



System Quick Start Guide

Introduction

This system quick start guide is intended to assist the user with an easy out of the box experience. By following the steps in this guide, the user will be able to view 2 separate video streams within the VMS, one stream showing the 360° thermal video wall from the TRIA™ and the second showing the video stream from the PTZ. The user will also notice, after completing these steps, that the PTZ is being directed to specific targets that were detected by Thermal Radar™ and that the location of each detection is shown on the map interface of the TRIA™ feed.



These are high level instructions. If you need more detailed information, please refer to our other guides.

Components of the Thermal Radar System

Required:



Thermal Radar: Continuous rotating, 360° thermal imaging unit with edge analytics for human and vehicle detection. Set up using TRIA™



TRIA™ : (Thermal Radar Integration Appliance)
Converts the continuous flow of thermal images and alarms from Thermal Radar™ into a compatible VMS format, output module or 3rd party device.

Optional:



PTZ: (Various Manufacturers)
A pan-tilt-zoom camera takes directional input from Thermal Radar™ for targeted surveillance following a detection.



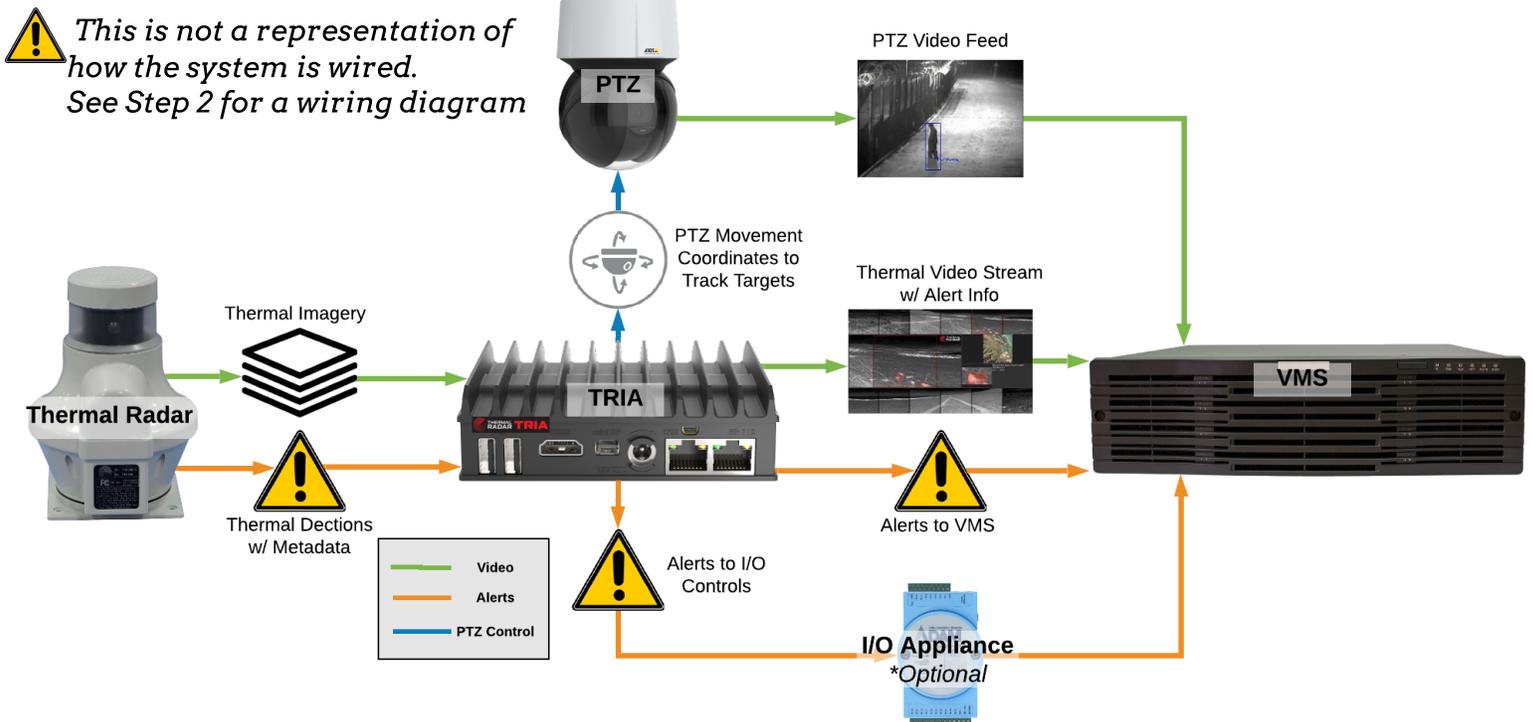
NVR / VMS PC :
Collects video & alarms from TRIA™ and PTZ. Records and stores video and alarms for future playback



Relay/Digital Output Module:
Outputs controlled by TRIA. Can be used to trigger VMS Inputs, Lights, Sirens, or other 3rd party devices.

System Architecture & Data Flow

Below is a basic data flow diagram showing how the data flows within a configured system.



Step 1: Mount and Wire Thermal Radar/Hydra

**For detailed installation instructions , refer to installation guide*

1. Assemble the Hydra Standard Arm or Goose-Neck at mounting location.
2. Run and terminate 2 x Ethernet cables down the mounting arm
3. Insert CAT5 plug into Thermal Radar and mount on the top of the upper J-Box
 - a. NOTE: Ensure the front label of the Thermal Radar is facing the mounting arm.
4. Insert CAT5 plug into PTZ and mount the PTZ on the bottom of the upper J-Box.

Standard Arm:



Goose-Neck Arm:



Thermal Radar / Arm Alignment



Note: The mounting bracket may be different from the application above

Step 2: Insert HDMI Dongle

Insert HDMI Dongle into the HDMI port of the TRIA™

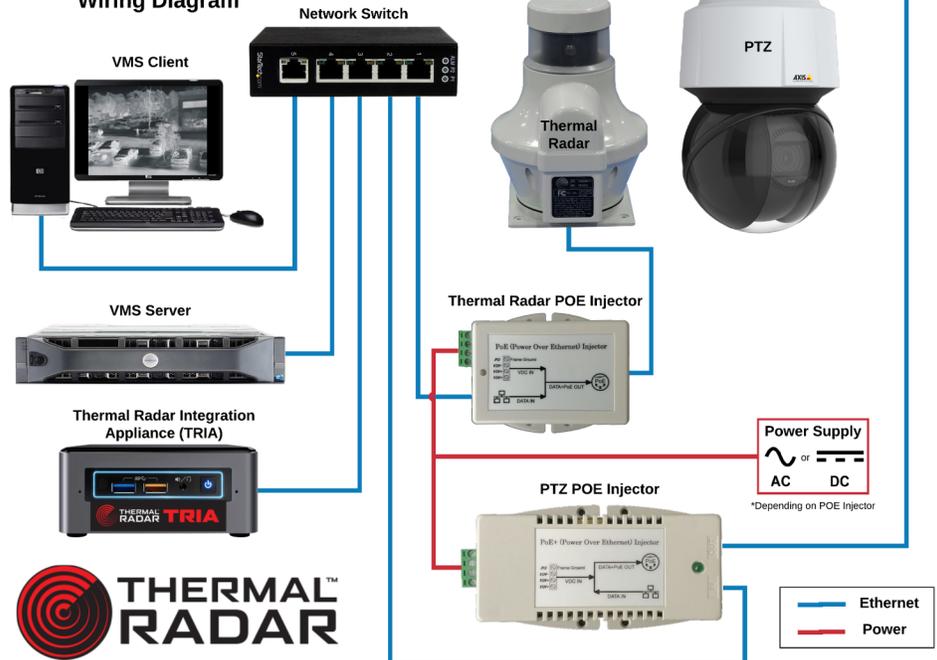
⚠ *The dongle MUST be inserted before powering up the TRIA™. This ensures the video stream resolution remains at 1920x1080*



Step 3: Wire and Connect System to Network

1. Connect the Ethernet Cable from Thermal Radar™ to the POE-OUT port of the it's injector. Then connect an Ethernet cable from the POE-IN port to the network switch.
2. Connect the Ethernet cable from the PTZ to the POE-OUT port of it's injector. Then connect an Ethernet cable from the POE-IN port to the network switch.
3. Connect an Ethernet cable from ETH1 port on the TRIA™ to the network switch.
4. Connect VMS PC to the network switch.

Thermal Radar Hydra Basic Wiring Diagram



Step 4: Power Up the System

1. Connect the power cables from Thermal Radar™ POE and the PTZ POE; as well as the power for the TRIA™, network switch, and VMS PC to your power source.
2. Ensure all devices power up correctly.
 - Thermal Radar™ rotates to its home position, then begins sinning after 30 seconds
 - PTZ will begin it's start up protocol and diagnostic tests.
 - TRIA™ will indicated proper start up with the front LED flashing.

Step 5: Connect Your PC/Laptop to the Network

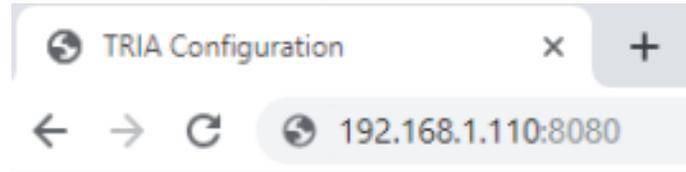
1. Connect a PC/Laptop to the network to begin configuring the system.
2. Set the IP address of the PC/Laptop being used to configure the system to 192.168.1.xxx range. (ex. 192.168.1.100)

System Default IPs:

TRIA™	192.168.1.110
Thermal Radar™	192.168.1.111
PTZ Camera	192.168.1.112

Step 6: Open the TRIA™ Web Configuration Page

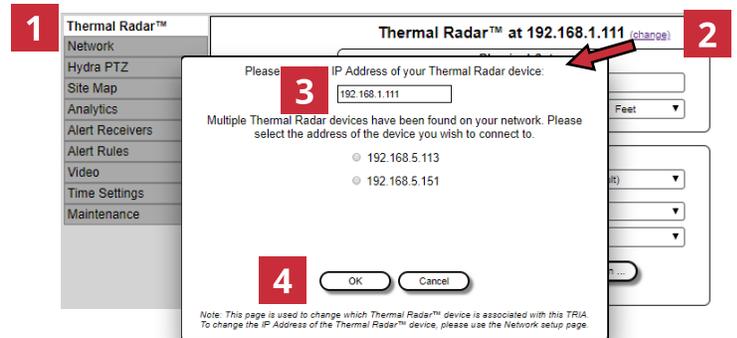
1. Open a web browser and type the following URL into the URL text box (Port 8080)
http://192.168.1.110:8080



Internet Explorer is not supported

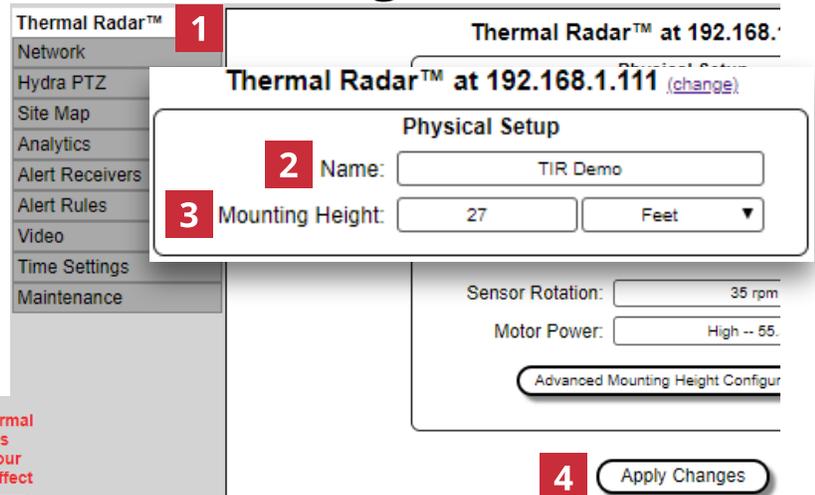
Step 7: Pair TRIA™ with the Thermal Radar

1. Select **Thermal Radar™** from the Left Menu
2. Select [\(change\)](#) on the Thermal Radar™ page
3. Select or enter the Thermal Radar™ IP address of 192.168.1.111
4. Once you've selected a Thermal Radar™ or entered the default IP address, press



Step 8: Set Thermal Radar™ Name and Height

1. Select **Thermal Radar™** from the Left Menu
2. Assign a name to the Thermal Radar™ by entering a name in the text box next to "Name:"
2. Enter the mounting height of the Thermal Radar™. (Top of Thermal Radar to Ground)
3. Select



After setting a new height to the Thermal Radar a prompt will appear telling you a restart is required. Don't restart now as the Thermal Radar will automatically restart after Step 9.

A restart of the Thermal Radar™ device is required before your changes will take effect

Step 9: Change IPs on the Thermal Radar™ and TRIA™

1. Select **Network** from the Left Menu
2. Select **Edit Settings** under Thermal Radar™ Network Settings and enter your desired network settings for the Thermal Radar™.
3. Select **Edit Settings** under TRIA™ Network Settings and enter your desired network settings for the TRIA™.
4. Press **Apply Changes** to save the new network settings for the Thermal Radar and TRIA™. After the settings are sent, both devices will reboot automatically

Thermal Radar™ Network Settings

Mode: Static

Thermal Radar™ IP Address: 192.168.1.111

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

Preferred DNS: 1.1.1.1

TRIA Network Settings

Mode: Static

System (TRIA) IP Address: 192.168.1.110

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

Preferred DNS: 192.168.1.1

Host Name: TRIA2.0

MAC Address: 94:c6:91:1a:49:55

Apply Changes will update the Thermal Radar and System (TRIA) network settings and restart both units

Step 10: Change IP of the PTZ Camera

 For detailed instructions, refer to the Integration guide for your specific PTZ

1. Open a web browser and navigate to 192.168.1.112 or the default IP of the PTZ.
2. In the PTZ's web config page, change the network settings to the newly desired settings.
3. If desired, change the user name and password.

Step 11: Change IP in Your PC/Laptop

Change IP in Your PC/Laptop to the new IP Address Range

Step 12: Open TRIA™ Web Config Page at New IP Address

<http://<New TRIA IP>:8080>

Step 13: Pair PTZ with Thermal Radar™/TRIA™ System

 For detailed instructions, refer PTZ Specific Integration guide

1. Select Hydra PTZ from the Left Menu
2. Select the PTZ Brand to be paired the system.
3. Enter the IP address of the paired PTZ
4. Enter the User Name and Password of the PTZ
5. Click **Apply Changes** to save settings

Thermal Radar™

Network

Hydra PTZ

Site Map

Analytics

Alert Receivers

Alert Rules

PTZ

PTZ Brand: Vicon

IP Address: 192.168.1.112

Hydra PTZ

PTZ Offset Alignment: 105.1

PTZ Camera Settings

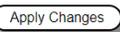
PTZ Brand: Vicon

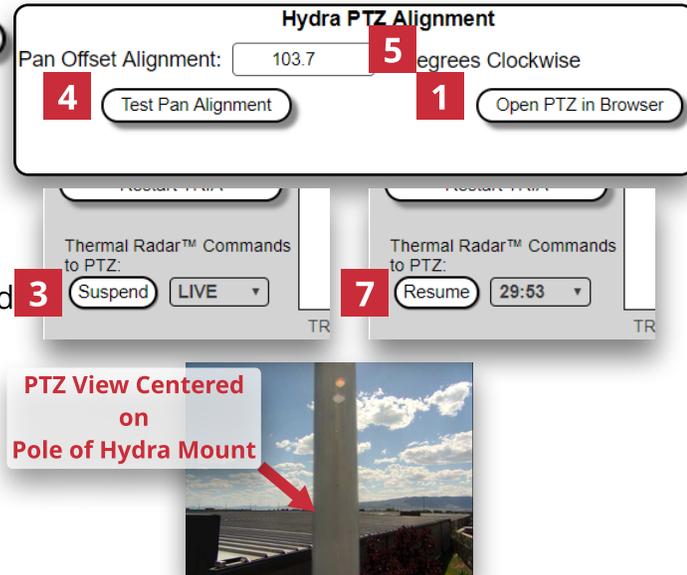
IP Address: 192.168.1.152

User Name: ADMIN

Password: Hydra360

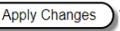
Step 14: Align PTZ with Thermal Radar

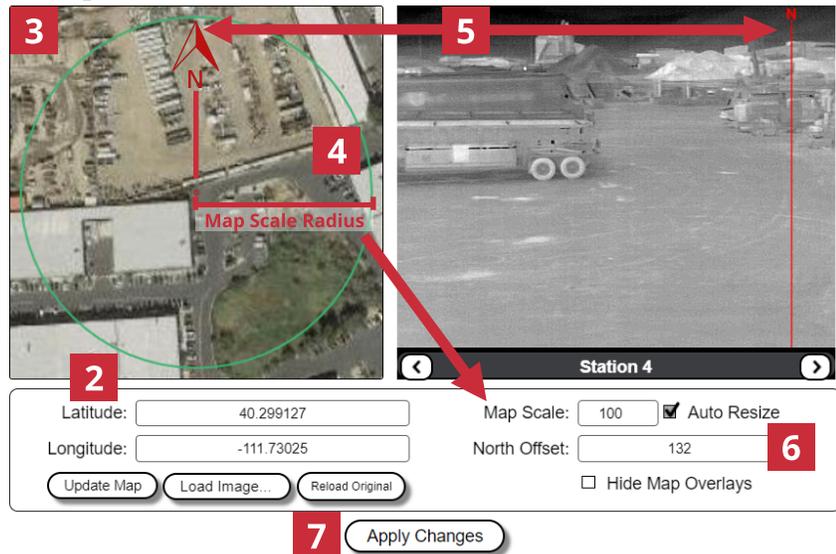
1. Open the PTZ Web Config Page clicking 
2. Login to the PTZ and begin viewing the video stream
3. Click  on the bottom left to prevent the PTZ from moving automatically during the alignment process.
4. Press  to send the PTZ to its current alignment position
5. Estimate how many degrees clockwise the PTZ will need to pan, so that it will be looking at the mounting pole, and enter that number into Pan Offset Alignment box
6. Repeat steps 4 and 5 until the mounting pole is in the center of the PTZ video view
7. Click  to allow the PTZ to be moved automatically
8. Click  to save settings



Step 15: Add and Scale Site Map

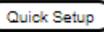
 For detailed instructions ,

1. Select **Site Map** from the Left Menu
2. Enter the current GPS coordinates of the Thermal Radar and select  (if not auto populated)
3. Using your mouse adjust the map zoom to show the desired map area with the red dot centered on the Thermal Radar's location
4. Verify the **Map Scale** is correct (in Meters)
5. Reference North (UP) on the uploaded map, then scroll through the thermal panorama stations using   until you find the station facing North
6. Adjust the **North Offset** value (Degrees Clockwise) until the Red North Line is perfectly set to North in the thermal image
7. Click  to save settings



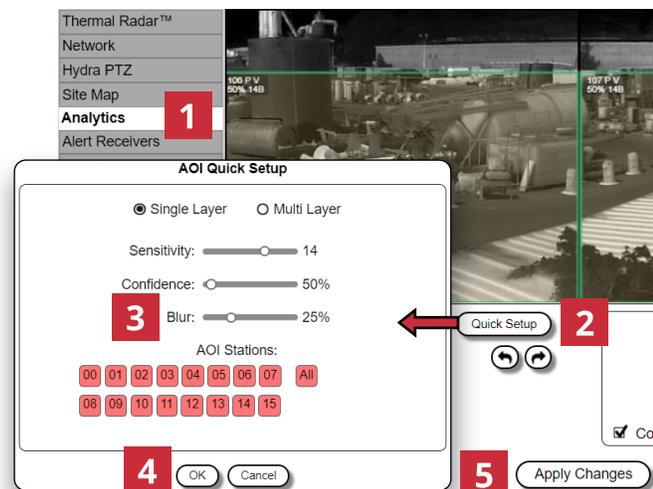
 The feature uses Google Maps and requires an Internet connection on the PC/Laptop with web browser.

Step 16: Add Areas of Interest

1. Select **Analytics** from the Left Menu
2. Select  to open **AOI Quick Setup** window
3. Slide the **Blur - No Blur** slider to 25%
4. Select  to add AOIs to the panorama
5. Select  to save and apply the AOIs

 The above steps are a basic setup of the Analytics of the Thermal Radar. It is likely that more custom Analytic programming will be needed to remove/mask unimportant areas, and fine tune the settings to your site.

PLEASE SEE ANALYTICS PROGRAMMING GUIDE FOR MORE INFO



Step 16: Adding the TRIA™ and PTZ to VMS

 For detailed instructions on adding video feeds and alerts, see guide for your specific VMS

1. Start a network scan on your VMS for ONVIF camera to find the TRIA™ and PTZ on the network.
(If not auto scanned, manually add IPs and ONVIF Scan Port)
2. Enter the Username, and Password for TRIA™ and PTZ
3. Add the TRIA™ and PTZ to VMS camera list
4. Open the TRIA™ and PTZ video feeds in the VMS camera view display.

TRIA ONVIF Info:

Username:	admin
Password:	admin
Onvif Scan Port	80

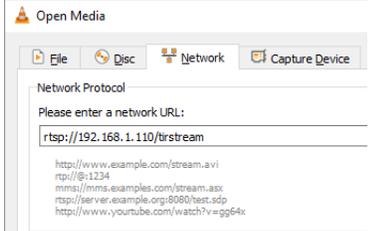
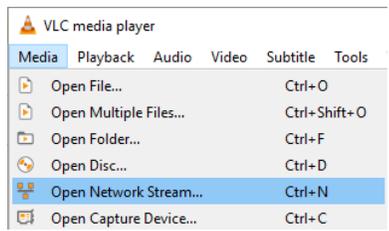
RTSP Video Feed:

rtsp://192.168.1.110/tirstream

Optional if not using VMS:

If you don't have a VMS setup, you can view the TRIA™ RTSP Video Stream through VLC Player

1. Open VLC Player
2. Select **Media --> Open Network Stream**
3. Enter the RTSP URL and select **Play**



End of Quick Config Guide

If steps 1-16 have been properly followed, the user will be able to view 2 separate video streams within the VMS, one stream showing the 360° thermal video wall from the TRIA™ and the second showing the video stream from the PTZ. The user will also notice that the PTZ is being directed to specific targets that were detected by Thermal Radar™ and that the location of each detection is shown on the map interface of the TRIA™ feed.

If the PTZ is not placing the detected target in the middle of the screen, the Hydra PTZ tab in the TRIA™ can be adjusted for better targeting. If the detection location "dot" on the map is not accurate, then the mounting height and North offset can be adjusted for better geospatial accuracy.

In order to set up alerts within the VMS, see the integration guide for the VMS being used

Walk Test:

After the TRIA has been configured, it is best practice to perform a "Walk Test" to determine if the Thermal Radar is detecting and tracking accurately. To perform a walk test, have another individual or yourself walk the site where the Hydra/Thermal Radar is installed. Ensure the individual is walking through the areas the AOI's have been programmed.

Here are the steps to follow while performing the walk test:

Step A: Verify the Thermal Radar is Detecting:

If not detecting anything then

- Ensure the Thermal Radar height is set correctly
- Ensure the Thermal Radar Tilt Angle is set correctly
- Make sure an AOI is added into detection area
 - Verify AOI Settings
- If excessive false detections then
 - Decrease AOI sensitivity
 - Increase AOI confidence
 - Increase AOI Blur

Mounting Height: Feet

Sensor Tilt Angle:

Settings for AOI 103

Filters: Person Vehicle

↓ Sensitivity:

↑ Confidence:

↑ Blur:

Copy Settings From Last AOI



Step B: Verify and Adjust PTZ Alignment and Desired Movement Frequency

**Make adjustments under "Hydra PTZ" tab*

Thermal Radar™

- Network
- Hydra PTZ
- Site Map
- Analytics
- Alert Receivers
- Alert Rules
- Display
- Time Settings
- Maintenance

1. Pan Adjustment

- a. If the PTZ needs to point more Right then add more degree to the Hydra PTZ "Pan Offset Alignment", if the PTZ needs to point more Left then subtract from the PTZ "Pan Offset Alignment"

2. Tilt Adjustment

- a. If the PTZ needs to point more Up then add to the PTZ "Tilt Adjustment", if the PTZ needs to point more Down then subtract from the PTZ "Tilt Adjustment"

3. If PTZ moves too often

- Adjust the "PTZ Movement Rules" by adding more "Consecutive Detections" (increment by 1 until desired movement is achieved)
- Additionally, the box can be checked to disarm the station where movement was detected and a value can be added for the number of rotations you would like the station to be disarmed (increment by 1 until desired movement is achieved)
 - a. If the PTZ needs to move more often
 - Decrease the number of "Consecutive Detections"
 - Decrease the number of rotations a station will be disarmed
 - Turn off the disarming feature
 - Adjust AOI sensitivity

Hydra PTZ Alignment

Pan Offset Alignment: Degrees Clockwise

Tilt and Zoom Adjustment

Tilt Adjustment: Reach Max Zoom at

Maximum Zoom Level: Wide Tight

Zoom PTZ during adjustments

PTZ Movement Rules

Move After Consecutive Detections in an AOI

After Move, Disarm AOI for Rotations Without Detections
(1 rotation = 1.7 seconds)

Step C: Verify and Adjust Map North Offset and Scale

1. Scale:

- a. If dots are too close then
 - Decrease the "Map Scale"
- b. If dots are too far then...
 - Increase the "Map Scale"

2. North Offset

- a. If dots need to rotate clockwise then
 - Decrease the "North Offset"
- b. If dots need to rotate counter-clockwise then
 - Increase the "North Offset"

Map Scale:

North Offset:

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Test

Step D: Verify Alerts are being sent to Alert Receivers (VMS, Relays, etc...)

1. Verify that the logic is programmed into the system receiving the alerts
2. On the Alert Rules, Press "Test" button

