



# Hearty Welcome

EXPECT MORE.

#### PRESENTATION AGENDA



1	WHY MATRIX?
2	WHAT IS HVR?
3	MATRIX SATATYA HVR

4 APPLICATIONS OF SATATYA HVR

5 KEY BENEFITS OF SATATYA HVR

- 6 SATATYA HVR HARDWARE SOLUTION
- 7 KEY FEATURES OF SATATYA HVR
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- 9 FEATURE LIST



# MATRIX SATATYA: THE 3 DIMENSIONAL SECURITY PROFICIENT, PERSISTENT, PREVENTIVE

# WHY MATRIX?



#### 3-Dimensional Benefits of Matrix Video Surveillance

Proficient	Persistent		Preventive		
Reduction in solution cost of bandwidth, storage & manpower		Better reliability against downtime & breakdowns	Enhanced security of physical assets from theft, snooping etc.		
Improved productivity, process compliance and employee discipline	Ŏ	Greater visibility & control	Improved safety of human assets from accidents, hazards and injuries		
Simplicity of management			Proactive solution with early detection and instant notification		

#### What is HVR?



- A hybrid Video Recorder (HVR) is used to record video from both analog and IP cameras
- HVR brings flexibility to video surveillance systems as it can be used in any existing analog security cameras, at same time expanding the system to IP



### MATRIX SATATYA HVR



#### **BENEFITS OF MATRIX SATATYA HVRs**

The Software solution includes free Centralized Management Software (CMS), free web client and free mobile application for remote and centralized management as well as monitoring

#### **CONNECTIVITY DIAGRAM**

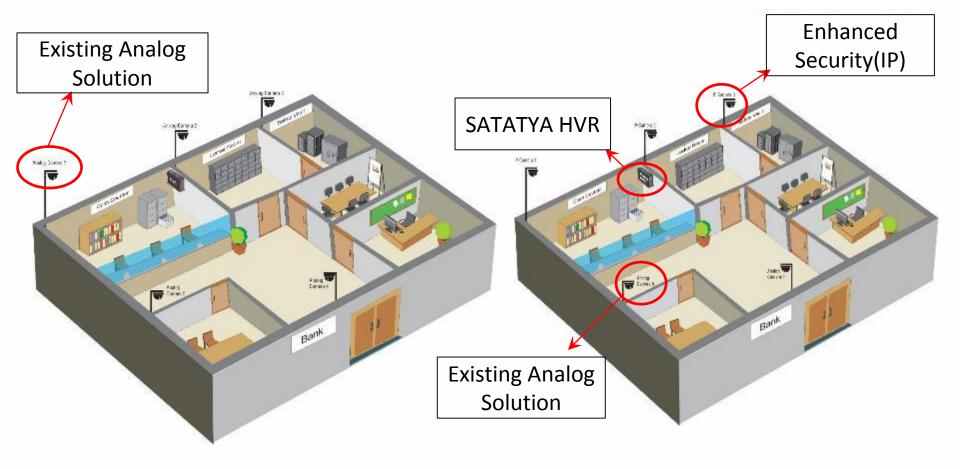




#### HVR APPLICATION FOR AN EXISTING ANALOG SOLUTION

- Video surveillance security is moving from analog to IP technology
- Migration from analog to IP demands infrastructural changes with huge costs
- With Matrix HVR one can install few IP cameras in areas where high security is required (e.g. server room, cash counter etc.)
- Other areas can be secured by the existing analog solution
- HVR helps to upgrade the existing solution to IP without having the need to completely replace the existing solution, thus providing a huge savings in cost.





**Analog Solution** 

**SATATYA HVR Solution** 



#### HVR APPLICATION WHERE A NEW SOLUTION IS TO BE SET

- Matrix HVR solution helps save huge costs for green field implementations
- Incase of green field implementations, the cost of a completely IP project is huge as compared to a project which is a mix of analog & IP

# CASE 1: IP SOLUTION COST OF 8 IP CAMERAS = RS.40K NO ANALOG CAMERA COST OF NVR = RS.6K COST OF SOLUTION = RS. 46K COST OF SOLUTION = RS. 29K CASE 2: HYBRID SOLUTION CASE 2: HYBRID SOLUTION COST OF 4 IP CAMERAS = RS.20K COST OF 4 ANALOG CAMERAS = 4K COST OF HVR = 5K TOTAL COST OF SOLUTION = RS. 29K

Total savings with hybrid solution is about Rs.17K

<sup>\*</sup> All calculations are based on approximate market values



Cost Effective Installation of SATATYA HVR

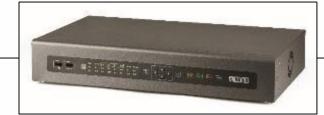
Hotel Entrance: IP Camera



Hotel Kitchen: Analog Camera

Hotel Reception: IP Camera

Hotel Parking: Analog Camera





# **KEY BENEFITS**



#### 1. EASE OF MONITORING & MANAGEMENT



*CASCADING* helps users to monitor multiple NVRs and HVRs from a single device without a server. This simplifies monitoring and management to a great extent

Other features
TCP based notifications
Health monitoring
Remote monitoring
E-map
Sequencing
Camera grouping



#### 2. REDUCED STORAGE



ADAPTIVE RECORDING helps save storage and increase storage up to a whooping 50%

#### **Other features**

Camera wise recording and backup retention

Scheduled and manual backup to FTP, NAS and USB

Camera wise manual and scheduled centralized recording



# ₩

#### 3.BANDWIDTH OPTIMIZATION

TCP BASED NOTIFICATIONS sends push notifications about functioning status of all cameras & devices in less than 5Kbps bandwidth.

#### Other features

Camera wise constant & variable bit rate

Video compression techniques: H.264/MPEG-4/Motion JPEG

Higher Throughput: 144 Mbps Ethernet ports for distributing traffic network



#### 4.REAL TIME / PREVENTIVE SECURITY



CALLING FROM MOBILE APP to make calls to the person whose number has been linked to camera in the SATATYA HVRs. Each camera can be assigned a separate number. This simplifies the process of taking action in case of any unexpected event.

#### Other features

Event recognition like motion detection, view tamper and connection failure

Alerts for the above events in the form of notifications via SMS, email with snapshot, alarm, buzzer etc. help take quick decisions in order to prevent any mishap





#### **5.QUICK INVESTIGATION**

TIMELINE AND EVENT BASED SEARCH WITH SYNCHRONOUS PLAYBACK helps search based on the time of the day, date, event via different color codes for different events enabling the user to investigate quickly

#### Other features

TCP based notifications

SMS & email notification with snapshot

Pre and post recording

Clip export





#### **6.CENTRALIZED SECURITY SOLUTION**

INTEGRATION WITH ACCESS CONTROL helps in providing a centralized security solution by supporting database level integration with Matrix access control software

#### **Other Integrations**

Integration with fire alarm

Integration with other third party sensors



# 2

#### 7.DATA SECURITY

- Three authorization access levels for users: Administrator, Operator and Viewer
- IP & MAC based access & blocking of users
- RAID 0 and RAID 1 Support to prevent loss of data



#### **8.EASE OF CONNECTIVITY**



Now you can connect from anywhere even in the absence of Wi-Fi connectivity through MOBILE BROADBAND (3G/LTE) AND FREE MATRIX DNS solutions.

#### **Other Features**

Auto-configure camera option: Mention IP range and device discovers the camera automatically from the range selected

UPNP: Permits networked devices to discover each other for data sharing and communication



#### 9.COMPATIBILITY



All ONVIF or RTSP compliant cameras can be connected to matrix devices & hence this helps in providing interoperability

























Leading the Way in Megapixel Video"







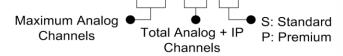
# SATATYA HVR HARDWARE SOLUTION

#### MATRIX SATATYA HVR



#### **NOMENCLATURE**

## **SATATYA HVR0408S**



#### **HVR VARIANTS**

#### **HVR Standard**

**HVR0408S** 

HVR0824S

**HVR1624S** 

# HVR1624S Rear



#### **HVR Premium**

HVR0408P

HVR0824P

**HVR1624P** 

#### HVR1624P Rear



#### HVR1624P Front



# HVR0408



	Premium	Standard		
Channels	4 Analog Channel and 4 IP Channels or 8 IP Channels	4 Analog Channel and 4 IP Channels or 8 IP Channels		
Output	1 HDMI, 1 VGA,1 CVBS Spot	VGA		
Audio	2 Audio input & 1 Audio Output	-		
Alarm	2 Alarm input & 1 Alarm Output	-		
Storage	1 SATA HDD Support(6TB)	1 SATA HDD Support(6TB)		
Throughput	48Mbps(16Mbps Downlink/32Mbps Uplink)	48Mbps(16Mbps Downlink/32Mbps Uplink)		

# HVR0824



	Premium	Standard		
Channels	8 Analog Channel and 16 IP Channels or 24 IP Channels	8 Analog Channel and 16 IP Channels or 24 IP Channels		
Output	2 HDMI, 1 VGA , 1 CVBS 1 HDMI, 1 VGA Main, 1 CVBS Spot Spot			
Audio	8 Audio input & 1 Audio Output	2 Audio input & 1 Audio Output		
Alarm	8 Alarm input & 3 Alarm Output	4 Alarm input & 1 Alarm Output		
Storage	Storage 4 SATA HDD Support(6TB) 1 SATA HD			
Throughput	144 Mbps (48 Mbps Downlink / 96 Mbps Uplink)	144 Mbps (48 Mbps Downlink / 96 Mbps Uplink)		

# HVR1624



	Premium	Standard		
Channels	16 Analog Channel and 8 IP Channels or 24 IP Channels	16 Analog Channel and 8 IP Channels or 24 IP Channels		
Output	2 HDMI, 1 VGA , 1 CVBS 1 HDM Main, 1 CVBS Spot			
Audio	16 Audio input & 1 Audio Output	2 Audio input & 1 Audio Output		
Alarm	8 Alarm input & 3 Alarm Output	4 Alarm input & 1 Alarm Output		
Storage	4 SATA HDD Support(6TB)	1 SATA HDD Support(6TB)		
Throughput	144 Mbps (48 Mbps Downlink / 96 Mbps Uplink)	144 Mbps (48 Mbps Downlink / 96 Mbps Uplink)		

# **Technical Specifications**



MODELS		SATATYA HVR0408S	SATATYA HVR0824S	SATATYA HVR1624S	SATATYA HVR0408P	SATATYA HVR0824P	SATATYA HVR1624P
VIDEO	VGA Main	1	1	1	1	1	1
	Spot Output	X	1	1	X	X	Х
	HDMI Main	Х	1	1	1	2	2
	HDMI Spot	X	X	X	X	X	Х
	CVBS Main	X	X	X	X	1	1
	CVBS Spot	X	X	X	1	1	1
	Loop Output	X	X	X	X	8	16
ALIDIO	Input	X	2	2	2	8	16
AUDIO	Output	X	1	1	1	1	1
ALARM	Input	X	4	4	2	8	8
	Output	X	1	1	1	3	3
	Storage Calculator	✓	✓	✓	✓	✓	✓
INTERFACES	10/100Mbps Adaptive	1	X	X	1	X	Х
	Ethernet Interface						
	Gigabit Ethernet Interfaces	X	1	1	Χ	2	2
	USB Ports	2	2	2	2	4	4
	RS-485 (For PTZ Control)	Х	1	1	1	1	1



# **KEY FEATURES**

# Cascading

#### What?

Locally monitor all the cameras with a single device from other devices connected in the network. Connect up to 480 cameras (20 devices)

#### How?

Master device communicates to each device (slave) in the network for accessing their streams (analog + IP)

#### **Benefit?**

Centralized control, ease of management, reduction in cost of server

#### **Applications?**

CEO/HOD monitoring, Multi floor device monitoring









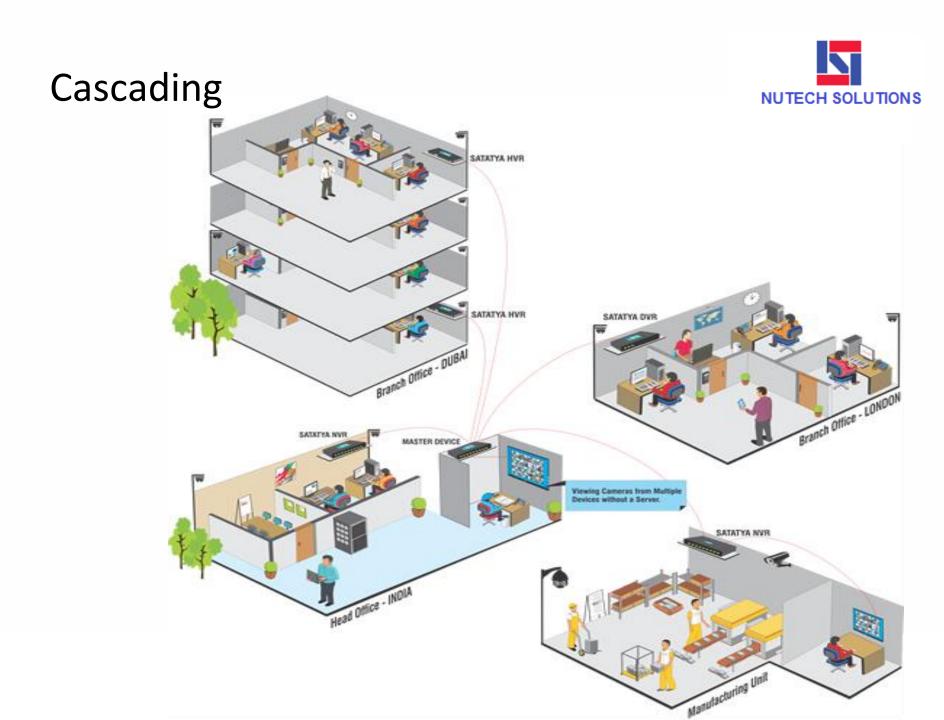


Manager IT Person









#### E-MAP

#### What?

Monitor the actual cameras using the virtual cameras placed on the JPEG map of the location

#### How?

On the layout plan of the area to monitor, place camera icons and link to actual cameras. on incidents, these icons start blinking

#### Benefit?

Centralized control with simplified and effective monitoring

#### **Applications?**

Alert monitoring for larger area on a single window mapping Large manufacturing plants, Residential area plotting





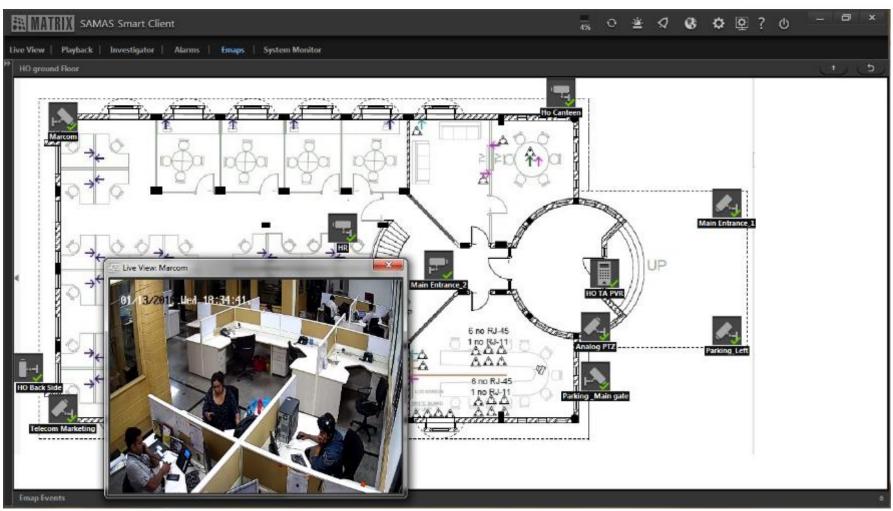






# E-MAP





# Adaptive Recording



#### What?

Adaptive recording is a method of recording which helps achieve optimized storage on HDD

#### How?

Automatically changes frame parameters during recording for configured time, thereby saving storage

#### **Benefit?**

Helps save lots on storage & bandwidth costs and increases storage days up to 60%

#### **Applications?**

Suitable for places like Malls, Corporates, Banks, retail stores where too much activity does not take place 24\*7







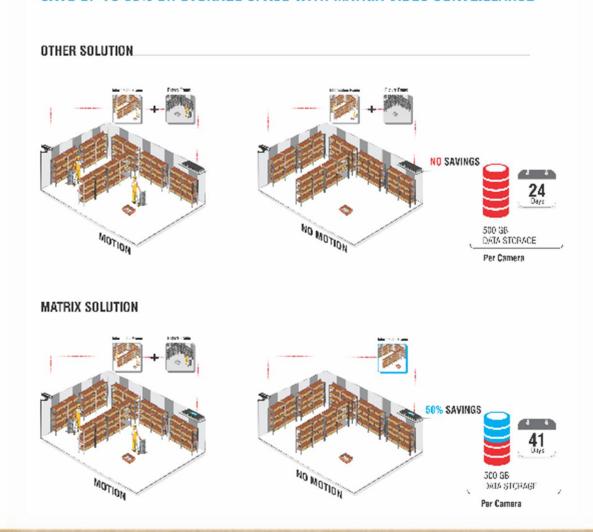




# Adaptive Recording



#### SAVE UP TO 50% ON STORAGE SPACE WITH MATRIX VIDEO SURVEILLANCE





# Camera-Wise Recording Retention

Manufacturing Residential

#### What?

Camera-wise flexibility to assign number of retention days as per the importance of camera

#### How?

User can select number of recording retention days per camera. Flexibility to choose between 1-999 days for each camera

#### **Benefit?**

Save unnecessary wastage of recording all cameras for same number of days. Flexibility of assigning different storage days to different cameras save storage by 30%

#### **Applications?**

Suitable for places like Banks, Corporates etc. Here cameras of high importance like server room can be stored for more number of days whereas Cameras with low importance like canteen can be stored for lower number of days

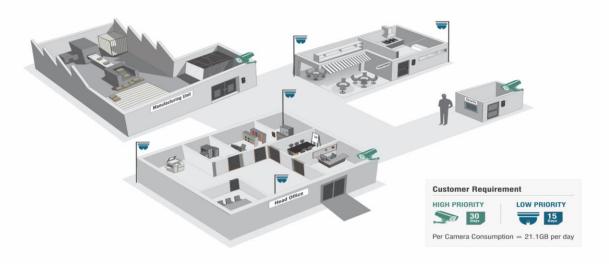
Corporates

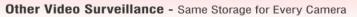
# Camera-Wise Recording Retention



#### **CAMERA-WISE RECORDING FLEXIBILITY**

Save up to 30% on Storage Costs





3 HIGH PRIORITY CAMERAS





5 LOW PRIORITY CAMERAS







**5TB Hard Drive** 

Matrix Video Surveillance - Configurable Storage for Each Camera

3 HIGH PRIORITY CAMERAS





5 LOW PRIORITY CAMERAS







# TCP Based Notifications



What?

Provides functioning status of cameras and devices in less than 5Kbps

How?

Each bit carries information like recording, motion, camera tamper etc.

Benefit?

Centralized control with low bandwidth

**Applications?** 

ATM monitoring, Branch connection monitoring













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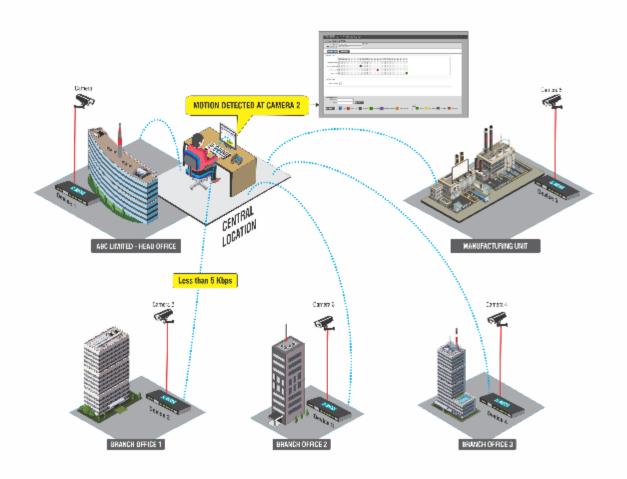






# **TCP Based Notifications**





# SMS & Email With Snapshot



What?

Notification to any person irrespective of his location in real-time

How?

On detection of security threat or fault in functioning of cameras or recorders, system will send SMS (without sim card) or email with snapshot

**Benefit?** 

Preventive security
Centralized control irrespective of location

# **Applications?**

E-mail with Snapshot, SMS on IVA alerts, E-mail for Reports





















Manager IT Person

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# **Health Monitoring**

## What?

Centralized functioning status of the solution

# How?

Real-time information about cameras, devices, network, server and storage performance

# **Benefit?**

Improved security and safety

# **Applications?**

Monitoring storage and connection status Check remaining resources for server











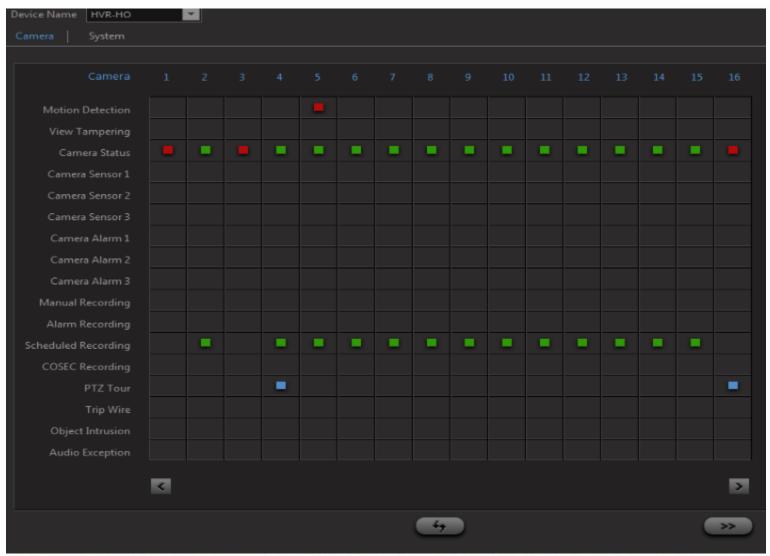




Manager IT Person

# Health Monitoring







# Scheduled & Manual Backup on FTP, NAS

## What?

Enables user to take backup of recordings of various cameras manually or as scheduled on NAS or FTP

## How?

Backup can be done camera-wise depending on the importance of the recorded video, data could be then deleted from device and retrieved from NAS,FTP

# **Benefit?**

Prevents from data loss Helps save on storage

# **Applications?**

In case of theft when the culprit damages the devices, the backup is still present as evidence on USB,FTP or NAS





















Manager IT Person

atchman P

# **Auto-Configure of Cameras**



## What?

Automatically configure cameras with their stream parameters directly from the recording device. No need to set from the respective camera page

## How?

Adds cameras automatically to the video recorders in the defined IP range

# **Benefit?**

Saves Configuration time Improves Productivity

# **Applications?**

Helps IT personnel of any corporate or manufacturing industry





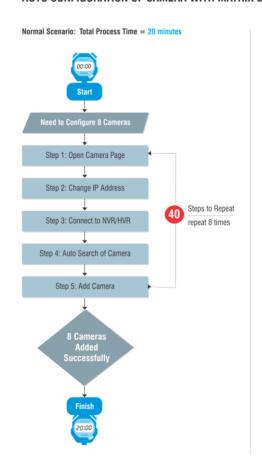


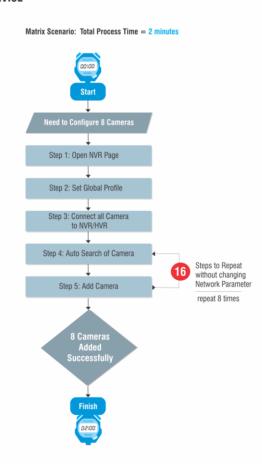


# **Auto-Configure of Cameras**



#### **AUTO CONFIGURATION OF CAMERA WITH MATRIX DEVICE**







# **Event Recognition-Trip Wire**

## What?

Virtual line on the image to separate dangerous or high security area

## How?

It identifies any motion over a virtual line and sends notification of a risk in the form of video pop up, SMS, email, audio or alarm

# **Benefit?**

Enhance safety of human assets, increased real-time security, quick investigation, improved discipline

# **Applications?**

Prevention of intrusion, alert on crossing danger zone, time track between two trip events



















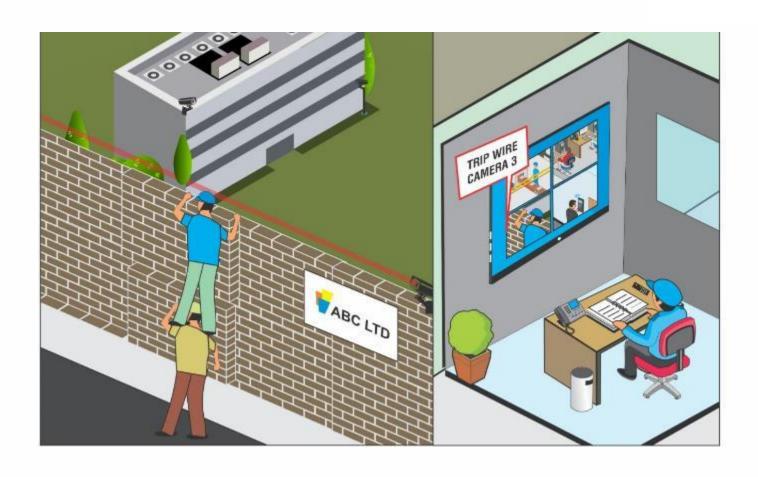


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chman Police



# Event Recognition-Trip Wire





# **Event Recognition- Motion Detection**

## What?

Mark dangerous area where motion could mean a tragedy

## How?

Identifies difference between two frames. If difference is found for a defined time, it sends notifications like SMS, email, audio, video pop up, alarm etc.

# **Benefit?**

Safety of human asset
Improve productivity and efficiency

# **Applications?**

Secure still object, investigation of critical object theft, unauthorized object picked at retail out let or mall





















Manager IT Person

**Natchman** 



# Calling From SATATYA Sight

## What?

Calling a predefined number associated with a camera

## How?

Mobile application uses the sim card of the mobile device to call the assigned number. Each camera can be assigned a separate number

# **Benefit?**

Real-time security
Remote monitoring and control

# **Applications?**

Factory premises, ATM security, productivity monitoring on production line













**Manager IT Person** 







Watchman

n Polic

# Calling From SATATYA Sight



# Calling from Mobile Sight Act Prompt, Prevent Mishaps - Call the Right Person at the Right Time

#### Other Video Surveillance Solution



#### Matrix Video Surveillance Solution



# Playback & Search



## What?

Timeline based search enables to search a particular event at a particular time of the day for any camera. Pre and post recording can also be done

# How?

User can scroll and set the camera number, timeline, event etc. From the GUI. The color codes used to indicate the recording type make it simpler for the user to search for the required video

# **Benefit?**

Saves a huge amount of time on investigation

# **Applications?**

Factory premises, quick investigation on theft, murder etc.













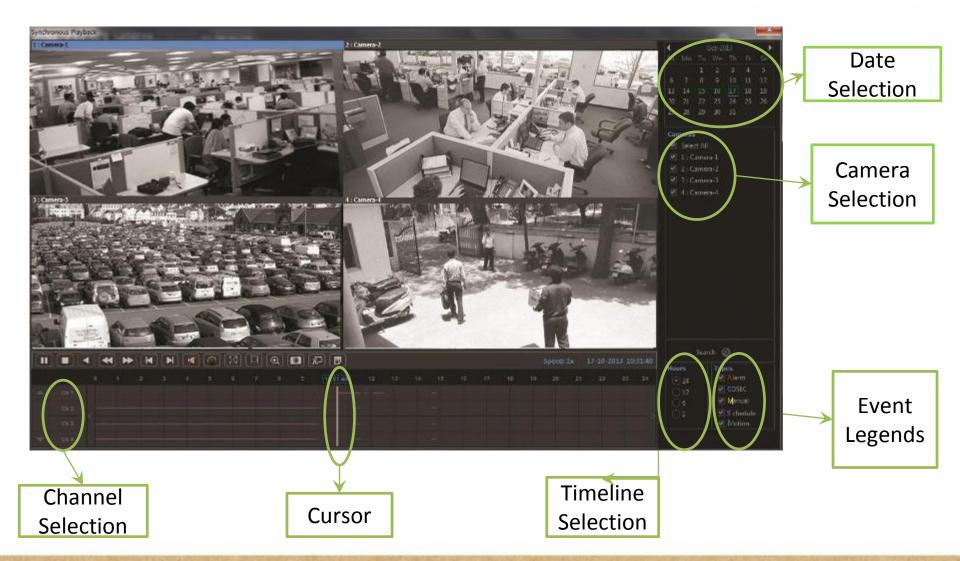






# Playback & Search







# Integration

## What?

Database level Integration with Matrix access control, other integration with fire alarm system, sensors etc.

## How?

Based on trigger by integrated application, cameras take a snapshot or start recording. Search based on such events can be done

# **Benefit?**

Detailed and quick investigation Improved productivity and discipline Complete automation of process

# **Applications?**

Identify unauthorized people in corporates, offices or hotels











# Integration







# SOFTWARE SOLUTION

# Centralized Management Software



- Centralized control of multiple NVRs and HVRs
- 36 channels/ up to 10 pages
- E-map monitoring
- Different layout styles
- Audio/visual, video alerts
- Recording plan, monitoring plan
- Device/camera group
- Playback search from device, CMS or backup
- Event log search



# Web Client



- Remotely access live or stored videos of SATATYA devices over the internet
- Configure the device monitor
- Asynchronous/synchronous playback
- Event log
- Camera wise record, search, storage, backup
- Health status of device
- PTZ settings
- User account management



# SATATYA SIGHT



- Live access of SATATYA devices using mobile phones
- 2×2 layout in live view
- Digital zoom
- Up to 50 different HVR support
- Calling appointed personnel from SATATYA SIGHT
- PTZ camera control
- Favorite channel allocation for quick view
- Snapshot in live view
- Main stream and sub stream for live view







# FEATURE LIST



#### **Channels and Resolution**

8/24/64 Channels Mega-pixel Resolution\* D1, 720P, 1080P 48/144/256/354Mbps Throughput

#### **Ease of adding cameras**

Auto configure of cameras UPnP

## **Recording Types**

Manual and Scheduled
Pre-alarm and Post-alarm
Trigger based
Two-way audio
Privacy masking
Motion detection

## **Bandwidth Optimization**

H.264, MPEG-4 and Motion JPEG Video Compression Dual Streaming Configurable Bit rate

#### **Monitoring**

1x1, 2x2, 3x3, 4x4, 5x5, 6x6, 8x8, 5+1, 7+1, 4+3, 8+2, 12+1
Single, Sequential, PIP1 and PIP2
Digital Zoom on Live and Playback
User Selectable Display Sequence
Cascading
TCP Based Notifications
System Health Status
PTZ Control
Video Snapshot

#### **Storage and Backup**

Up to 24TB Storage Capacity
Adaptive Recording
Camera-wise recording retention
RAIDO and RAID1
Crop and backup
Advanced storage management
Storage on NAS, FTP and External HDD
Export in AVI and Native File Format
Upload Image in JPEG Format
Manual and Scheduled Backup
Storage on FIFO



## **Search and Playback**

Timeline Based Search

Log/Event Search

**Synchronous** 

Asynchronous

Live and Remote Playback

**Different Speed Control** 

Fast Reverse

Slow Reverse

**Fast Forward** 

Slow Forward

**Next and Previous Frames** 

#### **Intelligent Features**

**Pentaplex Function** 

Motion Detection\*

Trip Wire\*

Intrusion detection\*

**Direct Streaming from Camera** 

Privacy Masking\*

View Tampering\*

Day Light Saving Time (DST)

Integration with Access Control System (ACS)

#### **Events**

Disk Error

Disk Volume Full

**System Alarm Detection** 

Manual Trigger

**Motion Detection** 

Trip Wire\*

Intrusion Detection\*

**View Tamper** 

Camera Disconnect

Power On

Storage Alert

#### **Action on Events**

**Buzzer Notifications** 

**Email Notifications with Snapshots** 

**Recall PTZ Pre-set Position** 

**Recording on Selected Channels** 

**SMS Notifications** 

Turn on/off Alarm Outputs

Upload Images on FTP/Email/Network Drive



#### **Remote Function**

Live Camera Monitoring with PTZ Control Menu Configuration Record Video Live View and Playback

#### Control

IR Remote Control Front Panel Backup Button Wireless Mouse

#### Alarm\*

Motion Detection\*
Video Loss
Video Tamper\*
Trip Wire\*
Intrusion Detection\*

## Security

IP Access Control List Block Online Users Secure Remote Access Video Access Rights

#### **System**

Firmware Upgrade
10,000 Events Log
3 User Access Levels (Default)
Embedded Web Server
Intuitive GUI
Linux Embedded OS
Online Users List
Multiple Concurrent Login Sessions (Up to 120)
Multiple Programmable Users
Web based Interface
Check System Health Status

## **Centralized Monitoring System (CMS)**

36 Channels Simultaneous
Display/up to 10 Pages
Connect Multiple NVRs, HVRs and DVRs
Create Monitoring Plans
Grouping of Multiple Cameras
Local Storage and Playback
Local Scheduled Recording
Centralized Recording and Backup



#### **Device Client**

Different Layout Styles
Asynchronous/ Synchronous Playback
Camera wise Recording, Backup and Storage
Main Stream and Sub Stream Options
Camera and Event wise Actions
Broadband and Static Routing Options
IP and MAC Address Filtering
User Account Management

#### **Mobile Client**

Support up to 50 SATATYA Devices 2\*2 Layout in Live View Remote Control for PTZ Cameras Device and Camera Configuration Playback of Recorded Files Favorite Channel Snapshots Calling a Concerned Personnel in case of any Event



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Thank You.