PRAMA™
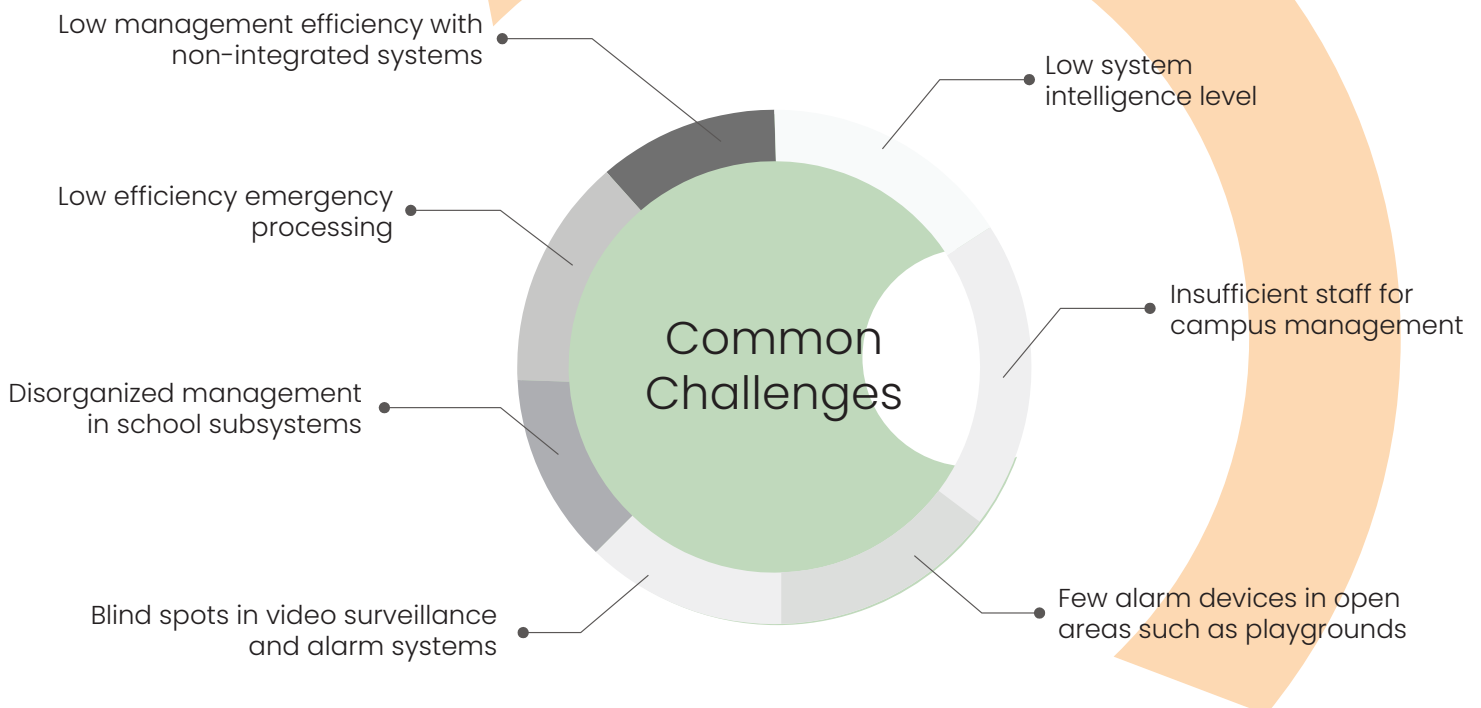
THE EDUCATION SOLUTION

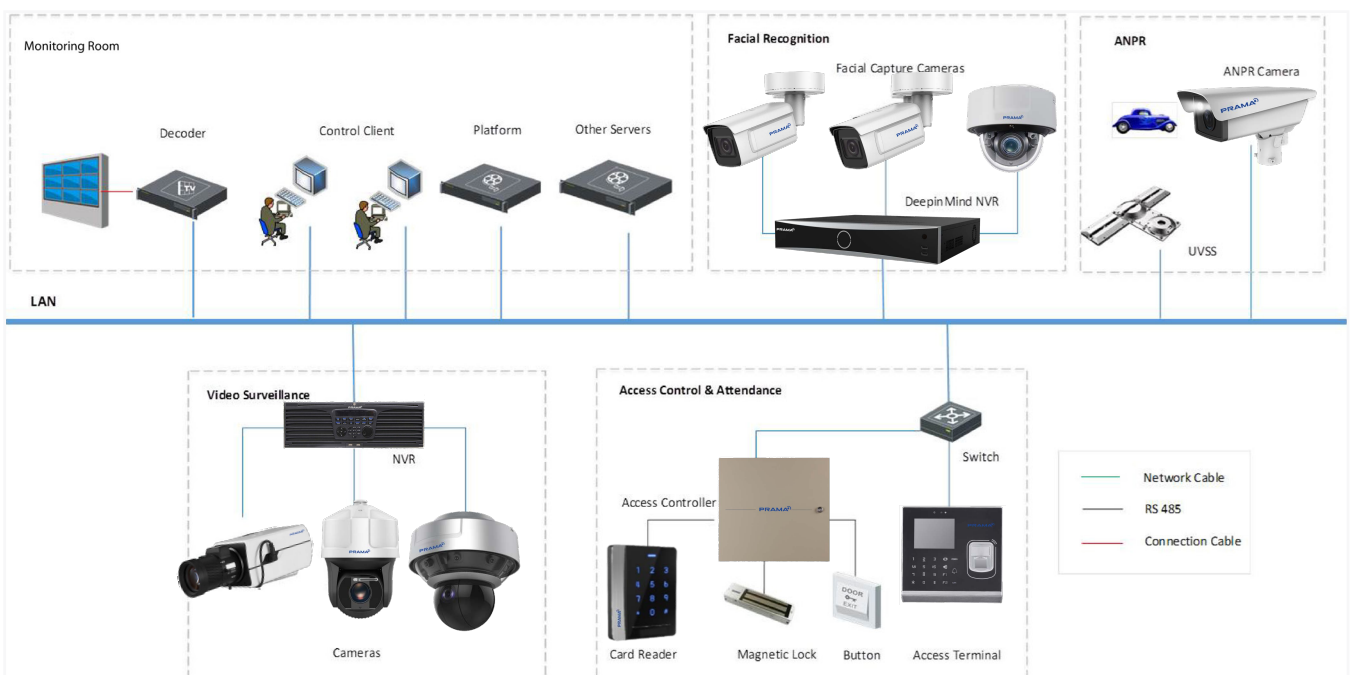## FOR CAMPUS SECURITY AND PROTECTION & FOR SCHOOL BUS SURVEILLANCE

www.pramaindia.in

COMMON CAMPUS CHALLENGES

As students spend the majority of the day in schools, campus security is of paramount importance to every school administrator and every parent. In order to develop an effective security system, all the possible risks – including suspects breaking into campus, stealing, and threatening student safety – must be fully considered. A campus security and protection solution utilizing PRAMA's most advanced network, audio, video, and intelligent recognition technologies, ensures students, parents, and administrators can enjoy a secured and serene learning environment.
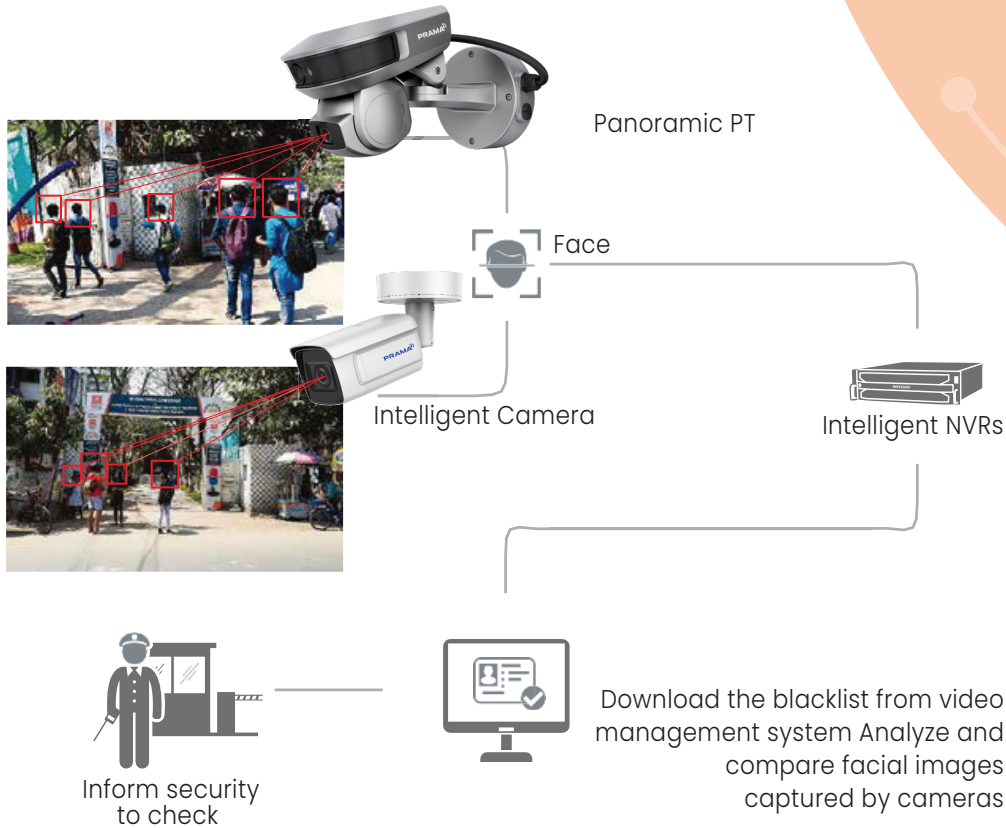
Low management efficiency with non-integrated systems

Low efficiency emergency processing

Disorganized management in school subsystems

Blind spots in video surveillance and alarm systems

Common Challenges

Low system intelligence level

Insufficient staff for campus management

Few alarm devices in open areas such as playgrounds

SYSTEM ARCHITECTURE

Monitoring Room

Decoder · Control Client · Platform · Other Servers

Facial Recognition

Facial Capture Cameras

Deepin Mind NVR

ANPR

ANPR Camera

UVSS

LAN

Video Surveillance

NVR

Cameras

Access Control & Attendance

Switch

Access Controller

Card Reader · Magnetic Lock · Button · Access Terminal

Network Cable
RS 485
Connection Cable

SCHOOL GATES

FACIAL IMAGE CAPTURE AND BLACKLIST ARMING

Panoramic PT

Face

Intelligent Camera

Intelligent NVRs

Through front-end cameras, the platform can perform real-time monitoring, face image capture, and alarm configuration.

Inform security to check

Download the blacklist from video management system Analyze and compare facial images captured by cameras

System Features

- Batch import of blacklist from VMS
- Downloading of face image library from VMS to intelligent devices
- Intelligent device scan run comparisons against different face libraries
- Stores all captured facial images in the center
- Receives real-time blacklist alarm
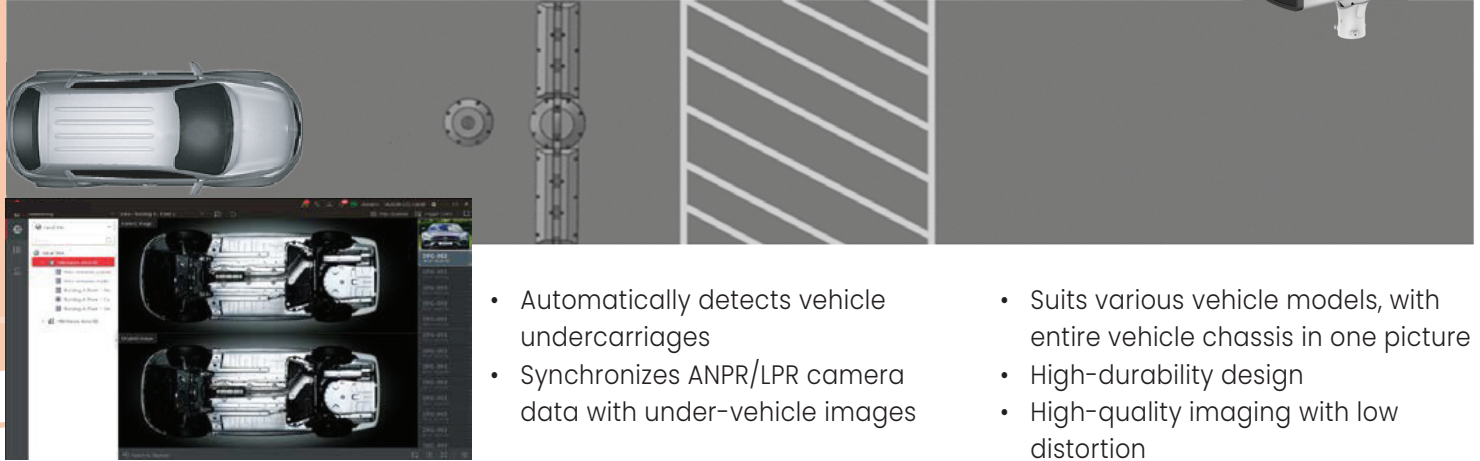- Searches by stored image for suspicious personnel

AUTOMATIC NUMBER PLATE RECOGNITION (ANPR)

Entryways constitute the first critical threshold for campuses. Security guards must pay close attention to vehicles to prevent security events.

- Automatic Number Plate Recognition & Recording
- Vehicle List Management
- Blacklist Warning and Whitelist Recognition
- History Search & Report

Entrance

Capture Unit

Router   UVSS

Platform

Network Cable

Exit

Router

Capture Unit
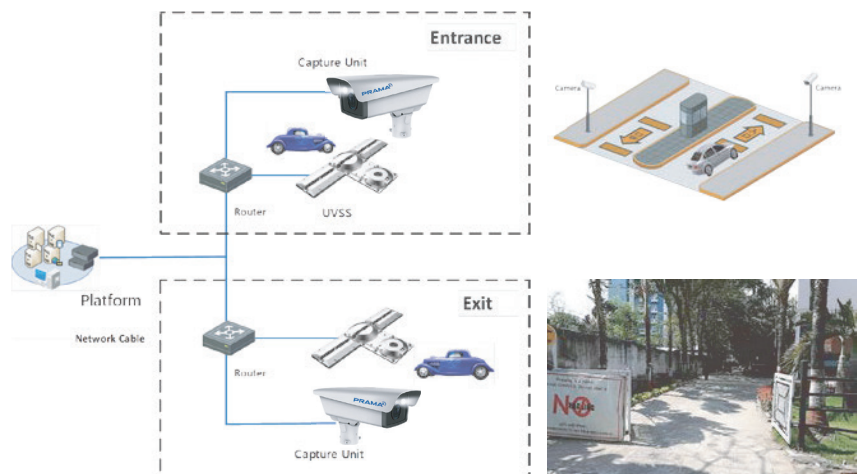
Camera

UNDER VEHICLE SURVEILLANCE SYSTEM (UVSS)

- Automatically detects vehicle undercarriages
- Synchronizes ANPR/LPR camera data with under-vehicle images

- Suits various vehicle models, with entire vehicle chassis in one picture
- High-durability design
- High-quality imaging with low distortion
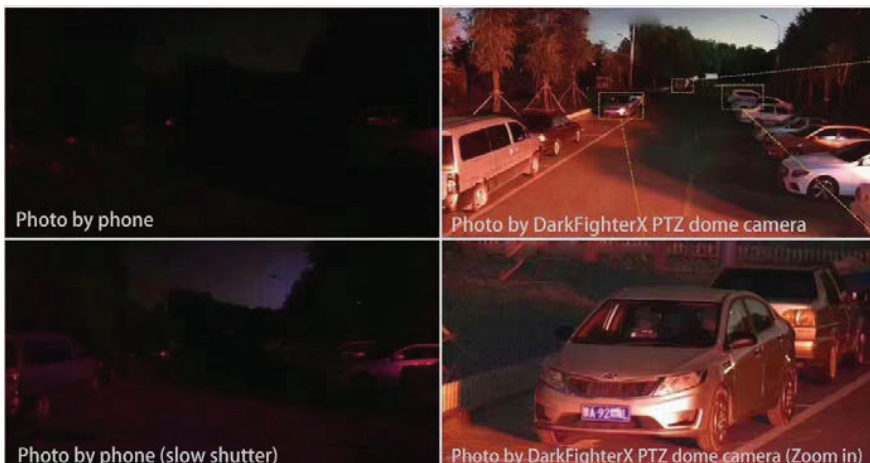
VIDEO SURVEILLANCE IN IMPORTANT SCENES

PUBLIC AREAS
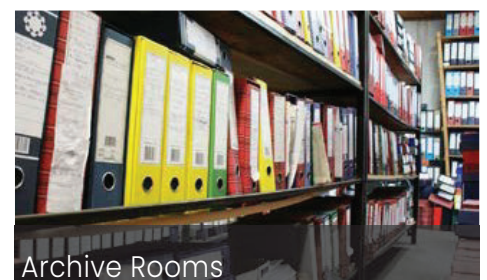
Panoramic Cameras provide a comprehensive view for large open areas as well as clear close-up video surveillance when needed.

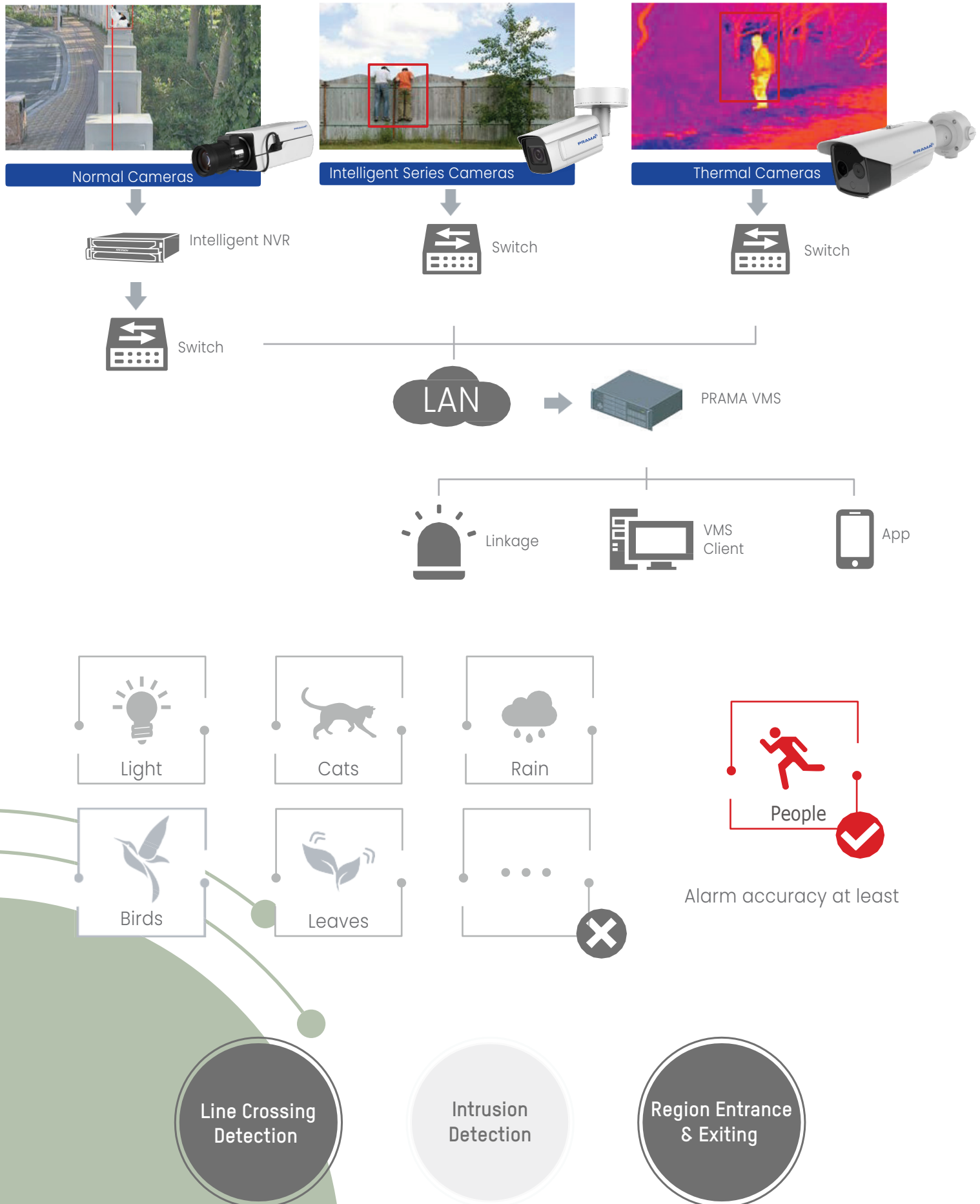## MAIN ROADS

Photo by phone

Photo by DarkFighterX PTZ dome camera

Photo by phone (slow shutter)

Photo by DarkFighterX PTZ dome camera (Zoom in)

Low-Light Performance cameras ensure video surveillance of the main roads is clear day and night.

ACCESS CONTROL FOR OFFICE AREAS

For other indoor areas such as meeting rooms, offices, financial offices, and laboratories, access control devices can be used to unlock doors. Users can customize various combinations of cards, fingerprints, or facial information for access credentials.

VMS

Control Client
Video Management Software

Fingerprint Issuer

Card Issuer

Local Area Network(TCP/IP)

Control System Framework

Controller

FP Reader | Card Reader | Lock | Exit Button
(Access & Attendance)

Standalone Terminal Framework

Standalone Terminal

Safety Module

Wiegand Reader | Lock | Exit Button
(Access & Attendance)

UTP — RS-485 — Wiegand — USB — RVV

School Laboratories

School Server Rooms

Financial Offices

Important Office Areas

Monitoring Rooms

Archive Rooms

PERIMETER PROTECTION

Normal Cameras

Intelligent Series Cameras

Thermal Cameras

Intelligent NVR

Switch

Switch

Switch

LAN

PRAMA VMS

Linkage

VMS Client

App

Light

Cats

Rain

Birds

Leaves

People

Alarm accuracy at least

Line Crossing Detection

Intrusion Detection

Region Entrance & Exiting

MONITORING ROOMS

- Up to 3 auxiliary screens for multiple channels and live view. Supports up to 256 cameras per live view
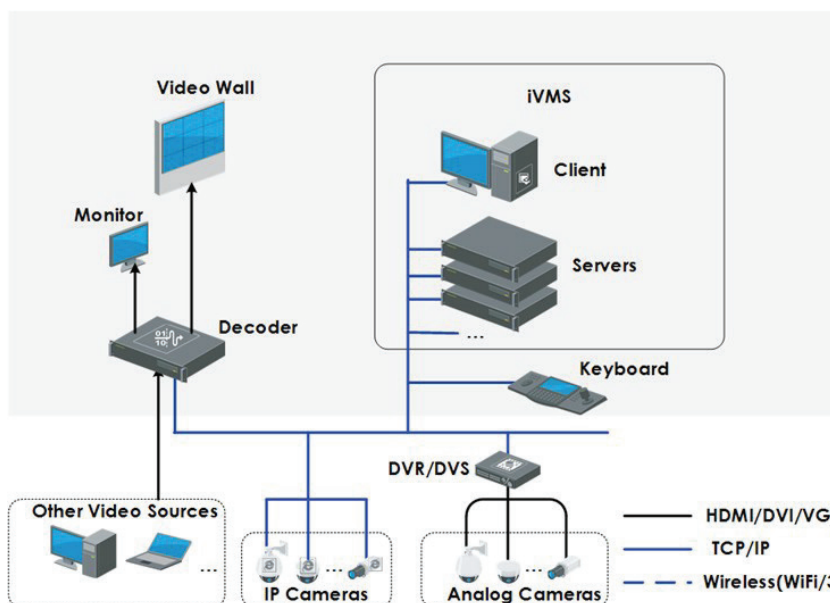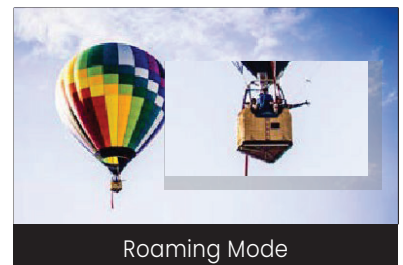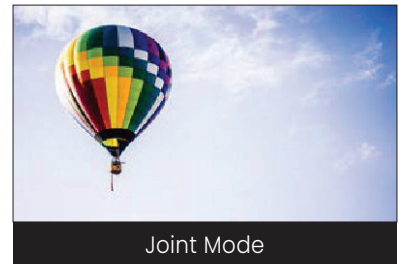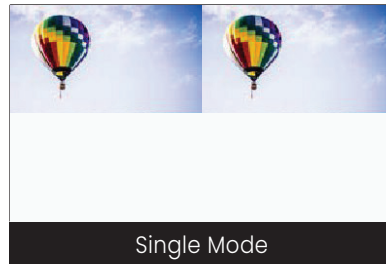- Up to 8 auxiliary screens for multi-task operation

| Live View | Playback | Alarm Linkage |

Smart Wall Application

- Alarms pop up on Smart Wall
- Associated channel pushed to Smart Wall

Windows Operation

- High Brightness
- High Contrast
- Quick Response
- Color Enhancement
- Dynamic Self-Adaptive

Single Mode

Joint Mode

Division Mode

Roaming Mode

- Powerful decoding capability
- PC signal input
- Joint screens for comprehensive and detailed video viewing
- Display enhancement
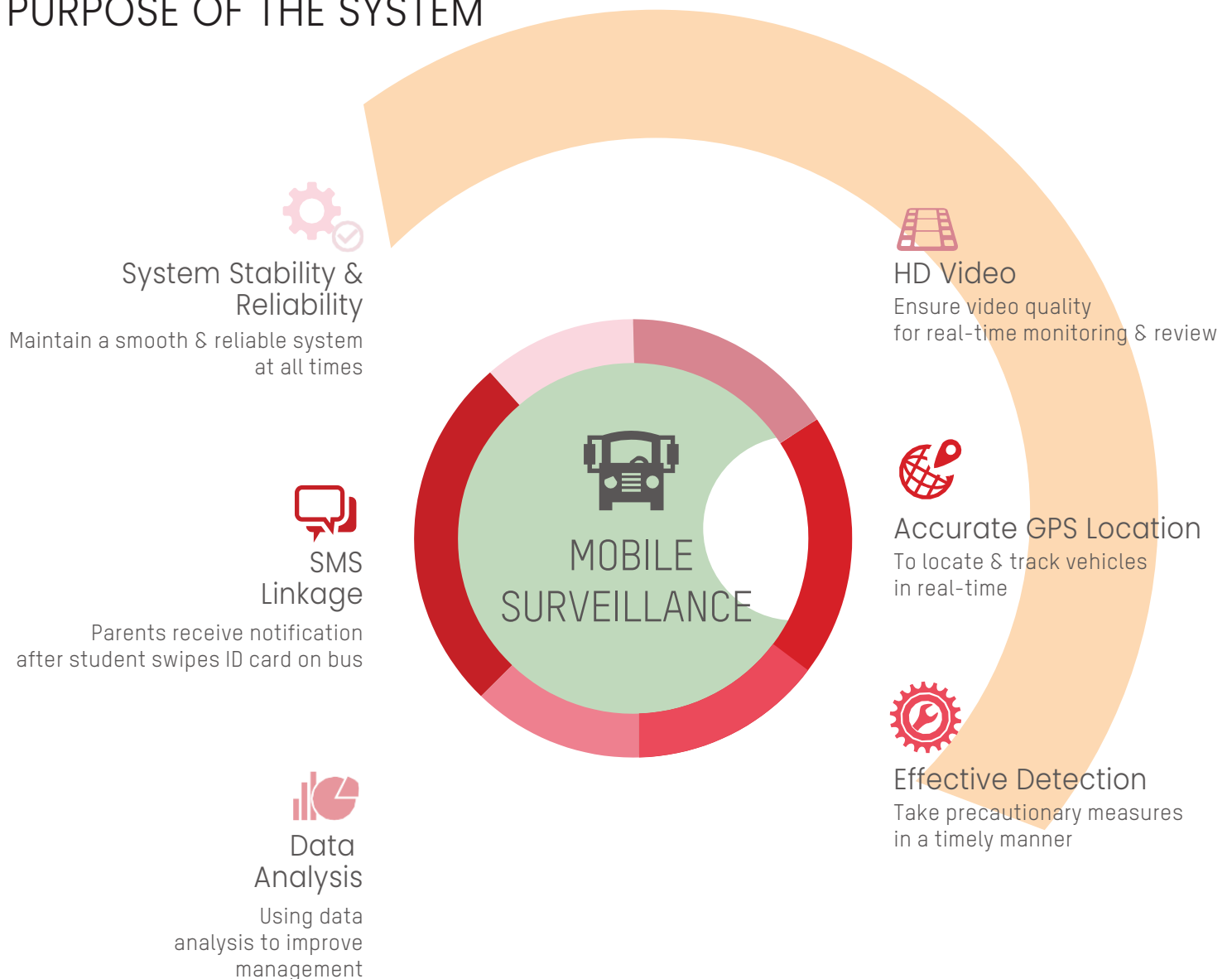- Reliable system
- Easy maintenance

COMMON CHALLENGES FOR SCHOOL BUS

A school bus system is one of the most important transportation methods for students all over the world. But the potential safety risks associated with them often go overlooked. A school bus security system should be able to:

- Supervise drivers to prevent unsafe driving
- Capture the bus's interior and exterior for comprehensive monitoring
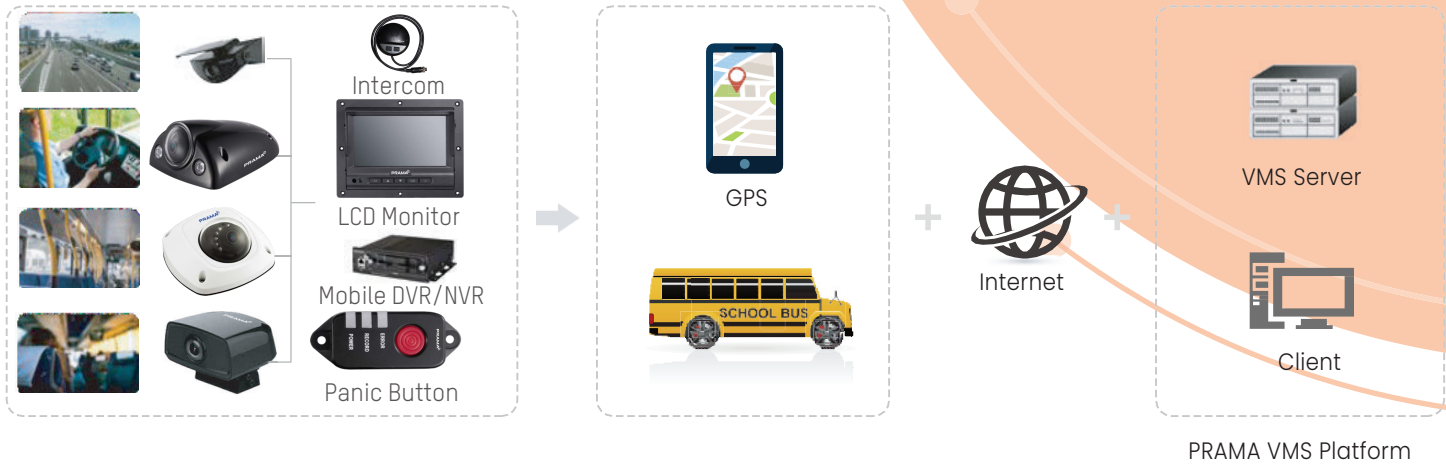- Monitor the entire vehicle and ensure students remain safe to and from school

Occupancy control

Driver monitoring

Accident response

PURPOSE OF THE SYSTEM

MOBILE SURVEILLANCE

System Stability & Reliability
Maintain a smooth & reliable system at all times

HD Video
Ensure video quality for real-time monitoring & review

SMS Linkage
Parents receive notification after student swipes ID card on bus

Accurate GPS Location
To locate & track vehicles in real-time

Data Analysis
Using data analysis to improve management

Effective Detection
Take precautionary measures in a timely manner

SYSTEM ARCHITECTURE

MOBILE VIDEO SURVEILLANCE SYSTEM

Intercom
LCD Monitor
Mobile DVR/NVR
Panic Button

GPS

SCHOOL BUS

Internet

VMS Server

Client

PRAMA VMS Platform

System Components for Mobile Surveillance Systems

Onboard video management	Transmission Network	VMS Management
Mobile video recorder and cameras installed on vehicle	Using 3G or 4G network connections	Central management for monitoring and more
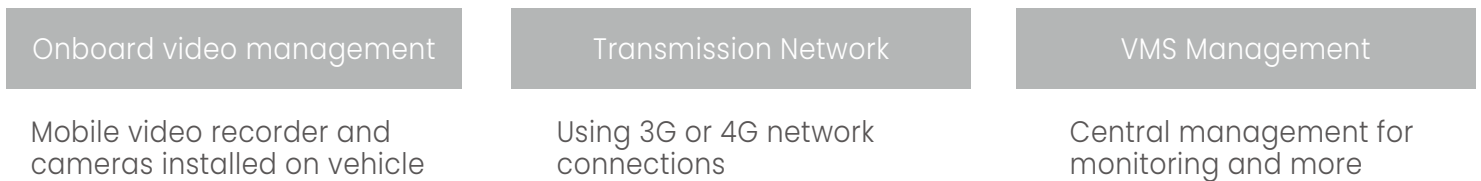
MOBILE VIDEO SURVEILLANCE SYSTEM FOR MULTIPLE SCHOOL BUSES

SCHOOL BUS   SCHOOL BUS   SCHOOL BUS   SCHOOL BUS

Wi-Fi Backup

Vehicle

Base Station   Bus Station   Base Station   Base Station   Base Station

Internet/VPN

Mobile Cameras

...

3G

Mobile DVR/NVR

GPS Data

Surveillance Center   LAN

Hybrid SAN   SMS   CMS   Client   Client

Live View

GIS Map

Satellite
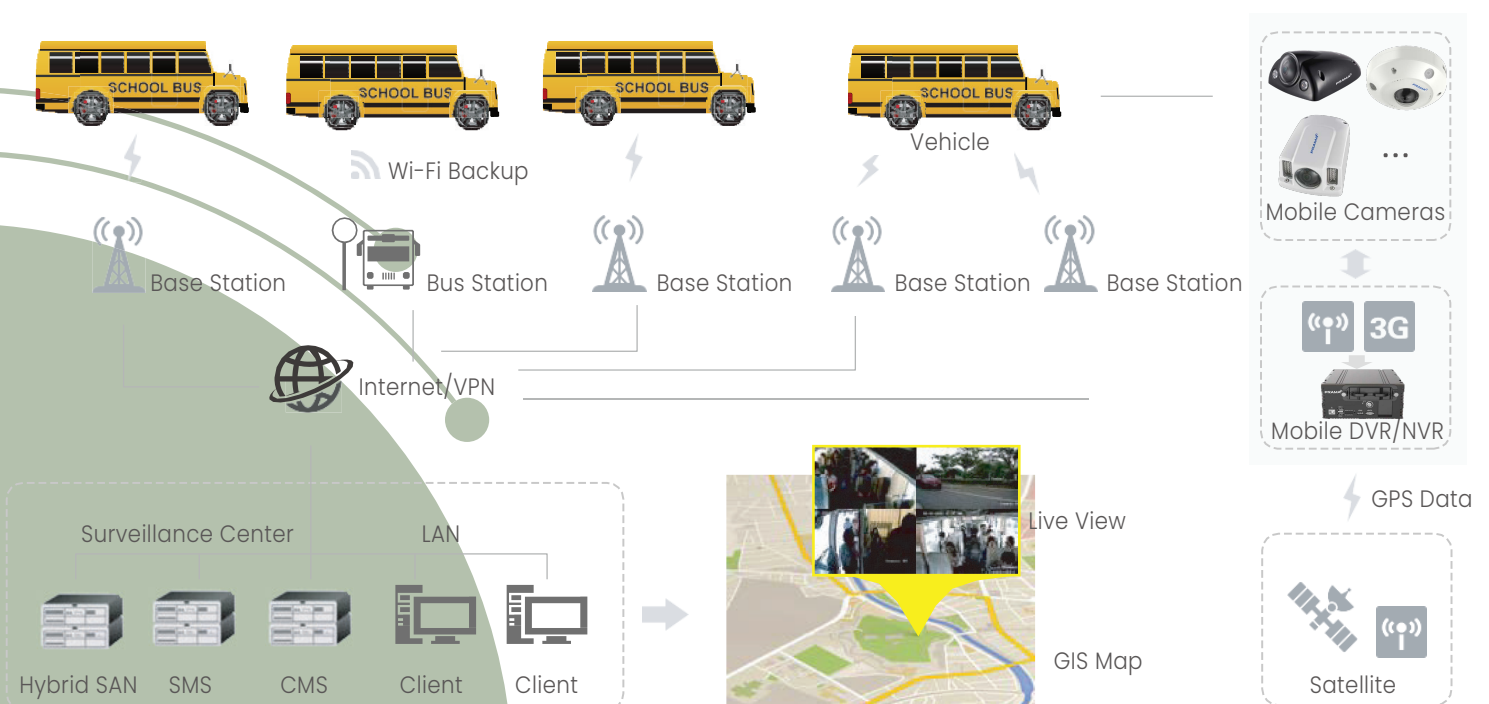
SYSTEM COMPONENTS AND HIGHLIGHTS

ONBOARD VIDEO MANAGEMENT WITH FRONT END DEVICES

Accurate GPS location information is sent to the center in real-time and is stored for playback

High quality video footage is recorded locally. Remote access to video facilitates review and forensic evidence gathering
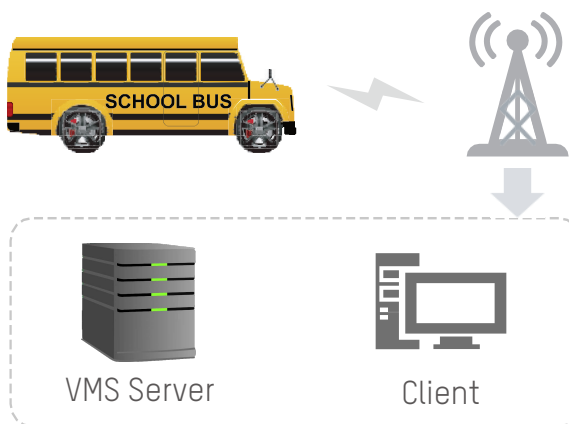
Two-way audio between driver and command center provides convenient communication when needed

When local alarm is triggered, real-time notifications will be sent to command center

TRANSMISSION NETWORK

VMS Server

Client

Data stream and messaging transmit entirely across a wireless network:

- Device registration data
- Device "heartbeat" signal for backup
- Live view & playback stream
- GPS data
- Alarm data

The ability to perform certain functions at a command center depends on local wireless network coverage, bandwidth, and quality. PRAMA engineers will assist in examining and/or creating the necessary parameters during installation process.

VMS MANAGEMENT

Central vehicle management and vehicle parameter configuration

Live view for real-time video provides easier management and monitoring

Two-way audio communication ensures communication between command center and any vehicle when necessary

Traffic data analysis includes vehicle mileage statistics, network usage for transmission, and more

Alarm, system updates, and linkage – Receive and monitor alarms, and ensure the command center is alerted of events

VMS Server

Client

PRAMA VMS Platform

# ADDITIONAL FEATURES

Optional Wi-Fi backup:

With high transmission speeds (over 30 Mbps per device), users can backup and secure all video footage of an entire day rapidly.
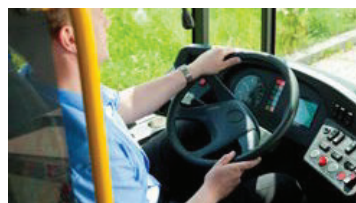
Log rides with student ID cards:

ID cards equipped with parent contact information send text messages as students board the bus. Information on a card also transmits to the command center for recording, reviewing, or exporting reports.
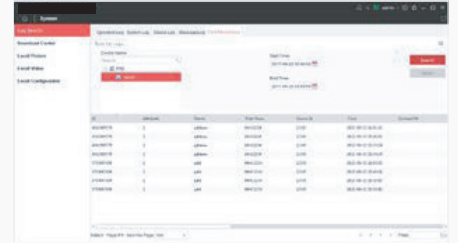
TYPICAL APPLICATION SCENARIO
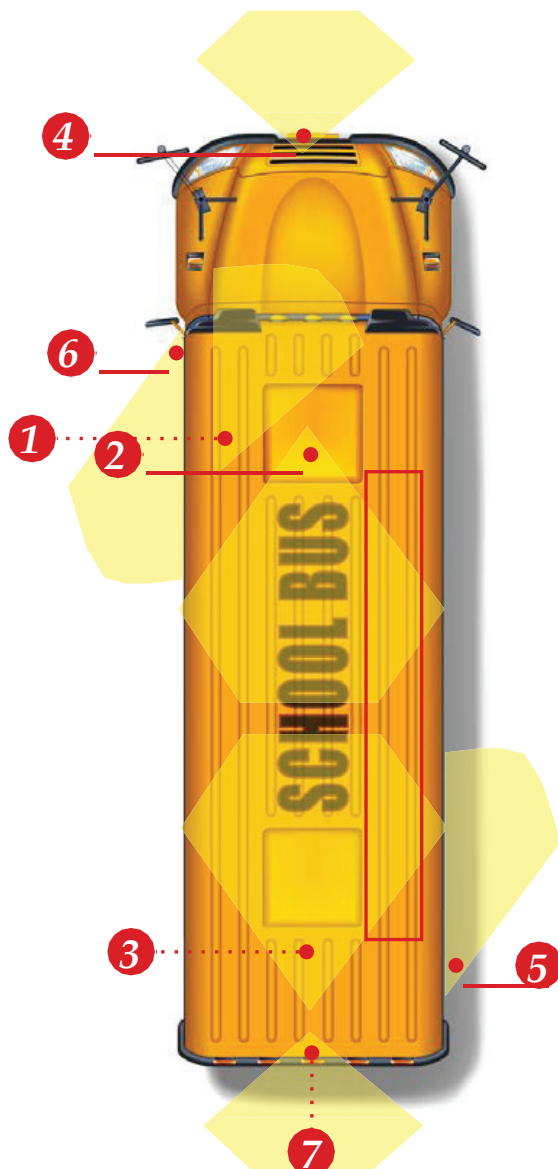
Bus interior

Driver's seat

Bus exterior

Camera placement suggestion

1	Monitors driver seat and the entrance
2	Monitors the inside of the bus without blind spots
3	Monitors the inside of the bus without blind spots
4	Monitors the areas in front of the bus
5	Monitors entrance from the outside
6	Monitors the side traffic and exterior of the bus
7	Rear-facing security and traffic camera