Genetec Integration Guide

Integrating MOBOTIX Cameras in Genetec Security Center 5.6 and higher

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1 Introduction

The technical partnership between Genetec and MOBOTIX offers new possibilities and advantages for application scenarios that combine the Genetec Security Center video management software with MOBOTIX cameras. From Security Center Version 5.6, Genetec supports and certifies MOBOTIX cameras that support the Genetec protocol.

This document describes the features available from MOBOTIX cameras and the steps necessary to make them available in Security Center for all cameras of the x16/26 series running firmware release MX-V5.2.3 or higher.

For instructions how to integrate cameras of the x14/24 and x15/25 series running firmware release MX-V4.4.2.x or higher, please refer to the document [see: Genetec Integration Guide V4].

To begin with, the MOBOTIX cameras provide the following features to the Genetec software:

1. MxPEG Codec
2. M-JPEG Codec
3. H.264 Codec
4. Virtual PTZ
5. PTZ Pattern Support
6. HTTPS encryption for API communication
7. RTP Uni- and Multicast Streaming
8. RTSP-over-HTTP(S) Tunneling for all RTP Streams
9. Event Notification (Analytics, Monitoring, Alarms)
10. Digital Signal Inputs/Outputs (with ExtIO)
11. Audio IN/OUT
12. Basic Image Settings (Sharpness, Backlight Compensation, White Balance)
13. Firmware Upgrade
14. Genetec Stratocast Cloud Support

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Note

Before you can add the camera to the Genetec Security Center using the Genetec Config Tool, you need to adjust some basic settings of the camera.

These settings should not be changed once the camera is in use.

If you do need to change settings, make sure to execute a Reconnect for this camera (right-click on camera, Unit → Reconnect). This will prompt Security Center to use the new configuration.

The following section describes the steps required to prepare MOBOTIX cameras for integration into **Genetec Security Center**.

2 Preparing the Camera for Integration into Security Center

2.1 Update and Reset the Camera

If the camera has been in use before, we recommend updating the firmware and resetting it to defaults.

2.1.1 Update the Camera Software to the Latest Release

Admin Menu → System Update → Update System Software

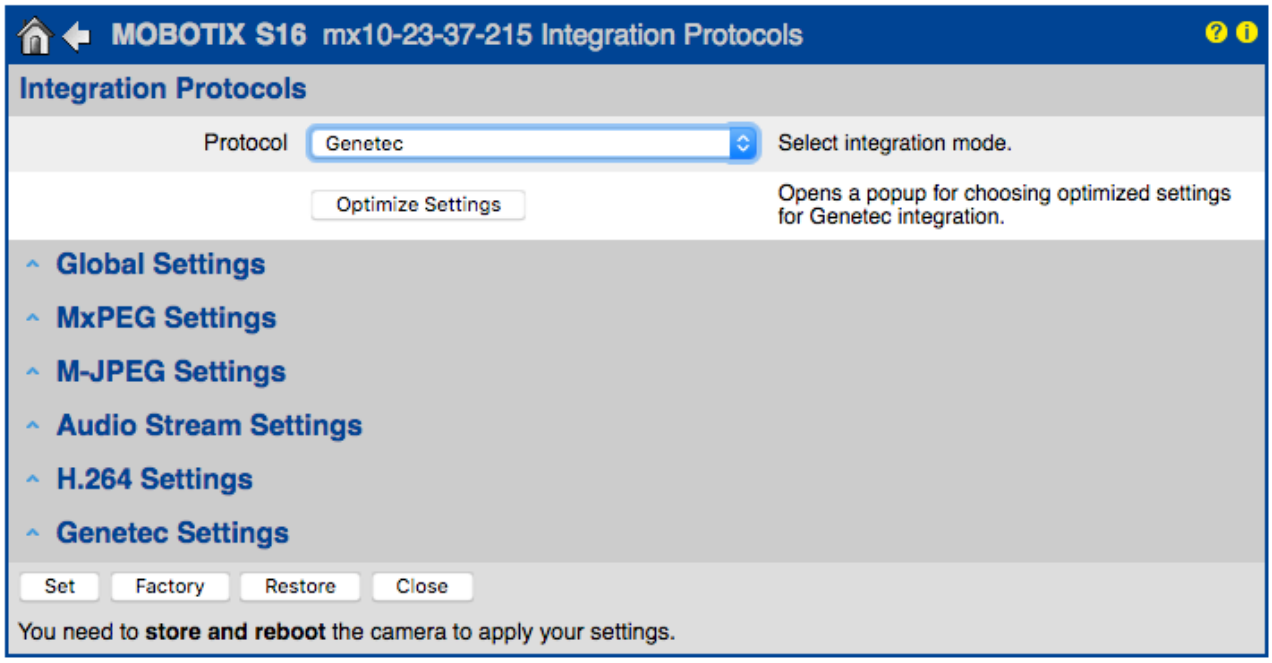
2.1.2 Reset the Camera to Factory Defaults

Admin Menu → Configuration → Reset configuration to factory defaults

2.2 Activate Genetec Integration Mode and Optimize Settings

By default, Genetec support is disabled in the camera firmware.

Admin Menu → Camera Administration → Integration Protocols

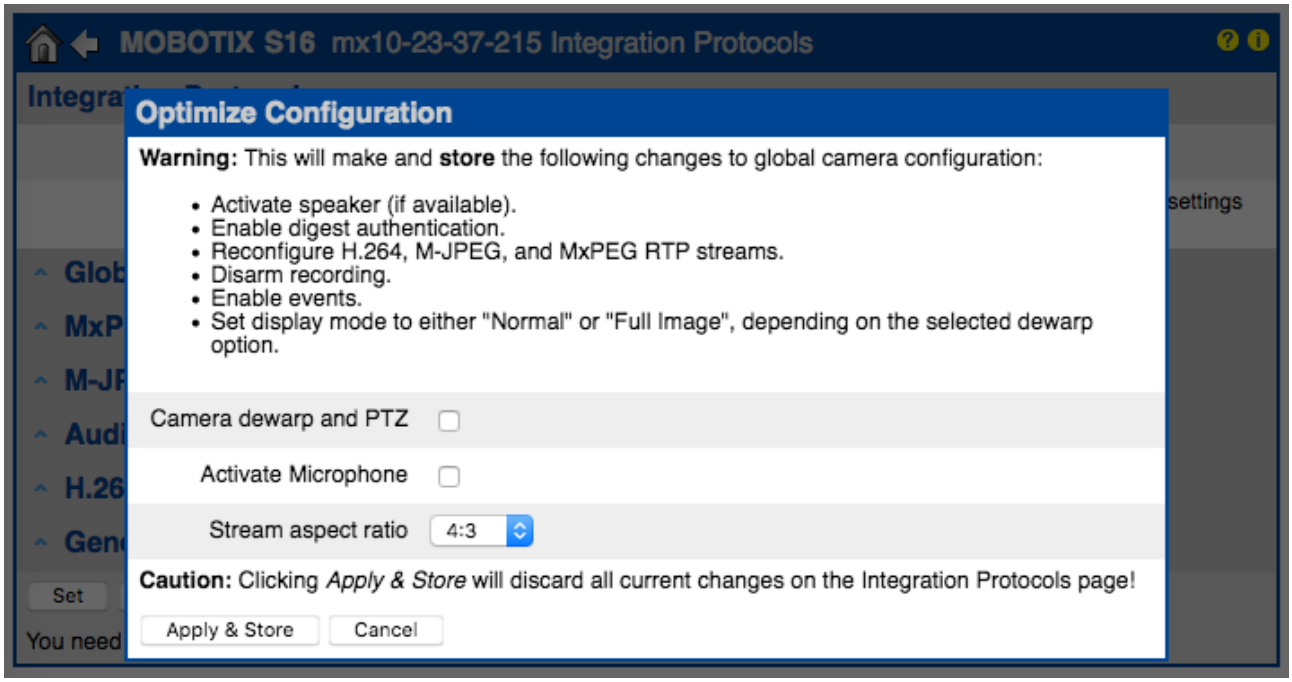


In the Protocol drop-down box select either **Genetec** or **Genetec + ONVIF**

Note

It is recommended that ONVIF clients access the camera in read-only mode, if you are using **Genetec + ONVIF** mixed mode.

Use the **Optimize Settings** button to open a dialog that will apply recommended configuration for integrating the camera into Security Center.



After clicking **Apply & Store**, your camera is ready to be integrated in Genetec Security Center.

2.3 Recommended Configuration

This section describes in detail the changes applied by the optimization wizard.

2.3.1 Activate Speaker

Activate any available speaker in the camera to support Audio-Out in Security Center.

2.3.2 Enable Digest Authentication

Activates HTTP Digest authentication for the HTTP Server of the camera.

2.3.3 Reconfigure RTP Server

Activates all RTP streams and configures them to FullHD resolution with 22 frames per second.

Note

While the Genetec integration mode is active, the RTP server will automatically reconfigure the camera's global video settings as needed by the active RTP sessions.

In addition, the features **RTSP-over-HTTP(S)** tunnel and **RTSP Client Setup** will be activated.

Note

Multicast will appear to be disabled in the configuration interface of the camera for all RTP streams. This has no effect on multicast support for Security Center!

Security Center manages its own multicast setups for the camera and configures them on the fly using RTSP. For this the option **RTSP Client Setup** needs to be active.

2.3.4 Disarm Recording

Disables camera side recording. Since access to the recordings through Security Center is not yet supported, recording will be disabled. If required, you can manually re-enable and configure recording as needed.

2.3.5 Enable Events

Activates event notification support for Security Center. See Section 3.1 for a list of supported events.

2.3.6 Set Display Mode, Dewarping and PTZ

If camera side dewarping is selected the display mode will be set to "Normal" and virtual PTZ will be available to Security Center.

If camera side dewarping is not selected the display mode of the camera will be set to "Full Image". This allows full image recording in Security Center, but virtual PTZ will not be available. This mode supports higher frame rates compared to camera side dewarping.

Note

On cameras with multiple image sensors the display mode will be set to the same value for all sensors. Mixing display modes on such cameras is not supported and might cause distortions in the video streams.

2.3.7 Microphone

If selected, this will activate the camera's microphone (if available) and ensure that audio support is activated for all RTP streams.

2.3.8 Stream Aspect Ratio

All resolutions available to Security Center will follow the selected aspect ratio. Recommended for use with Security Center are 4:3, 3:2 and 16:9.

The section "Global Settings" on the Integration Protocols page additionally offers the aspect ratio "free". This option disables the session-based reconfiguration (see section 2.3.3) in the RTP server. In "free" mode the resolutions available to Security Center depend on the settings in

Setup Menu → General Image Settings

Only resolutions smaller than the one selected here will be available to Security Center.

2.4 Custom Settings

The optimization wizard will only make one-time configuration changes to ease the integration process. Feel free to make further configuration changes as needed before starting the enrollment process in Security Center.

Keep in mind that some configuration changes may have an impact on performance or available functionality in Security Center.

3 Additional Configuration Options

3.1 Event Module

The camera supports a number of events from different sections.

3.1.1 Analytics Events

Cameras, which support MxAnalytics, are able to track objects in their field of view. By tracking objects, MOBOTIX IoT cameras are able to create events based on object movement and behavior (Behavioral Detection). These events can be sent to Genetec Security Center as Analytics Events.

To activate and configure Behavioral Detection, open the page

Setup Menu → Event Control → Event Overview → Image Analysis Events → Edit

The following Analytics Events are supported:

Mobotix Event	Genetec Event	Type
Restricted Area	ObjectInField	Native
Duration of Stay	ObjectLoitering	Native
Turn or U-Turn	ObjectConditionChanged	Native
Corridor	ObjectFollowingRoute	Native

For more information on how to configure Behavioral Detection events, please refer to the camera's online help and documentation.

3.1.2 Alarm Profiles

In general, all alarm profiles supported by the camera will be reported as custom events to Security Center. The alarm profiles can be configured here:

Setup Menu → Event Overview

The following profiles are active by default:

Mobotix Event	Genetec Event	Type
AS: MxActivitySensor	AS	Custom
UC: UC Soft Button	UC	Custom
VM: Video Motion	VM	Custom

3.1.3 Health Monitoring Events

Mobotix Event	Genetec Event	Type
Camera Temperature Warning: The temperature of the camera is high.	TemperatureAlarm	Native
Camera Temperature Alert: The temperature of the camera is too high.	TemperatureAlarm	Native
External Device Temperature Warning: The temperature of an external device (e.g., ExtIO or MX-GPS-Box) is high.	TemperatureAlarm	Native
External Device Temperature Alert: The temperature of an external device (e.g., ExtIO or MX-GPS-Box) is too high.	TemperatureAlarm	Native
Service Restart Warning: An internal service was restarted too often. Automated reboot cycle will follow soon if the problem persists.	ServiceRestartWarning	Custom
Service Restart Error: An internal service was restarted too often. Automated reboot cycle will follow soon if the problem persists.	ServiceRestartError	Custom

Mobotix Event	Genetec Event	Type
System Messages Alert: System messages contain (critical) errors.	SystemMessagesError	Custom
System Messages Warning: System messages contain warnings.	SystemMessagesWarning	Custom
Admin Password Alert: The camera's admin password is the default password.	PasswordError	Custom
Image Generation Subsystem Warning: Severe image generation subsystem malfunction.	ImageSubsytemWarning	Custom
Image Generation Subsystem Alert: Severe image generation subsystem malfunction. The image generation observed a malfunction for more than one minute.	ImageSubsytemError	Custom
Image Sensor Warning: An image sensor error occurred.	ImagesensorWarning	Custom
Image Sensor Alert: Severe image sensor malfunction.	ImagesensorError	Custom
Flash Storage Warning: Flash-based event storage medium is almost worn out.	StorageStatus (error)	Native
Flash Storage Alert: Flash-based event storage medium is worn out.	StorageStatus (error)	Native
Archive Status Warning: Buffer is almost full.	StorageStatus (full)	Native

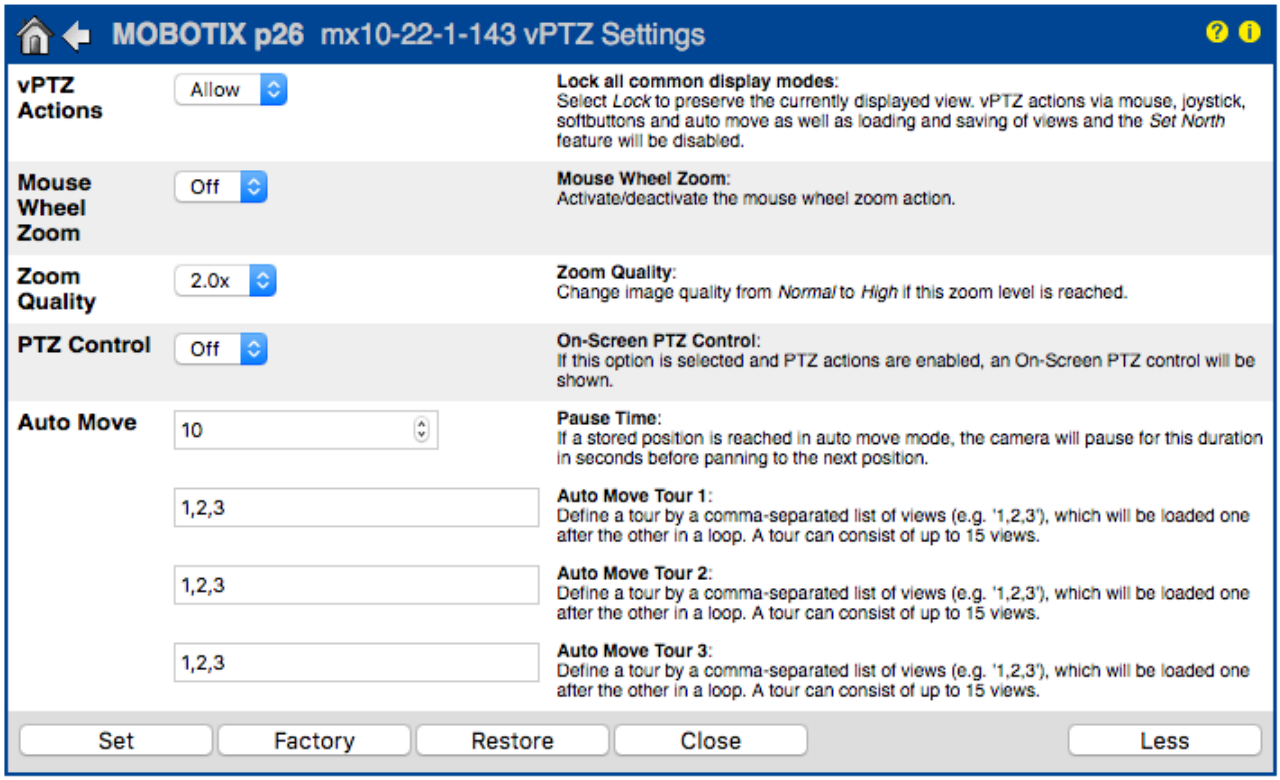
Mobotix Event	Genetec Event	Type
Archive Status Alert: Buffer is full, and camera is going to lose video recordings.	StorageStatus (full)	Native

3.2 PTZ Patterns

PTZ patterns can be created using the Auto Move Tour feature of the camera. You can define up to three tours as a list of Views which will be loaded one after the other in a loop.

To specify the sequence of **Views** which will be visited in an **Auto Move Tour** open:

Setup Menu > vPTZ Settings > Auto Move > Auto Move Tour



For each Auto Move Tour you can specify a comma separated list of up to 15 views.

The **Views** can be defined using the **Save** function in the **Presets** section on the **PTZ panel** of Security Center. You can also save the view positions using the camera's browser interface (drop-down list entry „Save View").

The **Auto Move Tours 1-3** will be available as **Pattern 1-3** in Security Center.

4 Adding the Camera to Security Center

4.1 Manually Adding the Camera

- Select "Add Video Unit" in Config Tool
- Select "MOBOTIX" as manufacturer
- Select "MxPEG Integration" as product type
- Enter camera IP address in corresponding field
- Select "Specific" authentication
- Enter username and password

4.2 Adding the Camera Using Discovery

The camera supports the Genetec Discovery Protocol.

- Config Tool → Unit Enrollment
- Enter username and password

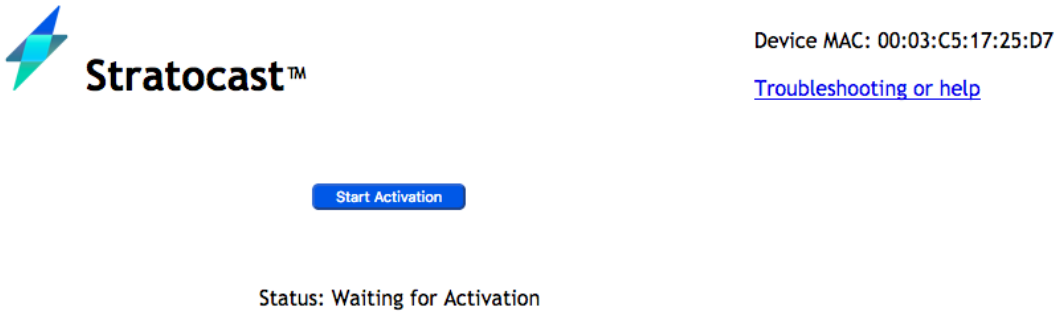
Note

If you selected **Genetec+ONVIF** as protocol, cameras might be listed twice in the unit enrollment dialog. Once as ONVIF and once as MOBOTIX camera. In this case we recommend using the MOBOTIX camera.

5 Stratocast

The camera also supports Stratocast protocol extension. This allows you to connect the camera with the Genetec Stratocast cloud service.

Open the URL *http://<CAMERA _IP>/stratocast* and click on Start Activation. Then follow the instructions.



The Stratocast extension will automatically enable the Genetec protocol extension and apply the optimized settings when connecting to the cloud.

6 Special Notes on Configuration

6.1 Reconnecting the Camera

Many configuration changes made through the camera native user interface (browser) require the camera to be reconnected in Security Center.

Examples are:

- Configuration changes to the RTP server

  Admin Menu → Integration Protocols

- Activating/deactivating microphone or speaker

  Admin Menu → Audio and VoIP Telephony → Speaker and Microphone

- Setting the Display Mode

  Setup Menu → Image Control → General Image Settings

7 Known Limitations and Workarounds

7.1 PTZ

If the camera provides a stream with several views (e.g., in dual image or surround display mode), virtual PTZ applies to the active view window. By default, the active window on the top left is active. You can change that, by clicking into one of the other window areas in the web browser view. As a confirmation you will see a brief yellow frame around the activated window.

7.2 Video Motion Windows

Video motion windows that are managed and configured in Security Center will always be applied to the current live image. If image area, zoom level or distortion correction is changed, you need to check and correct the video motion windows as needed.

7.3 Dual Cameras

Security Center will manage only one set of configuration parameters per camera. For MOBOTIX dual cameras, a number of image parameters can be set differently for the two image sensors.

7.3.1 Color Saturation, Rotation and Brightness

When changing these settings in Security Center, they will only be applied to the currently displayed image sensor. When viewing dual images, these settings will be applied to both sensors.

7.3.2 Aspect Ratio of Images

When changing display modes on dual lens cameras, make sure that both image sensors are using the same aspect ratio. Avoid combining two images with different aspect ratios, such as **Panorama** (8:3) with **Full Image** (4:3). If different aspect ratios are used, the RTP stream can briefly stop when switching from one sensor to the other in **Auto Mode**. In **Both** mode the combined image might show distorted in the RTP streams.

7.4 Thermal Cameras

When using an aspect ratio other than “**free**” (see section 2.3.8), thermal images are limited to their native resolution (typically 320x240, depending on the selected aspect ratio).

To be able to use larger resolutions you'll have to set the aspect ratio to "**free**" and configure the live image resolution via the camera's web interface.

7.5 Optimizing the Frame Rate

The maximum attainable frame rate depends on several parameters. To maximize the frame rate on the camera, you should apply the following settings. Please note, that some of these measures may reduce image quality.

7.5.1 Motion Detection

By default, Security Center will enable motion detection on the camera and set the detection area to cover the whole image. This might have negative impact on overall frame rates. To improve frame rates, we recommend to either disable camera side motion detection or to reduce the size of the detection zone.

7.5.2 Live Image

Using the Quick Controls on the camera's website select *Image Program → Fast.*

7.5.3 Setup Menu

- General Image Settings

  Frame and Data Rate → Playback has Priority → Disabled

  Noise Filtering → Off

- Exposure Settings

  Frequency of Power Supply → No artificial light

- General Event Settings

  Arming → Off

- Recording

  Arming → Off

  Full Image Recording → Off

The frame rate also depends on many other parameters, such as the sensor type (B/W, color), the image scene, lighting conditions, the amount of functions activated on the camera, as well as the type and number of extension modules connected to the camera.

When operating in Genetec Mode, the RTP server will automatically reconfigure the image generation as it is needed by the currently active RTP sessions. You will get the best frame rate on the session with the highest resolution. For all other sessions, the camera needs to scale down and recode the RTP stream, reducing the frame rate.