ATCC - TOLL
Automatic Traffic Counting and classification

COS AI

Adhering to

MORTH
Government of India

NHAI
National Highways Authority of India

IHMCL
Indian Highway Management Company Limited

Guidelines

Why AI based ATCC for Toll Plaza?

AI-powered traffic counting and classification systems outperform traditional sensors, providing precise real-time data. They seamlessly integrate with toll plaza management software, offering cost-effective solutions and improved operational efficiency with minimal maintenance.

Why choose COS AI ATCC?

COS AI provides customized solutions for toll plazas, with adaptable hardware and software tailored to diverse vehicle types and axle counts. Its user-friendly interface integrates seamlessly with existing systems, enhancing toll plaza management efficiency.

How ATCC works?

The camera on the gantry near the toll plaza transmits video through optical cables, and with the assistance of COS AI software, an LPU kit in the toll office performs analytics. The real-time traffic data is then showcased on a separately provided computer interface.

Key Features:

★ Detects more than 17 classes, covering most of the NHAI Mapper Vehicle Classes (20 classes).

★ Achieves 95% classification accuracy and 98% counting accuracy.

★ Validation of the toll plaza traffic is done using other installed methods.

★ Flexible post-editing options and an excellent report format for comprehensive toll management.

ATCC Dashboard

Instant Vehicle Classification on Dashboard
- ★ Provides a real-time overview of the current vehicle classifications.
- ★ Allows users to instantly view the vehicle types present.

Hourly Reports with In-Front Vehicle Images:
- ★ Generates detailed reports every hour, including information on vehicle classifications.
- ★ Includes images of vehicles taken from the front for evidence or additional analysis.

Real-Time Monitoring

Visual Data's

Hourly, Weekly, and Monthly Count-Based Reports:
- ★ Offers flexibility in reporting with options for hourly, weekly, and monthly counts.
- ★ Enables users to track trends and patterns over different time frames.

Downloadable Reports:
- ★ Users can download reports for further analysis or record-keeping.
- ★ Provides a convenient way to share or store historical data.
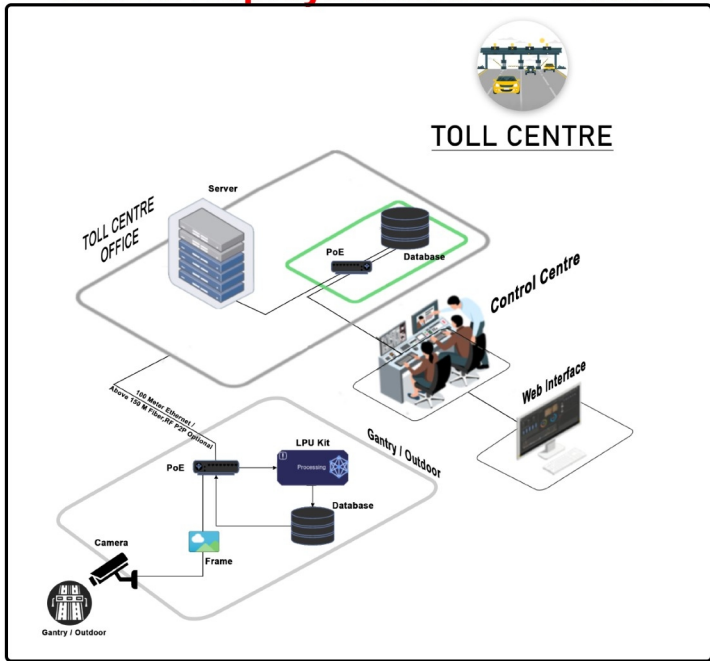
API Integration for ATMS/Toll Software:
- ★ Offers APIs for seamless integration with existing Advanced Traffic Management Systems (ATMS) or Toll Software.
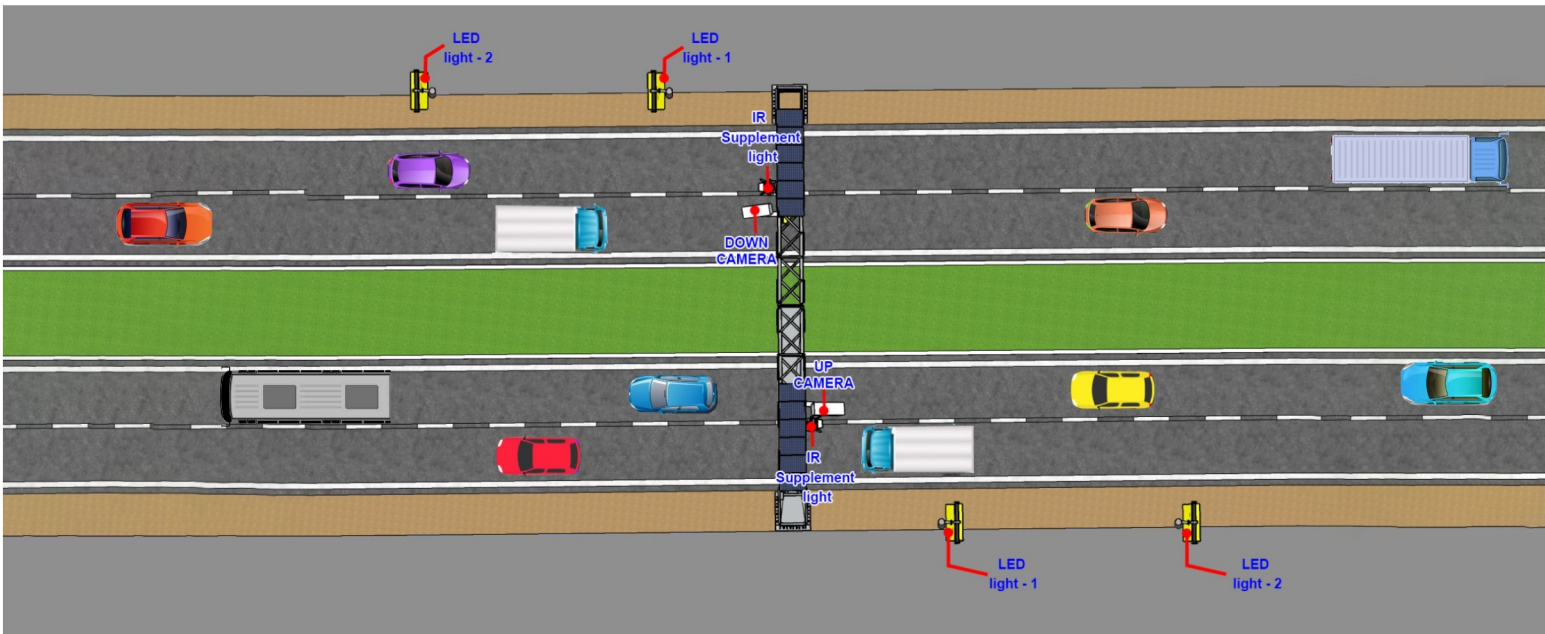- ★ Enables customers to incorporate the vehicle classification data into their existing infrastructure.
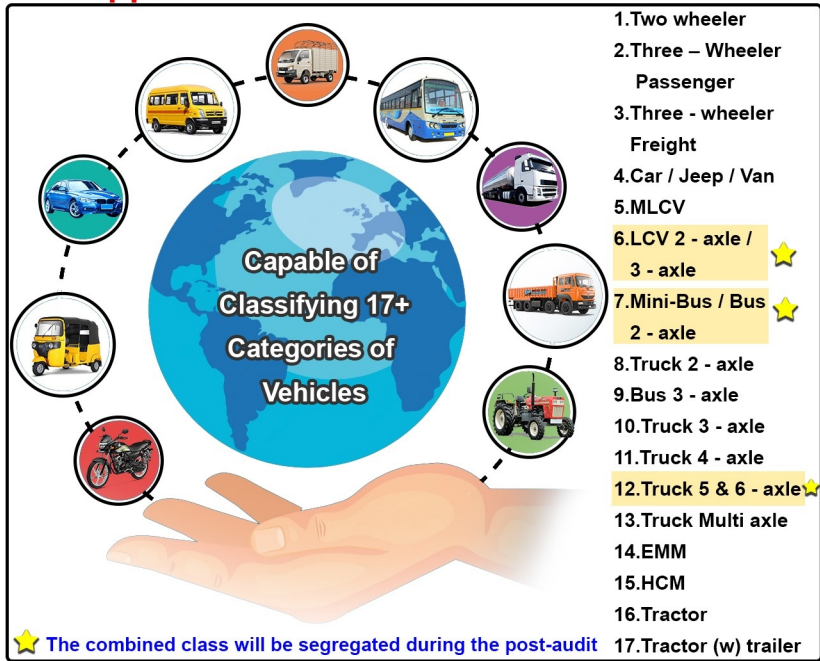
This system could be beneficial for various applications, such as smart city initiatives, transportation management, toll collection, and traffic monitoring. It provides both real-time insights and historical data for more in-depth analysis and decision-making.

COS AI Deployment Architecture

Mapper Vehicle Classes vs COS AI Classes

TOLL CENTRE

1. Two wheeler
2. Three – Wheeler Passenger
3. Three - wheeler Freight
4. Car / Jeep / Van
5. MLCV
6. LCV 2 - axle / 3 - axle ⭐
7. Mini-Bus / Bus 2 - axle ⭐
8. Truck 2 - axle
9. Bus 3 - axle
10. Truck 3 - axle
11. Truck 4 - axle
12. Truck 5 & 6 - axle ⭐
13. Truck Multi axle
14. EMM
15. HCM
16. Tractor
17. Tractor (w) trailer

⭐ The combined class will be segregated during the post-audit

COS AI 's Indicative ATCC Toll Components
(For 4 / 6 lane Highway section)

Sl.No	ATCC Toll Components	Qty.	Unit	Remarks
1	COS AI ATCC Toll Software	1	No.	COS AI
2	Hardware of COS AI LPU Kit	2	Nos.	COS AI
3	IP Camera 2MP / 5MP - HIKVISION / DAHUA	2	Nos.	Client
4	ARMOURED Ethernet CAT6 Cable (Camera to POE switch connectivity)	2	Nos.	Client
5	Lighting Pole for 8.0m Pole with 1m Arm @ 5.5m each 2 poles (LHS & RHS).	4	Nos.	Client
6	PoE Switch D-Link 5 Port	1	No.	COS AI
7	FIBER Cable & Media Converter, RF P2P to connect 2 Cameras from the gantry to Toll Centre LPU Kit. Because gantry/camera pole to toll centre more than 400 metres. (Optional)	As per site		Client
8	If Place the camera near the toll centre (less than 150m) Instead of gantry/camera pole ARMOURED CAT6 cable is preferable.	As per site		Client
9	LED Focus Lamp 1000W / 500W as per the Plan Diagram	6	Nos.	Client
10	To viewing the real time scenario - Desktop (Specs.:i5/ 16GB RAM / 1 TB SSD)	1	No.	Client
11	COS AI ATCC Toll Software	1	No.	Client

Terms & Conditions

- The client is responsible for covering the costs associated with Uninterrupted Power Supply, lighting, Internet Broadband line, Nework Cabling, Camera mounting, and any other miscellaneous works.

- Camera installations must be positioned at a minimum height of 18 feet above the surface.

- FIBER Cable & Media Converter, RF P2P connectivity to connect 2 Cameras from the gantry/camera pole to Toll Centre LPU Kit. Because the gantry to toll centre more than 400 metres. (Optional) are the responsibility of the client.

- If Place the camera near the toll centre (less than 150m) Instead of gantry/camera pole ARMOURED CAT6 cable is preferable for the connectivity establishment.

- Two lights will be installed, necessitating the placement of two poles in front of the camera pole. A minimum space of 20 meters between each pole is required on both LHS and RHS.

  Additionally, a third light will be installed near the camera with a road-focused beam.

- The video coverage area must not have stationary vehicles parked within it. Only through-traffic is preferred.

- For Toll Plaza installations, it is recommended that only through-traffic be accommodated.

- Usage in areas with mixed traffic, such as road crossings, traffic signals, or leakage roads, is not recommended.

- If a customer requests usage on road crossings, service roads, leakage roads, etc., a separate product should be explored .
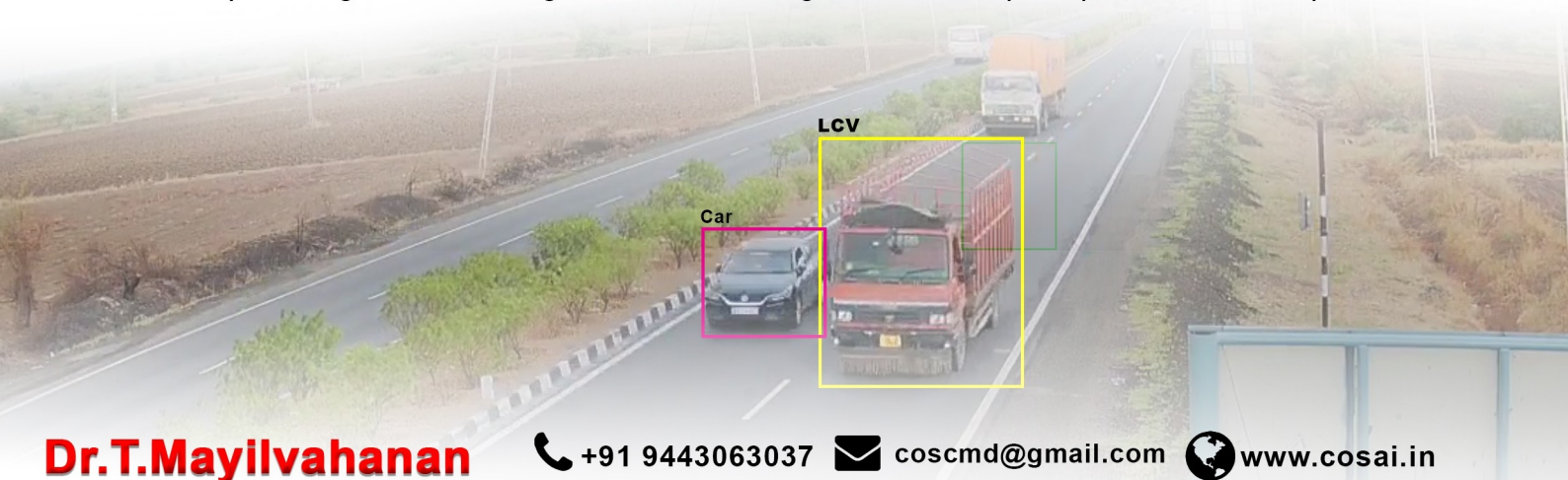
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