IOI SD

Release Notes

Firmware Version 2.3.0.2
© 2017 FLIR Systems, Inc. All rights reserved worldwide.

Names and marks appearing on the products herein are either registered trademarks or trademarks of FLIR Systems, Inc. and/or its subsidiaries. All other trademarks, trade names, or company names referenced herein are used for identification only and are the property of their respective owners. This product is protected by patents, design patents, patents pending, or design patents pending. The contents of this document are subject to change.

FLIR Systems, Inc.
6769 Hollister Ave.
Goleta, CA 93117
Phone: 888.747.FLIR (888.747.3547)
International: +1.805.964.9797
www.flir.com/security

For technical assistance, please call us at +1.888.388.3577 or visit the Service & Support page at www.flir.com/security.

Document History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>November 28, 2017</td>
<td>Initial FLIR release</td>
</tr>
</tbody>
</table>
# Table of Contents

1. **Version Content** ........................................................................................................... 5  
   1.1 Firmware Version Location ................................................................................. 5  
2. **Supported Products and Platforms** ........................................................................ 7  
3. **Key Features** ........................................................................................................... 9  
   3.1 PTZ Tracking with Quasar CP-6302 Camera ...................................................... 9  
   3.2 Hand-off from FLIR FC-Series ID Cameras to TRK-101-P ................................. 9  
   3.3 Support for Third-Party Management System Vendors .................................. 10  
4. **Known Issues and Limitations in the Current Version** ........................................ 11  
5. **Upgrading the Firmware** ....................................................................................... 15  
6. **Disclaimer** ............................................................................................................... 17  
   **Appendices** ............................................................................................................. 19  
   A.1. Preparing the Camera for PTZ Tracking ......................................................... 19  
   A.2. Binding the Camera with a Video Management System .............................. 21  
   A.3. Binding the FC-Series ID Camera to the TRK-101-P .................................. 23  
   A.4. Camera Installation Guidelines ......................................................................... 26  
      A.4.1 Recommendations ...................................................................................... 26  
      A.4.2 Site Design Considerations ....................................................................... 27  
      A.4.3 PTZ Hand-off Design Considerations .................................................... 28  
   A.5. Controlling the PTZ Tracker’s Arming Status via IO Inputs ............................ 29
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:

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRK-101-P PTZ Tracker</td>
<td>Encoder with built-in PTZ video analytics and H.264 compression.</td>
</tr>
<tr>
<td>Quasar CP-6302-31-I</td>
<td>Quasar IR PTZ camera with the following firmware or above:</td>
</tr>
<tr>
<td></td>
<td>The CPU version is fs20170928NRS</td>
</tr>
<tr>
<td></td>
<td>The Pan MCU version is PV2R-81D2</td>
</tr>
<tr>
<td></td>
<td>The Tilt MCU version is TV2R-81D2</td>
</tr>
<tr>
<td></td>
<td>The Zoom MCU version is T2-L34-40-170718-01</td>
</tr>
<tr>
<td>DNA 1.0 or higher</td>
<td>DNA version 1.0.4.0 or higher. Click <a href="#">here</a> to download the latest DNA</td>
</tr>
</tbody>
</table>
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 3rd 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:

<table>
<thead>
<tr>
<th>BUG ID</th>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>44605</td>
<td>Bug</td>
<td>Type &amp; Model screen &gt; Japanese GUI &gt; The Start PTZ Setup button is not aligned correctly.</td>
<td>Add action “Go To Preset” as an event response.</td>
</tr>
<tr>
<td>44573</td>
<td>Bug</td>
<td>TRK-101-P &gt; The camera does not go to preset if armed by an event action.</td>
<td></td>
</tr>
<tr>
<td>44572</td>
<td>Bug</td>
<td>TRK-101-P &gt; PTZ &gt; Tracking triggers an ARM event (configured on the Events setup page)</td>
<td></td>
</tr>
<tr>
<td>44539</td>
<td>Limitation</td>
<td>TRK-101-P and FLIR multi-sensor cameras &gt; Hand-off &gt; Camera does not respond to a 'hand-off' alarm that is received within 5 seconds after returning to a previous preset.</td>
<td></td>
</tr>
<tr>
<td>44550</td>
<td>Bug</td>
<td>A310pt &gt; Thermal &gt; PAL &gt; Tracking is not supported.</td>
<td></td>
</tr>
<tr>
<td>44490</td>
<td>Limitation</td>
<td>TRK-101-P &gt; Binding in VMS &gt; The TRK web page &quot;alarm&quot; box is not synced with Latitude Analytics status after &quot;clear alarm&quot; command from Control Center.</td>
<td></td>
</tr>
<tr>
<td>44437</td>
<td>Limitation</td>
<td>FLIR multi-sensor cameras &amp; TRK-101-P &gt; Web interface allows “GoToPreset” within 5 seconds from last “GoToPreset”, which causes a queue of commands to the camera.</td>
<td>Wait 5 seconds between GoToPreset command.</td>
</tr>
<tr>
<td>44388</td>
<td>Bug</td>
<td>TRK-101-P and Latitude 7 &gt; After removing the bind, Latitude still displays the IOI presets.</td>
<td></td>
</tr>
<tr>
<td>43748</td>
<td>Limitation</td>
<td>Latitude &gt; Auto Rearm can cause TRK to be armed and therefore not stream video while configuring the TRK unit.</td>
<td>Before set up from the TRK web interface, tile must be closed in Control Center and make sure the unit is armed from UVMS.</td>
</tr>
<tr>
<td>43676</td>
<td>Limitation</td>
<td>TRK-101-P &gt; Synchronize with NTP &gt; Cannot insert server name (for example ntp.time.com). An error message is displayed.</td>
<td>Use numerical IP address (xxx.xxx.xxx.xxx).</td>
</tr>
<tr>
<td>43584</td>
<td>Bug</td>
<td>Latitude &gt; User can overwrite an existing preset.</td>
<td>Occurs only with Quasar 30X.</td>
</tr>
<tr>
<td>43305</td>
<td>Bug</td>
<td>On IE 9, the System &gt; User Accounts screen is not accessible.</td>
<td>We recommend using IE 10 or 11.</td>
</tr>
<tr>
<td>BUG ID</td>
<td>TYPE</td>
<td>DESCRIPTION</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>43173</td>
<td>Limitation</td>
<td>FLIR FC-ID &gt; 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.</td>
<td></td>
</tr>
<tr>
<td>42991</td>
<td>Limitation</td>
<td>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.</td>
<td>Changing the setup is supported only on H.264.</td>
</tr>
<tr>
<td>42957</td>
<td>Bug</td>
<td>Latitude &gt; System Settings &gt; Alarm types &gt; Action &gt; Units that are bound with activated alarms (analytics have been cleared) are not displayed as Available.</td>
<td></td>
</tr>
<tr>
<td>42931</td>
<td>Bug</td>
<td>When operating in DVR mode with <em>Enhanced detection</em> enabled, after clicking the <em>Arm</em> button, the unit reboots after defining depth.</td>
<td>Bind the units in Latitude and select Decoder mode on the TRK unit.</td>
</tr>
<tr>
<td>42804</td>
<td>Limitation</td>
<td>TRK-101-P and CP-4221-301 &gt; Only VGA resolution is supported.</td>
<td>Bind the units in Latitude and select Decoder mode on the TRK unit.</td>
</tr>
<tr>
<td>42708</td>
<td>Limitation</td>
<td>TRK-101-P and Latitude 6.4.0.6852 &gt; When binding a unit, the user does not receive a warning message that it is not possible to add new Presets in Latitude.</td>
<td>Works as designed. Configure presets from the TRK unit.</td>
</tr>
<tr>
<td>42362</td>
<td>Limitation</td>
<td>TRK-101-P &gt; A fixed camera should be disarmed and in Decoder mode when defining PTZ hand-off.</td>
<td>Disarm the fixed camera before setting up the hand-off.</td>
</tr>
<tr>
<td>42243</td>
<td>Limitation</td>
<td>In Decoder mode, when the unit is powered on, the unit does not display its IP address in the analog video output.</td>
<td></td>
</tr>
<tr>
<td>42194</td>
<td>Limitation</td>
<td>FLIR Fixed family &gt; TRK-101-P &gt; Uncheck the <em>Enable PTZ functionality</em> checkbox in Latitude before binding the camera.</td>
<td>See Appendix.</td>
</tr>
<tr>
<td><strong>BUG ID</strong></td>
<td><strong>TYPE</strong></td>
<td><strong>DESCRIPTION</strong></td>
<td><strong>COMMENTS</strong></td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>41987</td>
<td>Limitation</td>
<td>Latitude &gt; Presets &gt; TRK-101-P and PTZ camera &gt; When clicking a Preset, after a while Latitude configures the camera as Preset 1.</td>
<td>Generic issue for PTZ binding.</td>
</tr>
<tr>
<td>41933</td>
<td>Limitation</td>
<td>The unit did not send E-mail on events to Gmail.</td>
<td>Use Exchange or Yahoo Mail.</td>
</tr>
<tr>
<td>41920</td>
<td>Bug</td>
<td>The batch Solo Setup recording is not working on units in Decoder mode.</td>
<td>It is recommended to use Auto calibration.</td>
</tr>
<tr>
<td>41745</td>
<td>Limitation</td>
<td>Latitude &gt; FLIR T4350BN &gt; Camera &gt; Video &gt; The resolution 640x360 is not support by the Analytics.</td>
<td>Use VGA resolution with TRK analytics.</td>
</tr>
<tr>
<td>39318</td>
<td>Bug</td>
<td>A custom direction arrow is displayed on a Loitering rule when changing the rule from IT to Loitering.</td>
<td></td>
</tr>
<tr>
<td>39303</td>
<td>Bug</td>
<td>Depth &gt; Solo Setup &gt; The close-up view window always returns back to the left upper side of the picture when the Solo Setup clip running.</td>
<td></td>
</tr>
<tr>
<td>39295</td>
<td>Bug</td>
<td>IOI &gt; 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.</td>
<td></td>
</tr>
<tr>
<td>39080</td>
<td>Limitation</td>
<td>Use a bit rate 900 or higher with D1 resolution when a rule is defined on a static object.</td>
<td></td>
</tr>
<tr>
<td>36235</td>
<td>Bug</td>
<td>The audio alert did not function on the Site-Live page upon detection of an event.</td>
<td></td>
</tr>
<tr>
<td>36163</td>
<td>Bug</td>
<td>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.</td>
<td>Select this setting (default) for an IOI encoder set up as a PTZ camera.</td>
</tr>
<tr>
<td>36155</td>
<td>Bug</td>
<td>Only IOI units that support SOE recording are listed in the Units drop-down list on the web interface in the Events &gt; Responses page, including units that are added manually.</td>
<td></td>
</tr>
<tr>
<td>35896</td>
<td>Limitation</td>
<td>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.</td>
<td>Disarm the fixed camera, sync the unit, and rearm the fixed camera.</td>
</tr>
<tr>
<td>35632</td>
<td>Limitation</td>
<td>There is no option to play a clip on a full screen on the Site Playback page in the web interface.</td>
<td></td>
</tr>
<tr>
<td>35610</td>
<td>Bug</td>
<td>The 64-bit version of VLC cannot be installed and used by Site Playback.</td>
<td>The units require IE 32-bit browsers. Install the 32-bit VLC version.</td>
</tr>
<tr>
<td>35460</td>
<td>Bug</td>
<td>A recording on the Site Playback page in MPEG-4 and H.264 did not play correctly.</td>
<td>Disarm the unit from which you are playing the clip.</td>
</tr>
<tr>
<td>31659</td>
<td>Bug</td>
<td>The video flickers in the web interface when the user scrolls down using Windows 8.1 and Windows 10.</td>
<td></td>
</tr>
<tr>
<td>31450</td>
<td>Limitation</td>
<td>Site Viewer &gt; There was no audio alert for the 1.5.7.x units.</td>
<td>This is supported on units with version 2.1.1 and 2.1.2.</td>
</tr>
</tbody>
</table>
### Known Issues and Limitations in the Current Version

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

© FLIR Systems, Inc. 2017. All rights reserved.
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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The CPU version</td>
<td>fs20170928NRS</td>
</tr>
<tr>
<td>The Pan MCU version</td>
<td>PV2R-81D2</td>
</tr>
<tr>
<td>The Tilt MCU version</td>
<td>TV2R-81D2</td>
</tr>
<tr>
<td>The Zoom MCU version</td>
<td>T2-L34-I0-170718-01</td>
</tr>
</tbody>
</table>

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:

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

The following parameters will be configured automatically by the TRK:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
</table>
| Noise reduction    | 3DNR = OFF  
2DNR = OFF         |
| Speed by zoom      | Off - When analytics is armed               |
|                    | On – When Analytics is disarmed             |
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.
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.

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.

![IOI Interface Image]

5. Click Create.

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

   ![Server Running]

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

   ![Server Stopped]

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.


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.

![Diagram showing maximum 30% FoV and horizon line]
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.