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IOI SD

# Release Notes

Firmware Version 2.3.0.2

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**Document History**

Version	Date	Comment
1	November 28, 2017	Initial FLIR release

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# 1. Version Content

This release adds support to the TRK-101-P PTZ Tracker for the Quasar CP-6302 IR PTZ camera.

In addition to documenting the [Key Features](#), these release notes cover [Supported Products and Platforms](#), [Known Issues and Limitations in the Current Version](#), and [Upgrading the Firmware](#).

**Caution:**

This firmware should not be installed on units that do not support SoE (units shipped with firmware lower than version 2.1.1). If such a unit is upgraded with this firmware version, the Analytic Decoder mode of the IOI IP functionality will not operate. In this case, the unit will operate only in Analog mode.

## 1.1 Firmware Version Location

This firmware version can be downloaded from [here](#).



## 2. Supported Products and Platforms

In addition to supporting all features and cameras previously announced, this version is applicable to the following products:

Product Name	Description
TRK-101-P PTZ Tracker	Encoder with built-in PTZ video analytics and H.264 compression.
	Quasar IR PTZ camera with the following firmware or above:
	The CPU version is <b>fs20170928NRS</b>
	The Pan MCU version is <b>PV2R-81D2</b>
	The Tilt MCU version is <b>TV2R-81D2</b>
	The Zoom MCU version is <b>T2-L34-I0-170718-01</b>
	The Quasar IR PTZ camera firmware is available from <a href="#">FLIR TCX</a> .
DNA 1.0 or higher	DNA version 1.0.4.0 or higher. Click <a href="#">here</a> to download the latest DNA Release Notes. Click <a href="#">here</a> to download the latest DNA User Manual.





## 3. Key Features

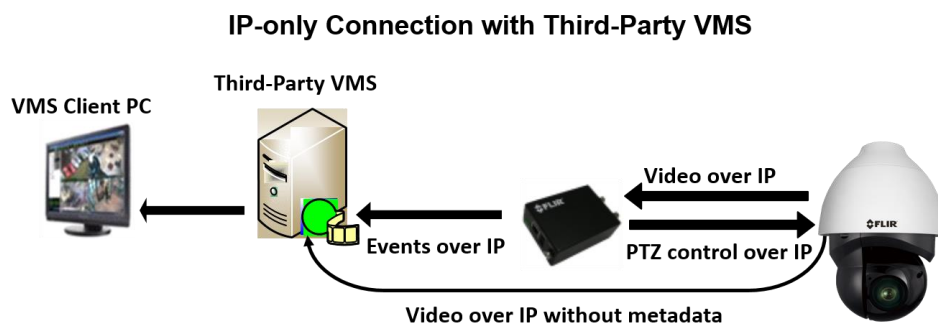
Version 2.3.0.0 includes the following key features:

- [PTZ Tracking with Quasar CP-6302](#)
- [Hand-off from FLIR FC-Series ID Cameras to TRK-101-P](#)
- [Support for Third-Party Management System Vendors](#)

### 3.1 PTZ Tracking with Quasar CP-6302 Camera

This firmware version fully supports PTZ Tracking on Quasar CP-6302 cameras.

The physical connection of the camera, PTZ Tracker and a VMS are illustrated below.



In the *IP-only Connection with a VMS* illustration above, configure the TRK-101-P in *Digital input, digital analytics output over IP* operating mode. See [Binding the Camera with a Video Management System](#).

### 3.2 Hand-off from FLIR FC-Series ID Cameras to TRK-101-P

TRK-101-P supports hand-off from FC-Series ID, in addition to already-supported hand-off from IOI HD and TRK-101-P.



**Note:**

1. The FC-Series ID camera must have firmware version V2.03.P03 and above.
2. The FC-Series ID camera is discovered automatically only if:
  - The camera and TRK-101-P are configured on the same VLAN on the TRK-101-P **PTZ Setup > PTZ Synchronization** screen
  - The camera and the TRK-101-P are connected to the same switch

### 3.3 Support for Third-Party Management System Vendors

The camera and the TRK-101-P are officially supported by several third-party management systems. The user should verify that the vendor supports both products. For complete details on each vendor's management system, refer to [Supported 3<sup>rd</sup> Party Platforms – FLIR Security Cameras](#).



**Note:**

The following limitations on TRK-101-P functionality exist with third-party management platforms:

- No analytic overlays: the VMS is not capable of combining the metadata with the video stream
- Binding from TRK web interface
- No Manual PTZ and Auto-Rearm functions
- Limited arm/disarm control from the management system

See [Appendix A.5](#) for using TRK external I/O to control arm/disarm status.



**Note:**

ExacqVision VMS systems operate with TRK-101-P and the supported cameras with the above limitations. However, TRK-101-P has not been officially certified by ExacqVision.

## 4. Known Issues and Limitations in the Current Version



### Note:

This version does not support Backup & Restore from IOI HD cameras to/from the TRK-101/ TRK-101-P. Firmware versions that support this function are available from FLIR TCX.

The following table includes known issues and limitations in the current version:

BUG ID	TYPE	DESCRIPTION	COMMENTS
44605	Bug	<b>Type &amp; Model</b> screen > Japanese GUI > The <b>Start PTZ Setup</b> button is not aligned correctly.	
44573	Bug	TRK-101-P > The camera does not go to preset if armed by an event action.	Add action "Go To Preset" as an event response.
44572	Bug	TRK-101-P > PTZ > Tracking triggers an ARM event (configured on the <b>Events</b> setup page)	
44539	Limitation	TRK-101-P and FLIR multi-sensor cameras > Hand-off > Camera does not respond to a 'hand-off' alarm that is received within 5 seconds after returning to a previous preset.	
44550	Bug	A310pt > Thermal > PAL > Tracking is not supported.	
44490	Limitation	TRK-101-P > Binding in VMS > The TRK web page "alarm" box is not synced with Latitude Analytics status after "clear alarm" command from Control Center.	
44437	Limitation	FLIR multi-sensor cameras & TRK-101-P > Web interface allows "GoToPreset" within 5 seconds from last "GoToPreset", which causes a queue of commands to the camera.	Wait 5 seconds between GoToPreset command.
44388	Bug	TRK-101-P and Latitude 7 > After removing the bind, Latitude still displays the IOI presets.	
43748	Limitation	Latitude > Auto Rearm can cause TRK to be armed and therefore not stream video while configuring the TRK unit.	Before set up from the TRK web interface, tile must be closed in Control Center and make sure the unit is armed from UVMS.
43676	Limitation	TRK-101-P > Synchronize with NTP > Cannot insert server name (for example ntp.time.com). An error message is displayed.	Use numerical IP address (xxx.xxx.xxx.xxx).
43584	Bug	Latitude > User can overwrite an existing preset.	Occurs only with Quasar 30X.
43405	Bug	On IE 9, the <b>System &gt; User Accounts</b> screen is not accessible.	We recommend using IE 10 or 11.

BUG ID	TYPE	DESCRIPTION	COMMENTS
43173	Limitation	FLIR FC-ID > When handing off to a PTZ camera from the FC-ID camera, the "Last detection object" feature does not work on the FC-ID camera.	
42991	Limitation	When handing off the camera to a PTZ camera, if the IOI HD streaming is on MJPEG, the video is not displayed on the TRK-101-P.	Changing the setup is supported only on H.264.
42957	Bug	Latitude > System Settings > Alarm types > Action > Units that are bound with activated alarms (analytics have been cleared) are not displayed as Available.	
42931	Bug	When operating in DVR mode with <i>Enhanced detection</i> enabled, after clicking the <b>Arm</b> button, the unit reboots after defining depth.	
42804	Limitation	TRK-101-P and CP-4221-301 > Only VGA resolution is supported.	Bind the units in Latitude and select Decoder mode on the TRK unit. This automatically sets camera and TRK settings.
42708	Limitation	TRK-101-P and Latitude 6.4.0.6852 > When binding a unit, the user does not receive a warning message that it is not possible to add new Presets in Latitude.	Works as designed. Configure presets from the TRK unit.
42362	Limitation	TRK-101-P > A fixed camera should be disarmed and in Decoder mode when defining PTZ hand-off.	Disarm the fixed camera before setting up the hand-off.
42243	Limitation	In Decoder mode, when the unit is powered on, the unit does not display its IP address in the analog video output.	
42194	Limitation	FLIR Fixed family > TRK-101-P > Uncheck the <i>Enable PTZ functionality</i> checkbox in Latitude before binding the camera.	See Appendix.

BUG ID	TYPE	DESCRIPTION	COMMENTS
41987	Limitation	Latitude > Presets > TRK-101-P and PTZ camera > When clicking a Preset, after a while Latitude configures the camera as Preset 1.	Generic issue for PTZ binding.
41933	Limitation	The unit did not send E-mail on events to Gmail.	Use Exchange or Yahoo Mail.
41920	Bug	The batch Solo Setup recording is not working on units in Decoder mode.	It is recommended to use Auto calibration.
41745	Limitation	Latitude > FLIR T4350BN > Camera > Video > The resolution 640x360 is not support by the Analytics.	Use VGA resolution with TRK analytics.
39318	Bug	A custom direction arrow is displayed on a Loitering rule when changing the rule from IT to Loitering.	
39303	Bug	Depth > Solo Setup >The close-up view window always returns back to the left upper side of the picture when the Solo Setup clip running.	
39295	Bug	IOI > The user has to run IE 10/11 as administrator for the Solo Setup files to be created and saved on Windows 8 and 8.1.	
39080	Limitation	Use a bit rate 900 or higher with D1 resolution when a rule is defined on a static object.	
36235	Bug	The audio alert did not function on the <b>Site-Live</b> page upon detection of an event.	
36163	Bug	When selecting an IOI-controlled PTZ camera in Latitude, Meridian, and Horizon, the PTZ protocol type is listed as IOImage PTZ instead of IOI PTZ Tracker.	Select this setting (default) for an IOI encoder set up as a PTZ camera.
36155	Bug	Only IOI units that support SOE recording are listed in the <i>Units</i> drop-down list on the web interface in the <b>Events &gt; Responses</b> page, including units that are added manually.	
35896	Limitation	It is not possible to sync the encoder when it is armed and set as a PTZ camera in Analog, DVR and Decoder modes, because there is no video stream.	Disarm the fixed camera, sync the unit, and rearm the fixed camera.
35632	Limitation	There is no option to play a clip on a full screen on the <b>Site Playback</b> page in the web interface.	
35610	Bug	The 64-bit version of VLC cannot be installed and used by Site Playback.	The units require IE 32-bit browsers. Install the 32-bit VLC version.
35460	Bug	A recording on the <b>Site Playback</b> page in MPEG-4 and H.264 did not play correctly.	Disarm the unit from which you are playing the clip.
31659	Bug	The video flickers in the web interface when the user scrolls down using Windows 8.1 and Windows 10.	
31450	Limitation	Site Viewer > There was no audio alert for the 1.5.7.x units.	This is supported on units with version 2.1.1 and 2.1.2.

## Known Issues and Limitations in the Current Version

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BUG ID	TYPE	DESCRIPTION	COMMENTS
25223	Limitation	Web video rendering is supported only on display adapters that fully support Direct X (e.g., NVidia, ATI, and most Intel on-board adapters).	
20590	Limitation	It was not possible to install ActiveX on 64-bit versions of Internet Explorer 9.	Use IE 11.
20344	Limitation	The noise reduction function does not operate properly on MJPEG.	

## 5. Upgrading the Firmware

Units with previous firmware versions can be updated over the web or by using the Discovery Network Assistant (DNA) tool.

**Note:**

From the encoder's **Setup > Camera > Streaming** screen, select the upgrade file according to the camera's Video Standard (PAL or NTSC).

**To upgrade the firmware**

1. Open the **Setup > System > Firmware** screen.
2. Browse for the firmware file in the directory to which you saved the file.
3. Click **Upgrade**.

**Caution:**

This firmware should not be installed on units that do not support SoE (units shipped with firmware lower than version 2.1.1). If such a unit is upgraded with this firmware version, the Analytic Decoder mode of the IOI IP functionality will not operate. In this case, the unit will operate only in Analog mode.





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## 6. Disclaimer

By providing this document, FLIR Systems, Inc. is not making any representations regarding the correctness or completeness of its contents and reserves the right to alter this document at any time without notice.

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# Appendices

## A.1. Preparing the Camera for PTZ Tracking

From the camera's web interface, configure the following:

1. On the **System > Maintenance > Software Version** screen, verify that the firmware versions are the same or higher than is displayed as follows:

The CPU version is	<b>fs20170928NRS</b>
The Pan MCU version is	<b>PV2R-81D2</b>
The Tilt MCU version is	<b>TV2R-81D2</b>
The Zoom MCU version is	<b>T2-L34-I0-170718-01</b>

2. If necessary, contact [FLIR TCX](#) for Quasar IR PTZ firmware.
3. After upgrading the camera, on the **System > Maintenance > Factory Default** screen, perform a partial restore to apply changes.
4. On the **Camera > Misc.** screen, select **TV System > 50 fps (PAL)** or **60 fps (NTSC)**.
5. Select the stream you want to feed to the PTZ Tracker and configure it with the following settings. The PTZ Tracker requires a specific stream setting. If you are working with a VMS, make sure that the VMS does not override the video setting for the selected stream.
6. On the **Streaming > Video Configuration** screen, set the following:

Parameter	Value
Encoder Type	H.264
Resolution	VGA (640x480)
Rate Control	CBR
Profile	Main Profile
Frame Rate	25/30 fps (PAL/NTSC)
Bit Rate	1500Kbps
GOV length	50/60 (PAL/NTSC)

7. On the **Streaming > Video Text Overlay** screen, disable any Video Text Overlays.
8. On the **PTZ > Privacy Mask** screen, disable any Mask Settings.
9. On the **PTZ > PTZ Settings** screen, set *Flip* to *Off*.

- The following parameters will be configured automatically by the TRK:

Parameter	Value
Noise reduction	3DNR = OFF 2DNR = OFF
Speed by zoom	Off - When analytics is armed On – When Analytics is disarmed
Digital Zoom	

## A.2. Binding the Camera with a Video Management System



### Note:

The following limitations on TRK-101-P functionality exist whether or not you are using a management system:

- No analytic overlays: the VMS is not capable of combining the metadata with the video stream
- Binding from TRK web interface
- No Manual PTZ and Auto-Rearm functions
- Limited arm/disarm control from the management system

See [Appendix A.5](#) for using TRK I/Os to control the PTZ camera's Armed/Disarmed status.



### Note:

Latitude VMS does not support binding the camera with the PTZ Tracker. DO NOT use the binding process via Latitude.

### To bind PTZ Tracker to the camera

1. Make sure that the camera is prepared for PTZ tracking. See [Appendix A.1](#).
2. Discover the camera and complete configurations on the VMS.
3. On the TRK-101-P **Camera > Streaming** screen, set the **Video standard** (PAL/NTSC).
4. On the TRK-101-P **System > Unit Information** screen, do the following:
  - a. Select *Digital input. Digital analytics output over IP*.
  - b. Enter the following RTSP URL in the *Insert RTSP stream URL* text box. For "<ip>", enter the camera's IP address. "<X>" represents the stream number that was configured. See [Appendix A.1](#).
    - For stream # 1 use: rtsp://<ip>/h264
    - For other streams use: rtsp://<ip>/h264\_<X>
    - Authentication is not required

- c. Click Apply.

5. On the **Camera > Type & Model** screen:
  - a. Set the *Camera Type* to *Pan/Tilt/Zoom* camera model.
  - b. Set the camera model.
  - c. Enter the camera's IP Address and Port (default is 80).
  - d. Enter credentials (default is Admin:1234).
  - e. Click **Apply**. Verify that you can move the camera by using the arrows.
  - f. Click **Start PTZ Setup**. The PTZ Setup wizard opens.

Channel name:

**Camera Type**

☐ Fixed

☒ Pan/Tilt/Zoom (PTZ)

**Camera Model**

Manufacturer:

Model:

Max Zoom:

**Communication**

Port:

Protocol:

Device ID:

Baud rate:

Parity:

Start bits:

Stop bits:

IP:  Port:

User:  Password:


6. Complete the wizard.
7. Configure Depth and Rule settings for each preset on the PTZ Tracker in the **Analytics** screen.
8. Arm the camera from the web interface.

### A.3. Binding the FC-Series ID Camera to the TRK-101-P

To implement a hand-off from the FC-Series ID camera to a PTZ camera, the FC-Series ID camera and PTZ Tracker (TRK-101-P) are bound together from the web interface of both units. The FC-Series ID camera should run V2.02 or higher.

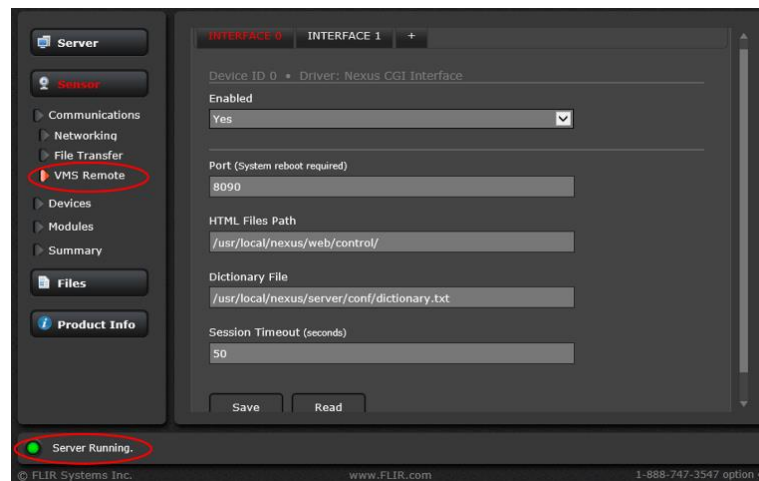


#### Note:

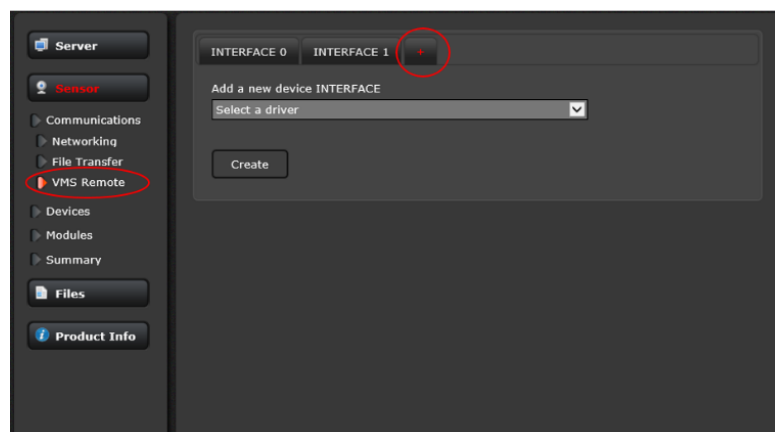
1. Before starting the procedure below, wait until the calibration of the FC-Series ID camera reaches 100% on the **Live Video** page.
2. Disarm the analytics by clicking the Analytics Disable icon  on the FC-Series ID **Live Video** page.

#### On the FC-Series ID camera

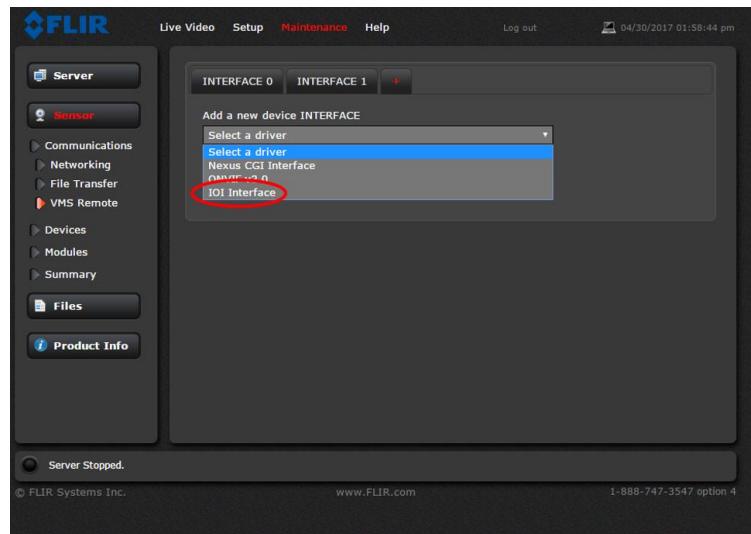
1. Select **Maintenance > Sensor > Communications > VMS Remote**.



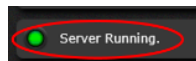
2. Verify that the server is running.
3. Click + (Plus).



4. From the drop-down list, select *IOI Interface*.



5. Click **Create**.
6. Restart the server by doing the following:
  - a. Click the green button next to “Server Running” to stop the server.



- b. Click the green button next to “Server Stopped” to start the server.

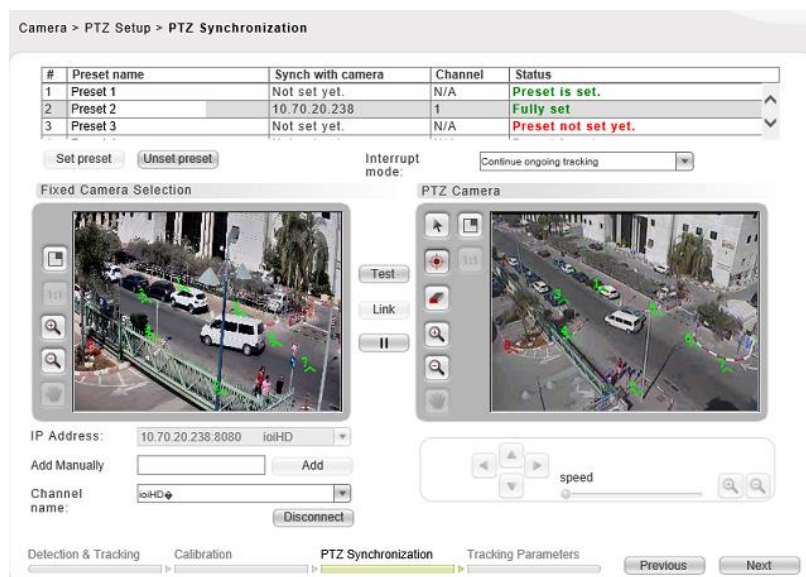


7. On the **Setup > Analytics** screen, from the *Calibration Mode* drop-down list, select *Auto* or *Manual* to set the depth.
8. Wait one minute after the process reaches 100%.

#### On the TRK-101-P

1. From the **Camera > Type & Model** screen, verify that the *Camera Model* is configured as *PTZ*.
2. Click **Start PTZ Setup**.
3. On the **Detection and Tracking** screen, select *Detection from another camera with Automatic PTZ tracking*.
4. Click **Next**.
5. Click **Calibrate** and follow the instructions on the web interface.
6. Click **Next**.
7. From the **PTZ Setup > PTZ Synchronization** screen, follow the procedure described in the [IOI HTML Edition Units User Guide](#) which can be downloaded from [here](#). Refer to “Step 3: PTZ Synchronization with Fixed Cameras” in the section “Using the PTZ Camera Definition Wizard”.
  - If the camera and encoder are located on the same VLAN, the camera’s IP address is displayed automatically in the IP address text box.
  - If the FC-Series ID camera is located on a different VLAN than the TRK-101-P, or if its IP address has changed, you must add the FC-Series ID camera manually in the *Fixed Camera Selection* section of the TRK-101-P PTZ Synchronization screen. In the *IP Address* text box, set the HTTP port to 8084, where the IP address is “<IP address>:port” (for example 173.25.19.111:8084).





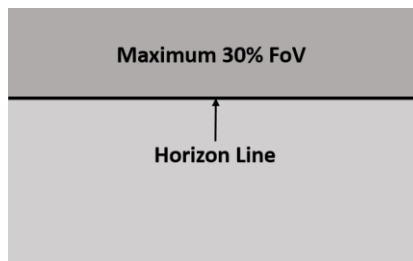
8. After binding the units, set 8 correlation points *on the ground*, as described in the procedure “To set correlation points in a preset” in the User Guide.
9. You can set a few presets for each fixed camera. The PTZ camera will automatically go the relevant preset according to the intrusion location on the fixed camera.

## A.4. Camera Installation Guidelines

Following are some guidelines for installing the camera.

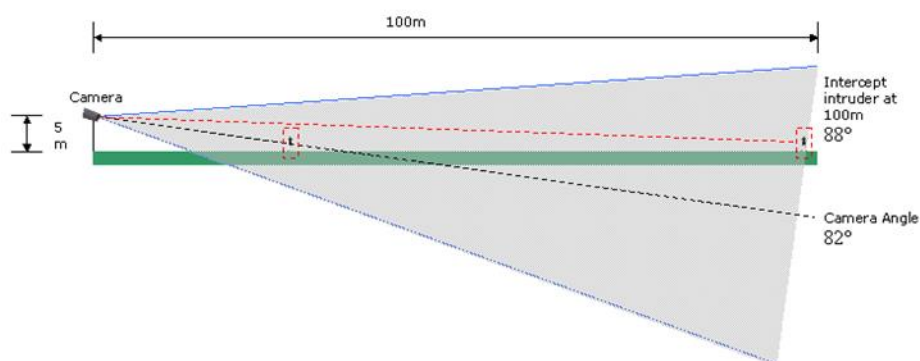
### A.4.1 Recommendations

- The recommended camera mounting height is a by-product of many considerations. As a guideline, it should not be too high or too low.
- The higher the camera, the sharper the angle that the camera requires in order to see the ground and objects. This creates more depth in the scene.
- Mounting the camera too high is not recommended, because objects should occupy 10%-20% of the frame when using analytic presets. Mounting the camera too high requires a lot of zoom when using presets.
- It is recommended to use the default object size (49) or a setting within the range of 40-60 on the **PTZ Setup > Tracking Parameters** screen.
- Camera height should be measured relative to the scene plane.
- Users who are not professional installers should set the height to *Unknown* in the camera's web interface to allow the algorithm to calculate the mounting height.
- The horizon should be parallel to the X axis of the camera surface. The camera should be installed without any roll angle (variation from 180° along the longitude) or the minimal roll angle possible.
- After completing the depth configuration, verify that the horizon line (percentage of the camera FOV) was calculated properly. It is recommended that the horizon does not exceed 30% of the FOV, meaning that the scene occupies maximum 70% of the frame.



## A.4.2 Site Design Considerations

- Minimum camera mounting height: 4m/13 feet
- Object size: 10%-20% of the scene
- Minimal tracking angle: 10° relative to the pole
- Maximal tracking angle: less than 90° relative to the pole



PTZ tracking can be initiated by detection on presets, hand-off from a fixed camera, or clicking on the object (Click-and-Track) once this feature is released in United VMS. Note that it is not possible to configure the camera for hand-off from a fixed camera and detection on presets at the same time.

### A.4.3 PTZ Hand-off Design Considerations

In Hand-off mode, the system can support up to 30 presets. Hand-off can be configured from presets from multiple fixed cameras (see Figure 1) or multiple presets per fixed camera (see Figure 2) to arrive at a total of 30 presets on the PTZ camera.

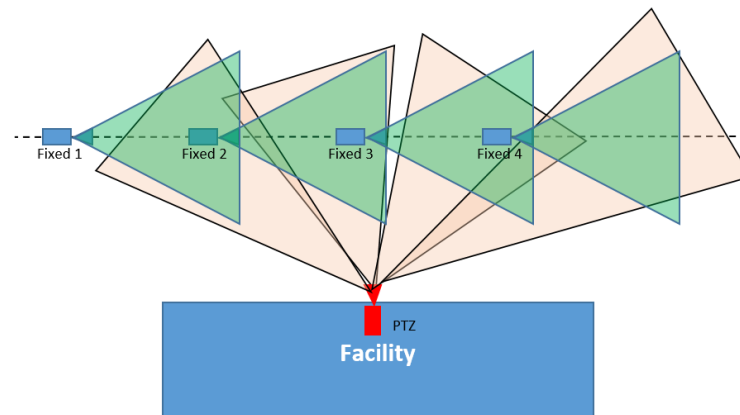


Figure 1: Multiple PTZ presets and fixed cameras

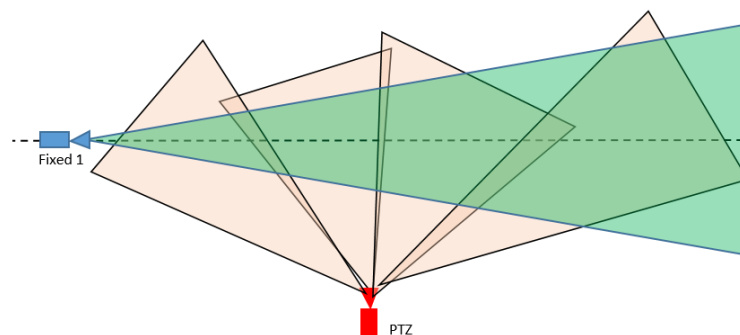


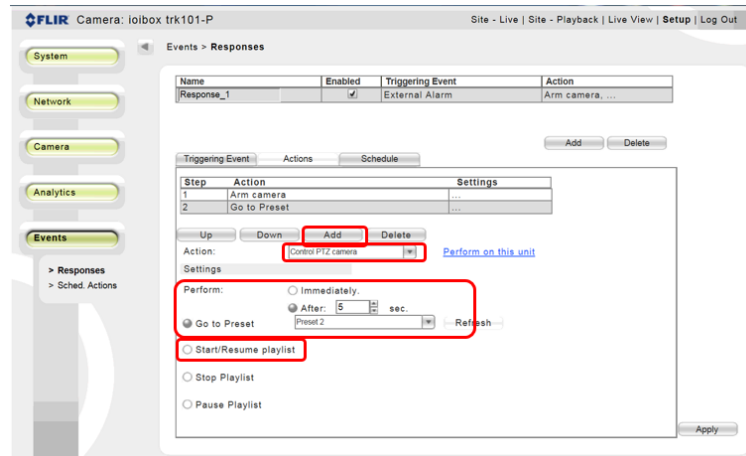
Figure 2: Multiple PTZ presets with one fixed camera

## A.5. Controlling the PTZ Tracker's Arming Status via IO Inputs

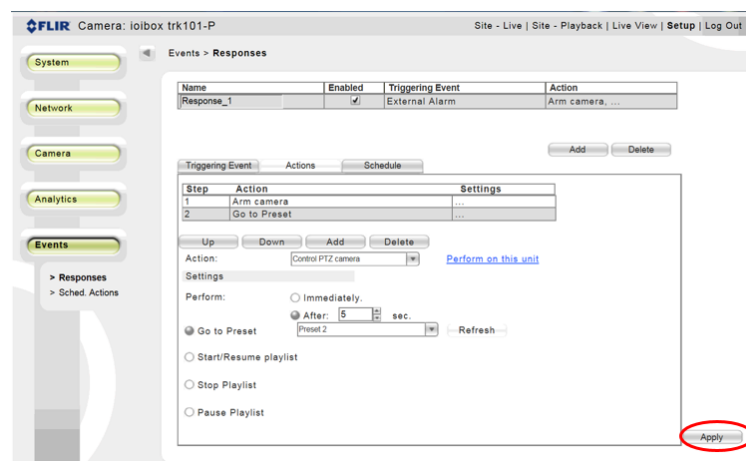
1. On the **Events > Responses > Triggering Event** screen, click **Add** to configure Response\_1.

2. In the *External alarm (dry contact)* field, select *Close*.
3. From the **Actions** tab, select *Arm camera*.

4. Click **Add** to add a “Go to Preset” action.
5. From the *Action* drop-down list, select *Control PTZ camera*.
6. Do one of the following:
  - Select *Go to Preset*.
    - From the *Go to Preset* drop-down list, select the desired preset.
    - Select *After*.
    - In the *After* text box, enter 5 seconds. The rule arms the analytics, and the unit goes to the selected preset after 5 seconds.
  - Select *Start/Resume playlist*. The rule arms the analytics and starts the pre-defined preset playlist.

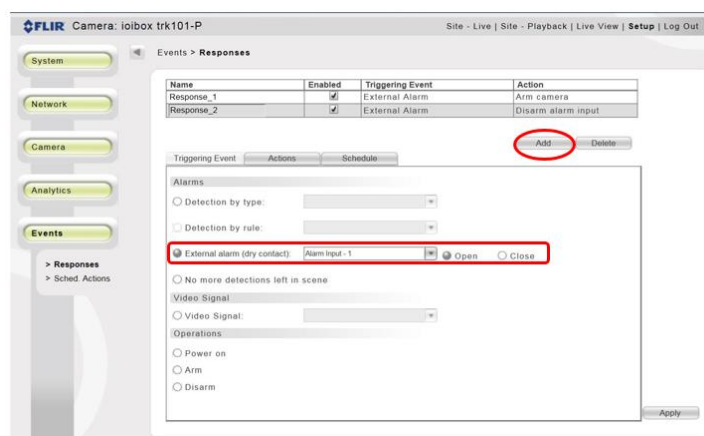


7. Click **Apply**.

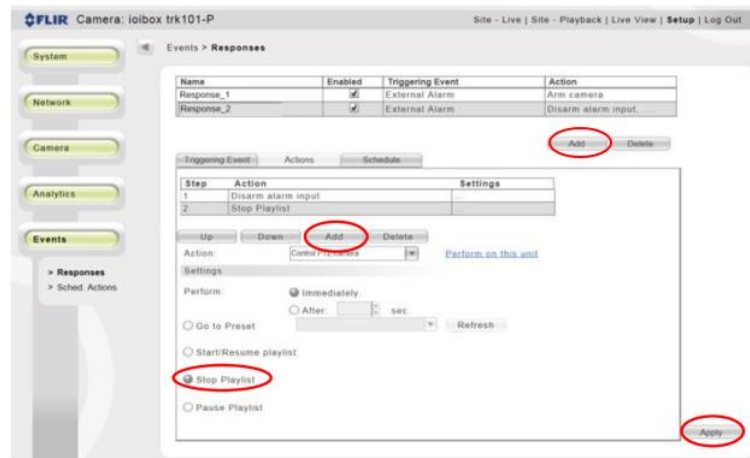


8. On the **Events > Responses > Triggering Event** screen, click **Add** to configure Response\_2.

9. Set *External alarm (dry contact)* to *Open*.



10. On the **Responses > Actions** tab, from the *Action* drop-down list, select *Disarm Camera*.



11. On the **Actions** tab, click **Add** to add another action.
12. From the *Action* drop-down list, select *Control PTZ Camera*.
13. Select *Stop Playlist*.
14. Click **Apply**.



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