MATRIX®

SECURITY SOLUTIONS

Researched, Designed & Manufactured in INDIA

50+ Countries | 1M+ Customers

CENTRALIZED VIDEO SURVEILLANCE

MATRIX®
SECURITY SOLUTIONS

Why Video Surveillance?

Why Video Surveillance?: Safety of People

Safety at Workplace

Safety during Night Hours and Holidays

Industrial Safety at Plants, Project Sites, Mines, etc.

Safety during Commuting

Why Video Surveillance?: Security of Assets

Infrastructure Security – Premises and Equipment

Material Security - Pilferage and Thefts

Data Security - Server Rooms or Data Centers

IPR Security - Designs, Processes, Formula

Why Video Surveillance?: Productivity

Productivity at Shop Floor

Productivity at Office Premise

Productivity between Departments

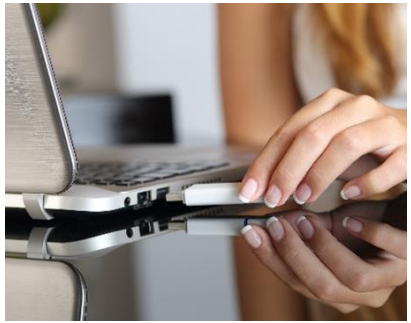
Productivity by Improving Processes

Why Video Surveillance?: Compliance

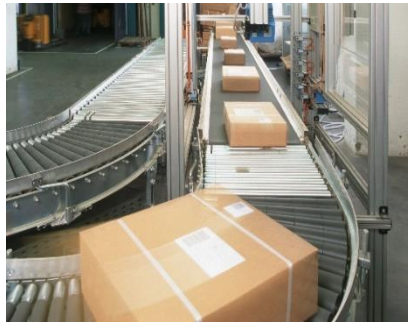
Internal Process Compliance

External Audit Compliance

Compliance for Digital Evidence



Compliance for Customer Requirements



Traditional v/s Matrix Video Surveillance

Traditional Video Surveillance	Matrix Centralized Video Surveillance
Hardware-based	Software-centric
Standalone	Centralized
Scattered	Integrated
Unintelligent	Intelligent
Rigid	Flexible
Closed	Open
Limited	Versatile (Innovative Functions)
Reactive	Proactive
Outdated	Futuristic

SATATYA Differentiators - Architecture

- Centralized
  - Top-Down, Central Planning, Designing, Implementation and Operation
- Scalable
  - 100,000 Cameras
  - 10,000 Locations
  - Unlimited Users
- Modular
  - Fits any Organization Hierarchy and Structure
- Software-centric
  - Intelligence, Flexibility, Automation, Efficiency and Scalability
- Complete Portfolio
  - Applications, VMS, NVR and IPC

SATATYA Differentiators - Performance

- Technology
  - EXMOR, H.265, 4K and RAID
- Redundancy
  - Safe Failover at all Levels
- Robust
  - Validated on “Test to Fail” Philosophy
- Simple
  - Easy to Use and Manage without Technical Experts

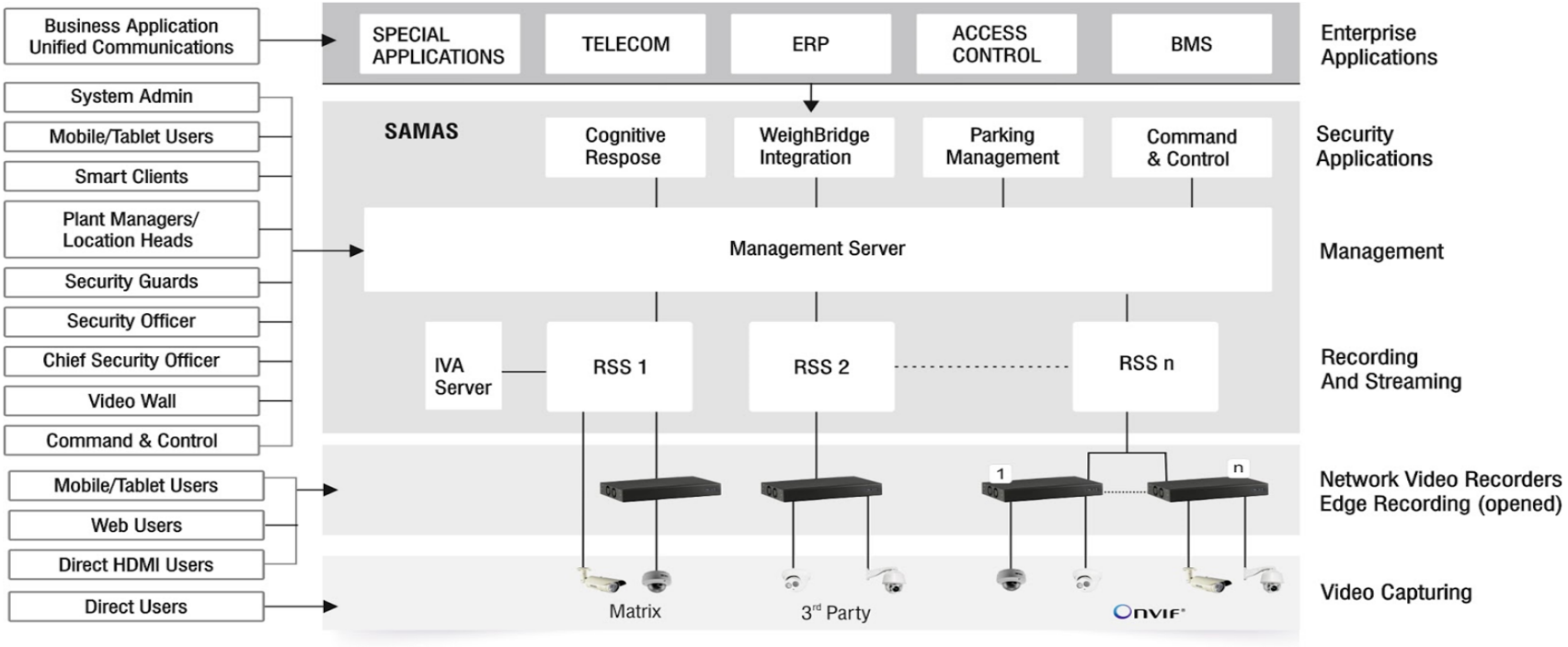
SATATYA Differentiators - Functions

- Intelligent Video Analytics
  - Automation and Preventive Security
- Cognitive Response Engine
  - Automate Surveillance Scenarios
- Innovative Functions
  - Surveillance Beyond Basic “Capture-View-Store-Play”
- Integration
  - Access Control, POS, BMS, Fire, Weighbridge and ERP
- Open System
  - ONVIF, APIs and Database Integration

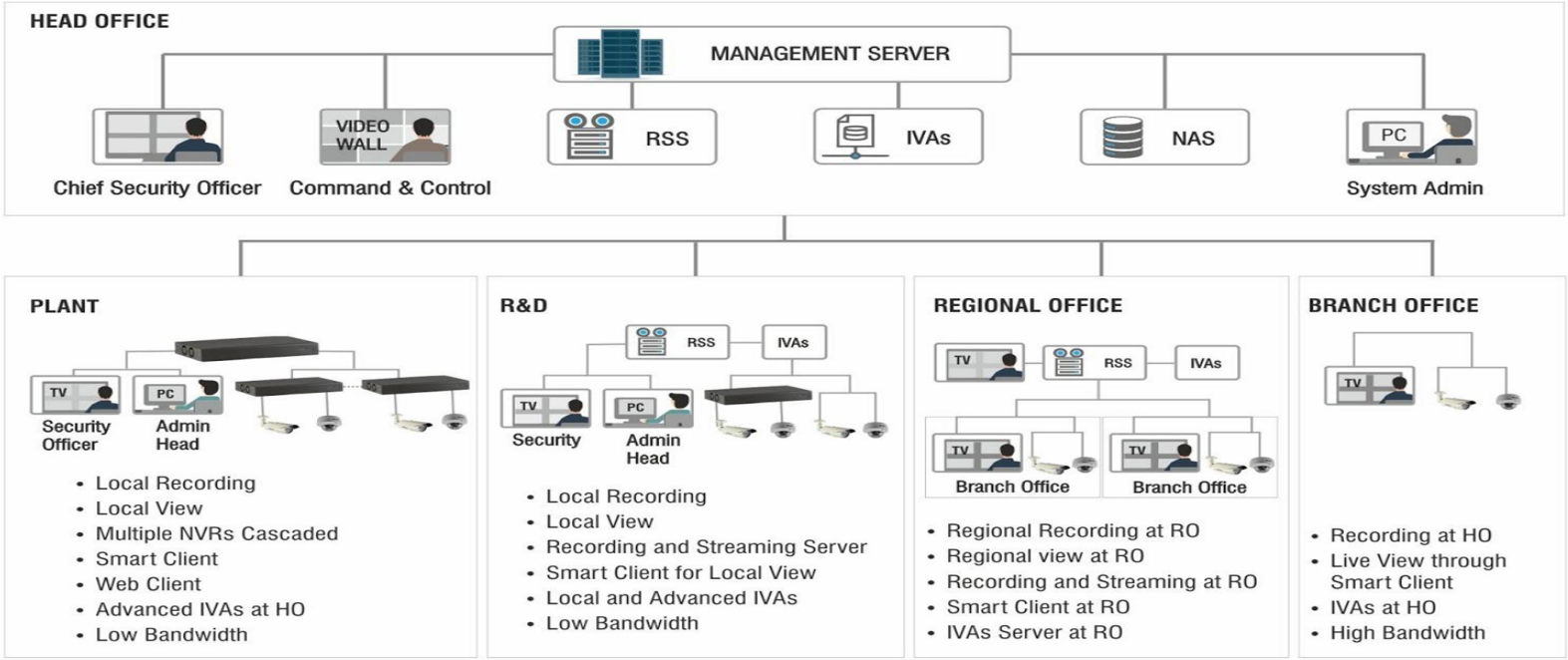
SATATYA Functions

- Video Capturing
- Video Live View
- Video Recording
- Video Streaming
- Playback and Investigation
- Notifications and Alarms
- Storage, Backup, Archival, Retrieval
- Command and Control
- Multi Locations and Centralizations
- Intelligent Video Analytics

SATATYA Architecture

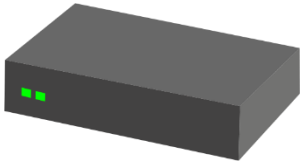


SATATYA Deployment



SATATYA Building Blocks

SATATYA SAMAS: Video Management Software



SATATYA PARAM: Network Video Recorder

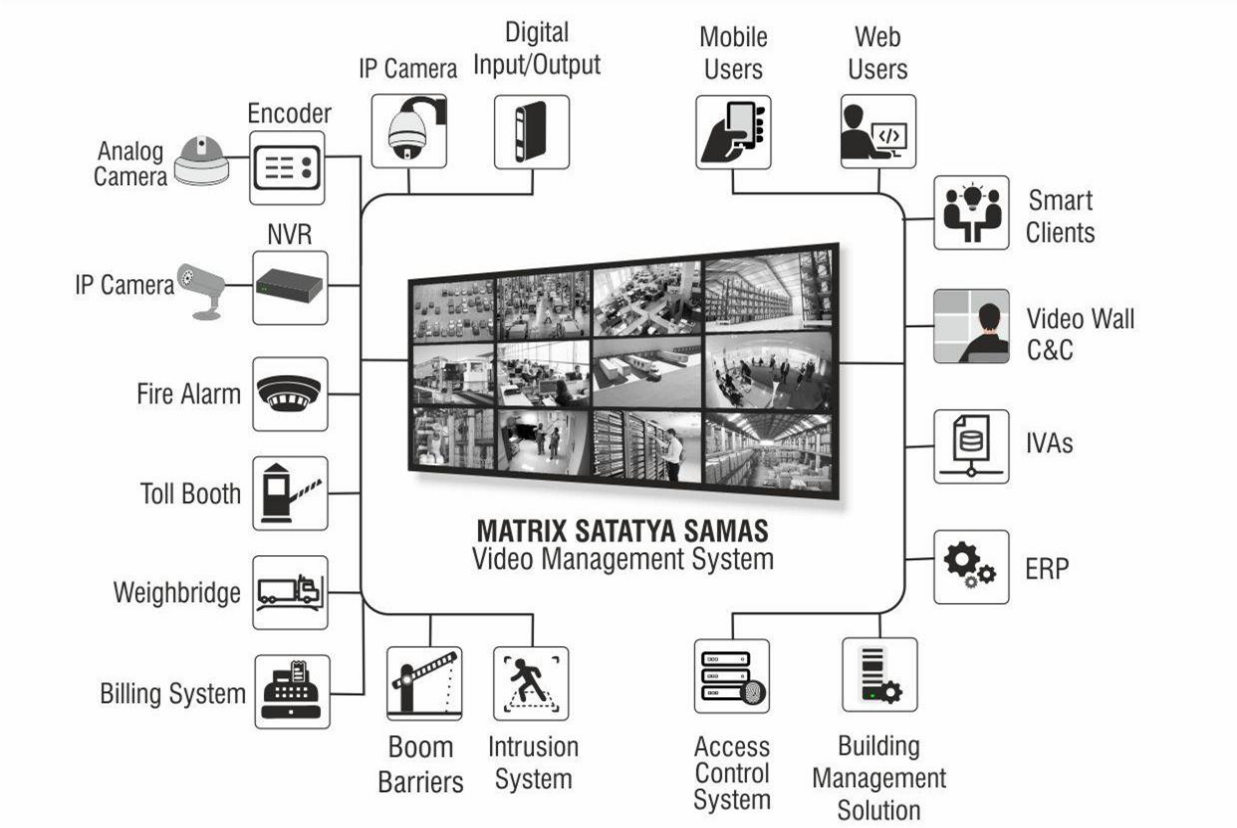
SATATYA NETRA: IP Camera

Desktop and Web Clients

Mobile Applications

SATATYA SAMAS: Video Management System

SATATYA SAMAS Interfaces



SATATYA SAMAS Server Building Blocks

Management Server

- System Admin
- Users Roles-Rights
- Devices Managements (RSS, NVR, Camera)
- Data Management
- Integration

Recording and Streaming Server (RSS)

- Fetch Video Streams from Cameras and NVRs
- Recording
- Streaming to Users for Live Viewing
- IVA Integration

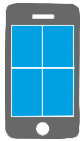
SATATYA SAMAS Client Building Blocks

System Admin Client

- Users Management
- Devices Management
- Storage and Backup
- System Alerts and Maintenance

Smart Client

- Live View
- Playback
- Investigation
- Events, Alerts and Pop-ups
- Reports and Analytics



Mobile Client

- Mobile Application
- Live View
- Playback

Media Client

- Transient Users w/o Log-in Rights
- Video Access

SAMAS Differentiators: Centralized Control

- Distributed Architecture
  - Multi Location Deployment to Match Organization Structure
- Multi-Monitors and Video Wall
  - Central, Regional and Local Monitoring
- User Roles and Rights
  - User-wise Roles and Rights for Privacy and Security
- Integration
  - Access Control, POS, BMS, Fire, Weighbridge and ERP
- Evidence Lock
  - Restrict Deletion or Overwriting of Important Evidence

SAMAS Differentiators: High Availability

- Server Redundancy
  - Multiple RSS for Uninterrupted Monitoring and Data Loss
- Network Redundancy
  - Multiple ISP for Uninterrupted Connectivity
- Health Status
  - Status of Servers, NVRs, Cameras, Storage and Sensors
- Retrieve Edge Data
  - Retrieve Recording from Edge Devices on Network Brownout

SAMAS Differentiators: Easy Search and Review

- Global Search
  - Automatic Fetch Footages from All Global Sources
- Power Investigator
  - Search Recorded Video by Analytics
- Day Highlight
  - Summary File for Quick Overview
- Time Lapse
  - Quick Overview by Reducing Frames

SAMAS Differentiators: Bandwidth Optimisation

- Camera-wise Recording and Backups
  - Separate Retention Days for Every Camera
- Multiple Stream Policies
  - Different Profiles for Recording, Local and Mobile Views
- Adaptive Edge Streaming
  - Adjust FPS based on Events

SAMAS Differentiators: Prompt Notifications

- Notifications
  - Video Pop-up, Email with Snap, Audio Alarm and SMS
- Manual and Auto Clip Export
  - Event based Clip Export in Popular Formats
- User Defined and Triggered Events
  - Send Clips, Operate Devices, Generate Alarms on Predefined Events

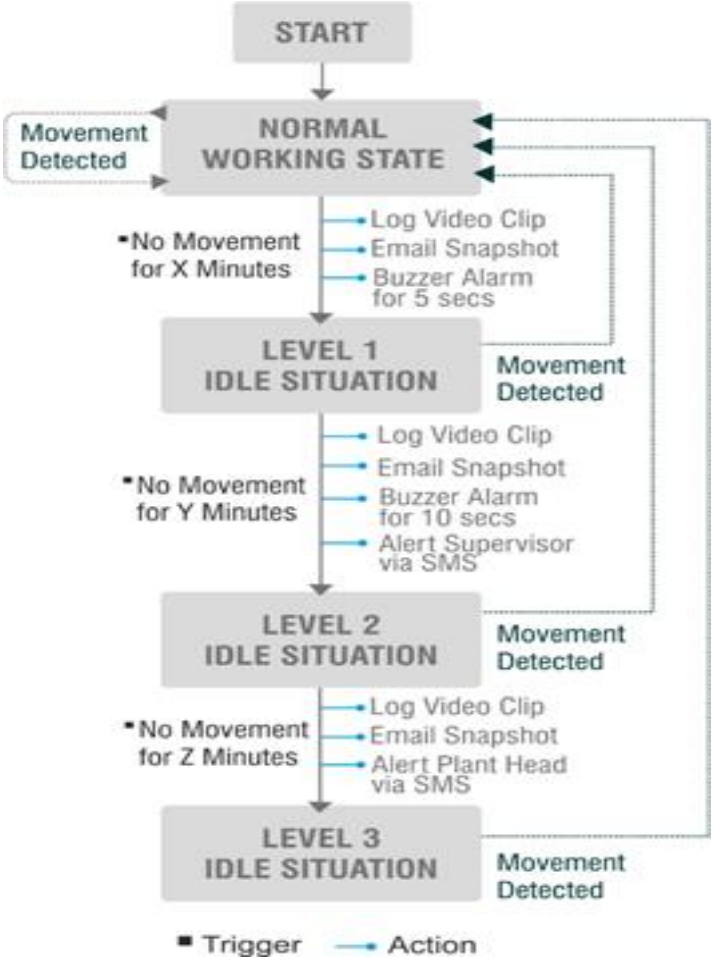
SAMAS Differentiators: Future Ready

- Scalable
  - 65,535 Cameras, 10,000 Locations and 1,000 Users
- Cloud Ready
  - Host on Public or Private Cloud
- Third Party Camera Support
  - ONVIF and Popular Brand Camera Support
- Device Initiation
  - Connect Matrix NVR and IP Cameras without Static or Dynamic Public IP

SAMAS Solution: CREAM

- Cognitive Response Engine with Automated Monitoring
- Replace Manual Surveillance with Automated Surveillance
- Multiple Scenarios, Inputs and Triggers
- Real-time Response
- Integration with External Systems
- Audit Trail for Analysis and Correlation
- Live Display and Tracking of Events and Responses

CREAM: Scenario Example



SAMAS Solution: Vehicle Management

- Vehicle Tracking and Parking Management
- Automate Large, Medium or Small Parking Areas
- Number Plate Recognition
- Notify Unauthorized or Improper Parking
- Track Occupied and Empty Slots
- Vehicle Counting
- Wrong Way Detection

VTPM: Application

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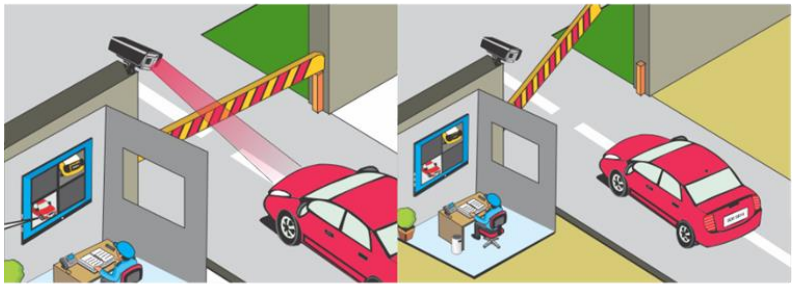
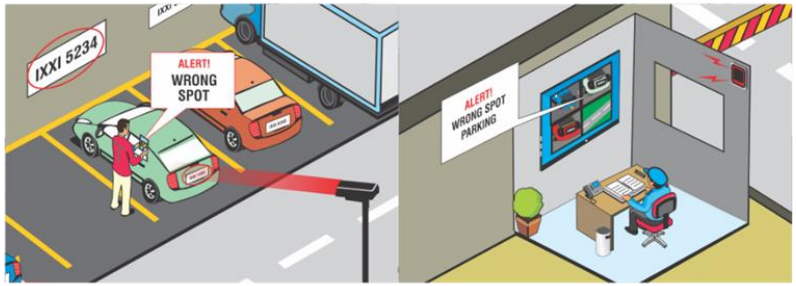
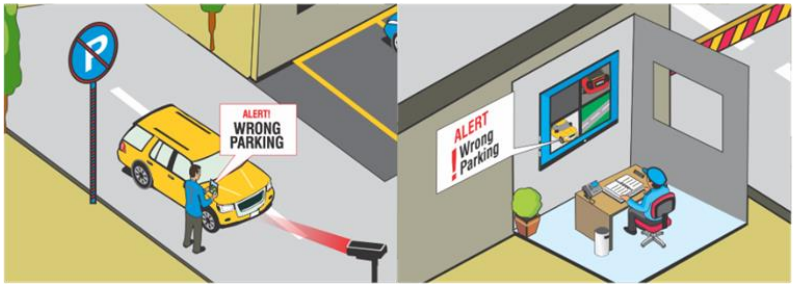
Entry or Exit of Vehicles



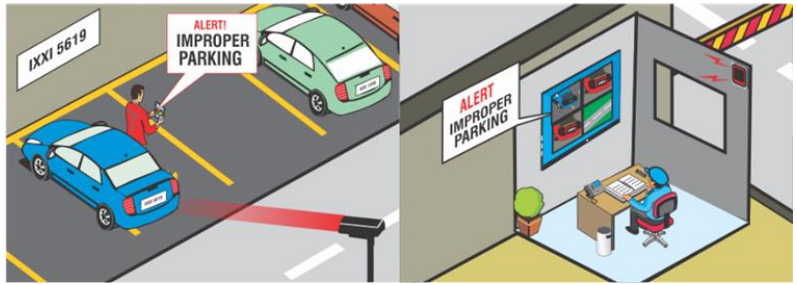
Unauthorized Parking



No Parking



Improper Parking

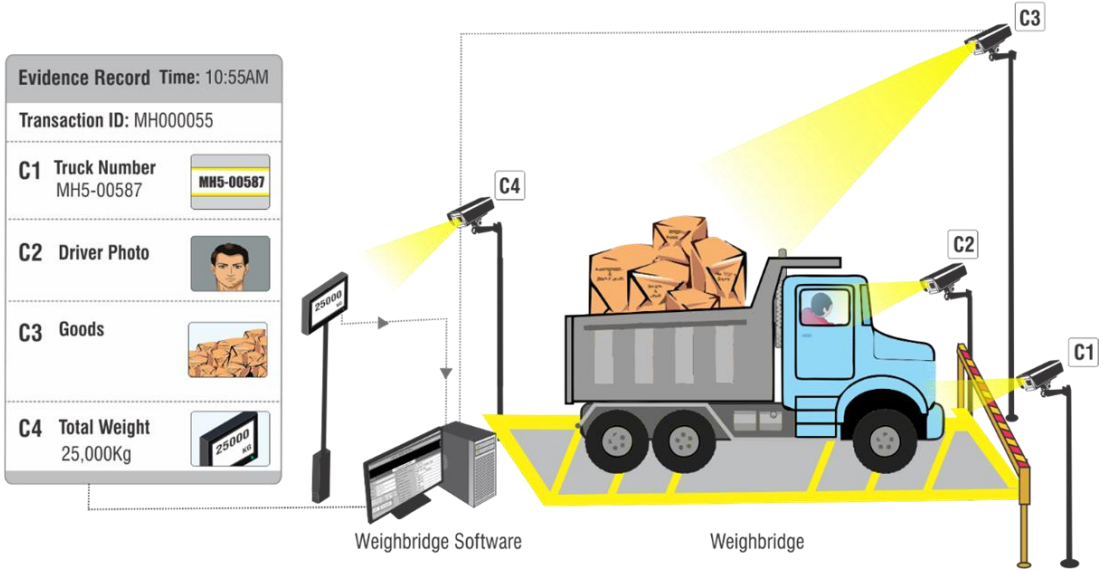


SAMAS Solution: Weighbridge Integration

Access Control	Vehicle Detection	Snapshots	GRN Data	Evidence Record Creations	Data Repository	Evidence Receipt
• Vehicle Entry • Vehicle Counting	• Vehicle Positioning on weighbridge (Trip wire and ANPR)	• Vehicle Number Snapshot • Driver Snapshot • Material Snapshot • Weighbridge Snapshot	• Collect GRN Data from ERP or Enter Manually	• Create Evidence • Bookmark Video Recordings	• Send Evidence Data to ERP	• Print Evidence Record

• Periodic Report Generation

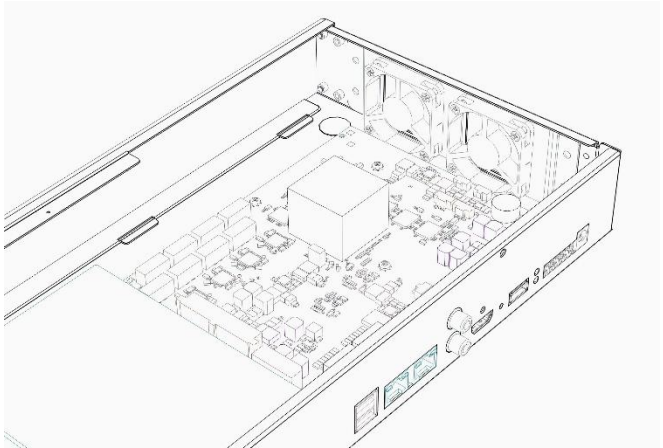
MIS Reports



SAMAS Specifications

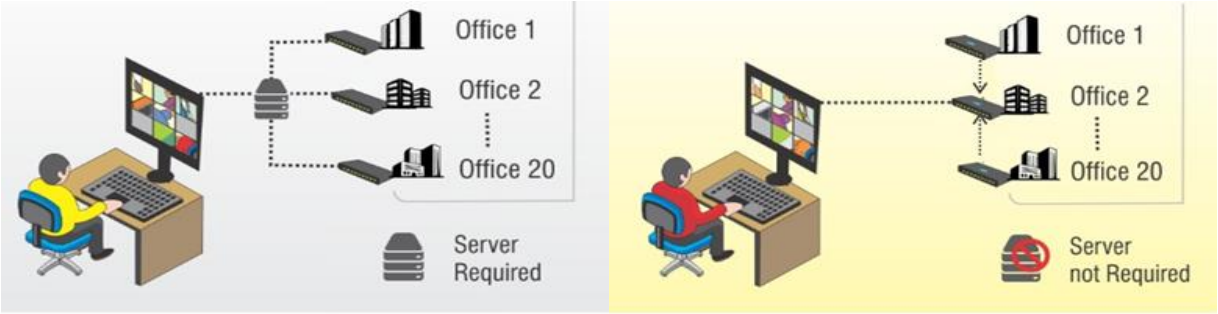
Built-in Cameras	5
Maximum Cameras	65,535
Built-in Users	1
Maximum Users	1,000
Maximum Recording and Streaming Servers or Devices	1,000

SATATYA PARAM: Network Video Recorder



NVR Differentiators: Cascading

- Link up to 20 NVRs
- View Cameras from any NVR
- No Server Required



NVR Differentiators: Performance

- 12MP Camera Recording
  - Ultra Resolution Stream for Recording
- 4K Decoding
  - 4K Resolution for Live View and Playback
- Higher Throughput
  - 512Mbps from High Resolution Cameras
- RAID 5, RAID 10 Support
  - Redundancy in Storage

NVR Differentiators: Storage

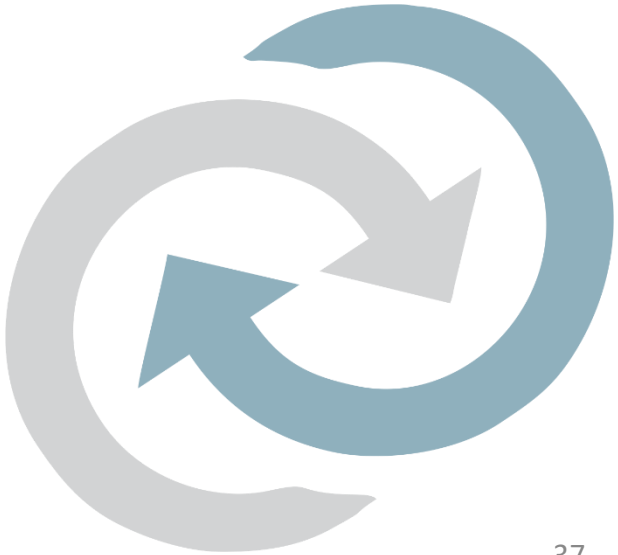
- High Storage
  - Up to 80TB on a Single NVR
- Higher Compression
  - H.265, H.264 and MJPEG
- Adaptive Recording
  - Reduce 30% Storage on No Activity with Lower Frame Rate

NVR Differentiators: Notifications

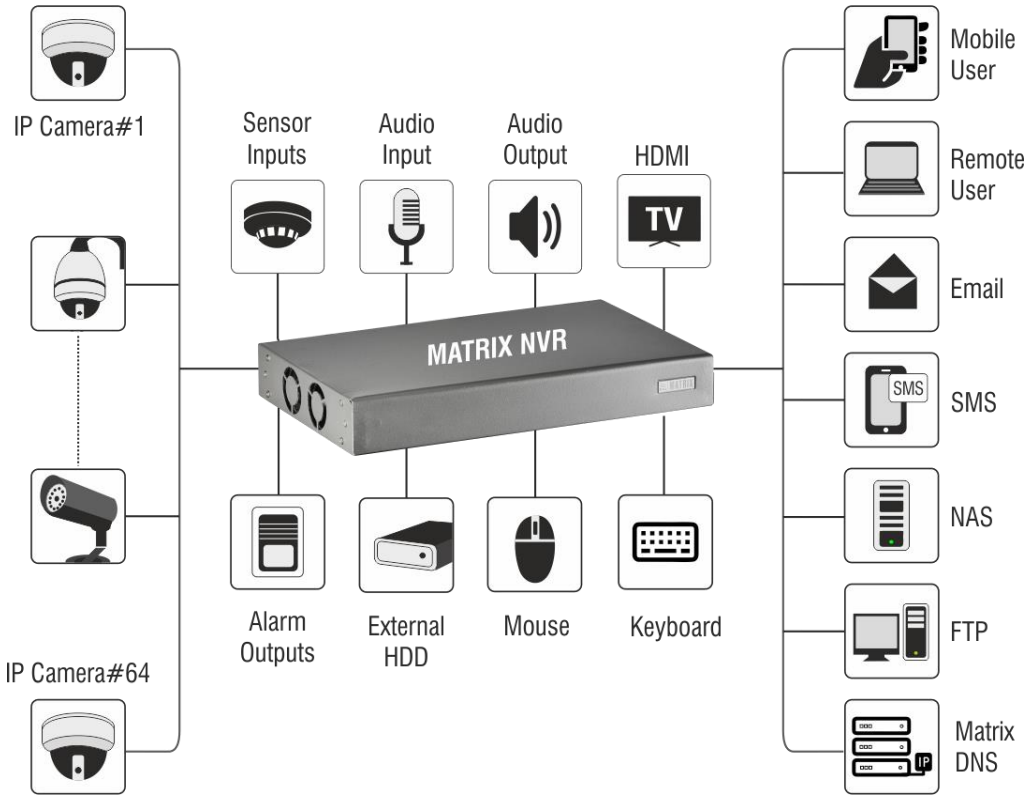
- Instant Notification
  - SMS, Email, Email with Snap, Call from App and Video Pop-up
- TCP Notification
  - Alerts using Bandwidth < 5Kbps

NVR Differentiators: Integration

- Readymade Integration with Popular Brands
- Interop with Third Party Camera
  - ONVIF, RTP/RTSP over TCP/UDP, HTTP Tunnelling for other Cameras
- Integration with Third Party System
  - Third Party System on Digital Ports



NVR Connectivity



NVR Selection Guide

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		NVR0801X	NVR1601X	NVR1602X	NVR3202X	NVR3204X	NVR6404X	NVR6408X
Video	IP Channels	8	16	16	32	32	64	64
	HDMI Main	1	1	1	1	1	1	1
Audio	Input	1	1	1	1	1	1	1
	Output	1	1	1	1	1	1	1
Alarm	Input	2	2	2	2	2	2	2
	Output	1	1	1	1	1	1	1
Storage	SATA Ports	1 (10TB each)	1 (10TB each)	2 (10TB each)	2 (10TB each)	4 (10TB each)	4 (10B each)	8 (10TB each)
	RAID Support	Single Disk	Single Disk	RAID-0, RAID-1	RAID-0, RAID-1	RAID-0,1,5,10	RAID-0,1,5,10	RAID-0,1,5,10
Interfaces	10/100/1000 Mbps Adaptive Interface	1	1	2	2	2	2	2
	USB Ports	3	3	3	3	3	3	3
Throughput	512Mbps, 256 Uplink/ 256 Downlink							

SATATYA NETRA: IP Cameras

IPC Differentiators: Low Light Performance

- High Performance at Low Light Conditions
- Sony STARVIS Sensor

Matrix

Others

IPC Differentiators: Greater Coverage (FOV)

- Capture Wider Field of Views with Fewer Cameras

Matrix: FOV 113°

Others: FOV 82°

IPC Differentiators: Consistent Performance

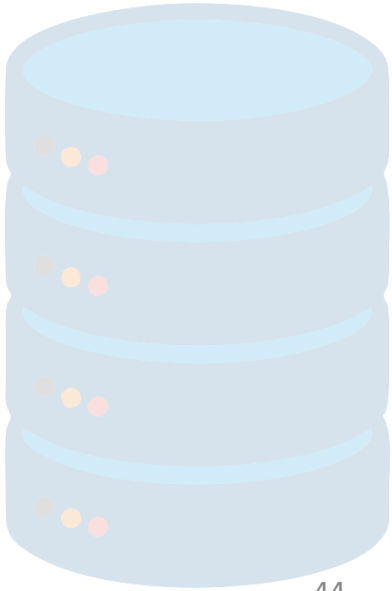
- Rectifies Overexposed and Underexposed Areas
- Sharper Image

Matrix: WDR On (120 dB)

Others: WDR Off

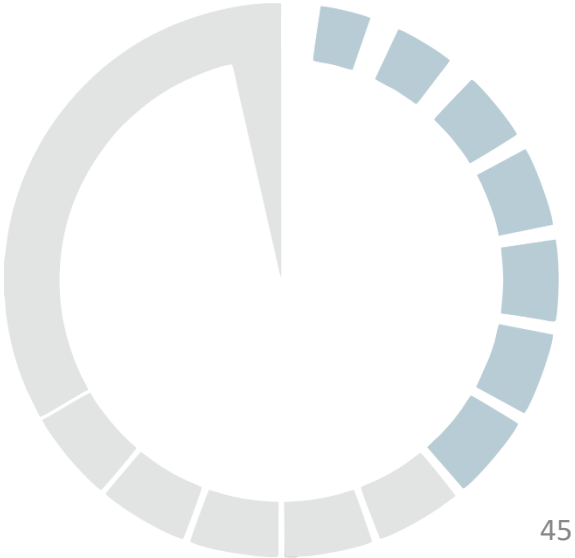
IPC Differentiators: Storage

- H.265 Compression
  - Reduces up to 50% Bandwidth and Storage
- Edge Recording
  - Store 512GB on SD Card
- Adaptive Streaming
  - Switch to Lower Bitrate and FPS during No Motion/Activity



IPC Differentiators: Bandwidth

- Smart Streaming
  - Different Image Quality for Different Regions
- Quad Streaming
  - Four Different Streams for Recording, Local View, Mobile etc
- Region of Interest
  - Streams only Specified Areas
- Adaptive Streaming
  - Switch to Lower Bitrate and FPS during No Motion/Activity



IPC Differentiators: Video Analytics

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Motion Detection

Notification based on Motion

Intrusion Detection

Notification on Entering Virtual Areas

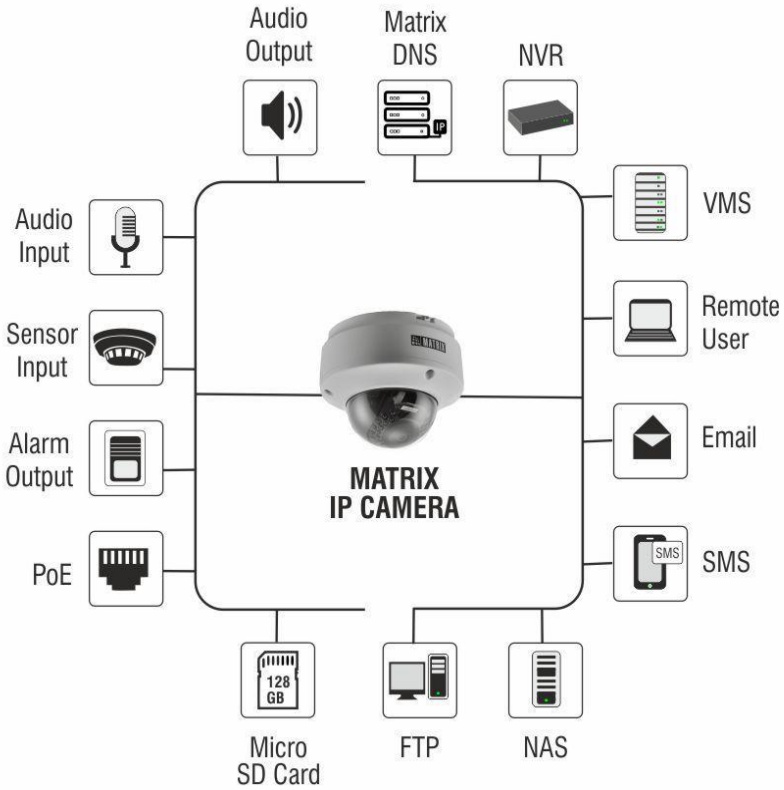
Tripwire

Identify Motion on a Virtual Line

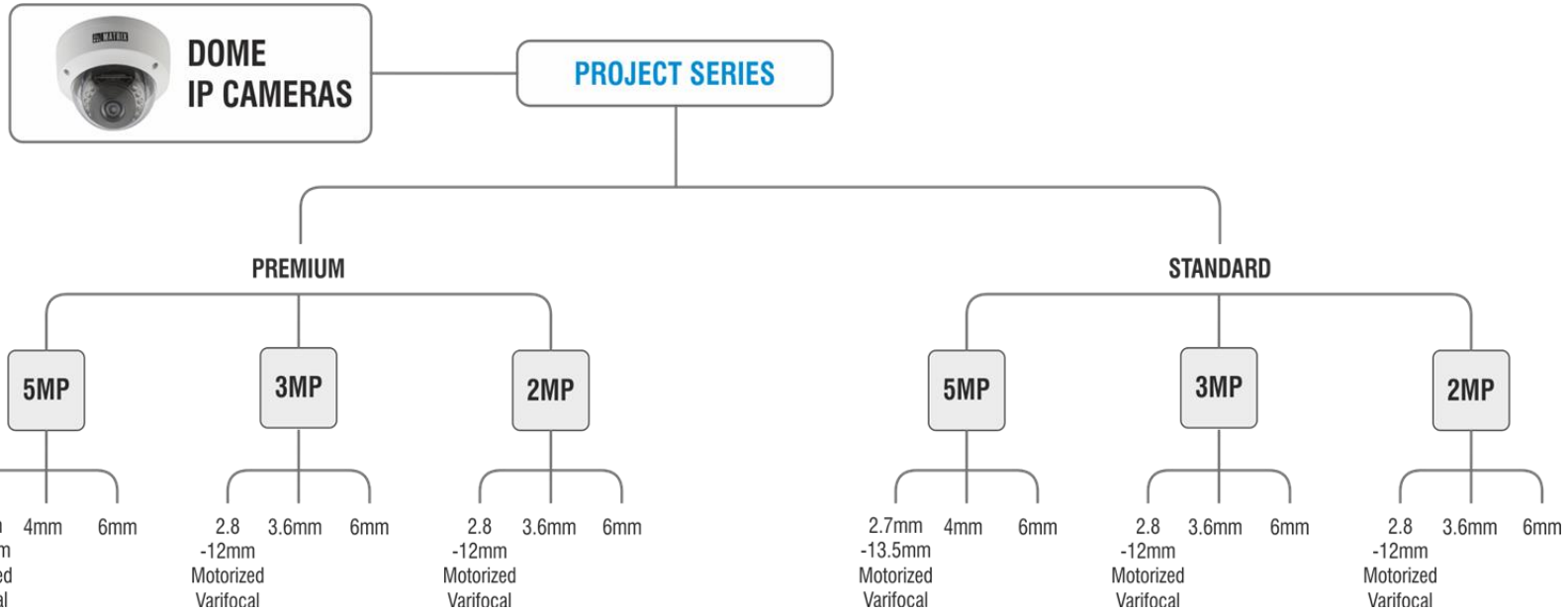
IPC Differentiators: Notifications

- SMS and Email Notifications
- Notifications for Predefined Events
- Snapshot
- Upload Image
- Alarm with Pre/post Recording
- Schedule Snapshot

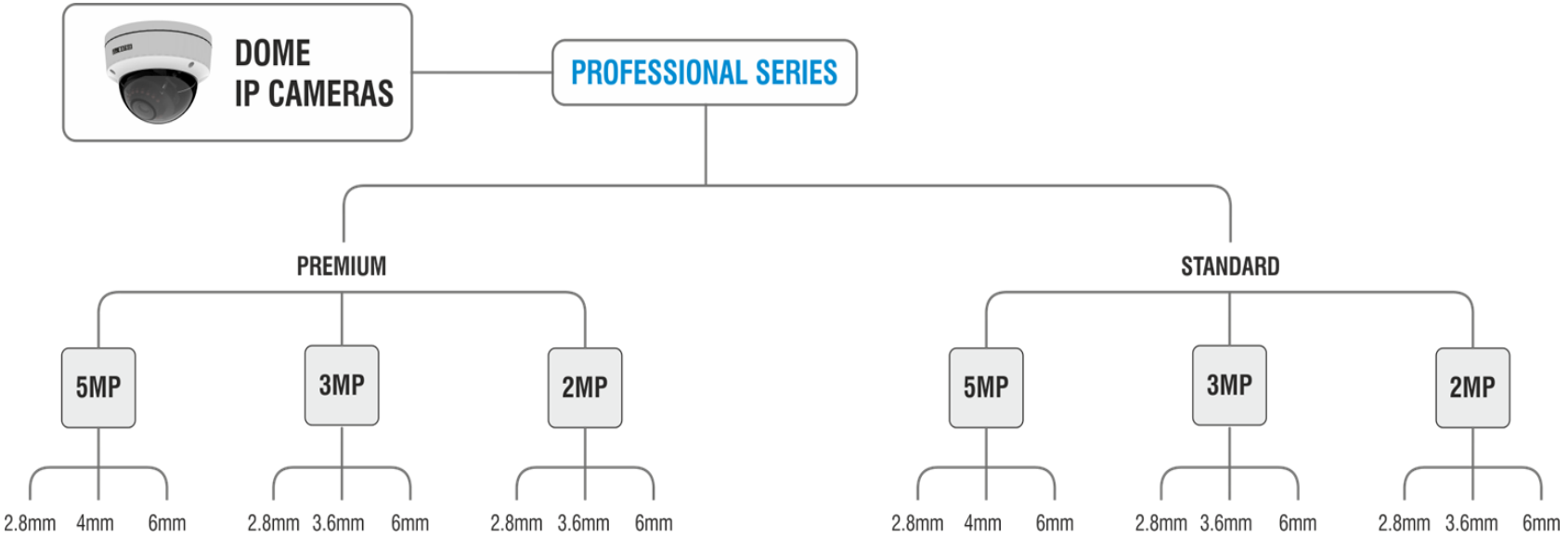
IPC Connectivity



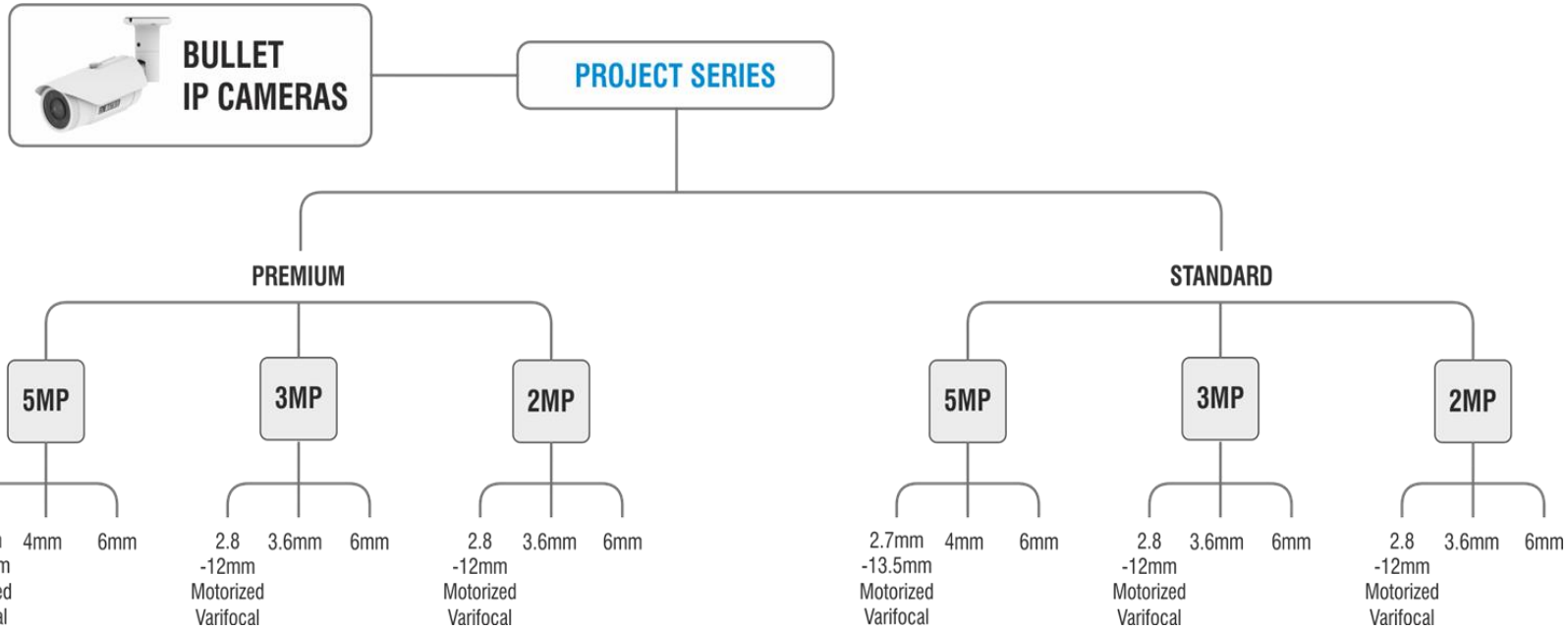
Dome Camera Range (Project Series)



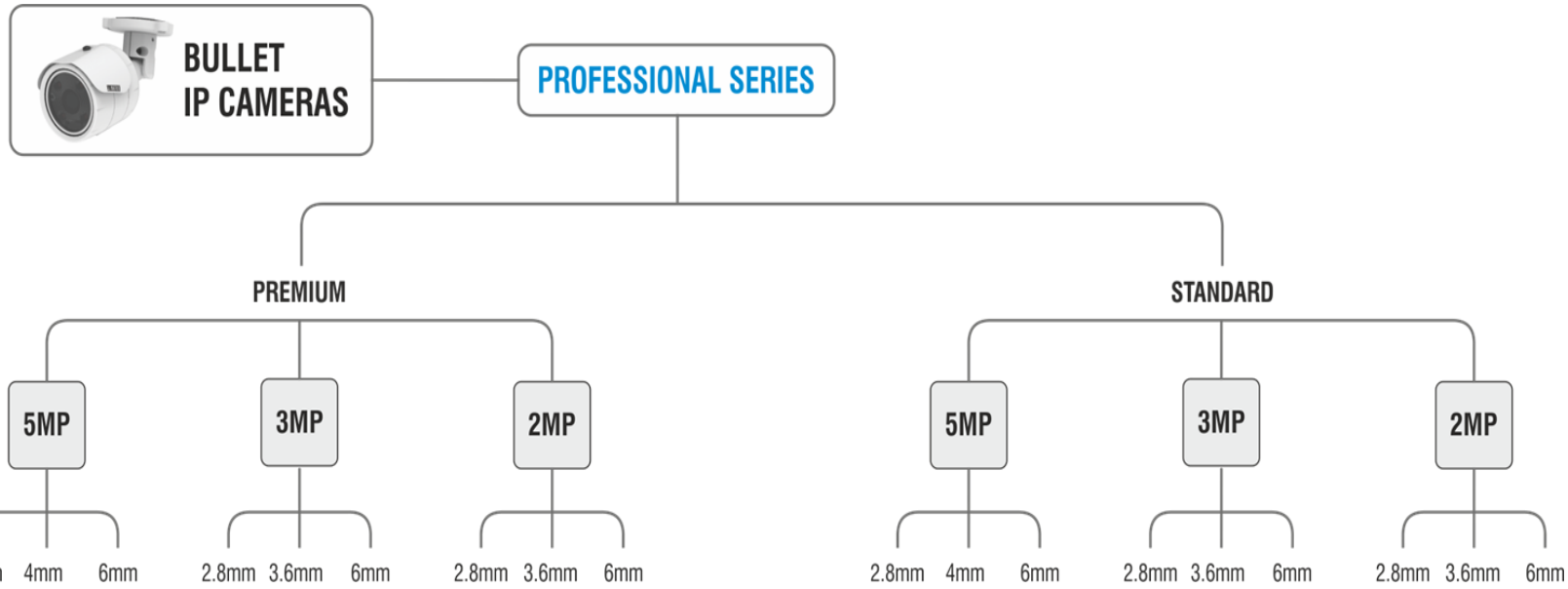
Dome Camera Range (Professional Series)



Bullet Camera Range (Project Series)



Bullet Camera Range (Professional Series)



IP PTZ Camera: PZCR20ML33CWP

- 33x Optical Zoom
- Maximum Resolution: 1920x1080 @ 60fps
- H.265/ H.264/ M-JPEG encoding
- IR Distance upto 200m
- Upto 256GB in-built storage
- IP67 & IK10 Compliant
- True WDR (140dB)
- Intelligent Video Analytics

IP PTZ Camera: PZCR20ML25CWP

- 25x Optical Zoom
- Maximum Resolution: 1920x1080 @ 60fps
- H.265/ H.264/ M-JPEG encoding
- IR Distance upto 150m
- Upto 256GB in-built storage
- IP66 & IK10 Compliant
- True WDR (140dB)
- Intelligent Video Analytics

Success Stories: NSE IT

- Challenges:
  - Real-time Security
  - Automated Health Reports
  - Centralized Monitoring
  - Storage Redundancy
- Solutions Offered:
  - Video Management System (SAMAS)
- Benefits:
  - Automated Summary Report
  - Address Alerts Quickly
  - Evidence Guarantee
  - Ease of Management

- Matrix Offering:
  - SAMAS for (250 Locations) with Dual ISP Support

Success Stories: LENSKART

- Challenges:
  - Centralized Monitoring and Control
  - Storage for More No. of Days
  - High Storage Costs
- Solutions Offered:
  - IP Cameras
  - Network Video Recorders (NVR)
- Benefits:
  - Prevention of Criminal Activities like Shoplifting, Vandalism, etc.
  - Enhanced Security
  - Employee Discipline
  - Centralized Control

- Matrix Offering:
  - IP Cameras: 200+
  - Recording Devices: 50+

Success Stories: TATA MOTORS

- Challenges:
  - Peripheral Security
  - False Alarms/Alerts
  - Common Platform for Multi-brand Cameras
  - Centralized Monitoring
- Solutions Offered:
  - Video Management System (SAMAS)
  - Hybrid Video Recorders (HVR)
  - IP Cameras
- Benefits
  - Higher Visibility and Productivity
  - Address Alert Quickly
  - Reduction of Operation Cost

- Matrix Offering:
  - IP Cameras: 40+
  - Recording Devices: 5+

SATATYA Customers

MATRIX SECURITY SOLUTIONS

CORPORATE
- Samsung C&T
- TCS Technology
- SGI Corp
- Tata Technologies
- Raymond
- Jaypeekint Lab
- COX & KINGS
- Honda Trading Corporation
- Rustom Jee
- Sterlite Technology
- Coromandel Fertilizer

GOVERNMENT
- Indian Railways
- Indian Air Force
- NTPC
- Patna Airport
- Bhubaneswar Airport
- NSTL
- Nashik Railways

EDUCATION
- IIT
- RBK International School
- NIFT
- Chitkara Group of Institute
- GITAM University
- GMERS College

MANUFACTURING
- Godrej Ware House
- Tata Motors
- Tata Chemicals
- General Electronics
- Schneider Electric
- Colourtex
- Yamaha Motors
- Jasani
- Cooper Corporation

MEDIA
- Network 18
- Times of India
- Matrimony.com
- Ramoji Film City

HOSPITALITY
- Hotel Royal Park
- Taj Group
- Taj Vivanta

OTHERS
- Lenskart
- Tanishq
- Sanofi Pharma
- Deccan Chemicals
- Raheja Hospital
- NESCO
- BTI Payments
- Dnata Group
- Haldiram
- Ramdev Masala
- NSEIT
- Vedanta Group
- HEG
- AWHO Township

Why Matrix?

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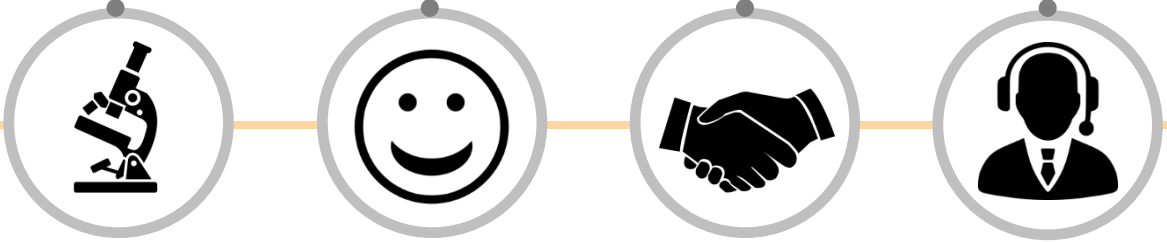
Indigenous R&D Centre

1Million + Satisfied Customer

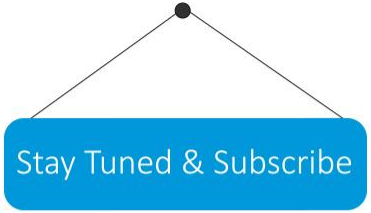
2,500 + Channel Partner

Technical Support



Who Are We

1 Million+	2,500+	60+	50+
Customers	Partners	Products	Countries



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www.MatrixVideoSurveillance.com

THANK YOU!

www.MatrixComSec.com