



iCetana

Technical Data Sheet

iCetana Introduction

The iCetana system is a breakthrough system for automatically monitoring large scale video surveillance networks (1000+ cameras). The system applies computer vision and machine learning technologies to show surveillance operators only those camera scenes in which something abnormal is occurring in real-time. Operators are then able to immediately assess and respond to any abnormal security, safety, and operational events, before they escalate.

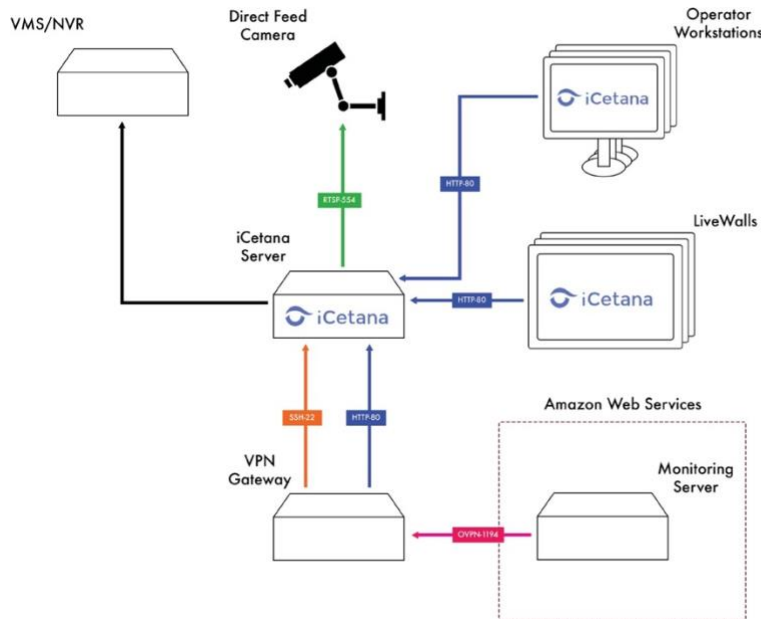
iCetana's system detects a wide variety of events including suspicious behaviour, access control related to people and vehicles, trespassing, crowd gathering and dispersal, precursor events such as probing and dry runs, irregular vehicle movements, assault and fighting. The iCetana System is being utilised globally in city surveillance, key government buildings, critical infrastructure locations, public transportation hubs, university campuses, and shopping malls.

iCetana integrates with existing IP (Internet Protocol) based Video Surveillance Systems (VSSs) by streaming video from VSS components direct to the iCetana server appliance. Video streams can be sourced from the VMS (video management system), NVR (network video recorder), DVR (digital video recorder), encoders or IP cameras. iCetana develops models of normal behaviour for each configured camera.

In order to achieve an accurate model, the iCetana system requires a stable and continuous video stream over the network, including a consistent resolution and framerate. It is essential that the VSS network infrastructure is able to support the traffic generated by modern high resolution VSS component equipment. iCetana provides system health monitoring to ensure that the video streams are optimal and any issues with the video network can be quickly identified. For more information on indicative bandwidth requirements on the VSS infrastructure, see networking requirements section.

Typical Deployment Architectures

iCetana Deployment Direct to Camera or General (Non-Milestone) VMS



NB

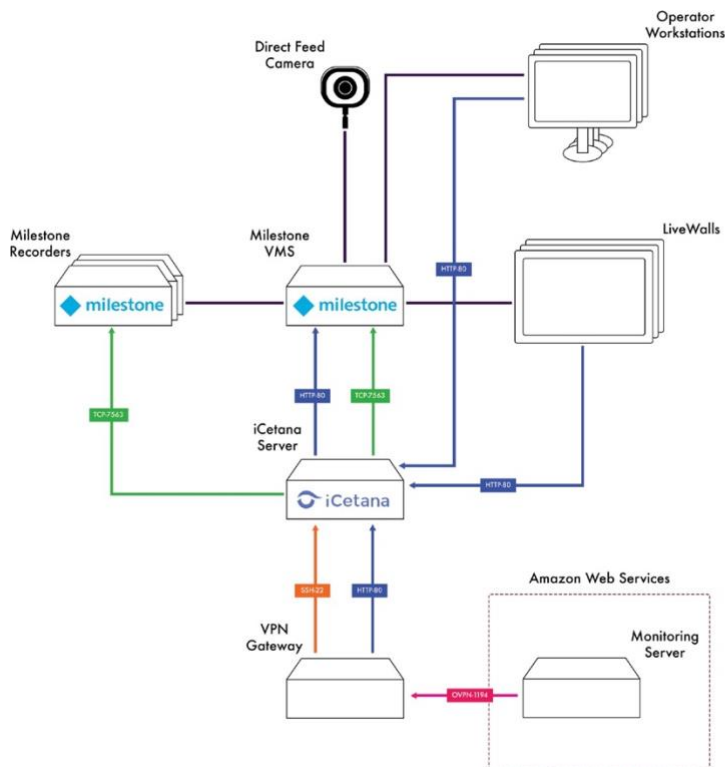
Arrows point in direction of initial connection

The port connection required for the VMS/NVR is dependant on the model/company.

This diagram is not definitive, as the topology is variant based on internal network configuration

*NOTE ALL HARDWARE REFERRED TO IN THIS DIAGRAM IS CLIENT PROVIDED.

iCetana Deployment with Milestone VMS



NB

Arrows point in direction of initial connection

More connections between iCetana Server and Milestone Servers may be required based on Milestone Configuration

This diagram is not definitive, as the topology is variant based on internal network configuration




*NOTE ALL HARDWARE REFERRED TO IN THIS DIAGRAM IS CLIENT PROVIDED.

Technical Data

Supported Video Stream Formats and Protocols

Video Source	Protocol	Codec	Notes
Camera/Encoder	HTTP	MJPEG	-
	RTSP UDP	H.264	Recommended
	RTSP UDP multicast	H.264	-
	RTSP UDP	H.265	Beta support

Video Management System Integration

VMS	Server Streaming	Client Integration
Milestone XProtect		
Genetec Security Centre		Under development for 2019 release

Camera Compatibility

iCetana recommends cameras that are dual, tri or quad stream compatible and able to provide a dedicated stream configured for the frame rate and resolution within the recommended range. This stream should be available to iCetana either directly or via the VMS and through reliable networking with sufficient bandwidth to stream continuously.

System Integration Mode

VMS	Server Streaming
VMS Integrated	<ul style="list-style-type: none"> Camera feeds sourced from the VMS; and iCetana LiveWall™ and Playback tools integrated into VMS client application utilising plugin technology.
VMS Streaming Only	<ul style="list-style-type: none"> Camera feeds sourced from the VMS; and iCetana LiveWall™ and Playback tools provided through standalone iCetana Client Applications suite.
Standalone	<ul style="list-style-type: none"> Camera feeds sourced direct from IP Camera/Encoder; and iCetana LiveWall™ and Playback tools provided through standalone iCetana Client Applications suite.

Video Resolutions and Frame Rates

	Recommended Minimum	Recommended Range	Recommended Maximum
Resolution	704×480 (4CIF)	720×576 (D1) to 1280×720 (720P)	1920×1080 (1080P)
Frame Rate (FPS)	5	7.5 to 15	30
Note: iCetana appliances are provisioned with a capacity of 100 cameras within the recommended range or below. Exceeding the recommended range may affect the capacity of the appliance.			

Network Infrastructure Bandwidth Capacity Requirements

# Video Streams	Format	Resolution	Frame Rate (fps)	Approximate Band- width (Mbps)
100	H.264	720P	15	200
100	H.264	D1	7.5	72
100	MJPEG	D1	7.5	360

Resolution Reference			
Reference	Resolution Pixels	Reference	Resolution Pixels
5MP	2560 x 1920	4CIF	704 x 480
3MP	2148 x 1536	DCIF	528 x 320
1080p	1920 x 1080	2CIF	704 x 240
720p	1280 x 720	CIF	352 x 240
D1 (PAL for Europe)	720 x 576	QCIF	176 x 120

VPN and Firewall Port Usage

Network Interface	Ports	Notes
System	22	Remote access and monitoring
	80	iCetana web management tool and iCetana applications
	443	
	111 and 2049 TCP/UDP (NFS)	Between iCetana Servers
3306 (Database)		
Management	80	Server Management

Network Services Required

Service	Required	Notes
DHCP	No	Require 2x static IPs per server
DNS	No	
NTP	Recommended	Time synchronisation with video management system is recommended

Contact

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