

Driver Behaviour Monitoring & Automated Enforcement Solutions for Developing Cities

Reliable traffic Data

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Problem(s)

Traffic Jams

Beating red robots

Motorists encroaching pedestrian walk-ways

Artificial Lanes blocking the normal lanes



Statistics

The number of motorists arrested for driving without due care increased from 2 201 in 2010 to 37 419 in 2015 while unlicensed drivers rose to 13 800 last year from 819 in 2010.

In 2015, the number of drivers fined for speeding increased to 34 782 from 24 330 in 2010 while cases involving negligent driving were 5 619 against 209 recorded in 2010.

418 reckless drivers were fined in 2015 from 29 drivers arrested for the same offence in 2010.

Current Methods of Enforcement

Manned roadblocks and patrols in CBD

Corruption, delays, creation of artificial congestion etc



Current Methods of Enforcement (cont...)

Spikes & sting operations



Accidents caused, loss of lives by pedestrians run over, injured police personnel etc

Solution ?

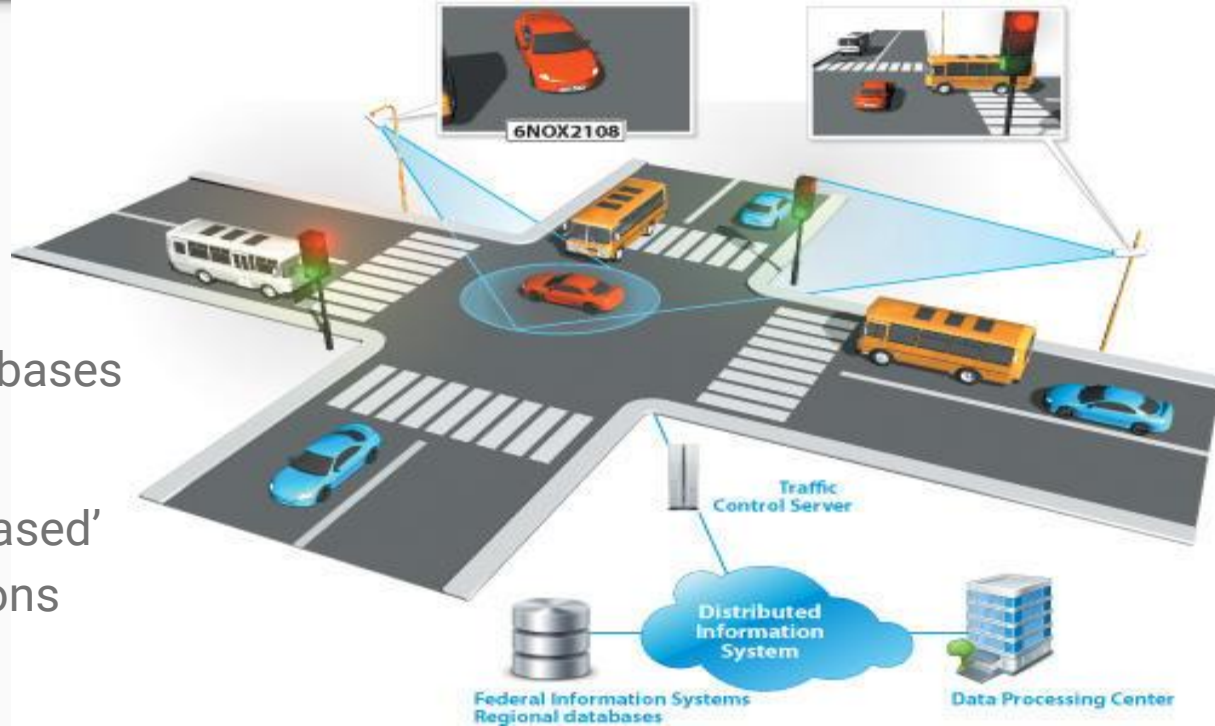
A DRIVER BEHAVIOUR MONITORING & AUTOMATED ENFORCEMENT SYSTEM

FEATURES :

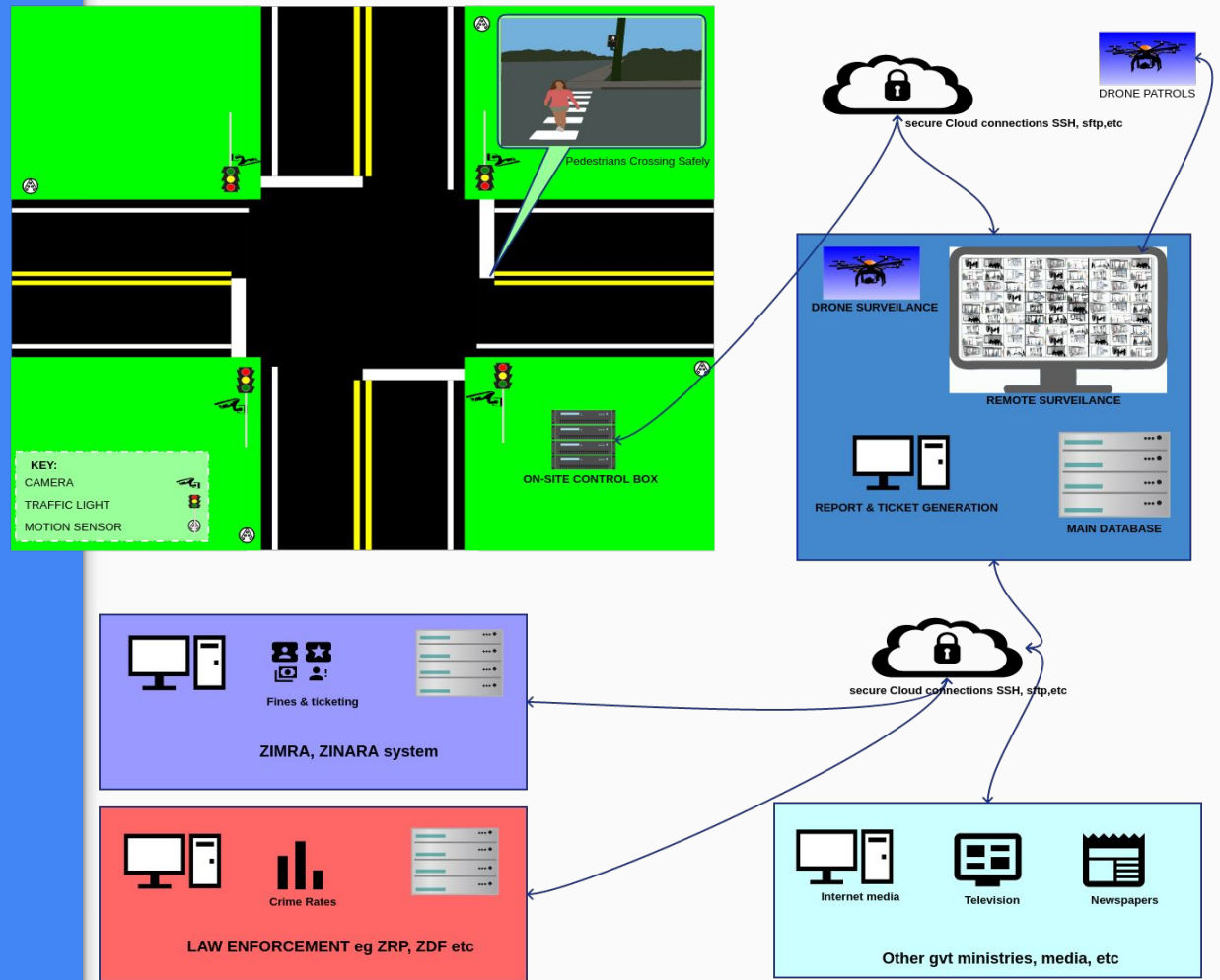
uses computer vision to monitor & track driver activity

Connected to CVR & ZRP databases

Automatically generates 'unbiased' accurate fines for any infractions made & stores evidence



System Design



Benefits

Less congestion & traffic delays

increases the revenue base of
CVR due to detection of
unregistered vehicles

Can be used to help track stolen
vehicles

Can be used by multiple stakeholders in their daily
activities eg town planners, law enforcement, Min.
of transport, news agencies(traffic updates),
academia etc

Current Progress

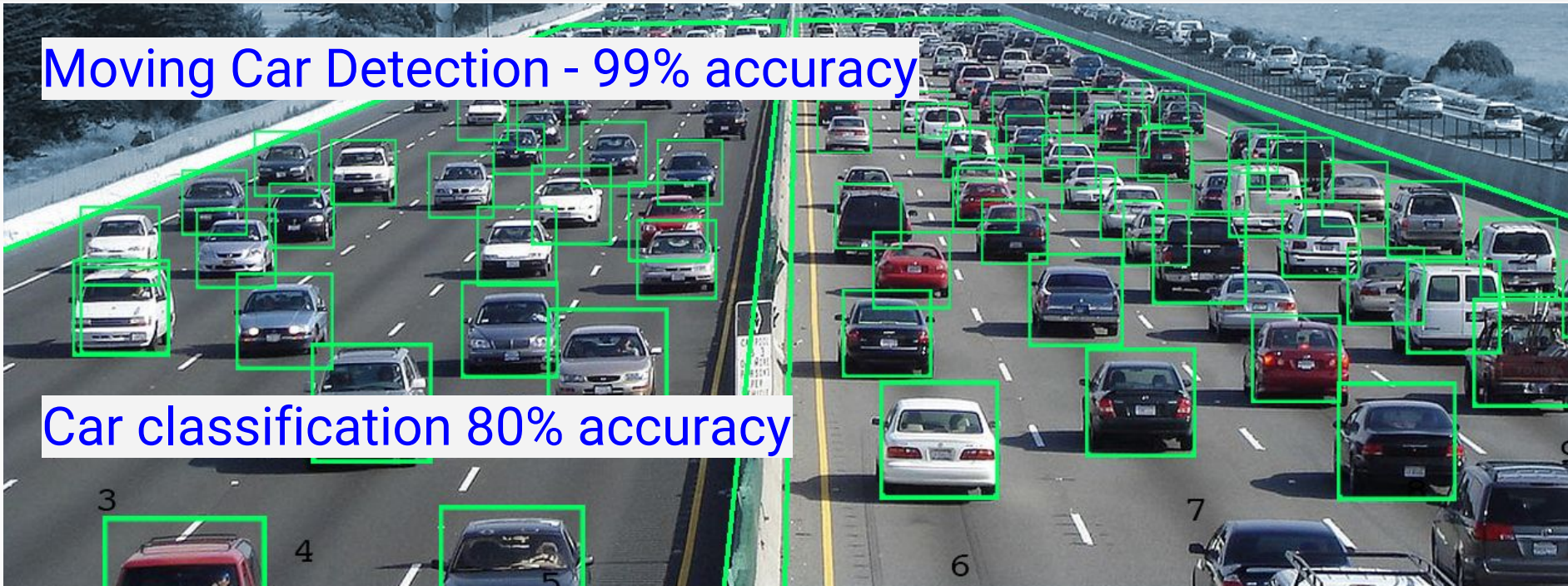
Number Plate recognition -
97% accuracy



Current Progress (cont.)

Moving Car Detection - 99% accuracy

Car classification 80% accuracy



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Applications

- Access control at gate monitoring systems
- Facial recognition at library entrances
- Artificial intelligence and Machine learning through
Self-driving cars & independent robots
- surveillance and reconnaissance
- National security (Civilian & Military) missile guidance systems

Advancement of Study

Stress testing - multiple environments

Better computing power for feature extraction and night time detection

Infrared cameras & funding to purchase sensors & actuators for enabling the traffic lights to communicate with the system

Connection to simulated 'database clones' of CVR and ZRP to test efficiency of ticket generation under real world conditions

Magumo

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