

# VISuite – Milestone Proxy Integration

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Integrating VISuite with the Milestone XProtect 2016/2017/2018 Expert/Corporate via Ipsotek Proxy Service

Version 0.5



The Open Platform Company



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### Approvals

Role	Name	Title	Date
Reviewer	James Black	Global Quality Control Manager	July 2017

### Document Version History

Version	Date	Author	Details
0.1	June 2017	<b>Moe Abbas</b>	Initial Version
0.2	July 2017	<b>Joao Reis</b>	Revision
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0.4	August 2018	<b>Harry Chu</b>	Revision
0.5	August 2018	<b>Alexander Salter</b>	Review and Update

### Definitions and Abbreviations

Acronym	Description
<b>IVA</b>	Intelligent Video Analytics
<b>VCA</b>	Video Content Analysis
<b>Mddb</b>	Meta-Data Data-Base
<b>GUI</b>	Graphical User Interface
<b>VMS</b>	Video Management System
<b>SDK</b>	Software Development Kit
<b>VIS</b>	Visual Intelligence Server
<b>ONVIF</b>	Open Network Video Interface Forum
<b>VCA</b>	Video Content Analysis

### Associated Documents

Ref.	Title	Identity
1	<i>Milestone Plugin Based Integration Manual</i>	<i>ITM-Milestone Integration-V1.7</i>
2	<i>VIconfigure Manual</i>	<i>ITM_VIconfig_V10.1.114</i>

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# 1. Introduction

This document contains the configuration details for the VISuite Milestone integration. Wherever necessary, references with other documents and material are made throughout the document. This document is categorized into 3 sections based on the context and functionality

- a) **Camera Configuration & Video Streaming** – Video from Milestone XProtect server or directly from the camera will be analysed by Ipsotek’s hardware & software.
- b) **Alarm Configuration & Alarm Linking** – One of the integration’s aims is to notify alarms in Milestone Management client interface. To achieve these alarms in both systems, Milestone and VISuite must be linked.
- c) **Plugins** – Software components developed by Ipsotek which can be hosted in Milestone’s Management client interface.

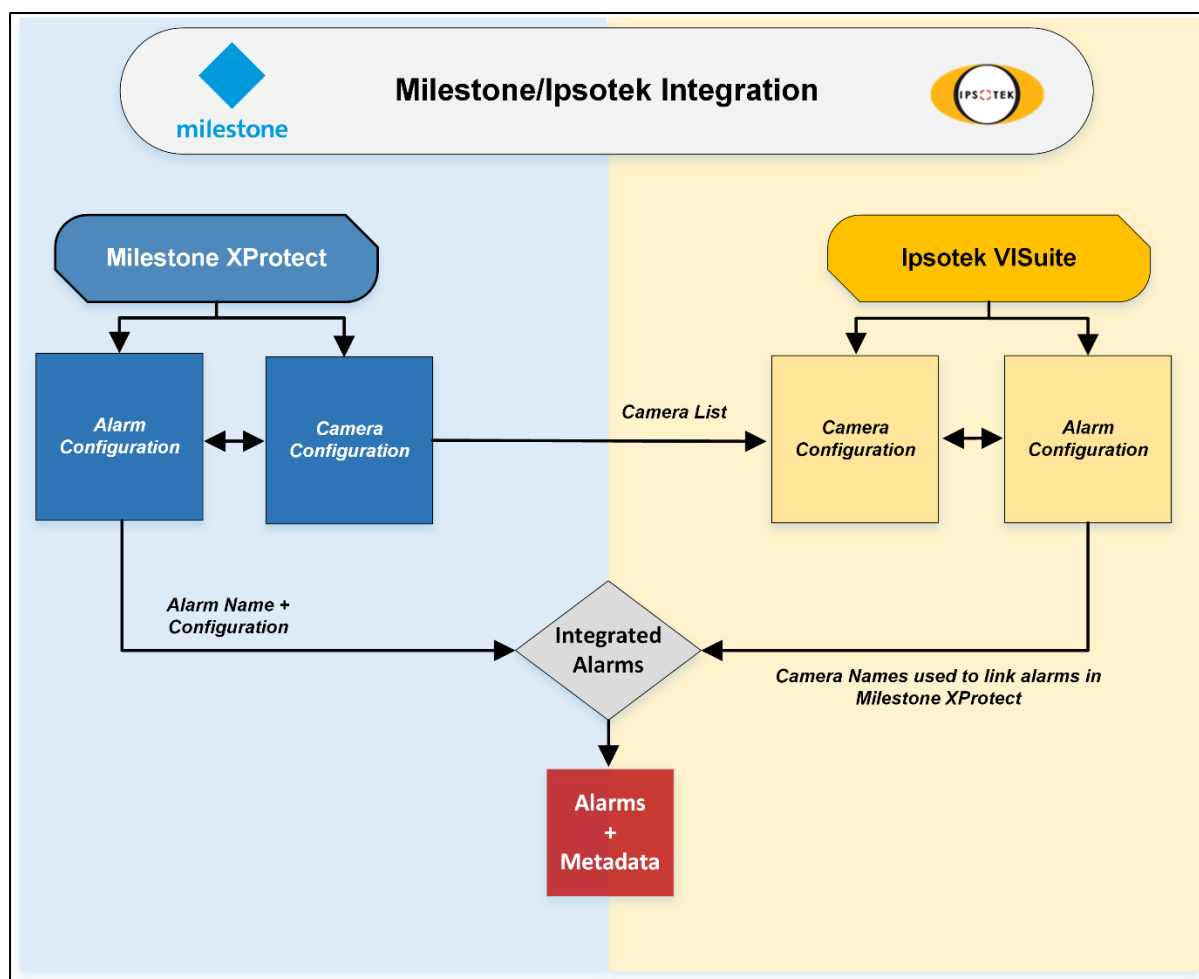


Figure 1: Block Diagram Describing Integration

## 1.1 Integration Features

Integration with Milestone XProtect supports the following functionality:

- Decode and analyse the IP Video in real-time.
- Raise alarms in XProtect viewing client.
- Display real time tracking and event metadata in viewing client.

## 1.2 Prerequisites

This integration requires the following components from both the systems.

- Milestone XProtect Corporate/Expert 2016/2017/2018 Server.
- Milestone XProtect Management Client 2016/2017/2018.
- Milestone XProtect Smart Client 2016/2017/2018.
- VCA server. Ipsotek's Video Content analysis hardware server.
- VISuite 10.1.114/115 Ipsotek's Video Content analysis software.
- Milestone Proxy 10.1.115
- .Net Framework 4.6.2
- Milestone device pack 8.4 or later
- **Administrator privileged windows account**

## 1.3 Video Streaming

It is assumed that both Milestone server, VIS server and IP cameras are on the same network. It is recommended that the network guarantees a consistent frame rate without any packet drops.

## 1.4 Feature Compatibility

The table below depicts the supported Ipsotek features on the various Milestone editions.

Integration Features	XProtect Corporate	XProtect Expert	XProtect Enterprise	XProtect Smart Client (32-bit)	XProtect Smart Client (64-bit)
VMS Video Streaming	✓	✓	✓	✓	✓
Raise XProtect Alarms	✓	✓	✓	✓	✓
Display Metadata	✓	✓		✓	✓
VIconfigure Plugin				✓	✓
VIZualisation Plugin				✓	✓

## 2. Milestone Licensing

### 2.1 Required Licences

There is a simple method of integration supported by the Ipsotek platform as described below. The Milestone licencing model requires the procurement of device license keys (DLK) to support individual devices. The licenses that are required are as follows:

**Method:** VCA (Ipsotek) server to receive video streams from Milestone.

**Licences Required:** One Milestone DLK per metadata channel

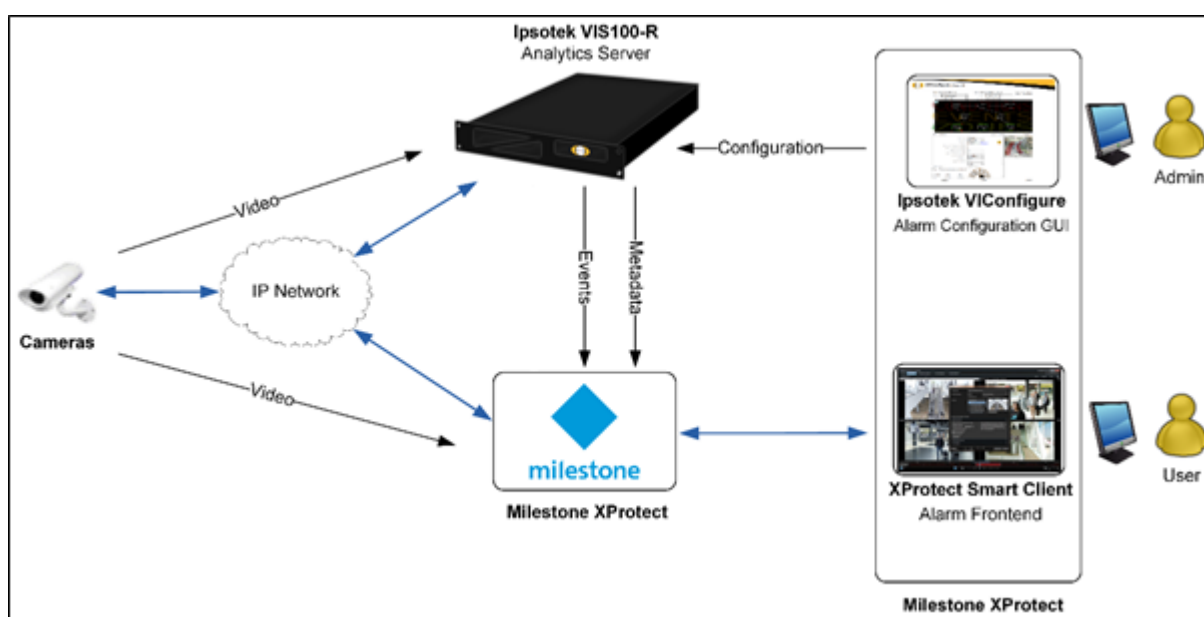
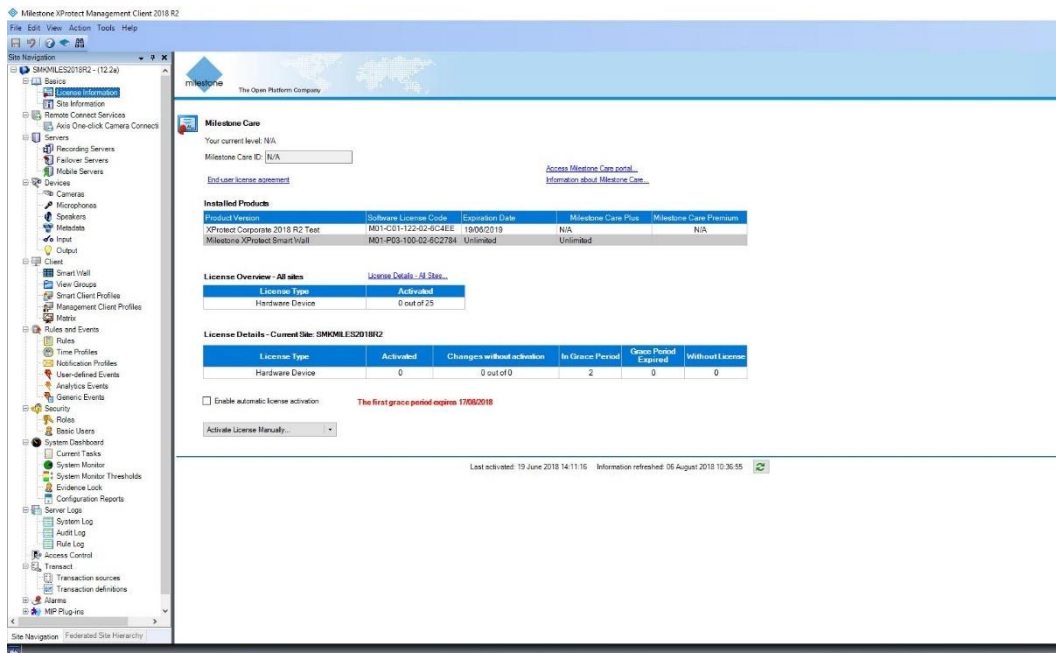


Figure 2: Milestone Metadata Integration System Diagram

## 2.2 Checking Milestone Licensing

The correct licenses should be acquired prior to any installation/configuration. Licenses and their quantities can be checked in the Milestone XProtect management client by navigating to the “License Information” under “Basics” on the left hand side Tree menu and clicking on the “License Overview” button as shown below:



**Milestone Care**

Your current level: N/A  
Milestone Care ID: N/A

[View License Agreement](#) | [Access Milestone Care portal](#) | [Information about Milestone Care](#)

**Installed Products**

Product Name	Software License Code	Expiration Date	Milestone Care Price	Milestone Care Premium
XProtect Corporate 2018 R2 Test	M01-C01-122-02-9C4EE	18/08/2019	N/A	N/A
Milestone XProtect Smart Wall	M01-P03-100-02-8C2784	Unlimited	Unlimited	

**License Overview - All sites** | [License Details - All Sites...](#)

License Type	Activated
Hardware Device	0 out of 25

**License Details - Current Site: SIMM0LES2018R2**

License Type	Activated	Changes without activation	In Grace Period	Grace Period Expired	Without License
Hardware Device	0	0 out of 0	2	0	0

Enable automatic license activation | **The first grace period expires 17/08/2018**

Activate License Manually...

Last activated: 10 June 2018 14:11:16 | Information refreshed: 06 August 2018 10:36:55

Figure 3: Milestone Licensing

## 3. Milestone Cameras

In order to perform event detection and overlay metadata, it is assumed that both Milestone server and VIS server are on the same network. It is recommended that the network guarantees a consistent frame rate without any packet drops.

### 3.1 Camera Name Limitations

- Character Limit (Ipsotek Limitation)

250

- Allowed Characters:

0123456789

abcdefghijklmnopqrstuvwxyx

ABCDEFGHIJKLMNPOQRSTUVWXYZ

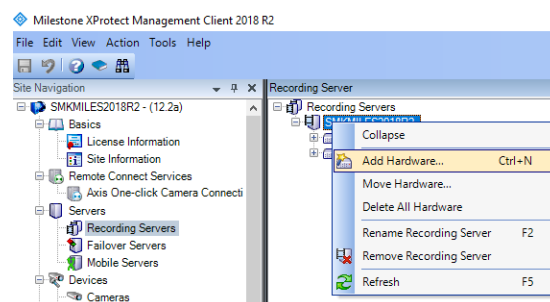
!#\$%&()\*+,-.:/=>?@[ ]^\_`{|}~

### 3.2 Camera Setup

This section provides the steps required for setting up a camera in the Milestone XProtect Corporate/Enterprise Management Client. Cameras should be added to the Milestone platform before seeking to create connections to the Ipsotek VCA server. Follow the steps below

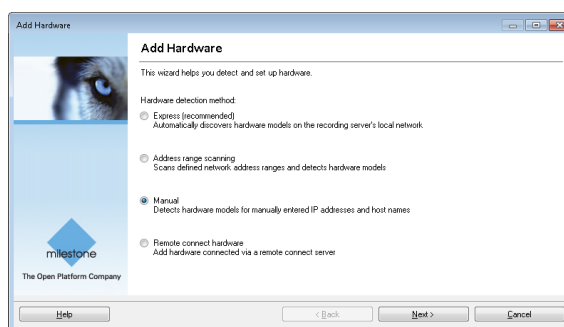
#### Step 1:

Add camera by selecting **Recording Servers** from the left-hand tree. Right click on the required/displayed server and select **"Add Hardware"** from the drop-down menu.



#### Step 2:

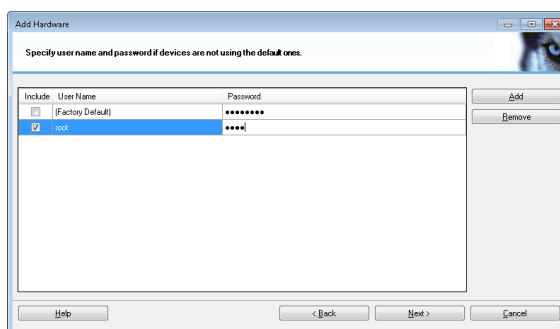
From the wizard select **Manual**





### Step 3:

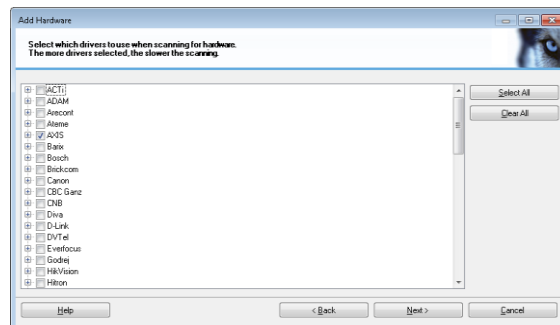
Add camera authentication credentials and enable via the check box.



### Step 4:

Select camera manufacturer and model.

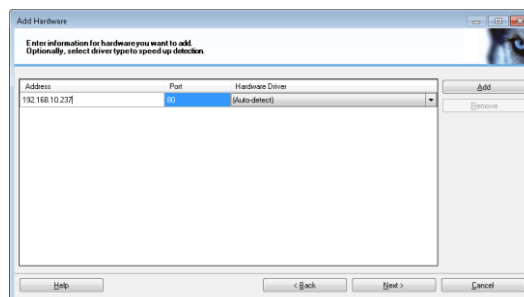
**Please Note:** Selecting a manufacturer will select all subsequent models. You may select the specific model number if known



### Step 5:

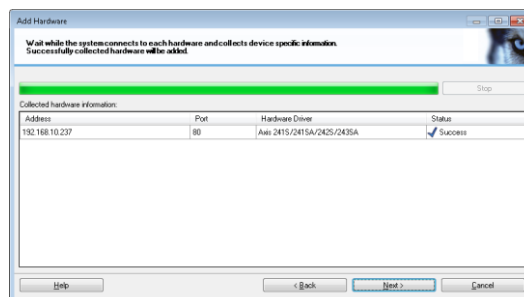
Enter IP address of camera.

**Please Note:** You may add multiple device IP's by clicking on "Add"



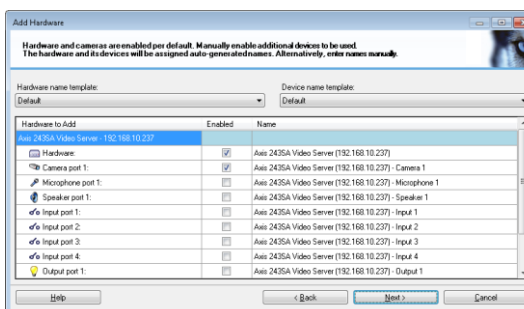
### Step 6:

Acknowledge addition of camera to system



### Step 7A:

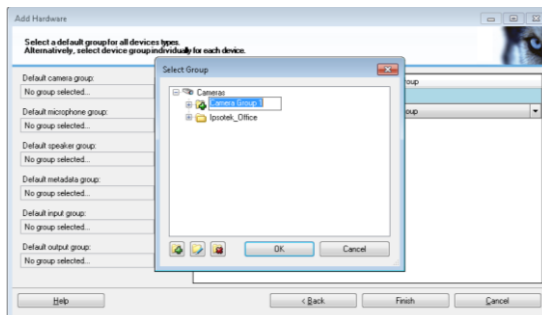
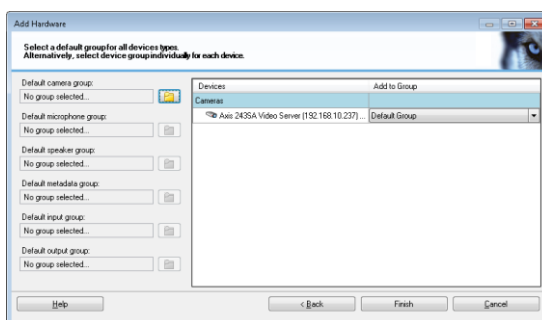
Select any additional hardware functions required.



### Step 7B:

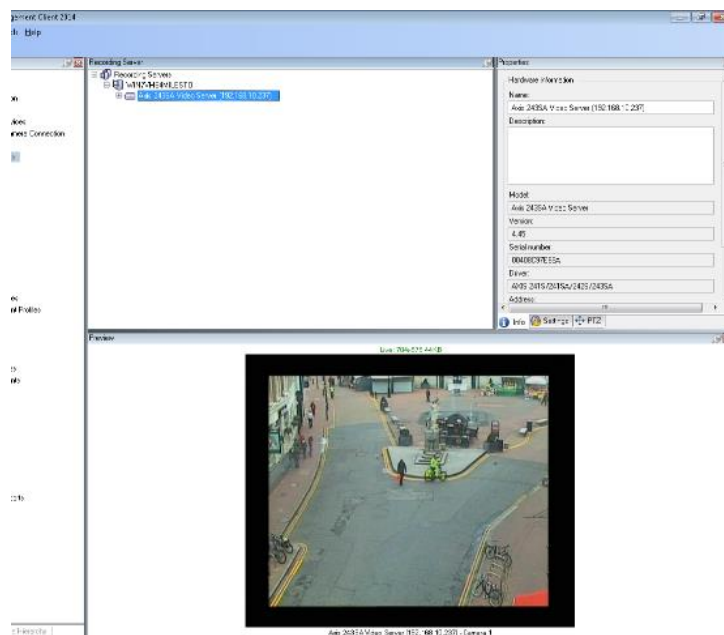
Select camera group by clicking on the highlighted folder. You may also create new groups through this dialogue.

**Please Note:** It is highly recommended that groups are used to keep cameras in a manageable order.



### Step 8:

Confirm camera feed via preview pane as shown.



### Step 9:

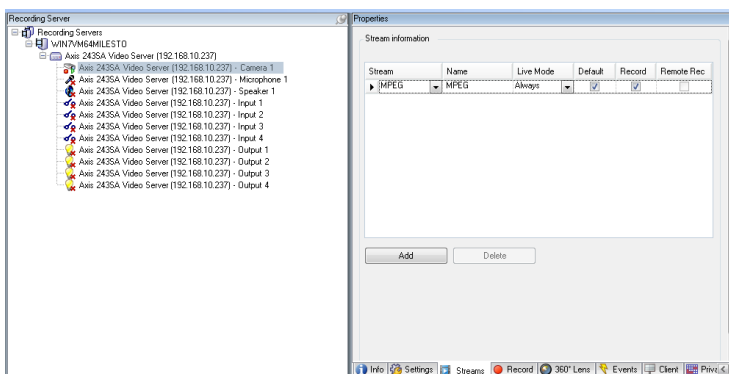
Select supported camera stream from the options by expanding the camera tree and selecting the camera hardware. Navigate to the streams tab in the right-hand pane and select the required stream from the dropdown menu.

#### Supported Streams:

H.263

H.264

MPEG



### **3.3 Ipsotek Camera Configuration**

The final step in the camera configuration is to name the cameras in VIconfigure to match the camera names configured in Milestone. Refer to the VIconfigure manual for configuration of rules and actions in VISuite.

## 4. Milestone Users

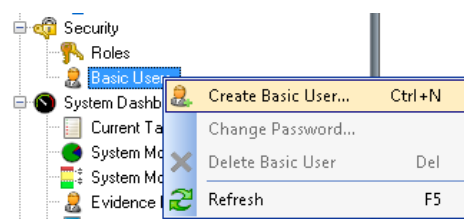
### 4.1 Create Basic User

In order for the integrated alarms to be viewed at the end of the integration, a basic user must be created and assigned to a corresponding group.

**Note : This step can be skipped if a Windows based account is being used for authentication. The correct permissions are required for Windows based accounts.**

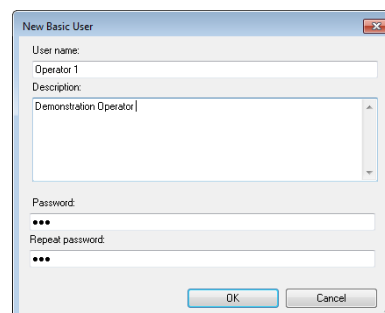
#### Step 1:

Create a new user by navigating to **Security** from the left hand menu tree. Right click on the **“Basic Users”** item and **“Add Basic Users”** from the drop down menu.



#### Step 2:

Create a new user by filling out the form provided.

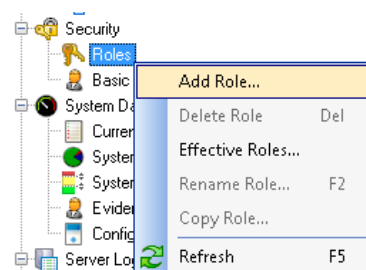


### 4.2 Create Basic User Roles

In order for the integrated alarms to be viewed at the end of the integration, roles must be created and assigned to a corresponding user.

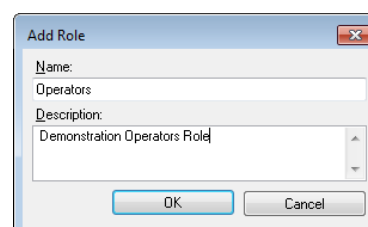
#### Step 1:

Create a new role by navigating to **Security** from the left hand menu tree. Right click on the **“Roles”** item and **“Add Role”** from the drop down menu.



#### Step 2:

Create a new role by filling out the form provided.



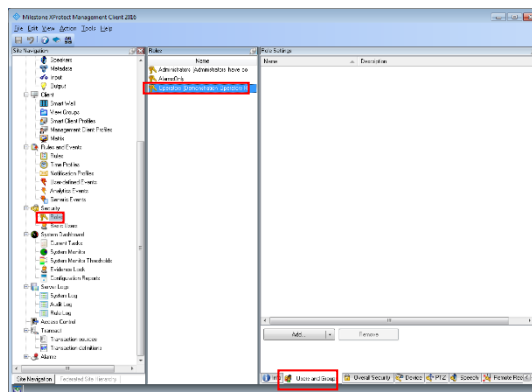
## 4.3 Assign Basic User to Role

Basic users must be assigned to a corresponding role.

### Step 1:

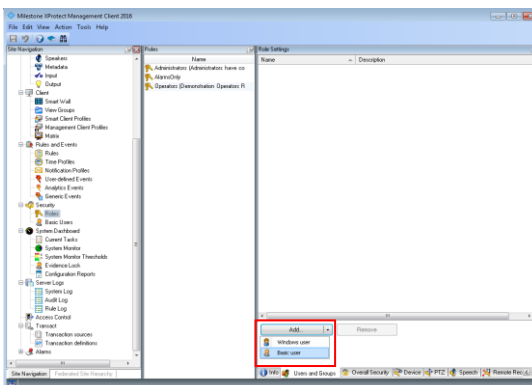
Navigate to **Security** from the left hand menu tree. Select **“Roles”** and the corresponding role **“Operators”** from the list in the middle tree.

Navigate to **“Users and Groups”** located in the bottom tabs as shown in the diagram.



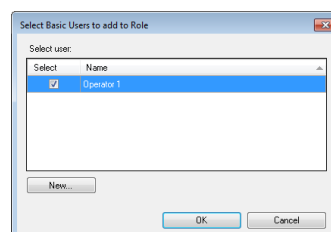
### Step 2:

Select **“Add”** and **“Basic User”**.



### Step 3:

Select created basic user.

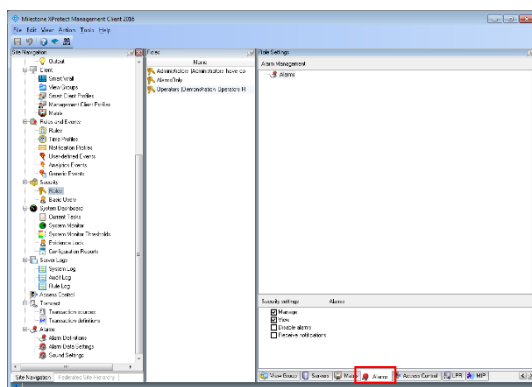


### Step 4:

Navigate to the Alarms tab and select **“Alarms”**

Select and Tick the following items:

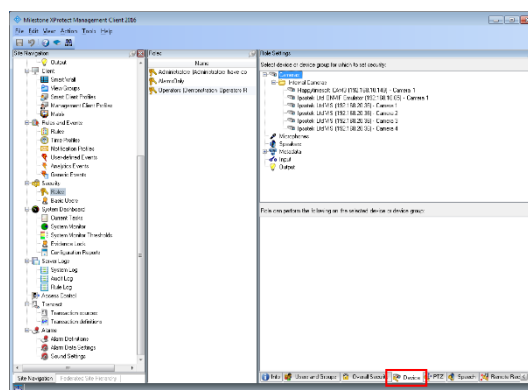
- **Manage**
- **View**



### Step 5:

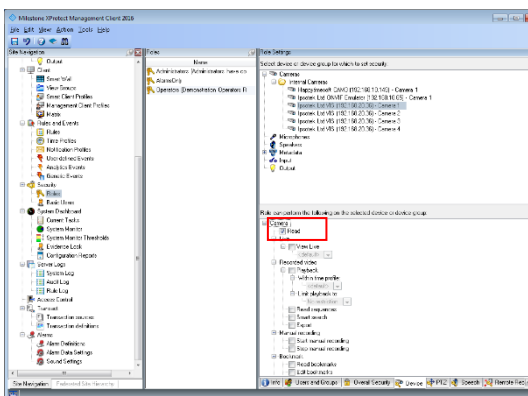
Navigate to the Device tab and select Cameras.

Select the associated cameras which will display analytic events.



### Step 6:

Enable Camera “Read” on the corresponding cameras to receive analytic events.

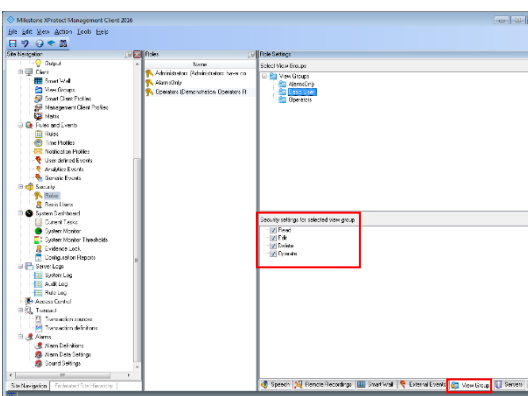


### Step 7:

Navigate to the View Group tab.

Select View Groups in which the operators will be able to see the IVA alarms in the “View Group” tab.

Set security constraints for view groups as shown.



## 5. Video Streaming Options

The integration between Milestone XProtect and Ipsotek VISuite 10.1 can operate as follows:

- VCA (Ipsotek) server to receive unicast or multicast video stream directly from IP cameras
- Upon the receipt of video, analysis in real time occurs and events will be raised into Milestone XProtect Smart Client as live analytics events.
- Metadata is provided by Ipsotek to Milestone via the proxy as a MIP's Stream. This can then be used as an overlay within milestone that highlights the cause of the alarm via bounding boxes drawn on the image.

### 5.1 System Schematic

The proxy integration has been improved to only send metadata overlay information to Milestone Management server. The Milestone Proxy Server uses the concept of a centralized proxy where the Ipsotek's VIS servers will connect to Milestone VMS. Milestone Proxy then will be responsible to maintain the communication to the Milestone VMS, trigger alarms and transmitting metadata through the MIP Message communication service.

It is assumed that both Milestone, VIS server and cameras are on the same network. It is recommended that the network guarantees a consistent frame rate without any packet drops.

It is also assumed that all servers and cameras are synchronised to the same NTP time source.

Events and metadata are handled by the Ipsotek XProtect Proxy Service. The proxy provides the integration with the Milestone system through the MIP Message Communication driver.

This proxy is a centralised service that can receive analytic metadata from several Video Analytics servers and parsed it to Milestone Management Server for event detections and metadata overlay to be consumed by Milestone Smart Client.

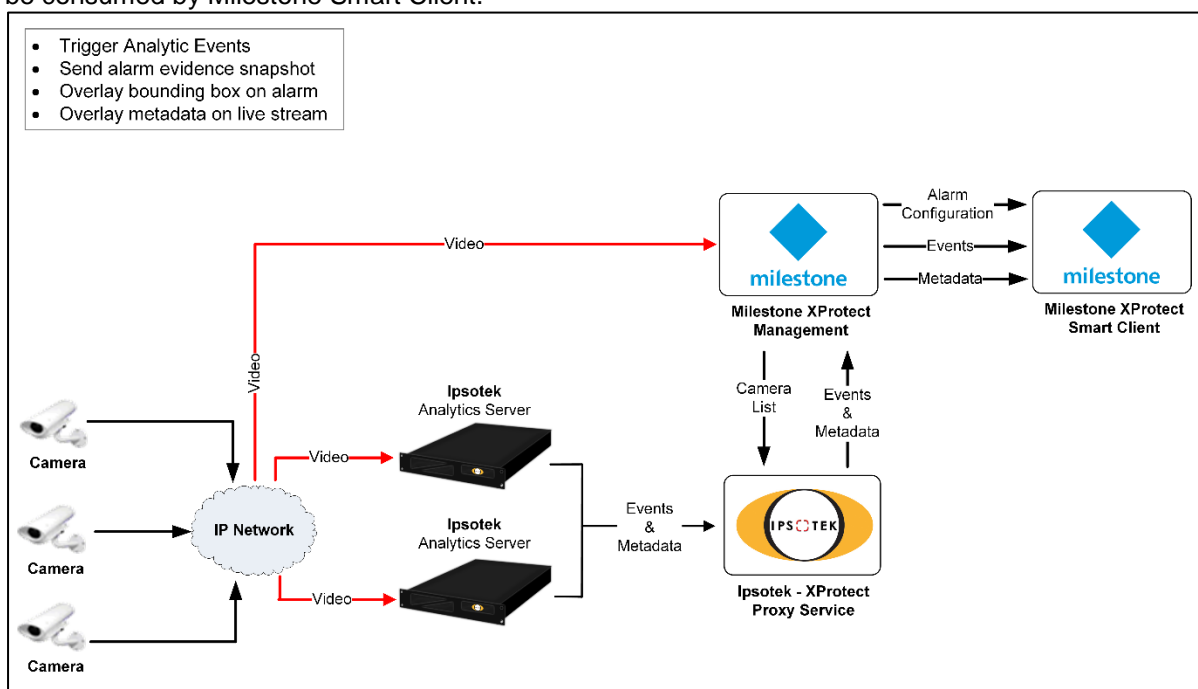


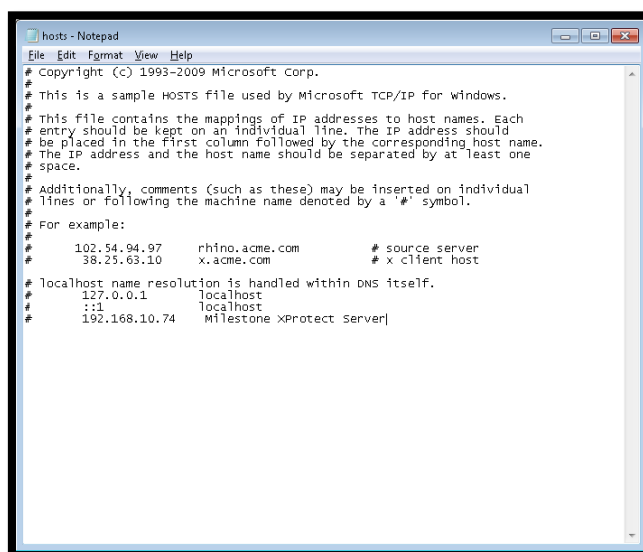
Figure 4: System Schematic

## 6. Ipsotek Server Configuration

### 6.1 Camera Setup

Before getting started with any configuration within VISuite, an entry to the windows “hosts” file must be made to send alarm data to the named milestone server(s).

The file is located at: **C:\Windows\System32\drivers\etc**



```

hosts - Notepad
File Edit Format View Help
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
# 102.54.94.97 rhino.acme.com # source server
# 38.25.63.10 x.acme.com # x client host
#
# localhost name resolution is handled within DNS itself.
#
# 127.0.0.1 localhost
#
# ::1 localhost
#
# 192.168.10.74 Milestone XProtect Server]

```

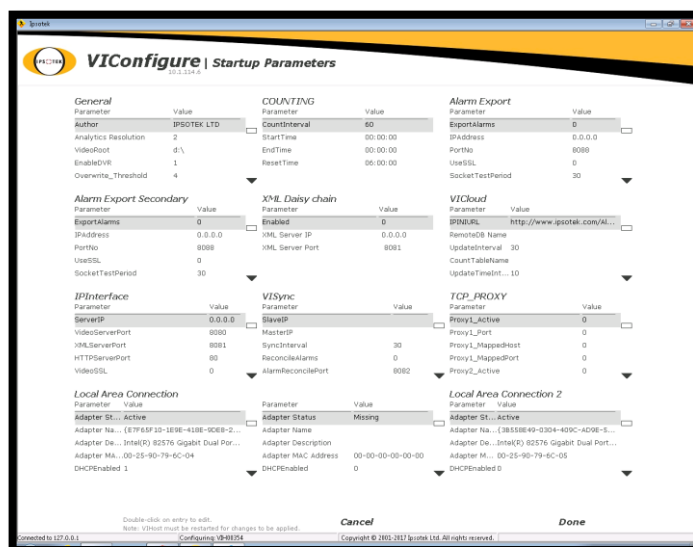
Figure 5: Addition of Milestone IP Address



## 6.2 Enabling XML Export

To establish a connection where alarms are sent with metadata overlay to Milestone Management, an XML connection is required to be initiated from the VA server to the Milestone proxy. To create this type of connection, follow the steps described below:

**Step 1:** In the VIconfigure interface navigate to: **Server Settings > Startup Parameters > Alarm Export**



**Step 2:** Enter the relevant connection details within the Alarm Export Settings

Ensure that the IP address is pointing towards where the proxy is installed and not to the VMS

Alarm Export	
Parameter	Value
ExportAlarms	1
IPAddress	192.168.11....
PortNo	8088
UseSSL	0
SocketTestPeri...	30
ACK Enabled	0
ACK retry count	5
ACK retry period	15
Enable Metadata	1

### 6.2.1

## 6.2.2 Alarm export parameters

Export Alarms via a primary and/or secondary XML source to a third party system.

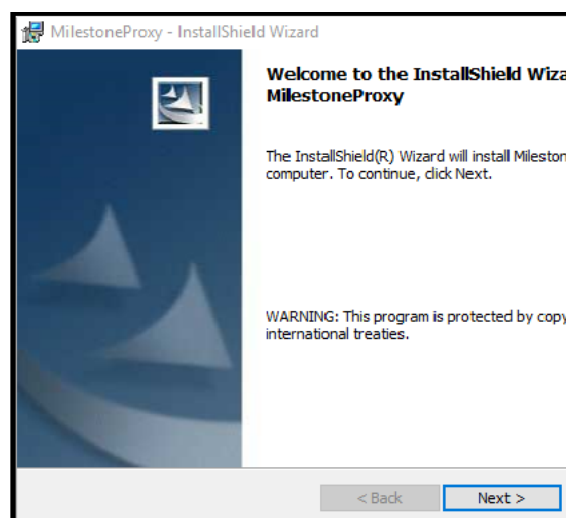
Parameter	Description
<b>ExportAlarms</b>	Export alarms via TCP. Set to 1 to enable exporting of alarms to export via specified IP address and port number. Alarm will be sent with XML data.
<b>IPAddress</b>	Defines export IP address, this is to be set to the IP of the server running the Milestone Proxy, it is recommended to use absolute addresses.
<b>PortNo</b>	Defines export port number. Default 8088.
<b>UseSSL</b>	Force SSL connection if required. Default 0.
<b>SocketTestPeriod</b>	Interval period (seconds) used to send test message to every socket to guarantee a stable connection to the server. Default 30.
<b>ACK Enabled</b>	Enable XML acknowledgment feedback. Default 0.
<b>ACK Retry Count</b>	XML acknowledgment feedback message retry count. Default 5.
<b>ACK Retry Period</b>	XML acknowledgment feedback message retry interval period. Default 15.
<b>Enable Metadata</b>	Include metadata information with XML export message. Set to 1 to enable metadata export.

## 6.3 Milestone Proxy Installation

### Step 1: Install MilestoneProxy.exe

The installer will install to

**“C:\Program Files\Ipsotek\MilestoneProxy”**



### Step 2: Edit MilestoneProxy.ini

Run “Notepad” as Administrator

Navigate to my computer and press the alt key.

At the top of the window you will see a toolbar open.

Go onto Tools – Folder options

A new window will open, navigate to the view tab and ensure “Show hidden files, folders and drives” is selected.

Then Open file

**“C:\ProgramData\Ipsotek\MilestoneProxy\MilestoneProxy.ini”** for editing.

Under server input the IP address of the VMS server with the relevant login details.



### 6.3.1 MilestoneProxy.ini parameters

The following settings are available in the ini file, only the one highlighted green are required.

Parameter	Description
[Proxy]	
ServerPort	Not used, must be set to 8088
LogPath	Log storage path, if left blank defaults to "C:\ProgramData\Ipsotek\MilestoneProxy"
EnableDebugMode	1 = Debug mode for verbose logging 0 = Normal mode for error logging
EnableAlarms	1 = Alarm Handling Enabled 0 = Alarm Handling Disabled
EnableMetadata	1 = Metadata Handling Enabled 0 = Metadata Handling Disabled
[Server]	
Ip	IP Address of the Milestone server
Port	Control port of the Milestone server
User	Milestone username
Password	Milestone password
Trigger Mode	0 for Analytics event by default; 1 for Alarm event.
MIP Port 1	MIP port used
MIP Port 2	MIP port used

## 7. Metadata Integration

### 7.1 Milestone Metadata Streaming Setup

This integration now includes the ability to display metadata on live camera streams and recorded alarm footage. Metadata streams are required to be configured in order to enable this functionality. Follow the steps below:

#### Step 1:

Add metadata stream by right clicking on the server and selecting **Add Hardware**

#### Step 2:

From the wizard select **Manual**

#### Step 3:

Add server authentication credentials and enable via the check box.

Username: **root**

Password: **password**

#### Step 4:

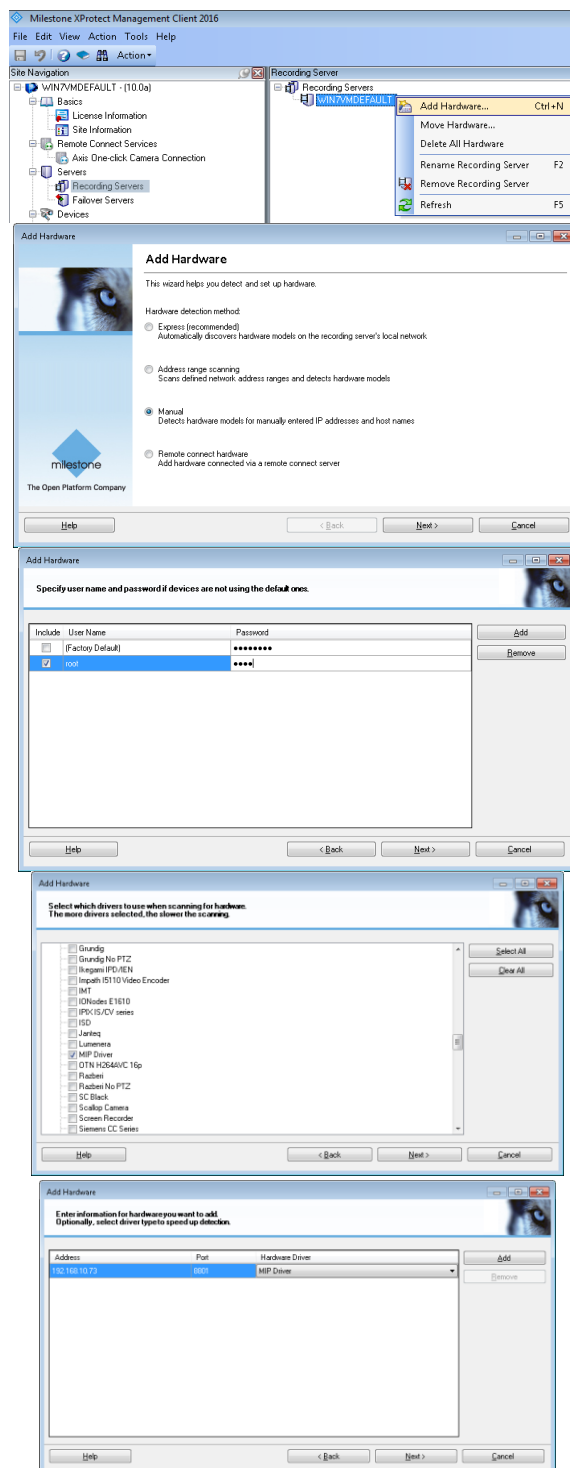
Under the Other category select **MIP Driver**

**Please Note:** Selecting a manufacturer will select all subsequent models. You may select the specific model number if known

#### Step 5:

Enter IP address of server and specify Port number. Select MIP Driver from drop down list.

**Please Note:** Port is required to match specified number set in VIconfigure. Each camera will require its own port number.



### Step 6:

Acknowledge addition of metadata stream to system

### Step 7:

Select additional metadata port as shown.

### Step 8:

Select metadata group by clicking on the highlighted folder. You may also create new groups through this dialogue.

**Please Note:** It is highly recommended that groups are used to keep metadata feeds in a manageable order.

### Step 9:

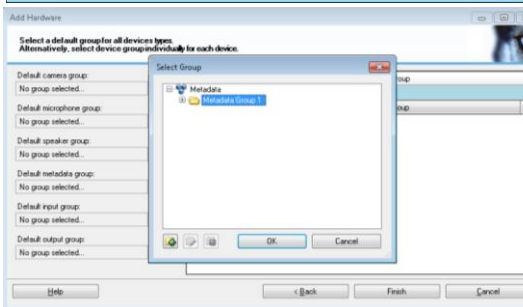
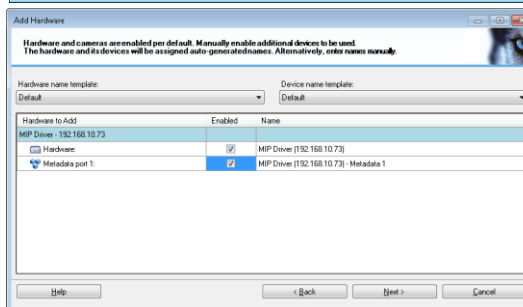
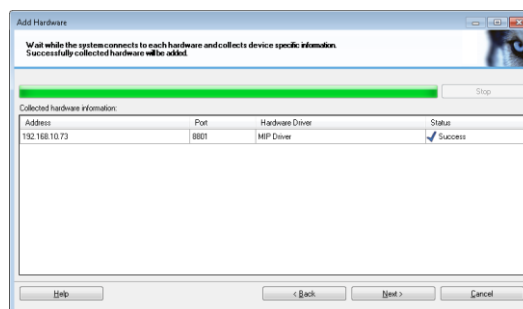
Check metadata stream by observing the icon in the preview pane. The icon should be seen to receive the 0's and 1's to confirm receipt of metadata information

### Step 10:

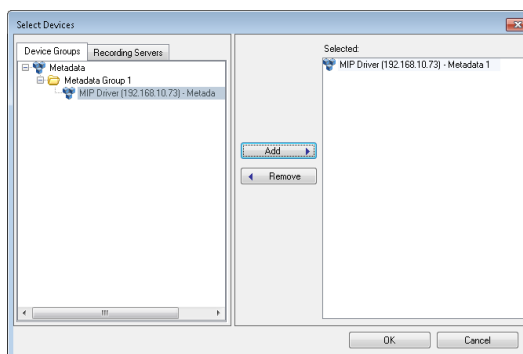
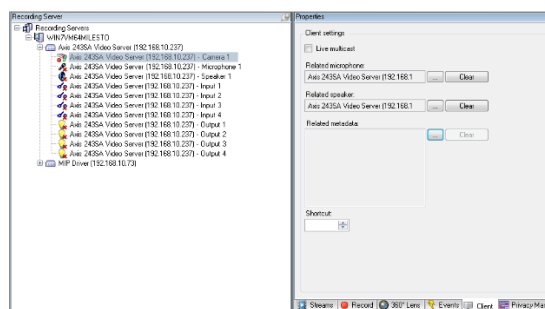
Assign metadata channel to camera

Select supported camera stream from the options by expanding the camera tree and selecting the camera hardware. Navigate to the **Client** tab in the right hand pane and click on the highlighted button to reveal the allocation options.

Save settings by clicking on the  icon or pressing ctrl+s.



MIP Driver (192.168.10.73) - Metadata 1



The screenshot below shows the completed Ipsotek metadata integration in Milestone Smart Client.

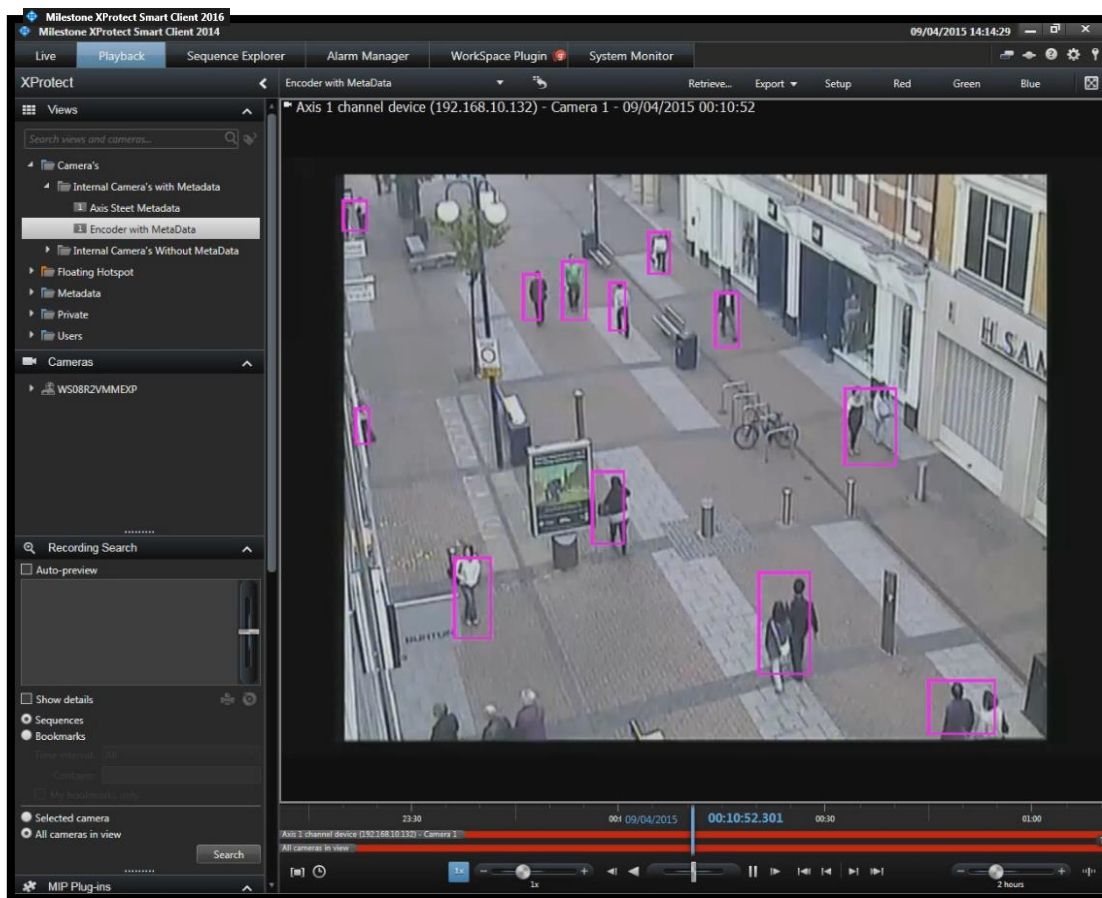


Figure 6: Metadata in Smart Client

## 8. Alarm Integration

With the input video source correctly set up, VISuite now analyses the video, generates alarms and triggers the corresponding alarms in the Milestone system. The following section details the steps required for creating alarms on both platforms.

### 8.1 Alarm Name Limitations

- Character Limit (Milestone Limitation)

31

- Allowed Characters:

0123456789

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

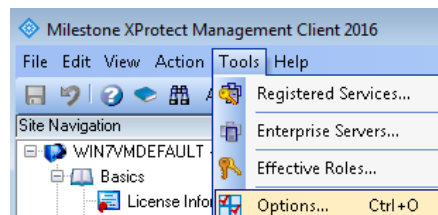
!#\$%&'()\*+,-.:/=>?@[ ]^\_`{|}~



## 8.2 Enable Analytic and Generic Alarms

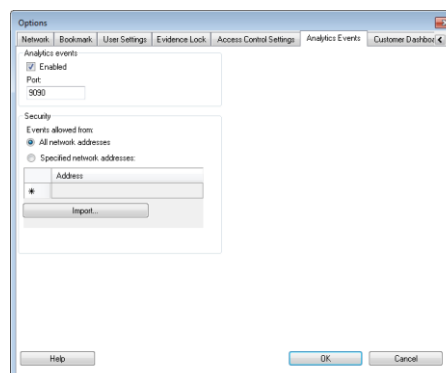
### Step 1:

Open Milestone Management Server  
Navigate to Tools > Options



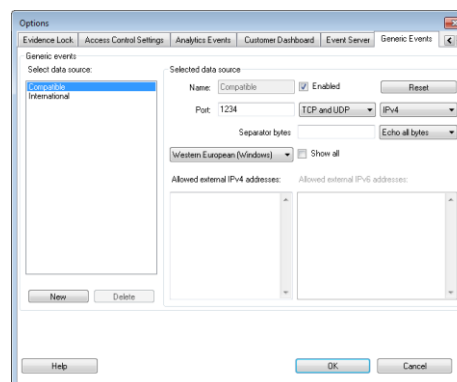
### Step 2:

Navigate to Analytics Events  
Enable Analytic Events



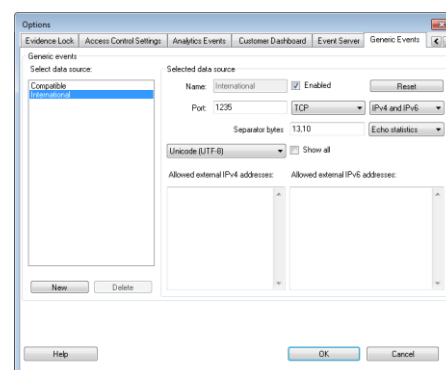
### Step 3:

Navigate to Generic Events  
Enable Generic Events



### Step 4:

Select "International" from data sources  
Enable International Events



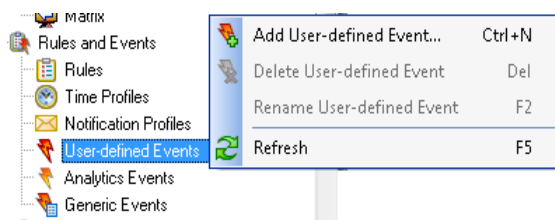
## 8.3 Milestone Alarm Configuration

### Step 1:

Navigate to **User-defined Event** under the **Rules and Events** menu in the left hand tree.

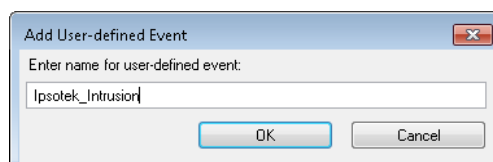
Right click to reveal the menu

Add a new User-defined Event



### Step 2:

Create event

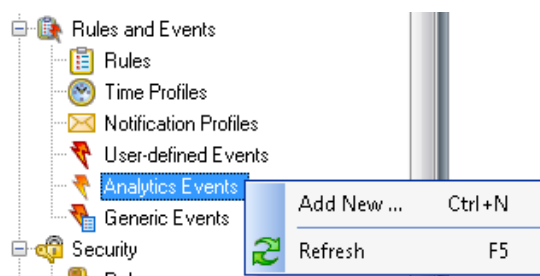


### Step 3:

Navigate to **Analytic Events** under the **Rules and Events** menu in the left hand tree.

Right click to reveal the menu

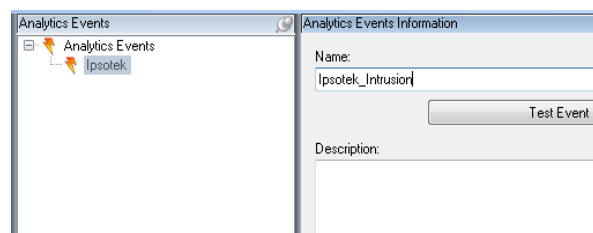
Add a new Analytic Event



### Step 4:

Create event in the right hand pane

Save settings by clicking on the  icon or pressing ctrl+s

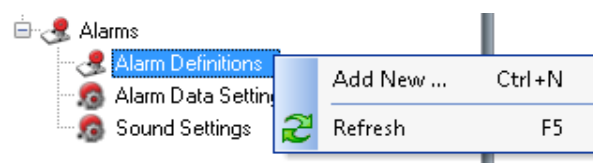


### Step 5:

Navigate to **Alarm Definitions** under the **Alarms** menu in the left hand tree.

Right click to reveal the menu

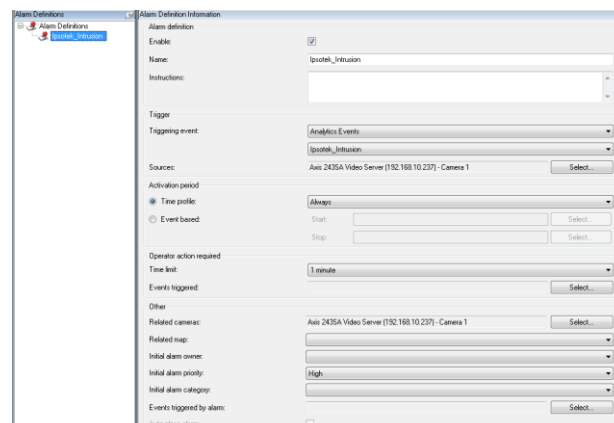
Add a new Alarm Definition



### Step 6:

Complete alarm definition information.

**Please Note:** Alarm definitions should be matched to their corresponding triggering event camera as previously set.



### 8.3.1 Creating Milestone Alarm Events for Multiple Cameras

In the earlier integration stages with Milestone Management server in which Analytics Events, User-defined Events & Alarm Definition were defined for each camera by a unique name for the triggering the alarms pushed from IPSOTEK servers to the Milestone Smart Client.

Now Milestone have updated their feature in the Analytical and Alarm events in Milestone Management 2016 which the alarm type can be created once and linked to several cameras. This feature will be shown in the steps below.

But before entering to new integration features, the requirements needed for the integration are:

- Ipsotek VISuite 10.1.113.4 or later
- Milestone Management Server 2016
- Milestone Smart Client 2016 (64-bit)

#### 8.3.1.1 Milestone User Defined Events

In the User-defined Events, an event can be created once instead of creating the same events multiple times for different cameras as shown in the Figure 7 below:

- Yellow highlight - One Abandoned Object event has been created.
- No highlight – Abandoned Object events created for specific cameras.

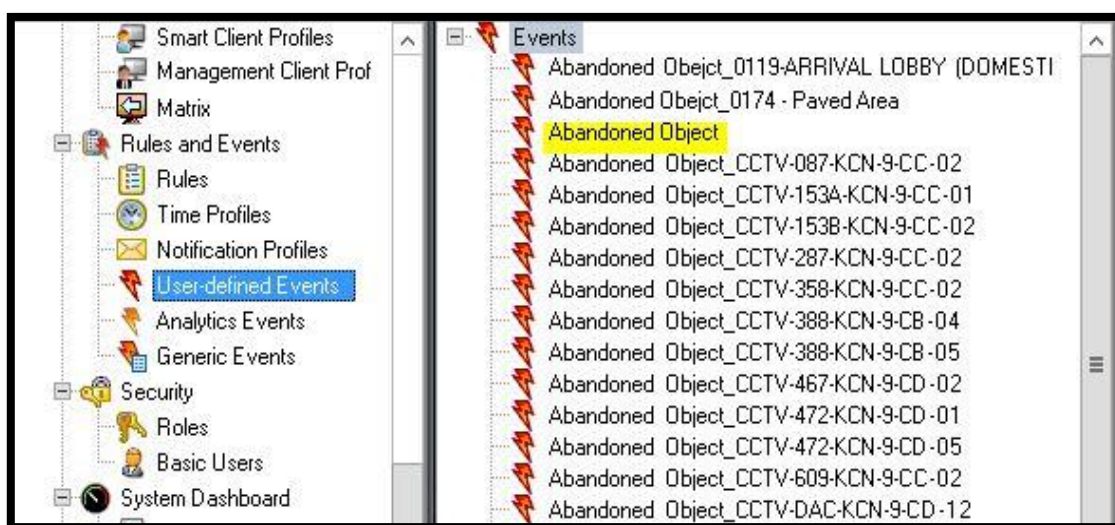


Figure 7: Milestone User Defined Event

### 8.3.1.2 Milestone Analytic Events

In the Analytics Events, an event can be created once instead of creating the same events multiple times for different cameras as shown in the Figure 8 below:

- Yellow highlight - One Abandoned Object event has been created.
- No highlight – Abandoned Object event created for specific cameras.

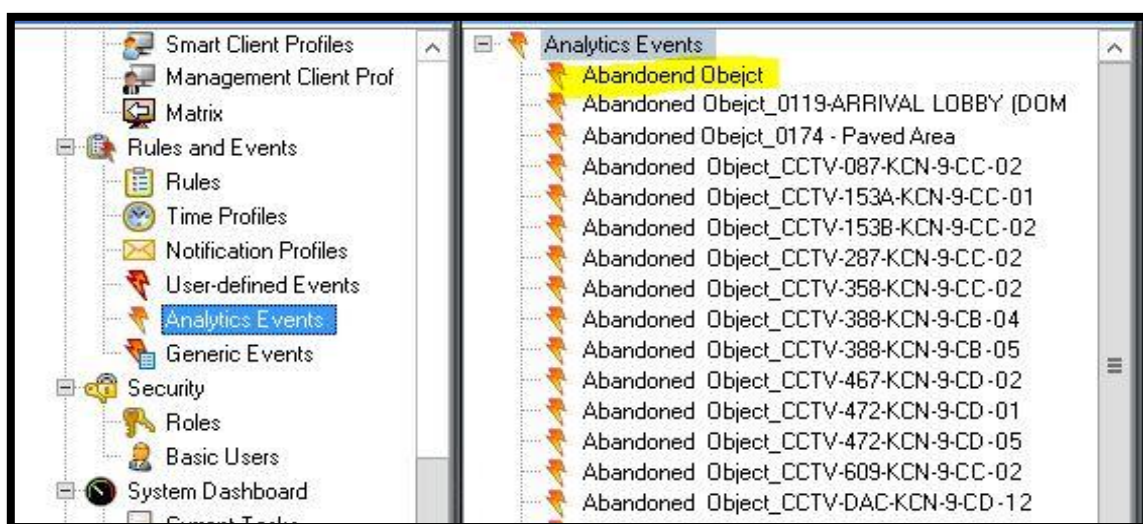


Figure 8: Milestone Analytic Events

### 8.3.1.3 Milestone Alarm Definition

In the Alarm Definition, an alarm can be created once instead of creating the same alarm 14 times for multiple times for the 14 cameras as shown in the Figure 9 below in Yellow shade.

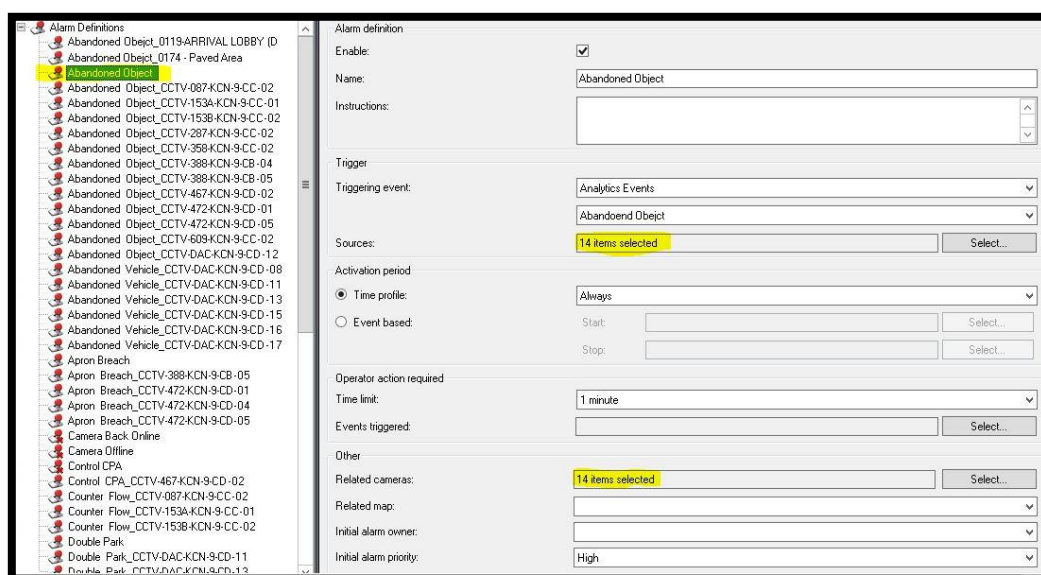


Figure 9: Milestone Alarm Definition

## 8.4 Ipsotek Alarm Configuration

The final step in the alarm configuration is linking the created alarm in VIconfigure to the alarms configured in Milestone XProtect Management Client. Refer to the VIconfigure manual for configuration of rules and actions in VISuite.

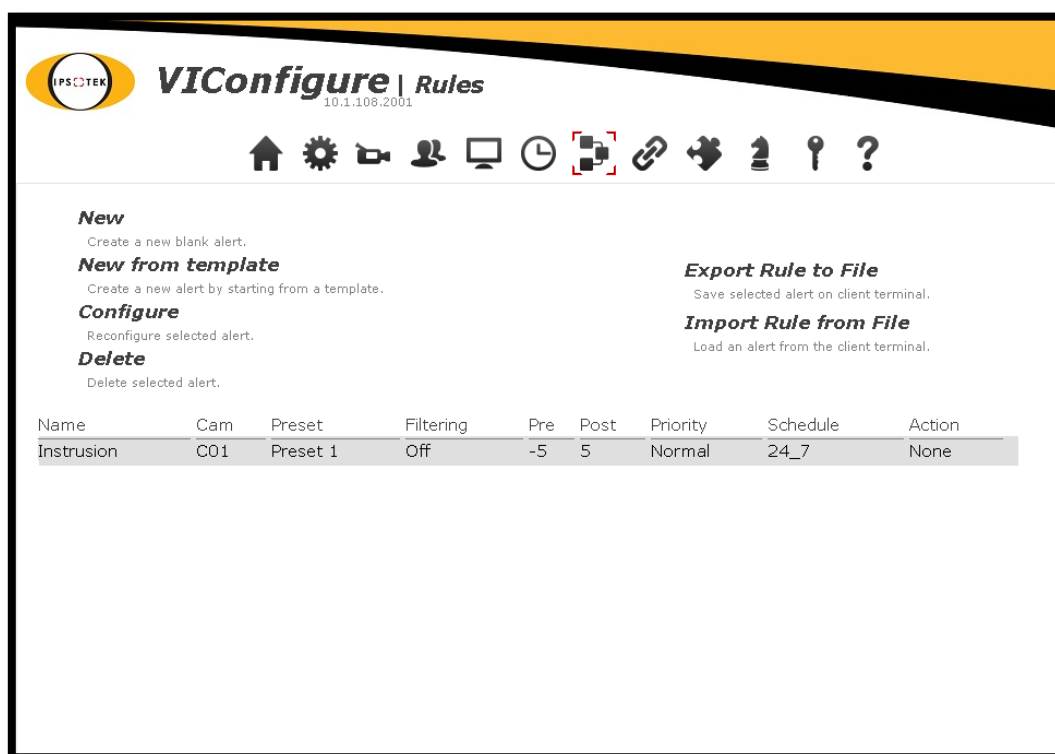


Figure 10: Rules page in VIconfigure with configured intrusion alarm

### IMPORTANT NOTES

- Cameras and Alarms must have the same name in both the VCA Server and Milestone Server.
- It is recommended that the Camera and Alarm names on the VCA Server are reviewed to check consistency with the Milestone Server.

## 9. Example Interface Screenshots

### 9.1 Ipsotek Video Content Analysis Alarm in Smart Client

The images below show an ipostek Video Content Analysis alarm being raised in Milesone XProtect Smart Client 2016 R2.

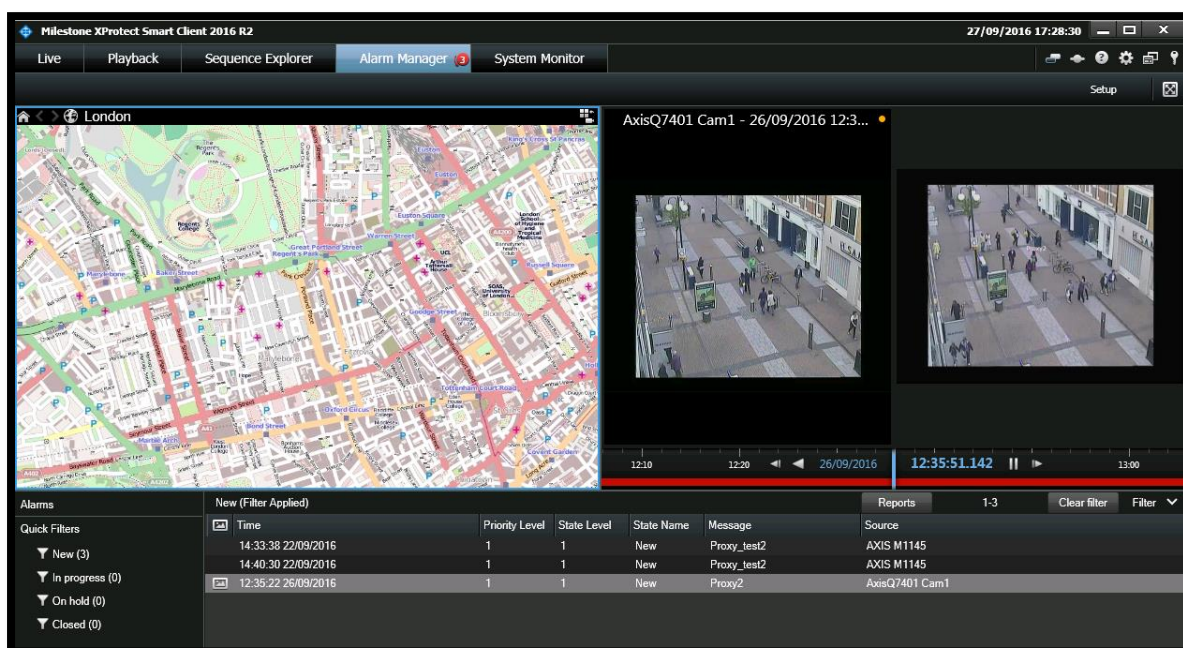


Figure 11: Ipsotek Alarm in Smart Client with Metadata

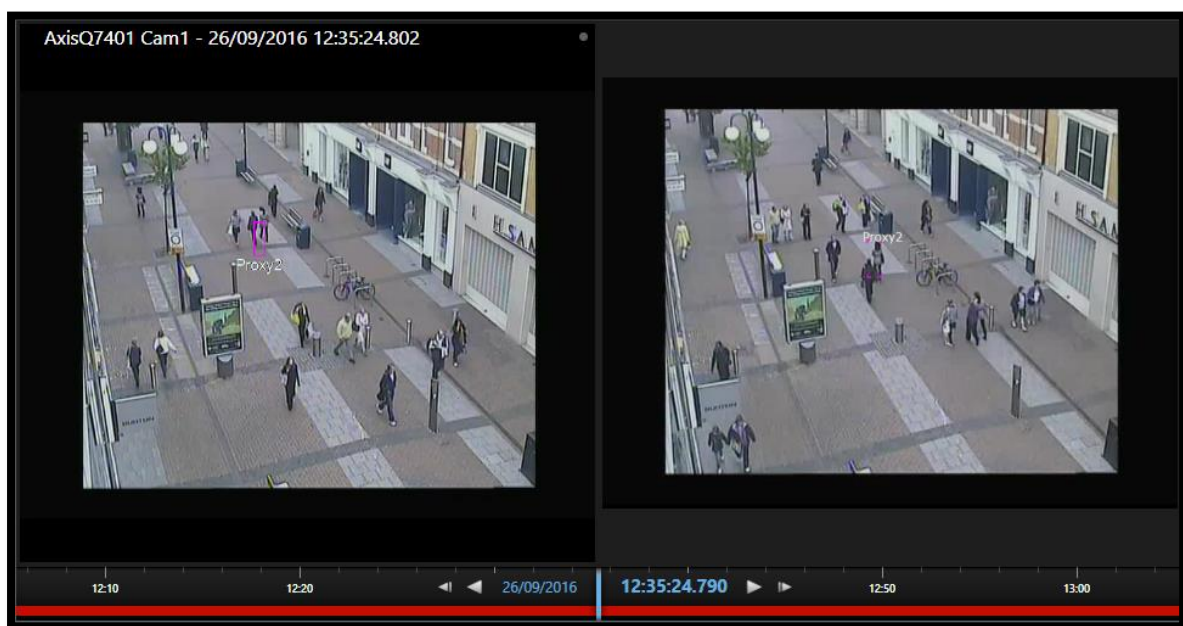


Figure 14 – Close up of alarm video – left and snapshot – right.

## 9.2 Ipsotek Face Recognition Alarm in Smart Client

The images below shows an ipostek Face Recognition alarm being raised in Milesone XProtect Smart Client 2016 R2.

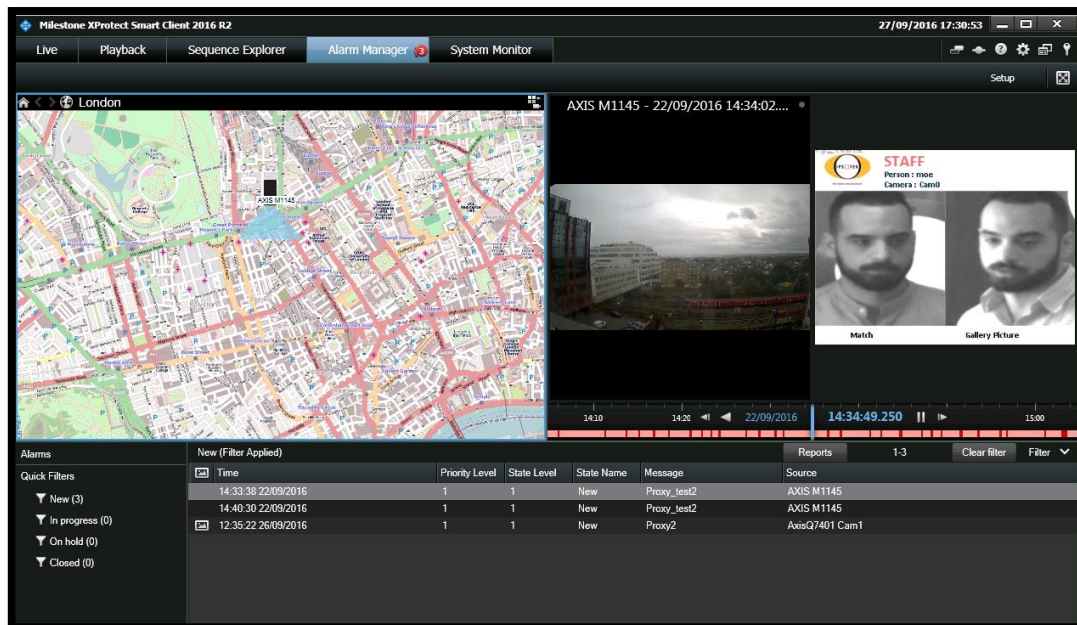


Figure 15 - Face Recognition Alarm example.

## 10. Support

If you require technical support, please use the following details to contact us directly;

<b>Support Telephone</b>	+44 (0) 208 971 8301
<b>Ipsotek Ltd Telephone</b>	+44 (0) 208 971 8300
<b>Support Email</b>	<a href="mailto:support@ipsotek.com">support@ipsotek.com</a>

## 11. General Information

If you have any further questions non-specific to the VI software, please use the following details below to contact one of our representatives;

<b>Ipsotek Ltd Telephone</b>	+44 (0) 208 971 8300
<b>Ipsotek Ltd Fax</b>	+44 (0) 20 8879 6031
<b>Email</b>	<a href="mailto:sales@ipsotek.com">sales@ipsotek.com</a>
<b>Address</b>	Ipsotek Ltd, PO Box 54055, London, SW19 4WE, United Kingdom.
<b>Registered Address</b>	Acre House, 11-15 William Road, London, NW1 3ER, United Kingdom.

Company registered in England and Wales. Number 4272419.