

FLIR-FATPOT

Latitude VMS Integration

User Manual

25/Sep/2018

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Preface

The FLIR-FATPOT module integrates FLIR's Latitude VMS with the FATPOT fusionPLATFORM™ CAD interoperability solution. The module allows the VMS to receive call events originating from fusionPLATFORM™ and act upon them. Upon an incoming call event, the VMS can automatically trigger an alarm, focus the GIS map on the provided location and direct adjacent PTZ cameras to the location of the call event.

Using AdminCenter, the VMS administrator can add a fusionPLATFORMTM system representation, configure communication ways to it, and define the VMS behavior upon each type of incoming call. Using ControlCenter, VMS operators can view and react to incoming call events. The call's location will be marked on a GIS map, and PTZ cameras in the vicinity will automatically be directed to the incident location and displayed to the operator.

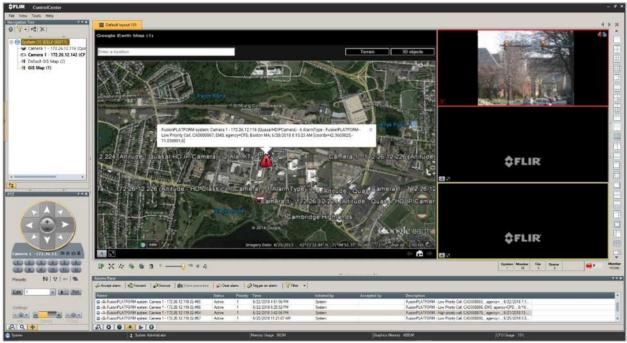


Figure 1: ControlCenter

This document outlines the way to configure Latitude to allow for this link between the two systems. For additional configuration information - such as firewall, entity creation and more, please refer to the Latitude installation guide.



System Requirements

Before starting the FLIR-FATPOT integration installation process, please verify that you have the following in place:

- 1. A fully configured Latitude 8.0 system with an Application Server added and set up.
- 2. A fully configured FATPOT system with SDK version 1.0.1.107.
 - a. You will need to create an "Interface" for the VMS in fusionPORTAL as explained below.
 - b. Please consult with your FATPOT system admin for your "Server IP", "Token" and "Secret" values.
- 3. A list of Latitude / Longitude coordinates for all cameras that you wish to automatically act upon incoming call events. See GIS Positioning section.

Licensing

- 1. The integration consumes one (1) Latitude Add-on license.
- 2. A Latitude GIS Mapping license is required for the GIS map functionality.



Installation

The FLIR-FATPOT module is a Latitude plugin that needs to be installed on the following machines:

- 1. All Directory machines (primary and failover) and
- 2. All AdminCenter and ControlCenter client machines and
- 3. All Application Server machines (primary and failover)

Note: If you do not install the plugin on the failover Directory or Application Server machines, the integration will not work properly once Directory or Application Server failovers occurs.

To install the plugin, follow these steps:

- 1. Stop the Directory, Application Server, AdminCenter and ControlCenter processes that are running on the machine where you want to install the integration plugin module.
- 2. Run the provided plugin installer FLIR.FATPOT.Plugin.msi.
- 3. Follow the on-screen instructions.
- 4. Restart the Directory, Application Server, AdminCenter and ControlCenter processes that are running on the machine where you just installed the integration plugin module.



Architecture

The FLIR-FATPOT integration utilizes Latitude's plug-in technology and incorporates Application Server, Directory and Presentation plug-ins.

The integration consists of the following components:

1. Application Server Plugin – responsible for:

- a. Establishing connection with FATPOT to receive incoming call events
- b. Processing events to identify cameras within a radius of interest
- c. Triggering / dispatching FATPOT events / alarms in Latitude
- d. Creating PTZ client sessions to send PTZ cameras to preset or absolute position.

2. **Directory Plugin** – responsible for:

- a. Monitoring the accessibility of the Application Server (indicating it is ready to receive incoming events from FATPOT)
- b. Creating alarm/event types for the FATPOT system

3. Presentation Plugin - enable users to:

- a. Viewing a FATPOT system representation in the Physical View of AdminCenter.
- b. Configuring connection details with FATPOT and define camera radius of interest
- c. Configuring Latitude actions for incoming call events and alarms

The FLIR-FATPOT integration works together with Latitude core GIS Mapping features to create call incident placemarks on a GIS map as described in the <u>ControlCenter Usage</u> section below.

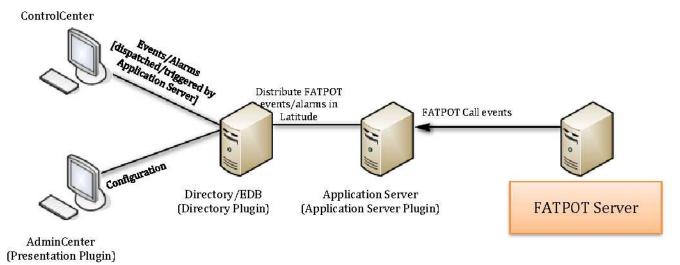


Figure 2: Integration Architecture



FATPOT Side Configuration

To communicate with the VMS, a FATPOT "Interface" must be set up using the FusionPORTAL client. One interface is required per VMS Application Server, so make sure to define two interfaces if you are using a failover Application Server in addition to the primary one.

- 1. To communicate with the Application Server, an Interface needs the public IP address and port on which the Application Server will accept connections.
 - The Application Server port must be open to inbound communication.
 - On the Application Server machine, run "netsh http add urlacl url=http://<IP address>:<port>/
 user=Everyone" in an elevated command prompt.
- 2. Once these IT considerations are in place, press "Test Connection" to verify the connectivity.

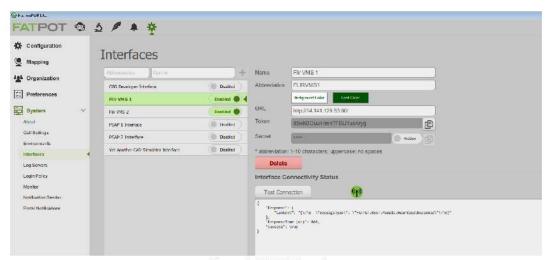


Figure 3: FATPOT Interface

3. In case the Interface is not able to receive calls, check if Interface Configuration is correct, as shown below.



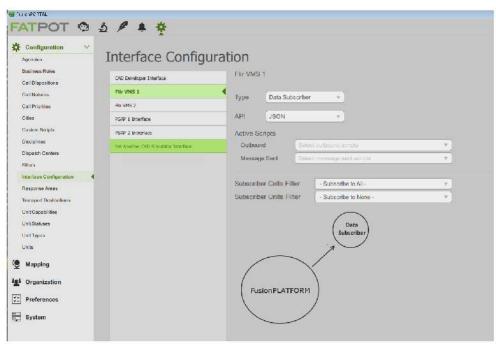


Figure 4: Interface Configuration

AdminCenter Configuration

Adding a FATPOT System

To allow the Latitude Application Server receive incoming call events from FATPOT, please follow these steps:

- 1. Verify that an Application Server has been added and configured.
- 2. Add a FATPOT system by navigating to the Physical tree, right-clicking the System node and selecting "Add FusionPLATFORM system".
- 3. Configure the following settings in the General tab of the new FusionPLATFORM system node:
 - FATPOT Server IP / Hostname: The IP address or hostname of the FATPOT server that the Application server should connect to.
 - **FATPOT Server Port (Default = 15799):** The port number of the FATPOT server that the Application server should connect to.
 - Reconnect Interval: The interval in which the integration will attempt reconnecting to a FATPOT server
 upon failing to establish a connection or when the server connectivity is lost.
 - Connectivity check interval: The interval in which the integration will check the connectivity state of a FATPOT server once an initial connection has been established.
 - Camera working range (in meters, -1 for infinite): Effective range of cameras with enabled GIS
 <u>Positioning</u> coordinates. If an incident is detected out of the specified range, the camera will not be notified.

Primary / Secondary FATPOT Interfaces

To support automatic Application Server failover, two interfaces must be configured on the FATPOT side. The VMS then needs be aware of the following settings of both the primary and secondary FATPOT interfaces:

- FATPOT Interface token: Given by the FATPOT admin for clients to communicate with the interface
- FATPOT Interface secret: Given by the FATPOT admin for clients to communicate with the interface
- Application Server Port: The port number of the Application Server machine that was given to the Interface during the <u>FATPOT Side Configuration</u> for sending call events to the Application Server. (Default is 2221 and 2222).

Notes:

- 1. The Token and Secret parameters should be of two different FATPOT interfaces.
- 2. Application Server ports should be available on the Systems that are configured with the interface.



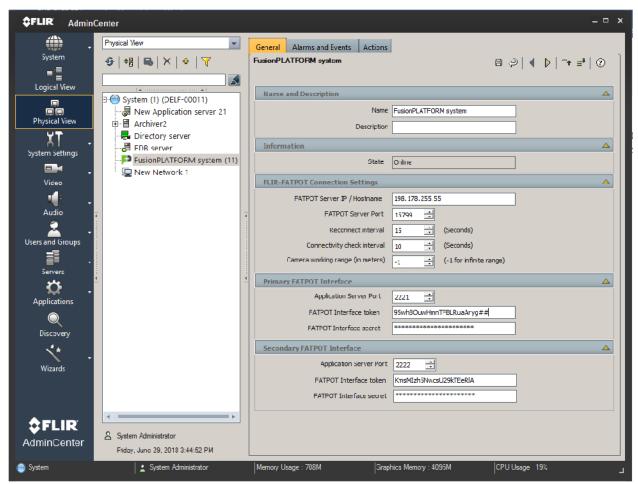


Figure 5: FATPOT system General tab

Once the FATPOT system settings are saved, the active Application Server will establish a connection, listening for incoming call events from the FATPOT server at the configured port.

Stopping and Starting the FATPOT system

Latitude can stop listening to FATPOT call events by right-clicking the FusionPLATFORM system node and selecting "Stop". To resume listening to incoming events, right-click the node a second time and select "Start". Note that starting and stopping the FATPOT system has no effect on the FATPOT system itself. The actions performed affect Latitude's listening to incoming events only.



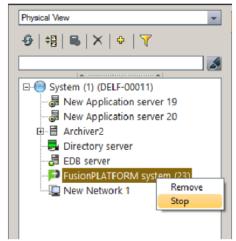


Figure 6: Stop and Start the FATPOT system

Configuring Latitude Responses to FATPOT Events

Browse to the "Alarms and Events" tab of the FATPOT server entity to configure Latitude's response to FATPOT call event types (see Figure 7). The integration module supports two types of FATPOT events that can be handled internally in Latitude. Using the Alarms and Events widget, the user can define one of four preconfigured Latitude responses to each one of them:

Event Types

ID	Туре
1	High Priority Call
2	Low Priority Call

Responses

- 1. **Treat as a Latitude Alarm**: The alarm types created by the integration for cameras within the <u>camera working</u> range of the call's location will be automatically triggered upon an incoming call of this type.
- 2. **Treat as a Latitude Event:** An event will be automatically dispatched in Latitude in correspondence with an incoming call of this type.
- 3. **Treat in Runtime**: The incoming FATPOT call of this type will both trigger the cameras' alarms and dispatch an event in Latitude.
- 4. **Ignore Event:** The call event will be ignored altogether.



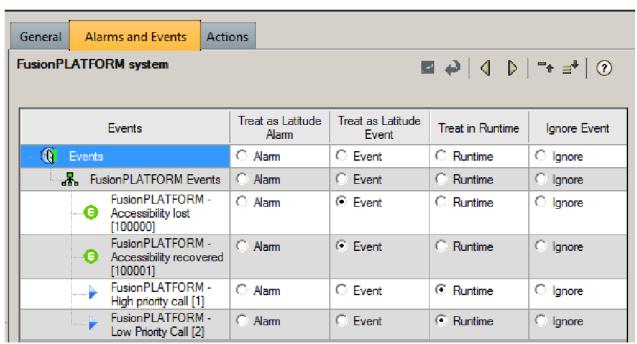


Figure 7: Alarms and Events tab

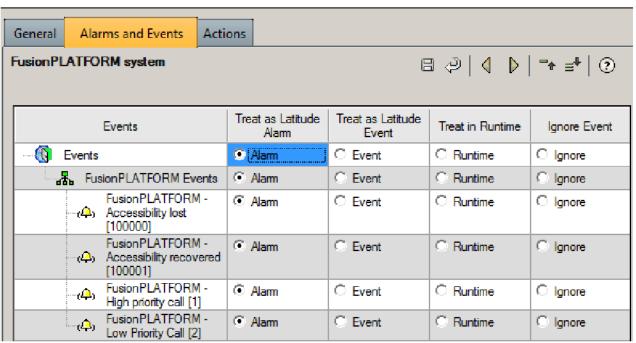


Figure 8: Treat all call detection events as Latitude alarms



Notes:

- 1. You can either check the individual radio-buttons to define a different behavior for each event, or you can check the radio-button of a parent node to automatically check all children nodes.
- 2. In Figure 8, the Alarm response was clicked for the root node (Events), setting the Latitude response to "Treat as Latitude Alarm" for ALL children nodes.
- 3. After each change, the Save button becomes enabled. Click it to save your changes.
- 4. FusionPLATFORM "Accessibility lost" and "Accessibility recovered" events are dispatched in correspondence to the connectivity status with the call detection system. "Accessibility lost" and recovered events indicate whether the Application Server has established or lost a connection to the configured Interface.

Integration Alarm-Types and Plugin-Events

For each Latitude camera with GIS Positioning coordinates enabled, the integration module will automatically create an associated Alarm Type under the System Settings tree (see Figure 9) and associate the camera by adding it to the alarm type's Cameras tab. In addition, the integration has plug-in events for the main FATPOT system appearing under the entity's "Actions" tab (see Figure 10):

- 1. **Alarm type:** automatically created per camera with GPS coordinates and triggered for cameras within the <u>camera working range</u> whenever a call detection event is received, and the response is set to "Treat as Latitude Alarm" (or "Treat in Runtime").
- 2. **Plug-in event:** dispatched whenever a call detection event is received in Latitude and the Alarm and Events response is set to "Treat as Latitude Event" (or "Treat in Runtime").

Call detection events received at the integration module are handled based on configured <u>Latitude Response</u>, and cameras within a working range of the incident are identified.

Once identified, the integration module triggers the corresponding camera alarm type or dispatches the corresponding plug-in event (of the FATPOT system):

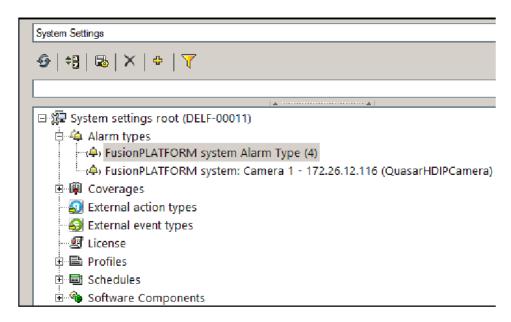


Figure 9: FATPOT Alarm Types for Cameras with GIS Positioning Enabled

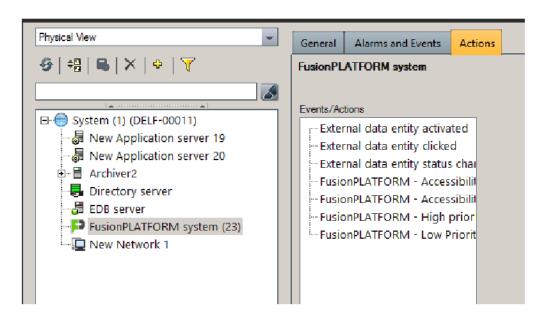


Figure 10: Plug-in Events for FATPOT System

Incoming FATPOT events that do not have a camera within the camera working range will trigger the alarm type of the main FATPOT system ("FATPOT system Alarm Type") or dispatch the event associated with the system. For incoming events which are set to "Ignore" in the Alarms and Events tab, the integration will neither trigger an alarm nor dispatch an event.

Using Latitude's Events / Actions infrastructure, the AdminCenter user can further configure actions to be executed alongside the alarm or event. For example, in Figure 11, a "Start Recording" action is configured for the "FusionPLATFORMTM – High priority call" plug-in event of the FATPOT system.

The data flow between the FATPOT call detection system and Latitude is as follows:

- 1. A "Fusion PLATFORMTM High priority call" event occurs in FATPOT and is sent to the integration module.
- 2. The event is processed, and the integration module identifies the event type and the configured Latitude response for this event type.
- 3. If this FATPOT event type was configured to be treated as an Event (or Runtime which will both trigger an alarm and dispatch a plugin-event), the "FusionPLATFORMTM High priority call" plug-in event is dispatched for the system.
- 4. As a result, the configured action Start Recording, is executed.

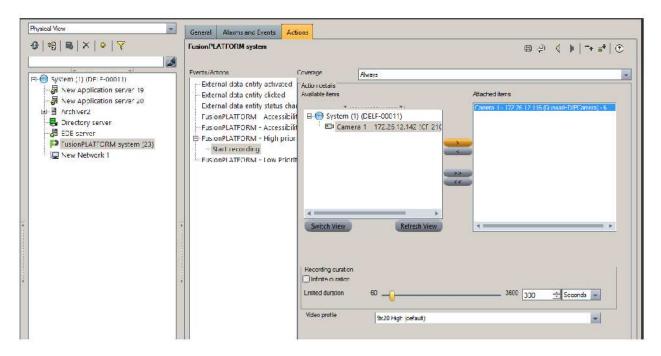


Figure 11: Start Recording Action for the FATPOT system "Single Call" Plug-in Event

ControlCenter will display the full description of the call event. The description includes:

- 1. The name of the event type
- 2. The address of the incident as provided by FATPOT
- 3. The time the incident occurred
- 4. The GPS coordinates of the incident (used to create a placemark on a GIS map for triggered FATPOT alarms)



PTZ Tracking

FATPOT call events originating from the FATPOT server include incident GPS coordinates. Incoming call events treated as alarms in Latitude will automatically have a "Go to Preset" or "Go to Location" PTZ operation conducted for cameras that satisfy the following requirements:

- 1. Camera has enabled GIS Positioning coordinates
- 2. Camera is within the Camera Working Range distance from the incident
- 3. Camera is configured as a PTZ camera

Go to Preset

For cameras that do not support an absolute "Go to location" command (described in the section below), the integration will use presets to point the camera toward the closest compass direction of the call detection alarm. Eight (8) presets should be defined for each such camera oriented to the north, north-east, east etc. Upon call alarms, the closest preset will be selected to orient the camera to the spot.

To setup the camera for "Go to Preset", navigate to the camera's General tab, and expand the "FATPOT PTZ Configuration" section:

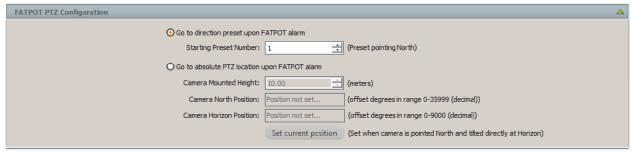


Figure 12: Camera General Page FATPOT PTZ Configuration Section (Go to Preset)

Preset numbers configured for the cameras should start from the configured **Starting Preset Number** (representing north), with the next seven preset numbers set to the next clockwise compass direction as shown in the below table:

Direction	Preset number
North	Starting Preset Number
North-East	Starting Preset Number + 1
East	Starting Preset Number + 2
South-East	Starting Preset Number + 3
South	Starting Preset Number + 4
South-West	Starting Preset Number + 5
West	Starting Preset Number + 6
North-West	Starting Preset Number + 7



Notes:

- 1. The FATPOT integration module uses "True North" for all heading calculations.
- 2. The user in AdminCenter upon call events for cameras should not configure "Go to PTZ preset" Actions with GIS Positioning coordinates, as the integration will automatically perform this operation as described in the above PTZ Tracking section.

Go to Location

For PTZ cameras that support absolute positioning (i.e. use a "**Pelco D**" driver, and <u>have supporting encoding board</u>, <u>firmware and wiring</u>), a "Go to Location" command can be configured to be sent to the camera, pointing the camera toward the direction of the incident.

To setup the camera for "Go to Location", navigate to the camera's General tab, and expand the "FATPOT PTZ Configuration" section:

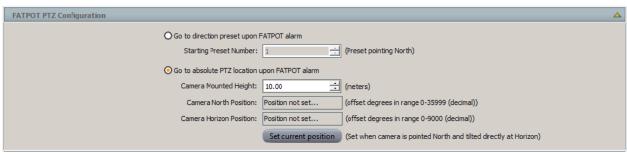


Figure 13: Camera General Page FATPOT PTZ Configuration Section (Goto Location)

- 1. First, confirm that the camera has GIS GIS Positioning Enabled with the camera's relevant GPS coordinates.
- 2. Check "Go to absolute PTZ location upon call alarm" to enable the setting.
- 3. Enter the Camera Mounted Height (in meters).
- 4. Next, press the "Set current position" button in the FATPOT PTZ Configuration section when the camera is directly pointed north and tilted horizontally (at the horizon).
- 5. If the camera supports absolute positioning, it should report its location upon selecting to set current position
- 6. The values reported will be used as offset degrees when an absolute Go to Location command is sent. Note that in Pelco D format, a reported value of 35999 is equivalent to 359.99 degrees.
- 7. Press the Save button to save the updated settings and use "Go to Location" for the camera.



PTZ User Priorities

Users should note that PTZ control in Latitude always adheres to user priorities. The integration module controls PTZ cameras with admin rights and **system priority** (priority can be changed).

In order to assure that an existing user PTZ session will not prevent a PTZ Tracking operation from being conducted by the integration, users can change the "**System PTZ Priority**" settings. This setting can be found under the root system entity under the General tab in AdminCenter.

Setting a higher priority (lower number), for "System priority", and a small "System vs user idle interval" value will make it less likely for the integration to not perform PTZ Tracking operation for reasons of priority.



Figure 14: System PTZ Priority Setting

For additional information regarding System PTZ Priority settings, please refer to the Latitude Help document by selecting System->Help from AdminCenter.

GIS Positioning

A camera's General page includes a "GIS Positioning" section that maintains the GPS location of each camera:



Figure 15: GIS Positioning Setting for Camera

Enable GIS Positioning: cameras must have this checkbox checked to be considered by GIS Maps and the FATPOT integration. The default coordinates are 0, 0, and 0 (Longitude, Latitude and Altitude). Enter the required coordinates and save the page.

Once GIS Positioning has been enabled for the camera and coordinates saved, a given camera can be added to a GIS Map by navigating to the GIS Map in the Logical View tree. Under the map's "GIS Map" tab, the camera can be selected as a GIS Entity. (For a more detailed description, please see AdminCenter help file and search for the "GIS Maps" section).

The integration will **automatically create an alarm type** for each camera that has GIS Positioning coordinates enabled for it under the video scene's General configuration page.



User Privileges

To allow a user other than the Administrator to use the integration, the following steps must be conducted for the selected user within the user's **Privileges** tab in AdminCenter:

Select the Plugins and Integrations node and check the Allow radio button for the parent **Plugins and Integration** node:

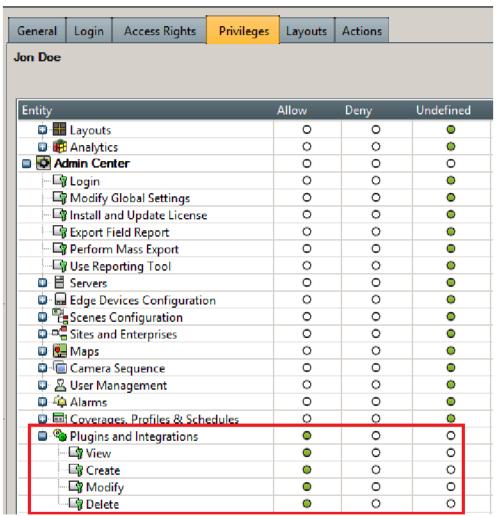


Figure 16: Software Component Privileges

ControlCenter Usage

Upon incoming FATPOT call events, ControlCenter will provide notification to the user and perform the following operations:

- 1. ControlCenter will display the full description of the received event.
 - a. Call event types treated as Latitude plugin events will be displayed in the "Events Pane"
 - b. Call detection event types treated as Latitude alarms will be displayed in the "Alarms Pane" (for ControlCenter users that are recipients of the alarm type)
- 2. For triggered alarms the following operations will also be conducted:
 - a. A ControlCenter tile "Armed for alarm", will display the cameras within the Camera Working Range of the detected incident
 - b. Archived video of the relevant cameras is Bookmarked
 - c. ControlCenter will direct PTZ cameras within the working range to the location of the call, by either a "Go to Location" or "Go to Preset" command as described in the above PTZ Tracking section
 - d. The GPS coordinates of the incident will be indicated by a place mark on a GIS map according to the Longitude and Latitude coordinates of the call detection event

The below screenshot is an example of ControlCenter displaying a call alarm in the alarms pane, presenting the associated camera video in a tile armed for alarm, and indicating the incident location on a GIS map:

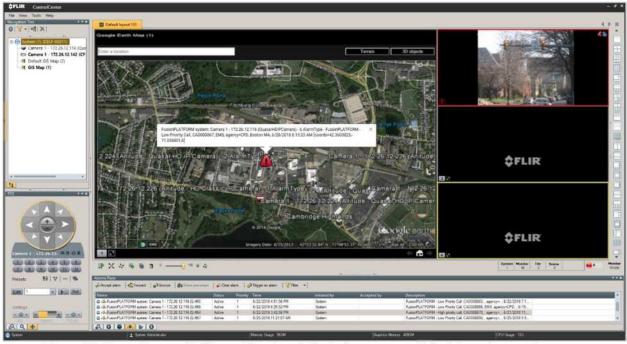


Figure 17: ControlCenter tile "Armed for alarm" displaying camera with incident place mark on map

Uninstalling the Integration

To uninstall the integration, follow the steps below:

- 1. In AdminCenter under the Physical tree, remove all the FATPOT system entities.
- 2. On the Directory, Application Server and Failover Directory/Application Server machines shut down all services and client applications.
- 3. In Windows Control Panel, double-click "Add or Remove Programs".
- 4. Locate the "FLIR FATPOT" entry and select Remove.
- 5. Restart the Latitude services and applications.
- 6. Repeat for AdminCenter and ControlCenter machines where the integration was installed.

Note: Be sure to conduct step (1) **before** uninstalling the integration from Add Remove Programs to ensure that all entities created by the integration are properly removed.



Upgrading

Upgrading Latitude NVMS

When upgrading Latitude with a Latitude Update in the same major release (e.g. Latitude 8.0 GA to Latitude 8.0 LUxx, or 8.0 LUxx to 8.0 LUyy), there is no need to perform any special procedure. The FLIR-FATPOT integration will work after upgrading the Latitude version.

When upgrading Latitude NVMS from one major release to another (e.g. Latitude 8.0 to Latitude 9.0), please contact FLIR to inquire about a version of the FLIR-FATPOT integration that is compatible with the new Latitude NVMS system.

If there is a new version of this integration for the new Latitude NVMS system, please follow the instructions for upgrading the FLIR-FATPOT integration.

Upgrading FLIR-FATPOT Integration

When upgrading from 8.0.0.1 to 8.0.0.X can be conducted as follows:

- 1. Following the <u>Uninstalling the Integration</u> section above without first removing existing FATPOT system entities (e.g. excluding step 1).
- 2. Conduct a new installation as described in the <u>Installation</u> section above.

Upgrading FATPOT System

If you are upgrading the FATPOT system, please contact FLIR's Support Group (<u>Product.Enterprise.Support@flir.com</u>) to find out if the integration will be compatible with the new FATPOT system.



Limitations

- 1. To successfully remove the FATPOT system entity and all its sub-entities from Latitude, you must make sure that the following requirements for removal are satisfied:
 - a. There are no open alarms that are associated to FATPOT.
 - b. FATPOT alarms are not referenced by other entities in the system.
 - c. Should one of these requirements not be satisfied, the removal of the FATPOT system will fail. There will be no error message displayed to the user.
- 2. The integration supports Directory failover with no special additional configuration. Automatic Application Server failover however, requires manually adding a second Interface on the FATPOT side and configuring it with the Failover Application Server settings. The settings of that Interface then need to be copied to the Secondary FATPOT Interface section in Latitude's AdminCenter.
- 3. Alarms management in Latitude such as alarm trigger, clear, forward etc. of incoming call events, will only be handled internally within Latitude and will not cause any changes to call states within the FATPOT system.
- 4. Note that cameras that do not have <u>GIS Positioning</u> coordinates configured will not be considered by the FATPOT integration, even if they are physically located within an incident's <u>working range</u>.
- 5. Connectivity checks will only indicate whether we are able to establish a client connection to the FATPOT server. Note however that this does not indicate whether FATPOT is able to send call notifications to the VMS. In some scenarios the connection will appear as inaccessible since the VMS failed reaching FATPOT, while calls from FATPOT still arrive to the VMS.



Troubleshooting

Log Files

The FATPOT module prints out log files for Latitude Services and Clients. Should you require troubleshooting an issue, please have the following log files (with file tracing set to Debug) ready with a **timestamp** of the reported issue:

- 1. AdminCenter/ControlCenter log files
- 2. Application Server log files
- 3. Directory log files

Below are several potential common issues that may be encountered and their associated resolutions:

Issue	Resolution
FATPOT system	Confirm that an Application Server is defined in Latitude and is currently
representation in the	accessible. After confirming The Application Server is accessible, if the
Physical tree appears offline	FATPOT system has been stopped, right-click the FATPOT system node in
	the Physical tree and select "Start"
FATPOT events are not	Confirm that the FATPOT interface IP represents the Application Server
received in Latitude	IP + port and Test connection succeeds.
	Ask FATPOT admin to verify if FATPOT server is up and sending Calls to
	interfaces.
Cameras do not perform	Confirm that all noted requirements in the PTZ Tracking section for the
PTZ Tracking upon a call	relevant cameras have been met.
detection alarm	Make sure that the camera is accessible to the Archiver, and manual PTZ
	operations can be performed successfully
	Make sure that PTZ priorities have been updated as recommended in the
	PTZ User Priorities section
Cameras do not point to the	If the camera is configured for Go to Location, make sure that:
correct direction upon a call	Camera GIS Positioning Latitude, Longitude coordinates are accurate
detection alarm	Camera Mounted Height is accurate
	Camera North and Horizon positions were accurately set when the
	camera was facing directly North (True North) and pointed horizontally
	at the horizon.
	If the camera is configured for Go to Preset, make sure that presets 1-8
	have been set for the camera, and that the directions of each preset
	number corresponds to the direction noted in the Go to Preset section
	above.