

INDUSTRY SOLUTION

Highways and Toll Plazas

Toll lanes, the carriageway and maintenance crews watched from the road's existing cameras: every vehicle on record, and stopped vehicles, wrong-way drivers and cattle on the road flagged as they happen.

Who it is for

- Toll road concessionaires and road InvITs
- Highway O&M contractors and toll operators
- Expressway, bridge and state highway operators

What you gain

- Stopped vehicles, wrong-way drivers, people and cattle on the carriageway reported at once
- PPE lapses and work-zone intrusions flagged
- An independent vehicle count per toll lane, to check against the toll system
- Safety reports by stretch and shift for audits

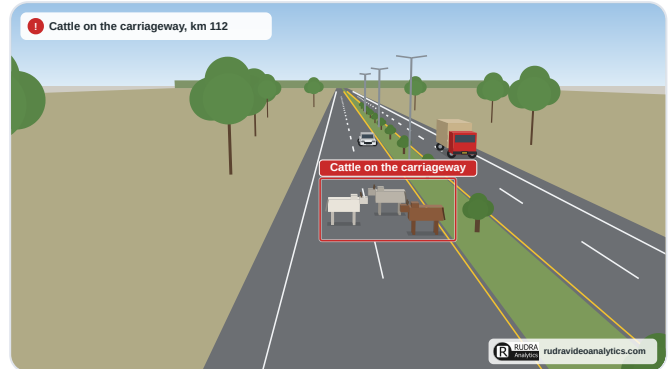


Illustration: what the camera sees and what Rudra marks on it.

WHAT IT DOES

Stopped vehicles and wrong way

A vehicle stopped on the carriageway, shoulder or slip road longer than allowed, and a vehicle driving against the traffic - each with a snapshot to the patrol team.

People and cattle on the carriageway

People and animals on the carriageway, at median openings and on slip roads, by schedule; cattle, dogs and monkeys are told apart from people.

Maintenance work zones

Vehicles entering a coned-off work zone, and lane staff or crews without a reflective vest or helmet - confirmed on site footage during the Proof of Concept.

Toll lanes: plates and counts

Each vehicle's number plate read in its lane, with alerts on listed and unreadable plates; vehicles counted by lane, hour and type - car, bus, truck and two-wheeler - and exported to Excel to check against the toll system's own figures.

Plaza: queues, booths and cash room

An alert when the vehicles waiting in a lane stay above the set number; the time each booth is staffed per shift; presence out of hours and two people on one entry at the cash room.

Crews, fire and control room

Face-recognition attendance for crews, patrol and toll staff; equipment removed from stores; flames and smoke at plazas; an alerts-first video wall.

PILOT Also offered as a pilot on your site

Water level: built and running, and offered as a pilot on the Client's own cameras - each commissioned only after a validation on the site's own cameras.

Where the cameras go

Area	What is watched	Licences
Carriageway, median openings and slip roads	Vehicles stopped longer than allowed; wrong-way driving; people and cattle on the road, by schedule	Core
Toll lanes	Number plate of every vehicle; vehicles counted by lane, hour and type	Core, ANPR
Plaza approach, booths and cash room	Vehicles waiting in each lane; booth staffing per shift; presence out of hours and two people on one entry at the cash room	Core
Maintenance work zones	Vehicles inside the coned-off zone; reflective vest and helmet for the crew	Core, PPE
Maintenance yard, camp and stores	Attendance for crews, patrol and toll staff; presence out of hours; equipment removed	Core, Face Recognition, Attendance
Plaza building, DG and electrical rooms	Flames and smoke; a camera covered or turned away	Core, Fire and Smoke

What you see every day

- Stopped-vehicle, wrong-way and cattle alerts with their snapshots, by stretch and hour
- Work-zone intrusions and PPE lapses with their snapshots, by stretch and shift
- Plates and vehicle counts per toll lane and hour, exported to Excel for comparison with the toll system's report
- Queue alerts and booth staffing per shift at every plaza
- Daily attendance, safety reports by stretch and shift, and an alerts-first video wall

What we need on site

- A camera at each work zone to be watched, on a mast or the crew vehicle, with a network link
- Highway cameras on poles or gantries that see the stretch to be watched, with lighting or IR for night
- A lane camera framed on the number plate in each toll lane - the plaza's existing lane cameras where suitable
- For PPE, people at least about 120 pixels tall in the picture
- A server sized by us for the cameras and analytics chosen, confirmed during the Proof of Concept

Licences · one-time or by subscription

Core licence

ANPR (lane cameras)

PPE Compliance

Fire and Smoke Early Warning

Attendance Management

Uses the road's existing plaza and highway cameras, with a camera at each work zone to be watched; the toll and traffic management systems are not changed and no connection to them is made - counts and plate records are exported for comparison. Alerts serve operations and safety, not e-challans or fines. On request, as custom analytics: vehicle counting by fee class (axles). Runs on the Client's premises on standard IP cameras (RTSP / ONVIF); alerts reach the web and mobile app, WhatsApp, SMS, e-mail, Telegram or a siren.

Let us survey your site

A Proof of Concept on up to four cameras for 30 days, on your own footage.

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