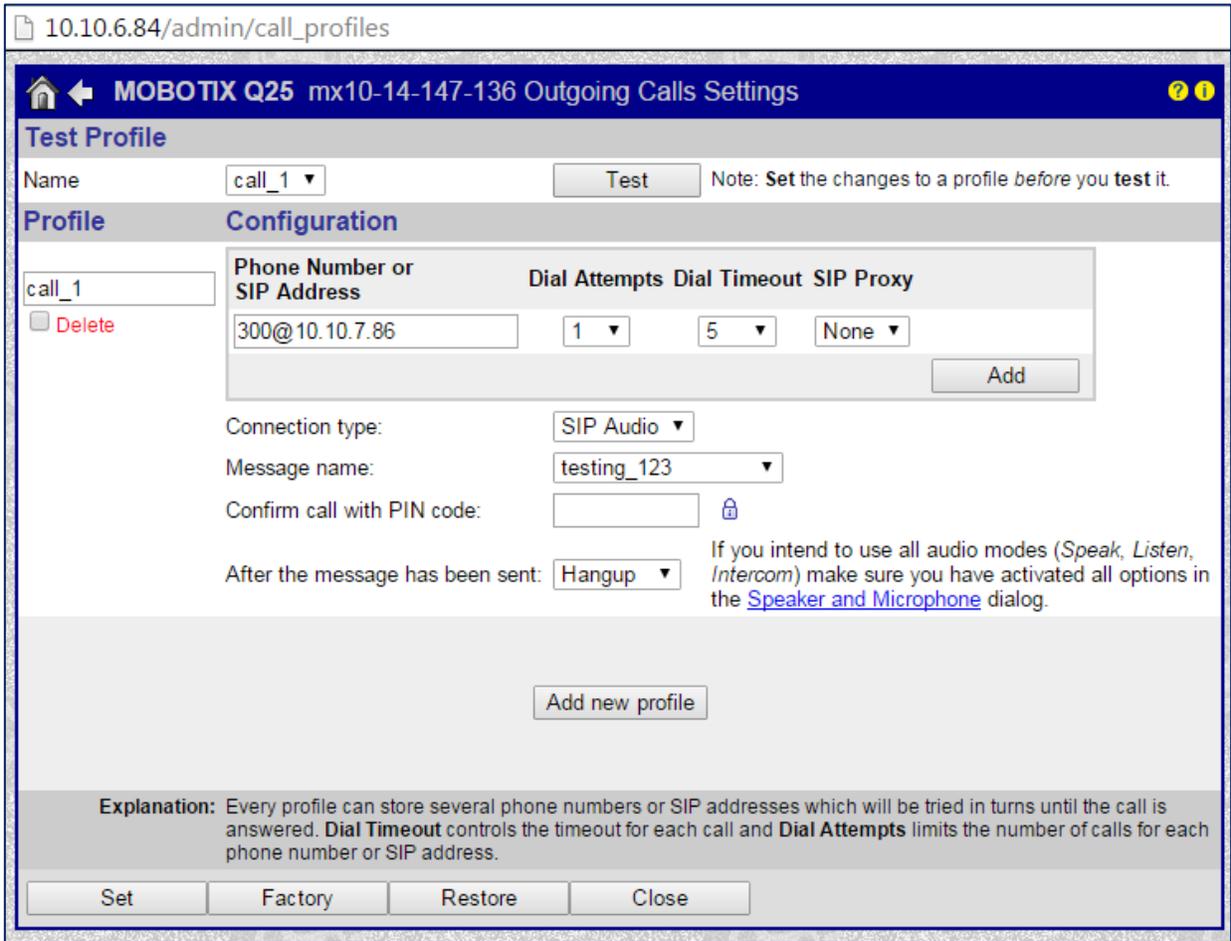
Welcome Message for Outbound Calls: Enable or disable welcome message for outbound calls.

Delay before Welcome Message: The camera waits for the time specified here before playing back the Welcome Message on outbound calls after the call is answered.

DTMF Key Confirmation for: Enable or disable DTMF key confirmation messages for inbound calls.

Notice that the *SIP Client* shows as "Enabled", with no set SIP account. This configuration causes the Mobotix Camera to operate in peer-to-peer mode. The default of 5060 for SIP Port matches the device's setting. Make sure to set the Audio Codec to PCMU. De-select G.722 if checked.

- Go to the “Outgoing Calls Settings” (see below).



10.10.6.84/admin/call_profiles

MOBOTIX Q25 mx10-14-147-136 Outgoing Calls Settings

Test Profile

Name: call_1 [Test] Note: Set the changes to a profile before you test it.

Profile Configuration

Phone Number or SIP Address	Dial Attempts	Dial Timeout	SIP Proxy
300@10.10.7.86	1	5	None

Connection type: SIP Audio

Message name: testing_123

Confirm call with PIN code: []

After the message has been sent: Hangup

If you intend to use all audio modes (*Speak, Listen, Intercom*) make sure you have activated all options in the [Speaker and Microphone](#) dialog.

Add new profile

Explanation: Every profile can store several phone numbers or SIP addresses which will be tried in turns until the call is answered. **Dial Timeout** controls the timeout for each call and **Dial Attempts** limits the number of calls for each phone number or SIP address.

Set Factory Restore Close

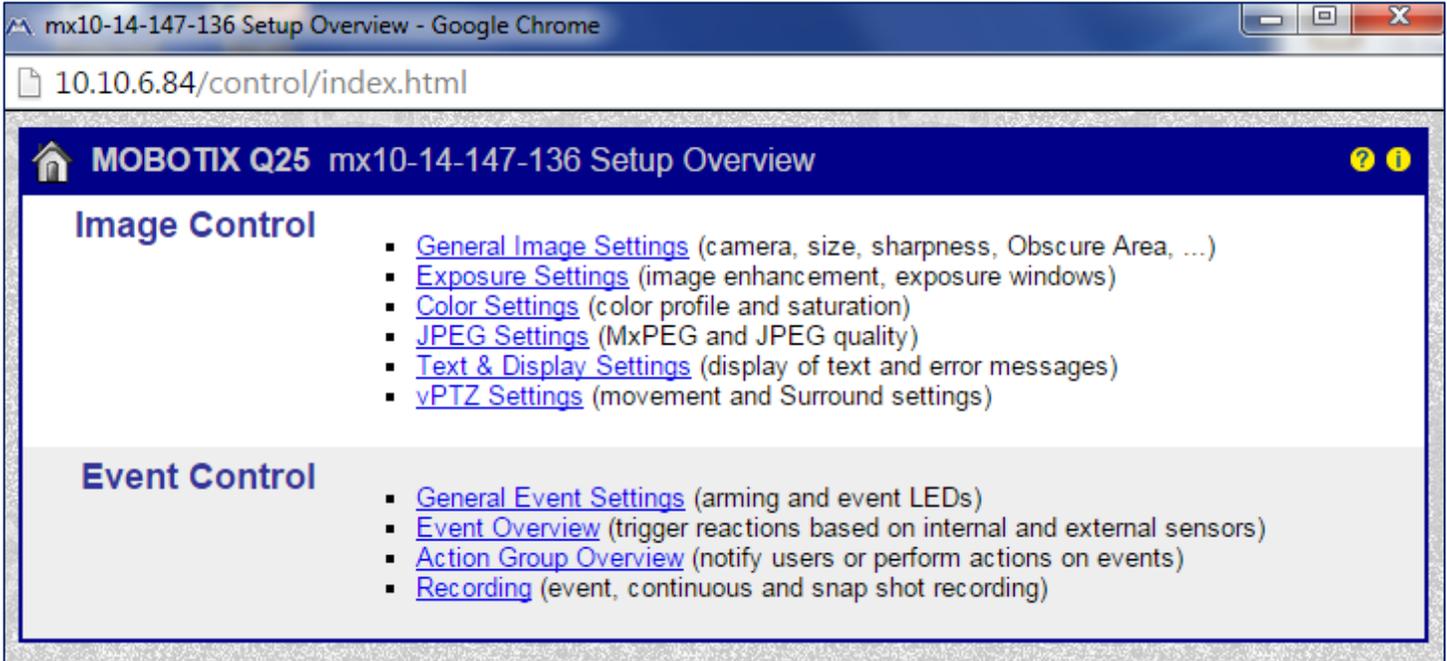
This configuration tells the Mobotix camera that whenever “call_1” becomes activated, it should place a call to the device at the designated SIP address (in this example [300@10.10.7.86](#)). The *message name* (in this example “testing_123”) indicates prerecorded audio stored on the Mobotix camera.

Note: In this example, the device uses the IP address 10.10.7.86. In a typical installation, the devices would acquire their IP addresses via DHCP, and their addresses might change. For this setup to work consistently, you must set up the DHCP server to assign speakers fixed IP addresses.

At this point, the configuration of the Mobotix camera should enable it to make a call to the AND device. Test it by clicking the *Test* button at the top, which should call the device and play the audio.

Mobotix Camera Triggering

To make the Mobotix camera trigger a call and play audio to the AND device, you must configure settings in the *Setup Overview* menu (see below).



The screenshot shows a web browser window titled "mx10-14-147-136 Setup Overview - Google Chrome" with the address bar showing "10.10.6.84/control/index.html". The page content is as follows:

MOBOTIX Q25 mx10-14-147-136 Setup Overview

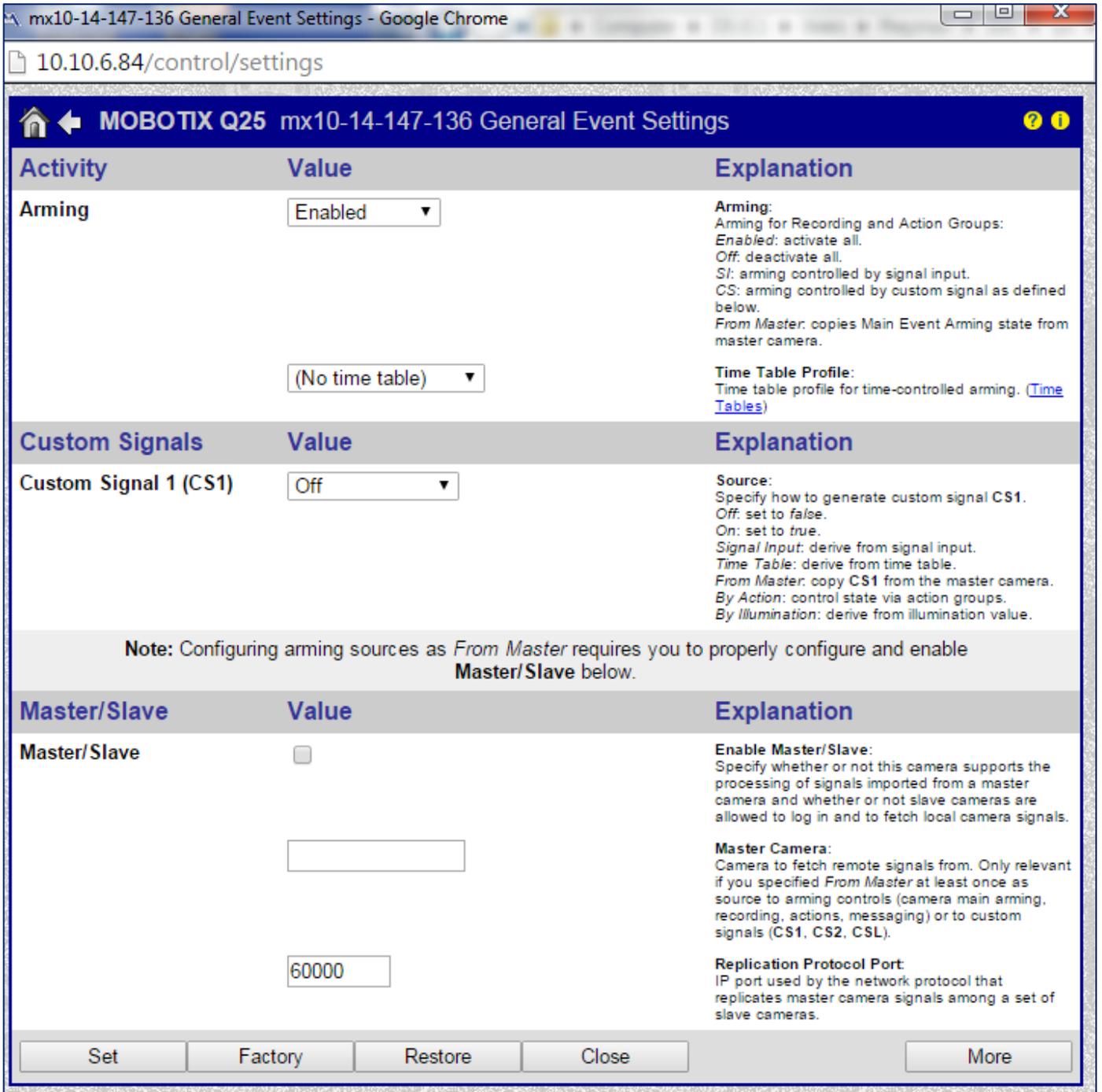
Image Control

- [General Image Settings](#) (camera, size, sharpness, Obscure Area, ...)
- [Exposure Settings](#) (image enhancement, exposure windows)
- [Color Settings](#) (color profile and saturation)
- [JPEG Settings](#) (MxPEG and JPEG quality)
- [Text & Display Settings](#) (display of text and error messages)
- [vPTZ Settings](#) (movement and Surround settings)

Event Control

- [General Event Settings](#) (arming and event LEDs)
- [Event Overview](#) (trigger reactions based on internal and external sensors)
- [Action Group Overview](#) (notify users or perform actions on events)
- [Recording](#) (event, continuous and snap shot recording)

1. Click on *General Event Settings* (see below). Make sure *Arming* shows as "Enabled".

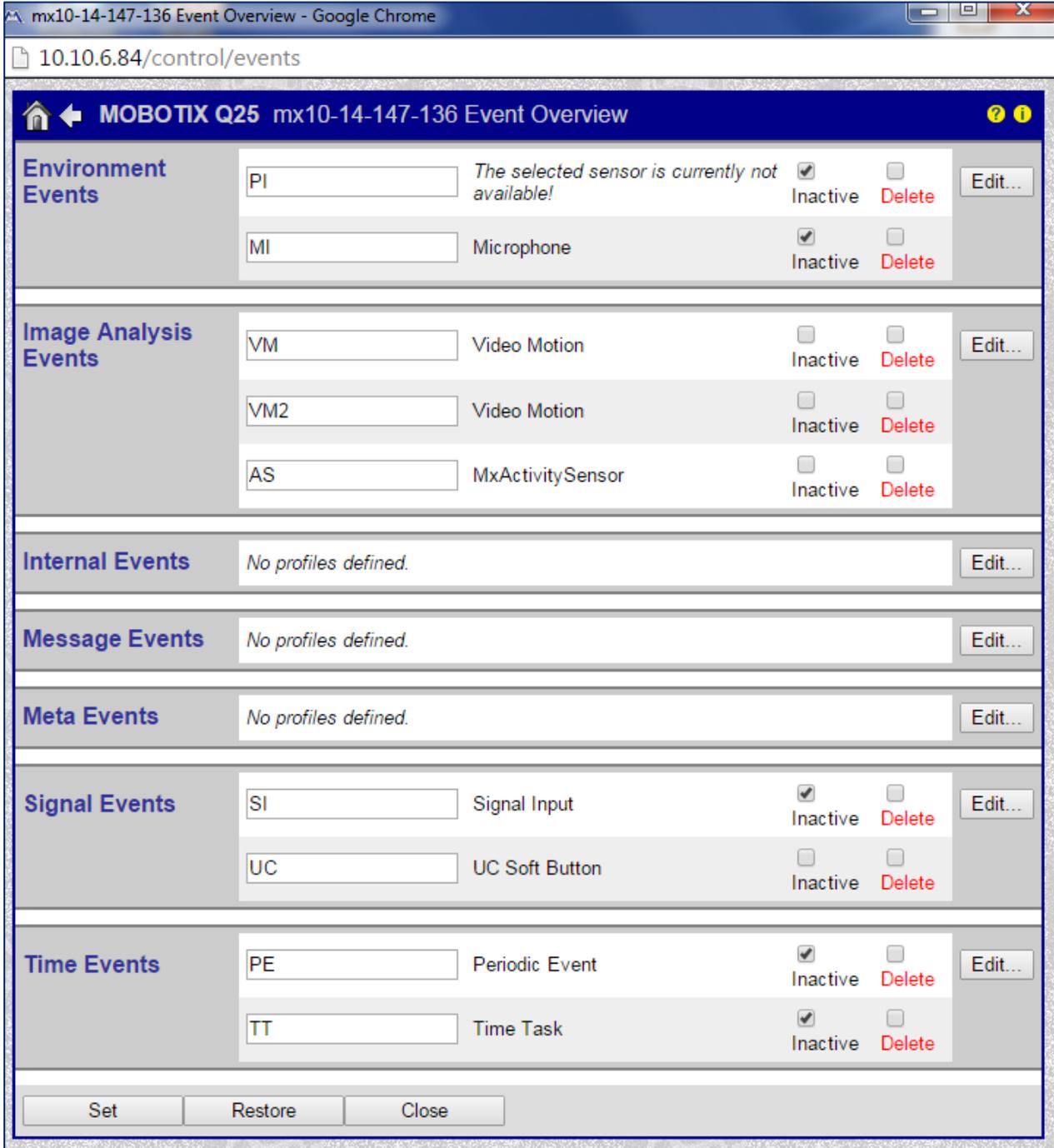


The screenshot shows the 'General Event Settings' page for a Mobotix Q25 camera. The browser address bar shows '10.10.6.84/control/settings'. The page title is 'MOBOTIX Q25 mx10-14-147-136 General Event Settings'. The interface is divided into several sections:

Activity	Value	Explanation
Arming	Enabled	<p>Arming: Arming for Recording and Action Groups: <i>Enabled:</i> activate all. <i>Off:</i> deactivate all. <i>SI:</i> arming controlled by signal input. <i>CS:</i> arming controlled by custom signal as defined below. <i>From Master:</i> copies Main Event Arming state from master camera.</p>
	(No time table)	<p>Time Table Profile: Time table profile for time-controlled arming. (Time Tables)</p>
Custom Signals	Value	Explanation
Custom Signal 1 (CS1)	Off	<p>Source: Specify how to generate custom signal CS1. <i>Off:</i> set to <i>false</i>. <i>On:</i> set to <i>true</i>. <i>Signal Input:</i> derive from signal input. <i>Time Table:</i> derive from time table. <i>From Master:</i> copy CS1 from the master camera. <i>By Action:</i> control state via action groups. <i>By Illumination:</i> derive from illumination value.</p>
<p>Note: Configuring arming sources as <i>From Master</i> requires you to properly configure and enable Master/Slave below.</p>		
Master/Slave	Value	Explanation
Master/Slave	<input type="checkbox"/>	<p>Enable Master/Slave: Specify whether or not this camera supports the processing of signals imported from a master camera and whether or not slave cameras are allowed to log in and to fetch local camera signals.</p>
	<input type="text"/>	<p>Master Camera: Camera to fetch remote signals from. Only relevant if you specified <i>From Master</i> at least once as source to arming controls (camera main arming, recording, actions, messaging) or to custom signals (CS1, CS2, CSL).</p>
	60000	<p>Replication Protocol Port: IP port used by the network protocol that replicates master camera signals among a set of slave cameras.</p>

At the bottom of the page, there are buttons for 'Set', 'Factory', 'Restore', 'Close', and 'More'.

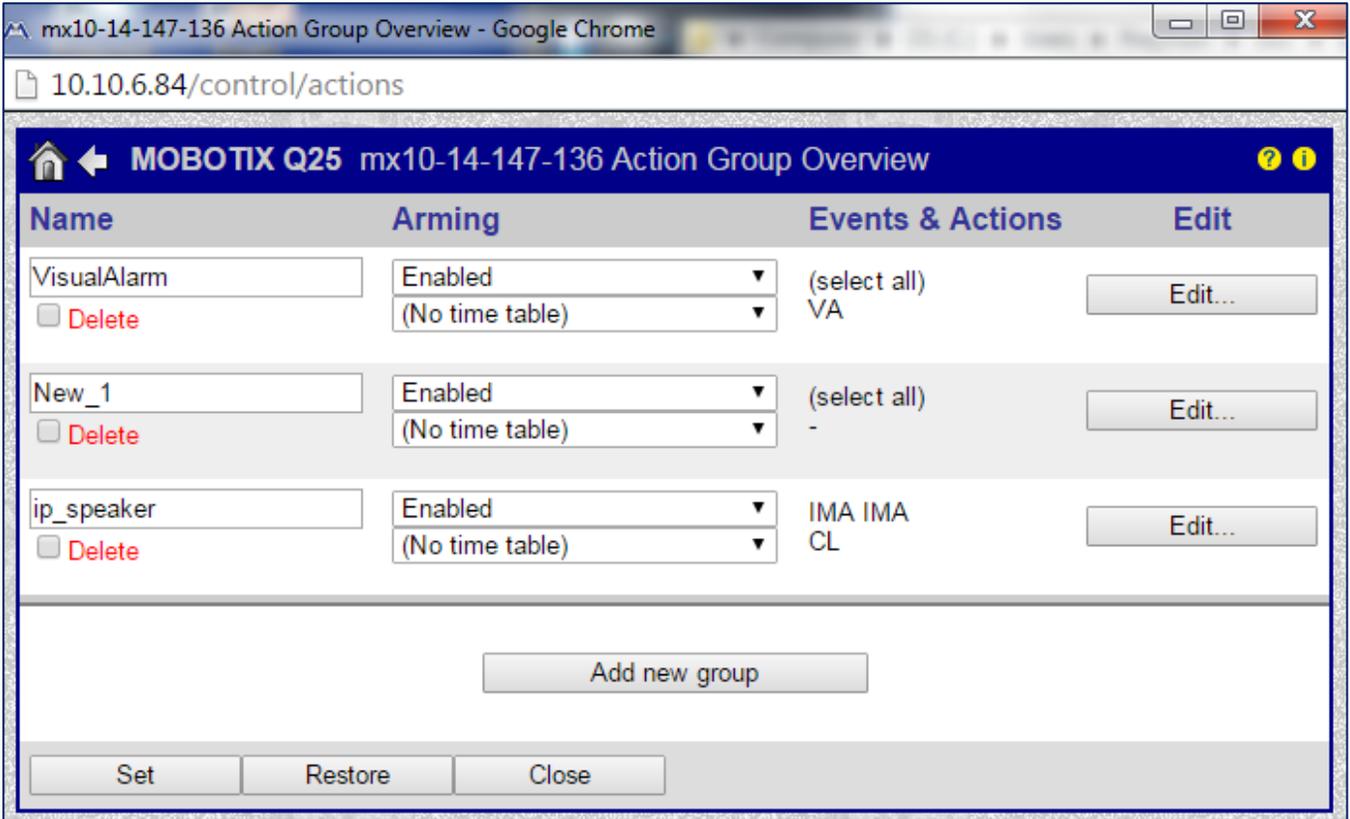
2. Click the *Event Overview* menu (see below).



Event Category	Event Name	Description	Status	Action
Environment Events	PI	The selected sensor is currently not available!	<input checked="" type="checkbox"/> Inactive	Delete Edit...
	MI	Microphone	<input checked="" type="checkbox"/> Inactive	Delete Edit...
Image Analysis Events	VM	Video Motion	<input type="checkbox"/> Inactive	Delete Edit...
	VM2	Video Motion	<input type="checkbox"/> Inactive	Delete Edit...
	AS	MxActivitySensor	<input type="checkbox"/> Inactive	Delete Edit...
Internal Events	No profiles defined.			Edit...
Message Events	No profiles defined.			Edit...
Meta Events	No profiles defined.			Edit...
Signal Events	SI	Signal Input	<input checked="" type="checkbox"/> Inactive	Delete Edit...
	UC	UC Soft Button	<input type="checkbox"/> Inactive	Delete Edit...
Time Events	PE	Periodic Event	<input checked="" type="checkbox"/> Inactive	Delete Edit...
	TT	Time Task	<input checked="" type="checkbox"/> Inactive	Delete Edit...

This example uses “VM” and “VM2”, the video motion triggers, to trigger the call, so make sure to set them to "enabled", and make sure the *Inactive* boxes show as unchecked.

3. Go to the *Action Group Overview* menu (see below).



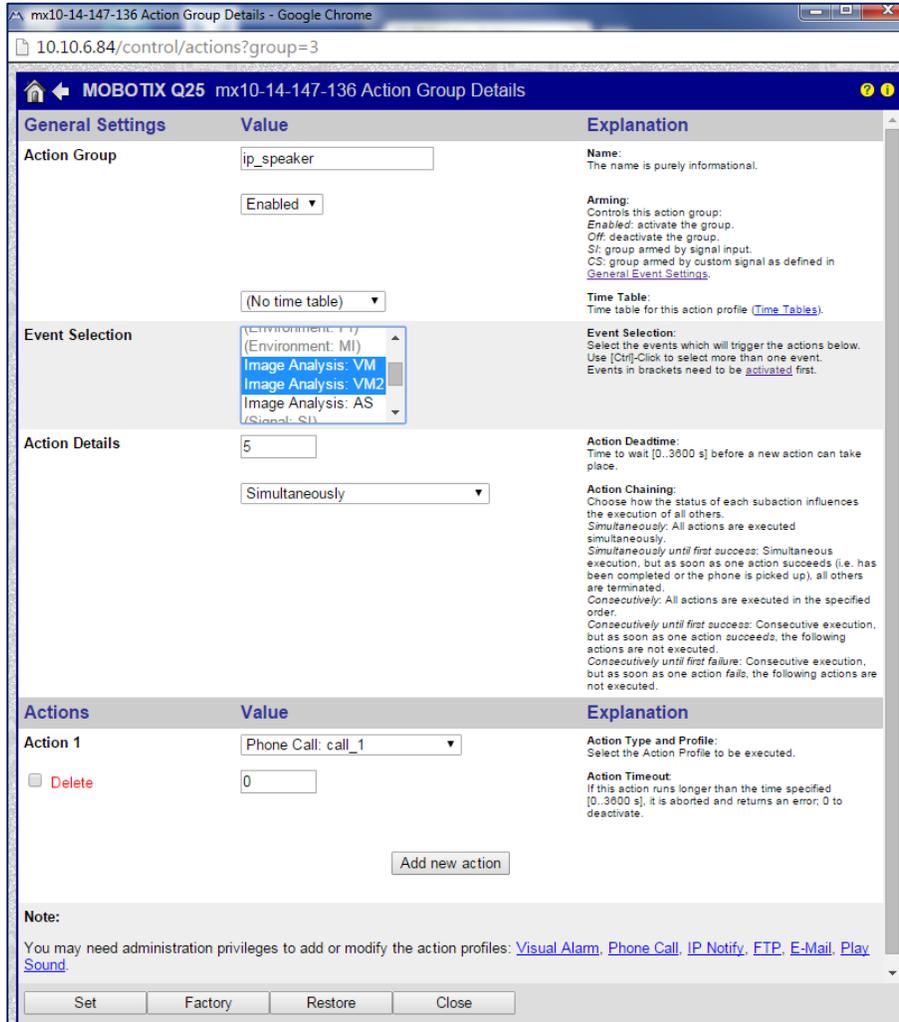
Name	Arming	Events & Actions	Edit
VisualAlarm <input type="checkbox"/> Delete	Enabled (No time table)	(select all) VA	Edit...
New_1 <input type="checkbox"/> Delete	Enabled (No time table)	(select all) -	Edit...
ip_speaker <input type="checkbox"/> Delete	Enabled (No time table)	IMA IMA CL	Edit...

Add new group

Set Restore Close

This menu shows a previously-created action group called “ip_speaker”, which responds to Events labeled as IMA and IMA (the video motion triggers).

Note: We created the action group “ip_speaker” by hitting the *Add new group* button, and then we edited those details by hitting the corresponding *Edit..* button, which leads to the *Action Group Details* menu (see below).



General Settings	Value	Explanation
Action Group	ip_speaker	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 General Event Settings .
	(No time table)	Time Table: Time table for this action profile (Time Tables).
Event Selection	Image Analysis: VM2	Event Selection: Select the events which will trigger the actions below. Use [Ctrl]-Click to select more than one event. Events in brackets need to be activated first.
Action Details	5	Action Deadtime: Time to wait [0..3000 s] before a new action can take place.
	Simultaneously	Action Chaining: Choose how the status of each subaction influences the execution of all others. Simultaneously: All actions are executed simultaneously. Simultaneously until first success: Simultaneous execution, but as soon as one action succeeds (i.e. has been completed or the phone is picked up), all others are terminated. Consecutively: All actions are executed in the specified order. Consecutively until first success: Consecutive execution, but as soon as one action succeeds, the following actions are not executed. Consecutively until first failure: Consecutive execution, but as soon as one action fails, the following actions are not executed.
Actions	Value	Explanation
Action 1	Phone Call: call_1	Action Type and Profile: Select the Action Profile to be executed.
<input type="checkbox"/> Delete	0	Action Timeout: If this action runs longer than the time specified [0..3000 s], it is aborted and returns an error; 0 to deactivate.
<input type="button" value="Add new action"/>		
Note: You may need administration privileges to add or modify the action profiles: Visual Alarm , Phone Call , IP Notify , FTP , E-Mail , Play Sound .		
<input type="button" value="Set"/> <input type="button" value="Factory"/> <input type="button" value="Restore"/> <input type="button" value="Close"/>		

Note the key values:

- *Arming:* Set to “Enabled”
- *Event Selection:* Set to VM and VM2 in this example (video motion will trigger the call)
- *Actions:* Press the *Add New Action* button, choose “call_1” to occur, which we set up earlier as the outgoing SIP call

OPERATION

After setting up the AND device and Mobotix camera, motion detected by the camera will trigger a SIP call to the device, sending audio.