



Integration Overview

Thermal Radar™ is an award-winning and patented security solution that provides continuous 360-degree situational awareness. Thermal Radar rotates best-in-class Boson™ thermal sensors and incorporates custom-written, edge-based detection algorithms to detect, classify, and geospatially locate threats within a perimeter. The Thermal Radar Hydra™ solution incorporates a laser-illuminated and/or infrared (IR) Pan-Tilt-Zoom (PTZ) camera for optical verification of intruders; when Thermal Radar detects a threat, it sends a slew-to-cue command to the PTZ for enhanced intelligence and target confirmation.

Thermal Radar's implementation within Milestone's VMS leverages Thermal Radar and an associated PTZ camera as approved hardware devices, and Thermal Radar-formatted Area of Interest (AOI) detection alerts originating from thermal-based analytic events. The AOI alerts are provisioned to natively integrate within Milestone's VMS for alarm processing and viewing within the XProtect Smart Client.

The integrated software solution allows live viewing of thermal detections and the associated optical imagery of the intruders. In addition, Thermal Radar detections generate native alerts within Milestone and allow viewing an alarm list and associated alarm video.

Integration Guide

Hardware / Physical Installation

Refer to the Thermal Radar Configuration Guide for information on components, system architecture and data flow¹, physical install, and other initial configuration information.

Thermal Radar Configuration

Refer to the Thermal Radar Installation Guide for information on configuring the Thermal Radar using the web-based graphical user interface (GUI).

For Milestone Analytic Events / Alarms, the following configuration steps are required within the Thermal Radar GUI:

¹ An architectural diagram is included as "Attachment A"

Thermal Imaging Radar Milestone VMS Integration

I. Add Alert Receiver

1. Select the “Alert Receivers” tab.
2. Within the “Alert Receivers” tab, “Add” a receiver.
3. Select “Milestone” using the drop-down list next to “Alert Format.”
4. Add the Server Address, Server Port, Username, and Password.
5. Configure the Alert Rules.
6. Select “Apply Changes.”

The screenshot displays the 'Alert Receivers' configuration interface. On the left sidebar, the 'Alert Receivers' menu item is highlighted with a red '1'. The main content area features a table with columns 'Format' and 'Active'. The 'Milestone' entry is selected, indicated by a red '2'. Below the table are 'Add', 'Remove', and 'Inactivate' buttons. To the right, the 'Milestone Settings' section contains several input fields: 'Alert Format' (dropdown menu set to 'Milestone', marked with a red '3'), 'Name' (text box with 'Milestone'), 'Server Address' (text box with '192.168.1.100'), 'Server Port' (text box with '9090', marked with a red '4'), 'User Name' (text box with 'admin'), and 'Password' (password field with '*****'). Below these settings are two alert rule configurations: 'Alert After [2] Consecutive Detections in an AOI' and a checked checkbox for 'After Alert, Disarm AOI for [2] Rotations Without Detections (1 rotation = 2.5 seconds)', marked with a red '5'. At the bottom center, there is an 'Apply Changes' button marked with a red '6'. The footer of the page includes the version information 'Thermal Radar Version: 2.1_d7ff5b62_202202041532' and the copyright notice 'Copyright ©2020 Thermal Imaging Radar'.

Thermal Imaging Radar Milestone VMS Integration

II. Create Alert Rules

1. Select the “Alert Rules” tab.
2. Within the “Alert Rules” tab, “Add” an Alert Format type.
3. Select “Milestone” from the drop-down list next to “Alert Format.”
4. Configure the “Rule Settings” based on user preference.
5. Name the Event Message within the “Rule Settings” section (e.g., GlobalAlert2).
6. Select “Apply Changes.”

The screenshot displays the Thermal Radar web interface for configuring Alert Rules. The sidebar on the left contains navigation links, with 'Alert Rules' highlighted and marked with a red '1'. The main content area features a table of alert rules with columns 'Type', 'Stop', 'Conf', 'AOI', and 'Data'. A red '2' points to the 'Add' button below the table. Above the table, the 'Alert Format' dropdown is set to 'Milestone', marked with a red '3'. To the right, the 'Rule Settings' section includes dropdowns for 'Detection Type', 'Station', and 'Confidence', and a text field for 'Event Message' set to 'GlobalAlert2', with a red '4' pointing to the 'Station' dropdown and a red '5' pointing to the 'Event Message' field. Below the table, there are 'Add', 'Remove', and 'Test' buttons. At the bottom, an 'Apply Changes' button is marked with a red '6'. The footer shows 'Thermal Radar Version: 2.1_d7ff5b62_202202041532' and 'Copyright ©2020 Thermal Imaging Radar'.

Refer to the following section for configuring the Thermal Radar and PTZ cameras, as well as Thermal Radar alerts, within Milestone’s Video Management System (VMS).

Thermal Imaging Radar Milestone VMS Integration

Milestone VMS Configuration

Refer to the Milestone Administrator manual for a complete overview of the Milestone VMS configuration requirements and process.²

The following steps are relevant to the installation of the Thermal Radar Hydra system within the Milestone Management System:

I. Add Hardware

1. Thermal Radar - Add the camera / video stream to the desired Milestone server as a Device, using the default or designated network address (e.g., 192.168.1.110).
 - i. Onvif Info
 - a) Username: admin (default)
 - b) Password: Admin1234 (default)
 - c) Port: 80
 - ii. RTSP Stream (for separate testing and viewing outside the VMS)
 - a) rtsp://192.168.1.110/tirstream
2. PTZ - Add the camera / video stream to the desired Milestone server using the PTZ settings, as defined in the manufacturer's manual.

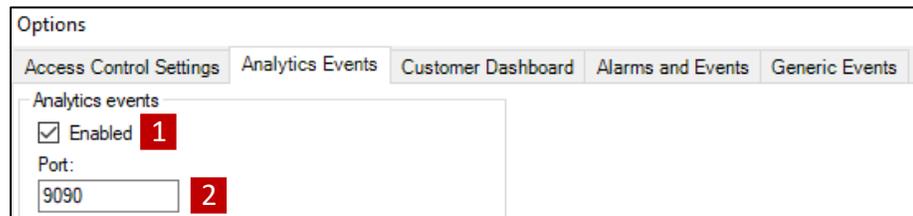
II. Configure Alerts

Notes:

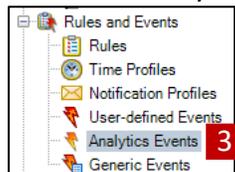
- A minimum of Milestone Essential+ is required to receive alerts from Thermal Radar, and a minimum of Milestone Express+ is needed to view an alarm list.
- To receive Thermal Radar alerts, Analytic Events and Alarms require provisioning within the Management Client.

1. Analytic Events

- i. Enable "Analytic Events" under Tools>Options>Analytic Events.
- ii. Assign Port "9090" to Analytic Events.



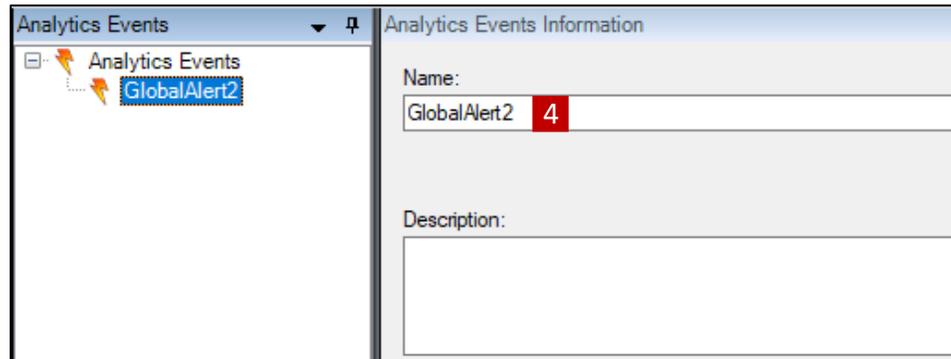
- iii. Create an Analytic Event under Rules and Events>Analytic Events.



² https://doc.milestonesys.com/mc/pdf/2021r2/en-US/MilestoneXProtectVMSproducts_AdministratorManual_en-US.pdf

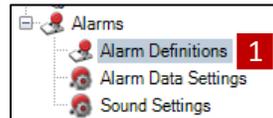
Thermal Imaging Radar Milestone VMS Integration

- iv. Enter the name for the Analytic Event (e.g., GlobalAlert2) – this name must match the name created in the Thermal Radar Alert Receiver.

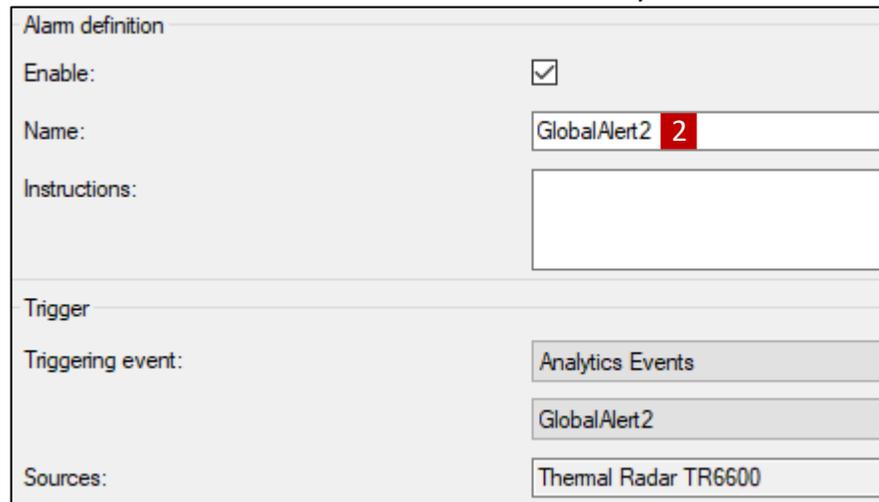


2. Alarms

- i. Create an Alarm under Alarms>Alarm Definitions.



- ii. Ensure the Alarm Name matches that of the Analytic Event.



III. Configure Video Streams and Alarm Views within XProtect

For a complete overview of Milestone XProtect configuration requirements and process, refer to the Milestone XProtect manual.³

The following steps are required to display the video feeds and alarm information from the Thermal Radar Hydra system within the Milestone XProtect Client:

³ https://doc.milestonesys.com/latest/en-US/portal/htm/chapter-page-sc-user-manual.htm?tocpath=XProtect%20Smart%20Client%7CXProtect%20Smart%20Client%20user%20manual%7C___0

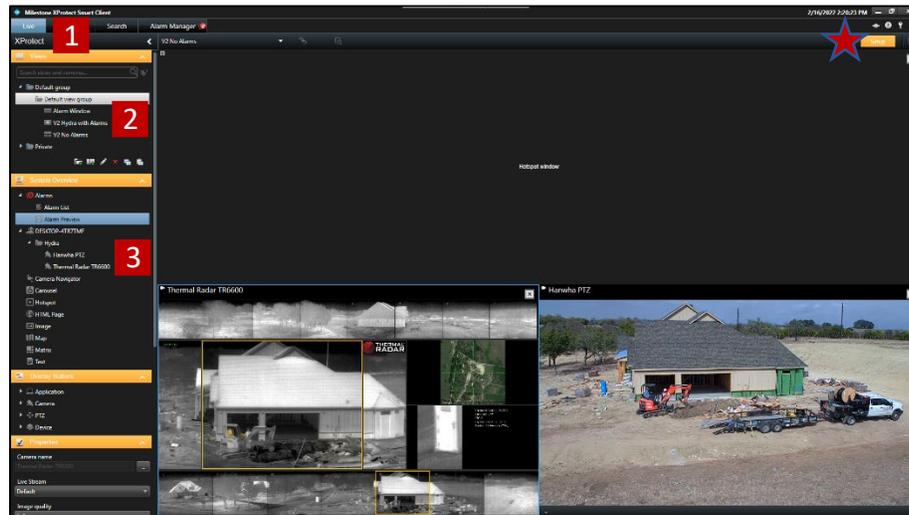
Thermal Imaging Radar Milestone VMS Integration

Notes:

- Create an Exception within the Windows Firewall to allow Milestone XProtect to receive alerts from Thermal Radar.

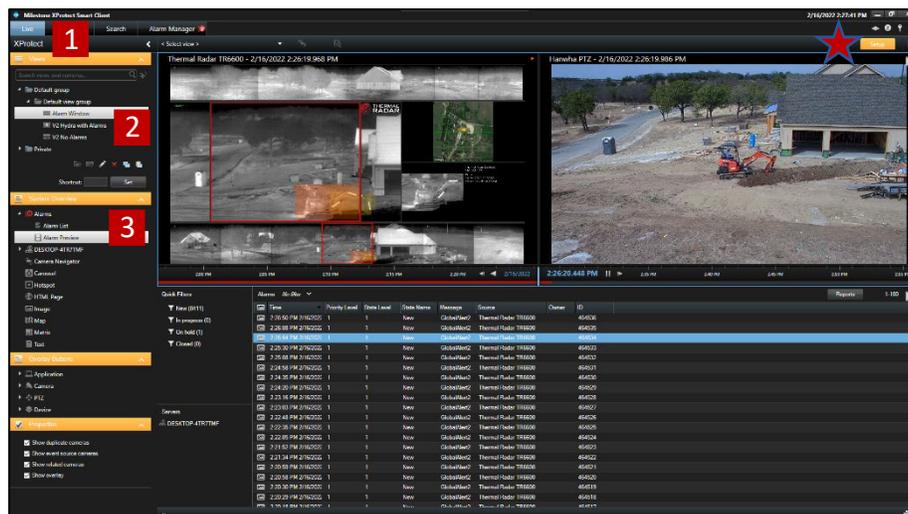
1. Video Streams

- Select the Live Tab, then select “Setup.”
- Create a View Window in the “View” section.
- Drag the Thermal Radar and PTZ cameras to the appropriate window locations from the “Server” section.



2. Alarm History and View

- Select the “Live” Tab, then select “Setup.”
- Create a View Window in the “View” section.
- Drag the Thermal Radar and PTZ cameras to the appropriate window locations from the “Alarm” section.

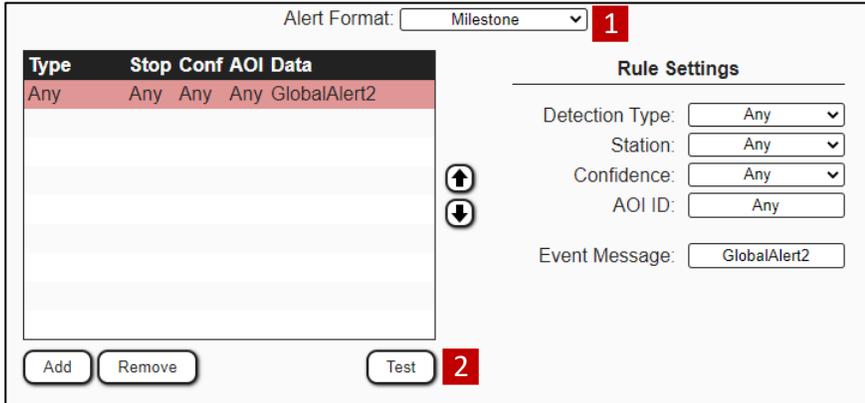


Thermal Imaging Radar Milestone VMS Integration

IV. Test and View Thermal Radar Alerts

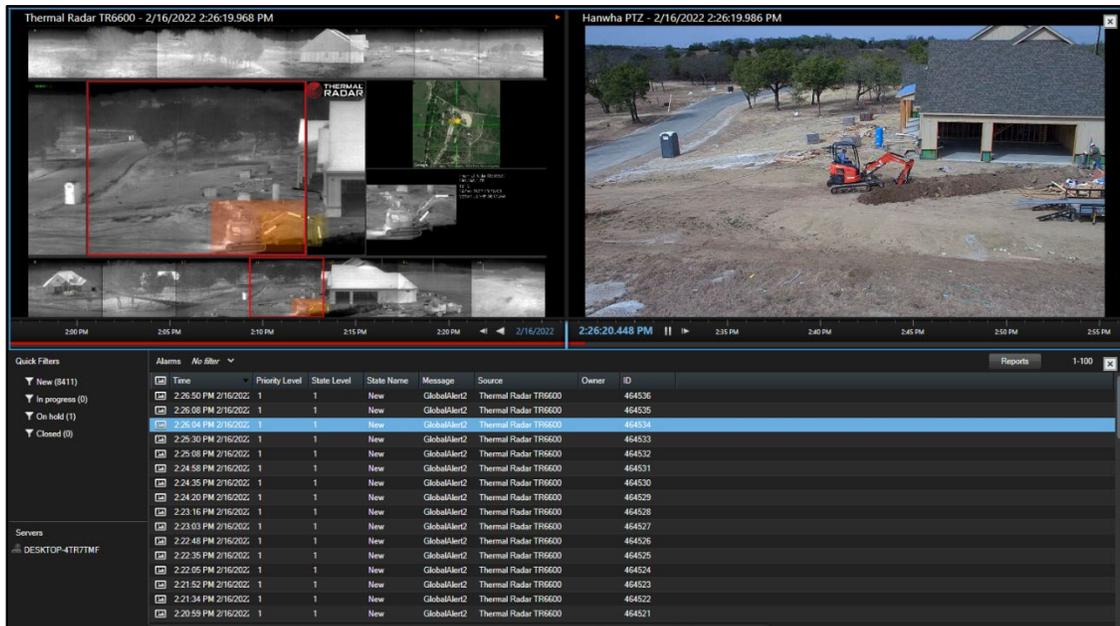
1. Test Alerts

- i. From the Thermal Radar "Alert Rules" tab, ensure "Milestone" is selected.
- ii. Select the "Test" button.



2. View Alerts

- i. Use the Alarm Manager Module Views within the Milestone Smart client to view the alarm history (alarm listing as well as alarm playback).



Thermal Imaging Radar Milestone VMS Integration

Hydra Data Flow Diagram - XProtect

