# Tech-Focused Traffic Policing in India

***Mains:*** *GS-III - Infrastructure & GS-II – Governance*

## Why in News?

*Recently, the Prime Minister of the Netherlands visited Bengaluru Traffic Police's Traffic Management Centre (TMC), where he spoke about the Actionable Intelligence for Sustainable Transformation Management (ASTraM) system.*

## What is Tech-focused traffic policing?

- **Tech-focused traffic policing** – It refers to the use of advanced technologies—such as AI, the Internet of Things (IoT), and automated surveillance—to monitor road conditions, enforce traffic laws, and manage traffic flow in real-time.
- It is often termed as "*Intelligent Traffic Management Systems*" (ITMS), moves away from manual enforcement towards data-driven, automated, and proactive solutions that reduce the need for physical police presence on the road.

## What is ASTraM and how does it work?

- **ASTraM** – It is a *smart traffic engine* which provides holistic insights into the road traffic scenario for Bengaluru city.
- **Introduction** – The Bengaluru traffic police have introduced ASTraM *in 2024* to enhance traffic management.
- **Purpose** – To provide situational awareness to take data-driven decisions for effective traffic management.
- This includes congestion alerts, incident reporting using BOT (mobile application), special event management, and dashboard analytics.
- **Development** – It was developed in *collaboration with the Dutch company Arcadis*, pools data from CCTV footage and open data sources to monitor and predict trends in real-time across Bengaluru's congested roadways.
- **Working –** It identifies congested areas, batches them, and then alerts relevant officers at every 15 minutes interval.
- By capturing both recurring and non-recurring congestion points, this application provides insights that can be *used for predictive traffic policing and incident reporting*.
- **Contrast to other systems** – Google Maps and other prominent mapping applications have been providing users with real-time traffic congestion data for years.
- They also report on traffic incidents and affected regions, but these systems *do not provide predictive services*.
- **Integration**

    - **e-attendance system** – Alerts are sent to the junction jockeys and sector officers, apart from various stakeholders for better traffic planning and management.
    - **Dashboard analytics** – It intends to provide actionable intelligence regarding traffic conditions, road safety, and enforcement.

## What are the various technologies and initiatives used across the country?

- **Delhi** – Used AI cameras and Automatic Number Plate Readers (ANPR) to enforce bans on old vehicles to reduce air pollution.
- **Greater Chennai Traffic Police** – It uses an integrated traffic regulation system (ITRS) that involves AI and live feeds for efficient traffic management, allowing them to track down repeat offenders.
- **AI Camera Surveillance** – Kerala has implemented AI cameras to detect violations like not wearing helmets, triple riding, and speeding, aimed at reducing accidents.
- **Smart Traffic Management** – Bengaluru uses the Adaptive Traffic Control System (BATCS) to monitor 165+ intersections, adjusting signals based on real-time traffic flow.
- **ATMS on Expressways** – The Delhi-Mumbai Expressway (Dwarka section) utilizes advanced AI to monitor traffic, detecting infractions in real-time to enhance safety.
- **Automated Enforcement** – Cities are adopting automated challan systems via SMS, reducing manual intervention and increasing transparency.
- **Predictive AI** – Projects like iRASTE (Intelligent Solutions for Road Safety through Technology and Engineering) use AI to predict accidents and analyze high-risk areas.
- **Global Perspectives**
    - **Western countries (EU, North America)** – Predictive policing and surveillance often considered undesirable; some US cities have banned it.
    - **Asia & Latin America** – The greater acceptance and deployment of such systems.

## What are the advantages of tech-focused traffic policing?

- **Consolidated Traffic Insights** – Intelligent traffic policing systems allow the authorities to quickly process data across many media formats (cameras, sensors, apps, reports).
- This gives authorities a consolidated picture of which areas require immediate intervention and urgent traffic policing solutions.
- **Predictive Preparedness** – The police can also build on this data to prepare for future events like processions, unrest, and traffic chokeholds.
- **More effective than existing app** – This is far more effective than relying on existing app-based GPS systems, or waiting for users to telephone or post their complaints on social media before taking action.
- **Accident Prevention** – Intelligent traffic policing systems have more localised data to work with, they can potentially prevent accidents that occur due to a mixture of Google Maps and human errors.
- For instance, take past incidents where Google Maps misdirected drivers onto unsafe bridges, leading to fatalities.

- **Surveillance & Enforcement** – Surveillance/intelligence policing can help the authorities identify rule violators in risky areas, without officers having to be physically present at the scene.

## What are the threats of predictive traffic policing?

- **Privacy Risks** – AI surveillance techniques and live data analysis can caution against privacy risks that arise from increased surveillance.
- **Errors in AI Traffic Systems** – Intelligence-based systems can make mistakes in detecting violations or predicting congestion.
- Such errors may cause unfair penalties or poor traffic management.

## What lies ahead?

- **Cybersecurity Safeguards** – As more citizen data is collected for traffic policing, greater cybersecurity safeguards and investments are required to secure sensitive and personally identifiable information.
- **Balancing Benefits & Risks** – AI surveillance can improve road safety and traffic management, but they carry inherent risks - data management, privacy, and cybersecurity challenges.

## References


1. The Hindu | Predictive policing & traffic management tools
2. The Hindu | Bengaluru traffic police launch ASTraM initiative
3. India AI | AI and traffic control in India



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