

Traffic Penalty Ticketing (e-Challaning) System

TECHNICAL DATASHEET

A Traffic Penalty Ticket (called “Challan” in India) is issued to the motor vehicle driver/owner who violates the traffic rules and regulations. When a traffic challan is issued, it implies that the person is responsible to pay the penalty of an amount which depends on the type of Traffic violation that has been detected. The Enforcement agency (typically, traffic police) has the right to issue a challan to any driver who does not follow the traffic rulebooks while driving. There are multiple reasons when a challan could be issued by the Enforcement agency for e.g., Violations of traffic rules, jumping red lights, driving an unauthorised vehicle, driving without a valid license, Over-speeding beyond the specified speed limit, Drunk driving, Driving without a valid insurance policy, etc.

In the age of digitization, there is an increased automation in detection of traffic violations, mechanism of penalizing offenders and payment of said penalty on electronic platforms for increased transparency.

Vaaan’s electronic-challaning System accepts proof of traffic violation from various automated & manual detection sources and integrates to a government web-site for electronic challaning to take place. Often the e-challans are also required to be automatically emailed along with validated proof to the Police station nearest to the location of traffic violation. This Software is typically required in a Control Room where validation/audit of the violation is done prior forwarding the same for traffic penalty ticket issuance to violator.

AT A GLANCE

Speed Violation List									
Status	Select All	From Date	From Date	To Date	To Date	Class	Select All		
Location	Select All	VRN		Avg Speed	All	<input type="button" value="Search"/> <input type="button" value="Reset"/> <input type="button" value="E-Chalan"/>			
Show <input type="text" value="10"/> entries Search: <input type="text"/>									
Incident Id	Category	Sub Category	Status	Incident Location	Source	Speed (Km/h)	Incident Log Date	Incident Date	Action
614206	Speed Violation	Over Speed	Open	32KM towards LKO L-1	ANPR	115	18/08/2022 17:26:47	18-08-2022 17:26	<input type="checkbox"/> <input type="checkbox"/>
614205	Speed Violation	Over Speed	Open	32KM towards LKO L-1	ANPR	115	18/08/2022 17:26:31	18-08-2022 17:26	<input type="checkbox"/> <input type="checkbox"/>
614203	Speed Violation	Over Speed	Open	32KM towards Agra L-1	ANPR	110	18/08/2022 17:22:50	18-08-2022 17:22	<input type="checkbox"/> <input type="checkbox"/>
614202	Speed Violation	Over Speed	Open	32KM towards Agra L-3	ANPR	141	18/08/2022 17:22:49	18-08-2022 17:22	<input type="checkbox"/> <input type="checkbox"/>
614201	Speed Violation	Over Speed	Open	32KM towards LKO L-2	ANPR	112	18/08/2022 17:19:52	18-08-2022 17:19	<input type="checkbox"/> <input type="checkbox"/>

Speed Violation Validation

Incident Detail

Incident ID : 614194
 Control Room : CR1-Km21
 Vehicle Speed : 88 kph
 Speed Limit : 85 km/h

ANPR Location : 32KM towards LKO L-1
 Plate Number : [REDACTED]
 Vehicle Class (before Validation) : BUS/TRUCK

Source : ANPR
 Incident Date : 18/08/2022 17:03:10


Validation Info

Validator VRN : [REDACTED] Validator Vehicle Class : BUS/TRUCK

Validator Status : Reviewed and Ok Comment (max 300 char) : [REDACTED]

Status : Close Closure Date : 18-08-2022 17:14

Violation Images



ITMS Challan CA CCTV Agra

Home Power

Violation ID Vehicle Number Start Date End Date Select Status

Total Traffic Violence : 6314 1 2 3 4 5 6 7 8 ... 631 632

Violation ID	RC Number	Geo Location	Offences	Date and Time	Status	Media	Action
<input type="checkbox"/>	[REDACTED]	KM 32-600(RHS)	Driving a motor vehicle or causes to drive a motor vehicle..	27-02-2021 11920	Pending		
<input type="checkbox"/>	[REDACTED]	KM 32-600(RHS)	Driving a motor vehicle or causes to drive a motor vehicle..	27-02-2021 11918	Pending		
<input type="checkbox"/>	[REDACTED]	KM 32-600(RHS)	Driving a motor vehicle or causes to drive a motor vehicle..	27-02-2021 11815	Pending		
<input type="checkbox"/>	[REDACTED]	KM 32-600(RHS)	Driving a motor vehicle or causes to drive a motor vehicle..	27-02-2021 11796	Pending		
<input type="checkbox"/>	[REDACTED]	KM 32-600(RHS)	Driving a motor vehicle or causes to drive a motor vehicle..	27-02-2021 11701	Pending		

Typical Hardware

CPU	4 Core – 64bit processor
RAM	8 GB
Storage	160 GB
Display	DSI, HDMI, DP, eDP

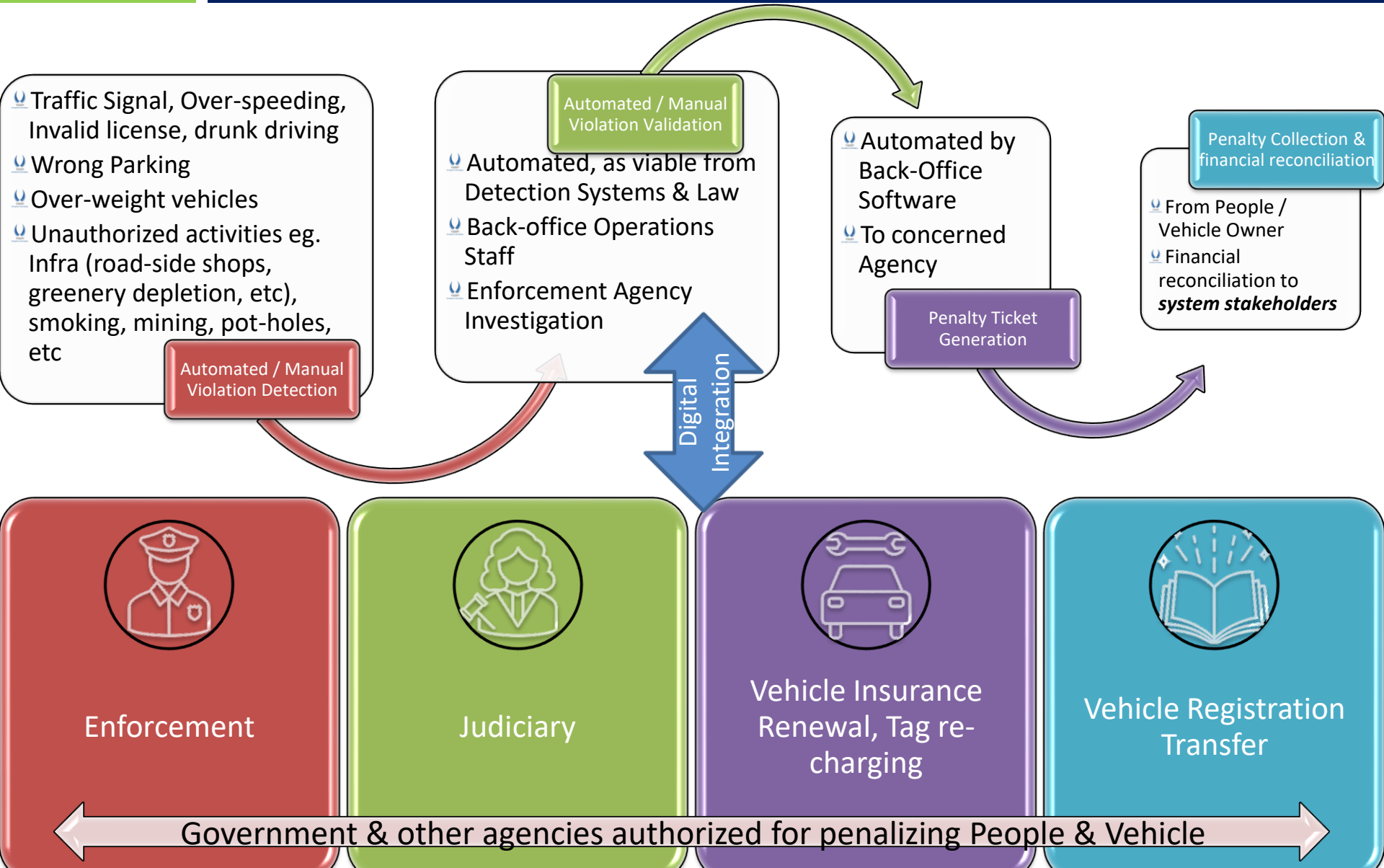


ISO 9001: 2015 | CMMi Level 3 | ISO 20000-1:2018 | ISO 27001:2013 | ISO 45001:2018 | ISO 14001:2015

Penalty Ticketing System e-Governance



PENALTY TICKETING SYSTEM FOR E-GOVERNANCE



VEHICLE VIOLATION DETECTION USE-CASES



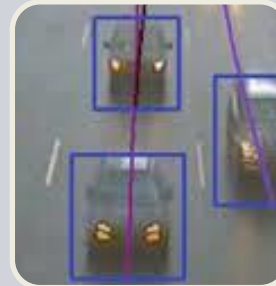
Traffic
Violations



Over-Speed
Detection



Red Light
Violation
Detection



Video
Incident
Detection
System



Parking
Violations

Back-office Control Room



MANUAL SURVEILLANCE



VaaN

Tech Systems & Infra Solutions

Traffic Monitoring - Sample Video/Images





VaaN

Tech Systems & Infra Solutions

AUTOMATED SURVEILLANCE: VIDEO INCIDENT DETECTION



Wrong Direction Detection



Stop Vehicle Detection



Vehicle Overspeed Detection



Fog/Low Visibility Detection



Traffic Congestion



Fire & Smoke Detection

SPEED & LANE DRIVING ENFORCEMENT



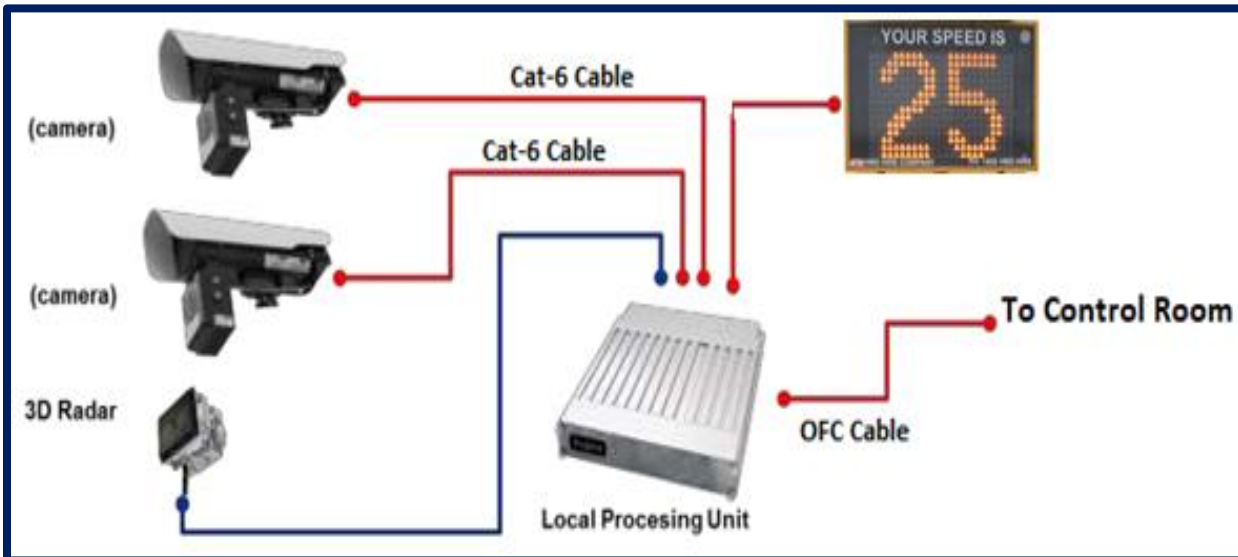
VaaN

Tech Systems & Infra Solutions



Field Side Equipment:

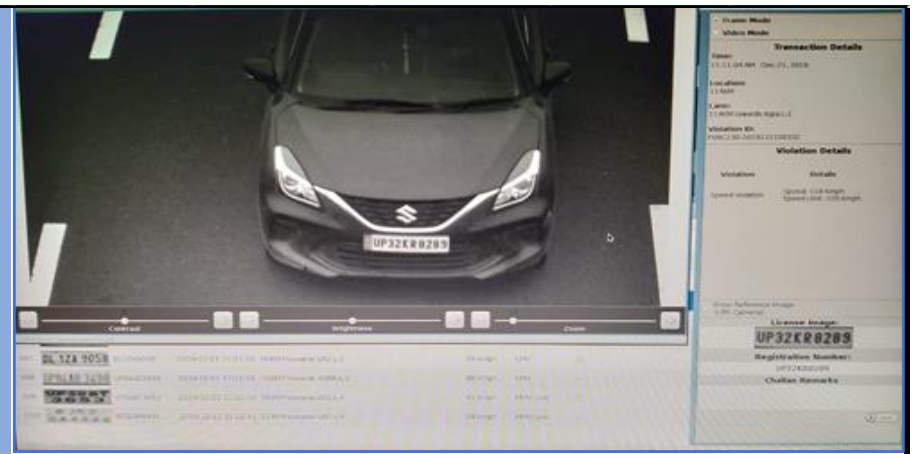
- ❑ One 3D-UHD/4D Radar
- ❑ One ANPR camera per lane
- ❑ One Overview Camera per Gantry, as required
- ❑ Road-side Controller Units
- ❑ Speed Display Unit per lane



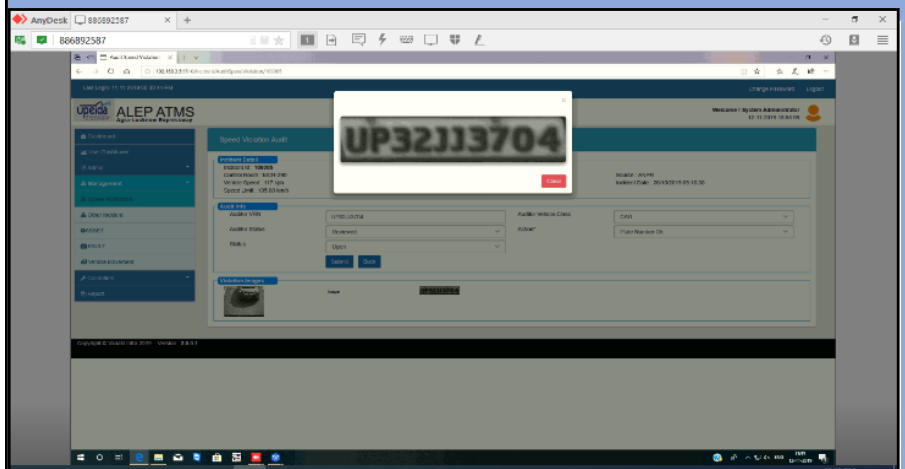
ENFORCEMENT PROCESS



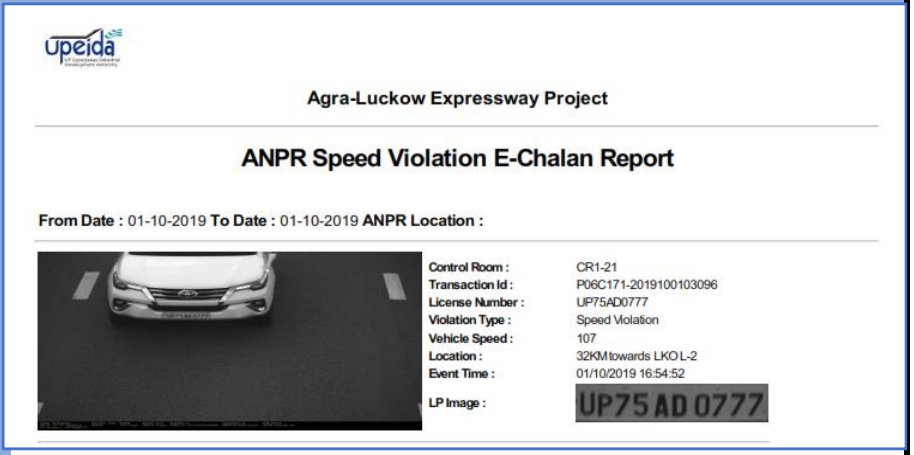
Speed Warning to Commuter



OCR Processing at Control Room



Audit before Challan Generation

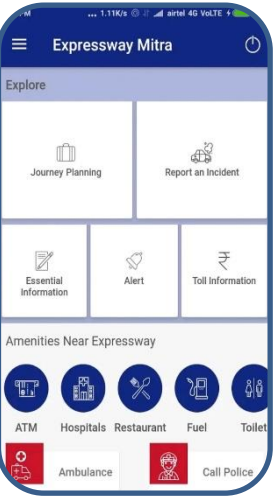


Electronic Challan for Enforcement

And if warning doesn't work, Spot & Section Speed enforcement kicks in...



MOBILE APP



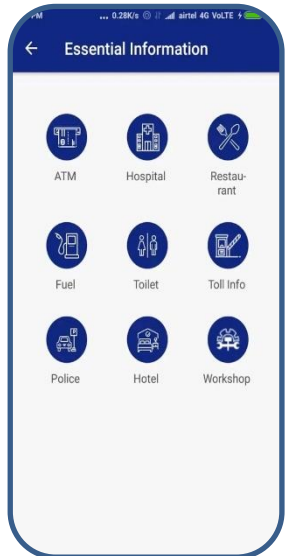
Home Page



Map Support



Speed Alerts



Information Support

Commuter

- Journey Planning, Information on Amenities, Map
- Over/Under Speed Warning
- Notifications – Nearby Historical Places
- Control Room Emergency Broadcasts eg Re-routing

Patrolling Team

- Commuter Assistance, Incident Management
- Tracking Personnel & Assets

Enforcement Agency

- E-challaning by Entering Vehicle Number
- On-the-spot registering of traffic violations such as invalid license, drinking & driving etc

Authorities

- Monitoring Control Room Operational efficiency
- Viewing Pending Incidents & Closure Statistics
- Monitoring Equipment Status & SLA parameters

MOBILE APP – COMMUTER LOGIN

Expressway Mitra

Explore

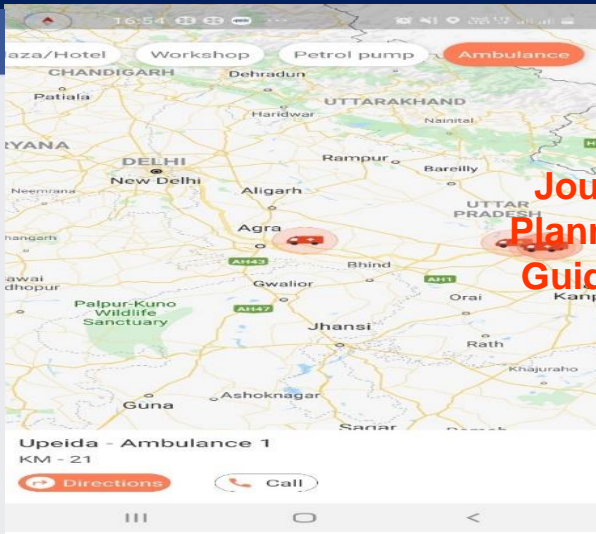
- Plan Your Journey
- Report an Incident
- Expressway services
- Alert
- Toll Fare

Amenities Near Expressway

- ATMs
- Hospitals
- Restaurants
- Fuel
- Restrooms
- Workshops

Emergency Assistance

- Ambulance
- Police
- Helpline no



Journey Planning & Guidance

Upelda - Ambulance 1
KM - 21

Directions | Call

Toll Fare

Vehicle Class: Light Commercial Vehicle

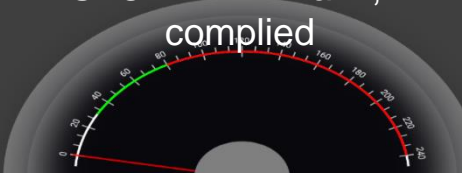
Entry and Exit Point: Agra (Exit Km-1)

₹ 470

CHECK TOLL FARE

Speed Limit
Car : 100 km/hr
Others : 80 km/hr

Warn if over-speeding or, STOPPED. Thank, if complied



0 km/hr

Exceeding the prescribed Speed Limit will result in penalty at the Exit Toll Plaza

Report an Incident

Select the incident to report to the Expressway Control Center.

- Accident
- Traffic Congestion
- Cattle on Road
- Unlawful Activities
- Road Assets
- Wayside Amenities
- Toll Plaza Related
- Breakdown Services
- Bad Road
- Vehicle Parked
- General Complaints
- Natural disasters
- Man-made Disaster
- Conflict based Disaster

Complaint ID:76067

Incident Resolved

Traffic Congestion
Maintenance WIP
Sun, 29 Sep, 02:48 PM

0 People involved in the Incident

Description: some

Remedy: informed to petrolling team

Incident Images: +1

Incident Generation, Feedback & reward

Complaint ID:102602

Incident Resolved

General Complaints
Street Light Not Working
2 Nov, 2019, 04:22 PM

Share your feedback

★★★★☆

Write a comment

Done

Incident images

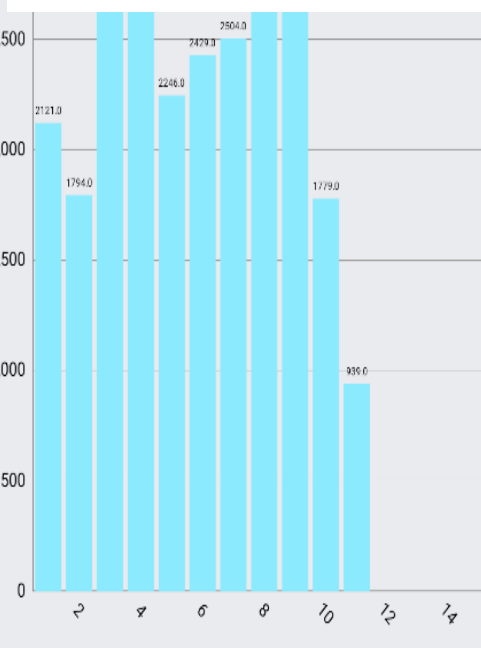
Incident location: 20, Faridabad, Haryana

MOBILE APP – ENFORCEMENT AGENCY LOGIN

Expressway Mitra

Yearly Data Monthly Data

Dashboarding & Visualizations




Day	Value
2	2121.0
3	1754.0
4	2246.0
5	2479.3
6	2504.0
7	2504.0
8	1779.0
9	996.0

(November, 2019)

Speed violation list

Scan The Toll Receipt Barcode

T&C applicable and rights are reserved to UPEIDA. Ensure that the scanned ticket is of Agra-Lucknow expressway only.



Place a barcode inside the viewfinder rectangle to scan it.

OR

Enter Vehicle Number

Enter Vehicle Number

Get Vehicle Report

Detail

Speed Violation Vehicle Number
DL10CB3973

@88 km/hr
Tue, 5 Mar, 07:07 PM

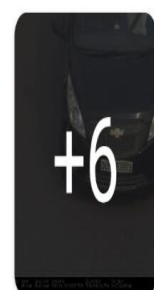
Control Room ID
1

Lane ID
1

Transaction ID
P06C161-2019020517838

Entry ID
13064

Violation Images



Generate E-Challan



UPEIDA

Agra Lucknow Expressway @ Chhatar Torkan
Chhatar and Noida for Overpassing (Officer)
Under Act and Rule (Traffic Violation)

E-Ticket Number: P06C161-201911100016
Offence Date: Mon, 11 Nov, 05:54 PM

Under the order of Law Motor Vehicle Act

Registration Number: UP1402393
Challan Type: Speed Violation

Control Room: 1
Transaction ID: P06C161-2019020517838
Vehicle Speed: 111 km/hr

Location: 250M towards AGRN lane2
Speed Limit: 100.00 km/hr
LP Image:

Police Station Name: _____
Police Officer Name: _____

Vehicle Detail

Registration Number: UP1402393

City: _____
Mobile Number: _____

MOBILE APP – PATROL TEAM LOGIN



Incident Dashboard


Incident Summary

Showing this week's details


Nov 01, 2019 to Nov 08, 2019

Total incident category wise

Category	Closed	Opened
Accident	26	0
Traffic Congestion	0	50




Incident History



Report an Incident

Complaint ID :131945



Incident Open

Date: 09/12/2019 **Time:** 4:06 PM

Category: Traffic Congestion


Sub Category: VIP Movement


Nearest Km: 120Km Lucknow to Agra

User Description: VIP movement

Control Room: MCR-290

Incident Images



 Charmwood Village, Faridabad, India, 121009

Assigned Incident Details

Comment

Resolved

Incident id **26814** Status **Open**

Incident date: 26 Jul, 2019, 09:15 PM


Description: testing

Close incident


Write a comment

Send

Incident Closure Report




Comment (3)



Close

← Accident

Upload incident images



Incident subcategory

Select incident subcategory

Description

Please provide description

Number of people involved

Nearest Km

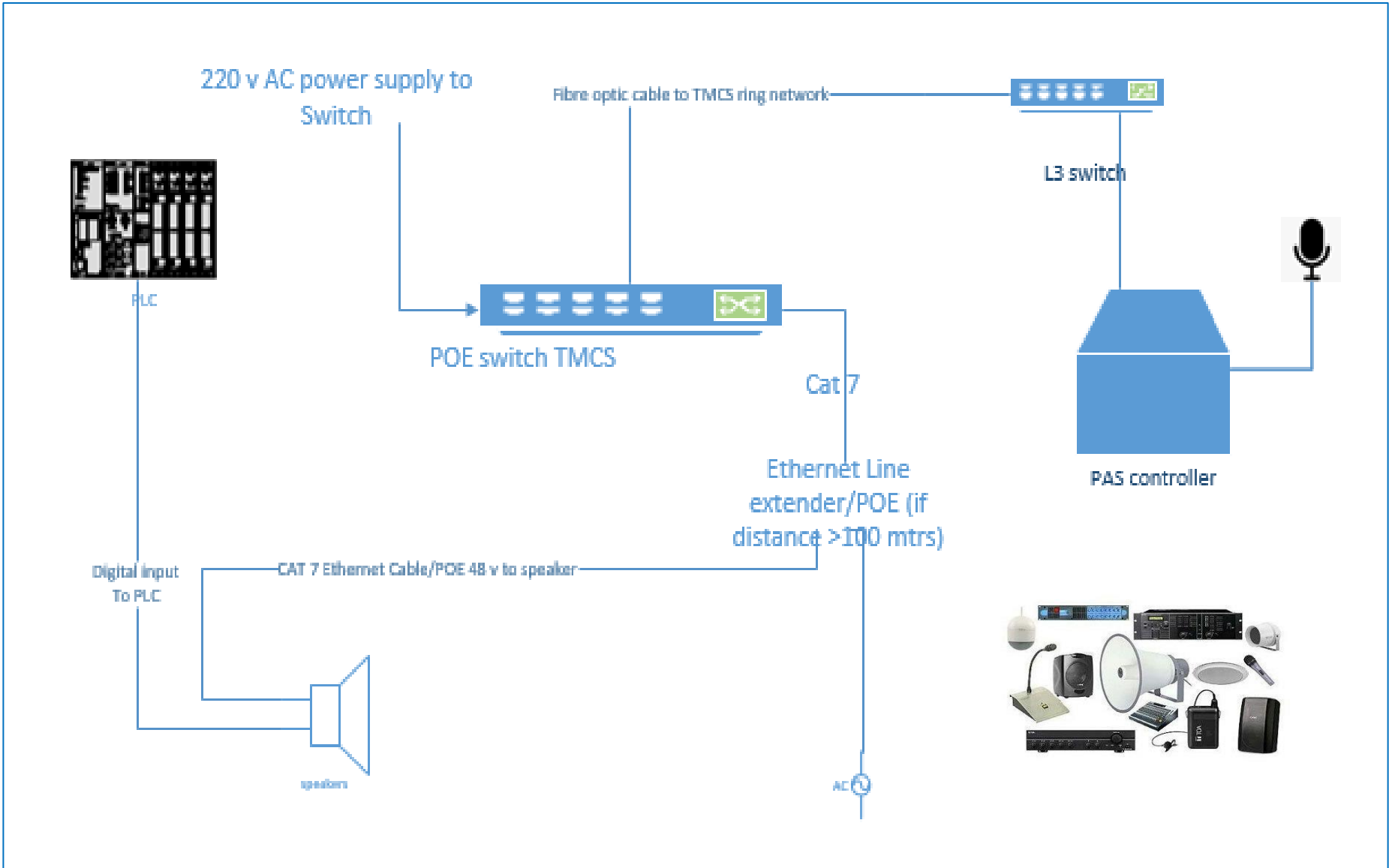
Incident Reporting

SUBMIT

EMERGENCY CALL BOX SYSTEM



PUBLIC ADDRESS SYSTEM





Mobile Interceptors

Red Light Violation

Digital Camera

Speed Detection

Mobile Data Terminal

Payment Gateway

Online / Net banking

Analytics & Dash Boards



INTEGRATED PENALTY MANAGEMENT SYSTEM AT CONTROL ROOM

COMMAND & CONTROL CENTRE



Operations Decision Support – MIS, Dashboards



Live Tracking and Incident Management – Video Analytics



Resilient & Redundant Network – 24x7 NMS



Remote Monitoring & Health Monitoring of Equipment



Active SLA Monitoring – 99.5% uptime



Integrable to State & National Level Command & Control Centers

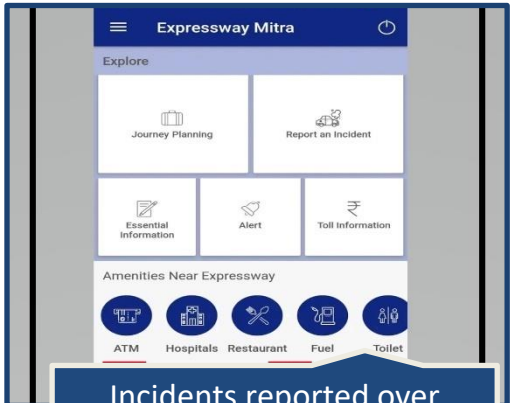
INCIDENT HANDLING IN CONTROL ROOM



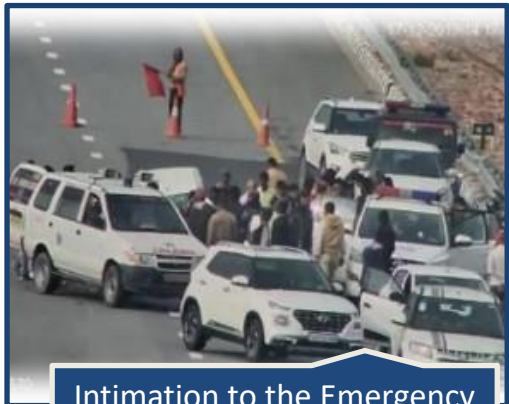
Incidents Detected from Control Centre



Incidents reported over ECB



Incidents reported over Mobile App and direct calls in Control Room



Intimation to the Emergency Response Teams, Ambulance, Police and nearest Hospitals



Incident Validation & Penalty Generation at Control Room

INCIDENT MANAGEMENT – VIDS/SURVEILLANCE

Last Login: 04-12-2020 05:47:02 PM

Change Password Logout



Upeida ATMS
Agra-Lucknow Expressway Project

Welcome! System Administrator
05-12-2020 12:57:50

- Dashboard
- User Dashboard
- Admin
- Management
 - Speed Violation
 - Other Incident
- Asset
- Fault
- Vehicle Movement
- Employee Roster
- Controllers
- Report

Validate Other Incident

Incident Detail

Incident Id : 267732
Category : Traffic Rule Violation
Source : ATMS Operator
Assign To : UPEIDA Six
Operator Remark :

Validation Info

Validator Comment (max 300 char)*

Incident Date 05-12-2020

Closure Date 05-12-2020

Submit Back Re-Validate

Incident Images



Download



Download



Direction
g direction.
y Van Crane Required
Incident Date : 05/12/2020 10:53:00
Incident Location : 0+800 LHS
Severity : Low

Status Close

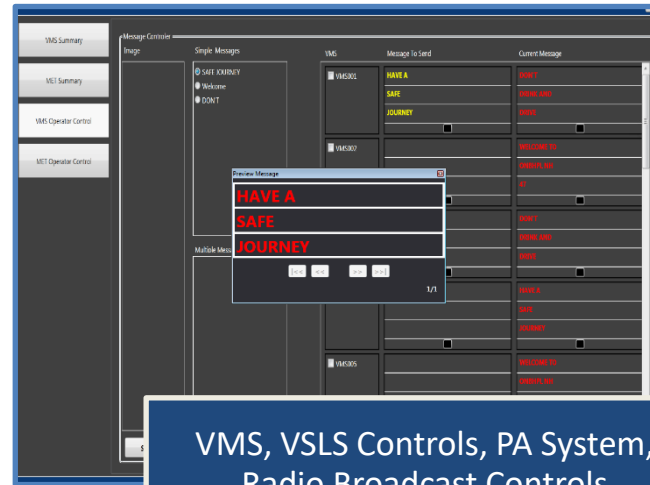
Sub Category Vehicle Driving In Wrong Direction

Closure Image Choose Files No file chosen

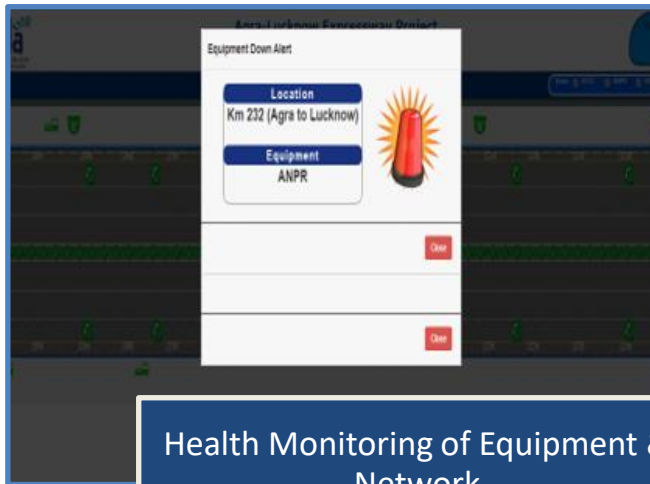
SHIFT SUPERVISOR TOOLS



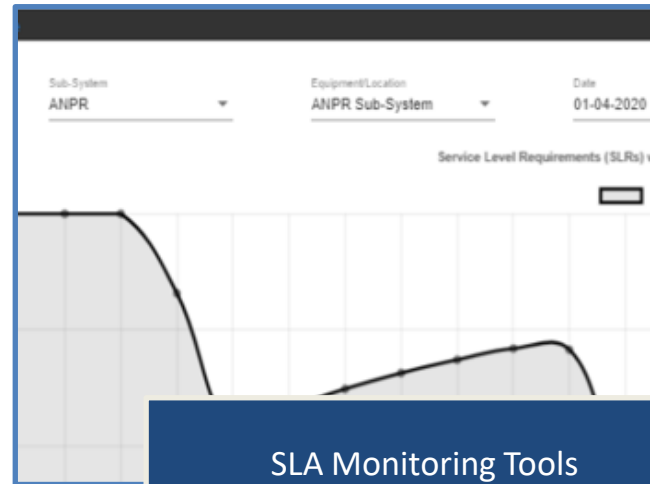
Operations Decision Support – MIS, Dashboards & Analytical tools



VMS, VLS Controls, PA System, Radio Broadcast Controls



Health Monitoring of Equipment & Network



SLA Monitoring Tools

REPORTING AND SLA MONITORING



Currently, >50 reports available. New reports or, alterations handled during design phase

Last Login: 04-12-2020 05:47:02 PM Change Password [Logout](#)

Upeida ATMS Agra-Lucknow Expressway Project Welcome ! System Administrator
05-12-2020 13:11:30

- Dashboard
- User Dashboard
- Admin
- Management
- Controllers
- Report**

ALEP - Reports

Control Room / Central Server: CR1-Km21

Report Category: **--Select Report Category--**

Select Report: **--Select Report Category--**

Start Date:

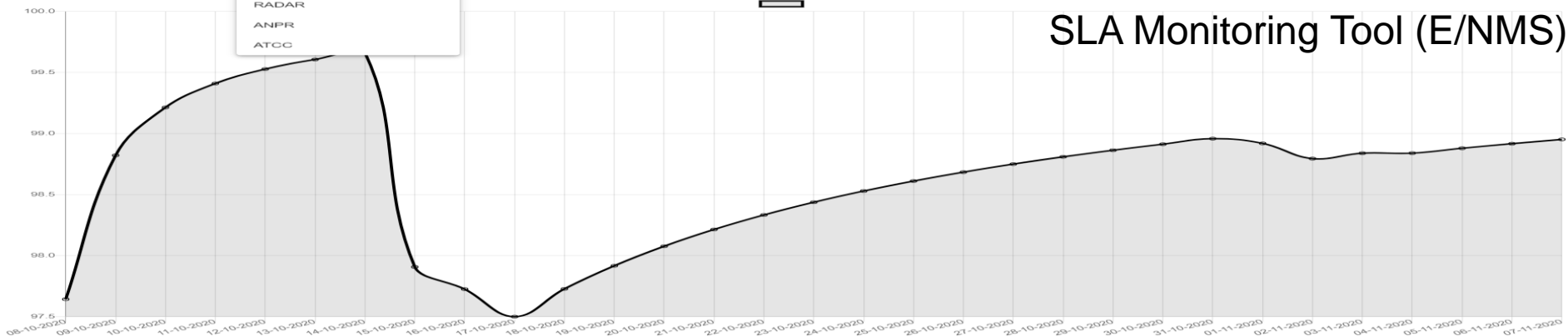
Year: --Select Year--

Month Name: --Select Month--

Week Name: --Select Week--

End Date: 05-12-2020 23 59 59

[Generate Report](#)



SLA Monitoring Tool (E/NMS)

FIELD EQUIPMENT - REAL TIME STATUS MONITORING



ECB Call Audit

Summary | Call MGT | Call Audit | Receive Call

Name: 3-000(LHS) (192.168.1.51) Chainage: 3 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 3-000(RHS) (192.168.1.52) Chainage: 3 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 6-450(LHS) (192.168.1.53) Chainage: 6 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 6-450(RHS) (192.168.1.54) Chainage: 6 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 10-450(LHS) (192.168.1.55) Chainage: 10 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 10-450(RHS) (192.168.1.56) Chainage: 10 Km., Direction: DOWN Battery: Unknown Door: Unknown
Name: 14-700(LHS) (192.168.1.57) Chainage: 14 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 14-700(RHS) (192.168.1.58) Chainage: 14 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 18-550(LHS) (192.168.1.59) Chainage: 18 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 18-550(RHS) (192.168.1.60) Chainage: 18 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 21-900(LHS) (192.168.1.61) Chainage: 21 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 21-900(RHS) (192.168.1.62) Chainage: 21 Km., Direction: DOWN Battery: Unknown Door: Unknown
Name: 28-300(LHS) (192.168.1.63) Chainage: 28 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 28-300(RHS) (192.168.1.64) Chainage: 28 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 30+550(LHS) (192.168.1.65) Chainage: 30 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 30+550(RHS) (192.168.1.66) Chainage: 30 Km., Direction: DOWN Battery: Unknown Door: Unknown	Name: 33+800(LHS) (192.168.1.67) Chainage: 33 Km., Direction: UP Battery: Unknown Door: Unknown	Name: 33+800(RHS) (192.168.1.68) Chainage: 33 Km., Direction: DOWN Battery: Unknown Door: Unknown
Name: 37+250(LHS) (192.168.1.69) Chainage: 37 Km., Direction: UP Battery: Unknown	Name: 37+250(RHS) (192.168.1.70) Chainage: 37 Km., Direction: DOWN Battery: Unknown	Name: 43+000(LHS) (192.168.1.71) Chainage: 43 Km., Direction: UP Battery: Unknown	Name: 43+000(RHS) (192.168.1.72) Chainage: 43 Km., Direction: DOWN Battery: Unknown	Name: 46+310(LHS) (192.168.1.73) Chainage: 46 Km., Direction: UP Battery: Unknown	Name: 46+310(RHS) (192.168.1.74) Chainage: 46 Km., Direction: DOWN Battery: Unknown

Radar: Speed Display

71 km/h Lane 1 Event Time 5/12/2020 12:53:35	93 km/h Lane 2 Event Time 5/12/2020 12:55:17	94 km/h Lane 3 Event Time 5/12/2020 12:55:36
--	--	--

Close

Agra-Lucknow Expressway Project

Device Faults List

ATCC	ECB	ANPR				
ECB	Door	Battery Staus-Vol	Solar Status-Vol	Vandalism	Temperature	
3-000(LHS)	Close	Ok - 13.93 V	Disconnected - 0.32 V		28.26 C	
6-450(LHS)	Close	Ok - 14.57 V	Disconnected - 0.40 V		28.31 C	
10-450(LHS)	Close	Ok - 13.77 V	Disconnected - 0.32 V		28.15 C	
3-000(RHS)	Close	Ok - 14.01 V	Disconnected - 0.32 V		27.80 C	
10-450(RHS)	Close	Ok - 14.25 V	Disconnected - 0.32 V		27.88 C	
14-700(RHS)	Close	Ok - 13.69 V	Disconnected - 0.40 V		27.34 C	
18+550(LHS)	Close	Ok - 13.85 V	Disconnected - 0.40 V		28.07 C	
21-900(RHS)	Close	Medium - 11.91 V	Disconnected - 0.08 V		27.96 C	
37+250(LHS)	Open	14.70	OFF		0	
78-000(RHS)	Open	14.47	OFF		0	
81+650(LHS)	Open	13.62	ON		0	
94-250(RHS)	Open	13.93	OFF		0	

Close

ECB Live Status

Device Component	Status
IP Address	192.168.11.67
Battery	14.13
Solar	0
Charging	ON
Light	OFF
Door	Open

FIELD EQUIPMENT – DASHBOARDING & STATUS



- Dashboard
- User Dashboard
- Admin
- Management
- Controllers
 - ATCC Controller
 - CCTV Controller
 - MET Controller
 - VIDS Controller
- Report

Summary
VIDS Details

Vids: -All-
 From Date: 01-08-2020 12:45
 To Date: 01-08-2020 12:45

Event Category: -All-
Search
Reset

VIDS ID	Event	Date	Time	Action
VIDS 16-300 LHS	Vehicle Stop	19/2020	11:49:42	Play
VIDS 16-300 LHS	Wrong Direction	19/2020	11:49:38	Play
VIDS 16-300 LHS	Wrong Direction	19/2020	11:49:36	Play
VIDS 16-300 LHS	Vehicle Stop	19/2020	11:49:35	Play
VIDS 36+650 LHS	Vehicle Stop	19/2020	11:49:32	Play
VIDS 36+650 LHS	Vehicle Stop	19/2020	11:49:22	Play
VIDS 36+650 LHS	Wrong Direction	19/2020	11:49:8	Play
VIDS 16-300 LHS	Vehicle Stop	19/2020	11:49:4	Play

▶
0:00

Summary
Monitor
MET Graph

Air Temperature

FusionCharts XT Trial

Humidity

FusionCharts XT Trial

Rain

FusionCharts XT Trial

Road Temperature

FusionCharts XT Trial

Visibility

FusionCharts XT Trial

Wind Speed

FusionCharts XT Trial

Vaaan-HTMS® Version: 1.0.0.0
×

- VMS Summary
- MET Summary
- VMS Operator Control
- MET Operator Control

VMS ID	IP Address	Status
0000VMS001	192.168.4.142	SAFE JOURNEY
0000VMS002	192.168.4.118	SAFE JOURNEY
0000VMS003	192.168.4.114	SAFE JOURNEY
0000VMS004	192.168.4.112	SAFE JOURNEY
0000VMS005	192.168.4.117	SAFE JOURNEY
0000VMS006	192.168.2.225	SAFE JOURNEY
0000VMS007	192.168.4.113	
0000VMS008	192.168.4.125	
0000VMS009	192.168.4.119	

CMN_LBL_Logn: 19/10/2019 04:48:25 PM CMN_LBL_User_System 4:49:24 PM Powered By: Vaaan Infra

Vaaan-HTMS® Version: 1.0.0.0
×

- VMS Summary
- MET Summary
- VMS Operator Control
- MET Operator Control

Message Controller

Image

- SAFE JOURNEY
- Welcome
- DONT

VMS

VMS001

VMS002

Message To Send

HAVE A SAFE JOURNEY

Current Message

DONT

WELCOME AND THINK AND

WELCOME TO TORRENTS AND #7

DONT

WELCOME TO TORRENTS AND #7

HAVE A SAFE JOURNEY

WELCOME TO TORRENTS AND #7

Preview Message








HAVE A SAFE JOURNEY

Multiple Messages








1/1

CMN_LBL_Logn: 19/10/2019 04:48:25 PM CMN_LBL_User_System 4:50:18 PM Powered By: Vaaan Infra

INTEGRATED PENALTY SYSTEM FEATURES

-  Centralized application for enforcement
-  Traffic rules and penalty levied against each violation are configured in central server.
-  Instant access to vehicle-wise/Driver-wise violation history (type of violation, pending challans etc.) using vehicle license number
-  Instant access of violation images
-  GIS/Map based GPS tracking of violation detection places/vehicles
-  Challan entry and Spot Challan issuance through PDA/Tab printer
-  Accepts cash and debit/credit card (online payment gateway) payments for spot/pending challans.

INTEGRATED PENALTY SYSTEM BENEFITS

-  **Increased transparency & uniformity** in end to end enforcement operations
-  **Ensure Law enforcement and road safety:** Identifying repeated offenders and taking action against them. Effective enforcement.
-  **MIS:** Information on area wise/ Inspector wise/ police station wise booked violations, Challan defaulters, collections, detained items etc. **Access to real-time information.**
-  **Resource Optimization:** Reduces manual/ paper work
-  **Increased revenues:** Simplified payment processes and Spot collections.
-  **Improved inter-departmental collaboration** (RO and Insurance companies) for better law enforcement.
-  **Several Payment Options** - Online Payment, Traffic spot challan, Debit and Credit card, Cash



VaaN

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