

Market Intelligence Partner

**1Lattice**

**Traffic** **InfraTech**  
EXPO

**Road** **InfraTech**  
EXPO

**Parking** **InfraTech** Expo

# TrafficInfraTech Expo

POST EVENT  
REPORT 2024

OCTOBER 2024

Confidential and proprietary © 1Lattice

# Product in Spotlight: Insights

## 1 Insights

Powered by Insights, our latest report on the “TrafficInfraTech Expo 2024”, offers a comprehensive overview of the advancements in traffic infrastructure and mobility solutions. This report delves into innovative technologies such as AI-driven traffic management, ITS systems, smart parking solutions, and GNSS-based tolling. Additionally, it highlights emerging trends like sustainable mobility and next-generation safety measures that are poised to shape the future of urban infrastructure.

Insights, our advanced intelligence product, transforms the way you approach infrastructure strategies by providing unparalleled access to comprehensive data, actionable insights, and in-depth forecasts. From real-time traffic analytics to innovative parking management, Insights empowers stakeholders with the knowledge needed to tackle India's critical road safety and mobility challenges effectively.

# TABLE OF CONTENTS

- 01** Introduction to the TrafficInfratech Expo
- 02** Executive summary of the event
- 03** Exhibitor profiles and participants
  - 3.1** Overview of the exhibitor landscape
- 04** Emerging trend and technology
  - 4.1** Intelligent transport system: An overview
  - 4.2** Innovation in real-time traffic monitoring
  - 4.3** Global navigation satellite system
  - 4.4** Parking solution technologies
  - 4.5** Other technologies showcased in the TrafficInfratech Expo
- 05** Brief of the products showcased by companies at the TrafficInfratech Expo
- 06** Road safety challenges
- 07** Technologies expected to see higher demand in CY25
- 08** Key traffic infrastructure projects
- 09** Way forward
- 10** Insights & perspectives from speakers





# Introduction to the TrafficInfratech Expo

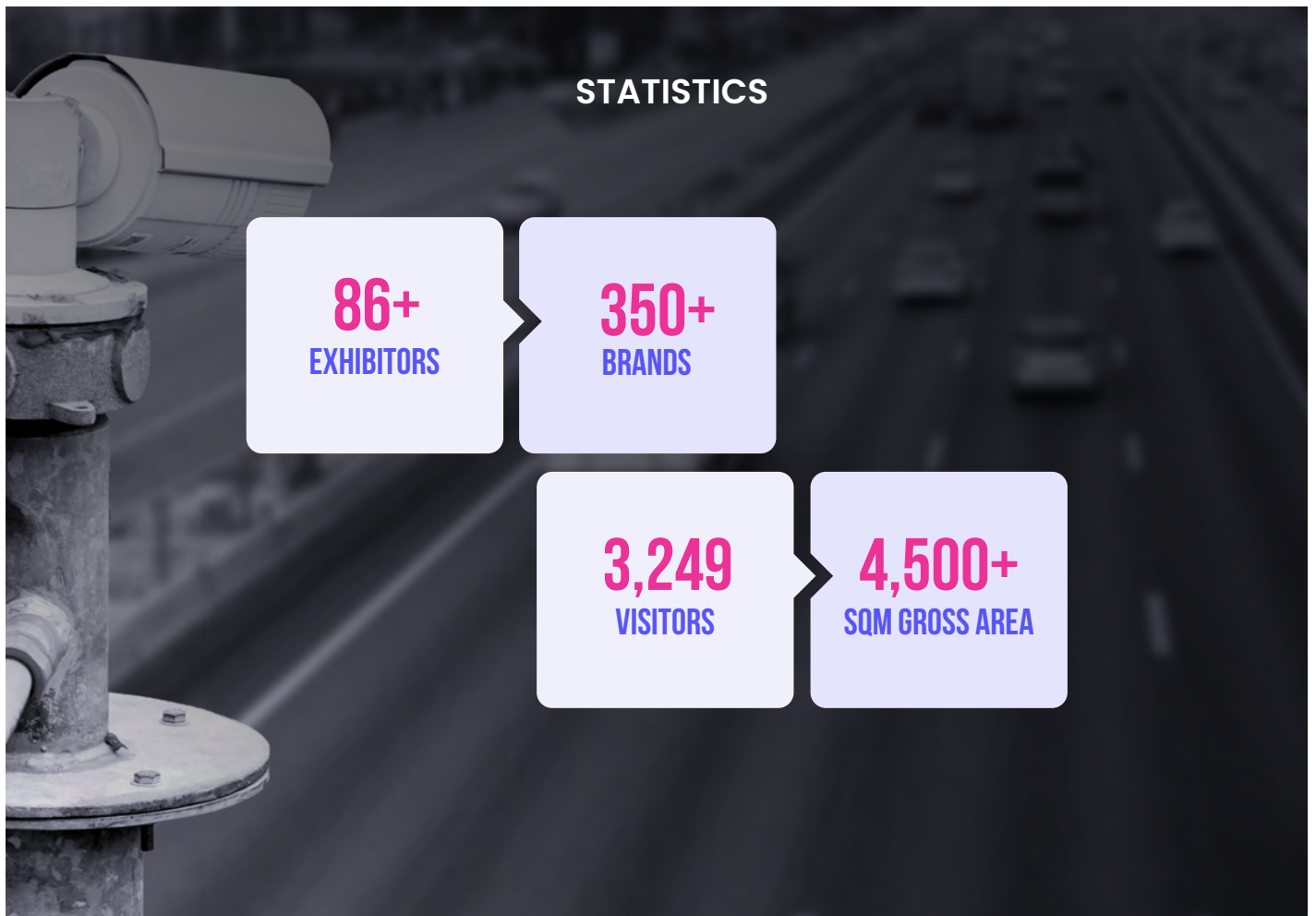


TrafficInfraTech Expo is the leading show for traffic management, road infrastructure, parking, and smart mobility in India. Since its first edition was held more than a decade ago, it has remained one of the most demanded and sought-after expos on latest innovations in traffic and transport technology, road safety and security, parking management, smart mobility, and road construction.

Over 86 domestic and international exhibitors attended 12th edition of the expo at Pragati Maidan in New Delhi on 22nd – 24th October 2024, once again highlighting India as an indispensable hub for the infrastructure and mobility space.

In addition to the main exhibition, the event hosted high-level conferences addressing topics such as green mobility, road safety challenges, and next-generation infrastructure technologies. These discussions aimed to explore innovative solutions to meet the evolving demands of India's transportation network.

The expo also served as a platform for industry leaders, policymakers, and innovators to collaborate and share insights, fostering the exchange of knowledge and the formation of strategic partnerships. This collaborative environment contributes to the advancement of infrastructure and mobility solutions in India.





# Executive summary of the event: TrafficInfratech Expo



The 2024 TrafficInfratech and mobility expo themed **“Enabling Responsible Mobility”** convened over 100 companies, policy-making participants, and leading people who discussed critical developments regarding the advancement of traffic infrastructure, in order to establish newer solutions relating to road safety. This assembly highlighted the fact that

transforming transport challenges into more positive change might be the end to what is possible while concentrating only on sustainable solutions related to human needs through providing a complete review of ITS current achievements as well as future goals.



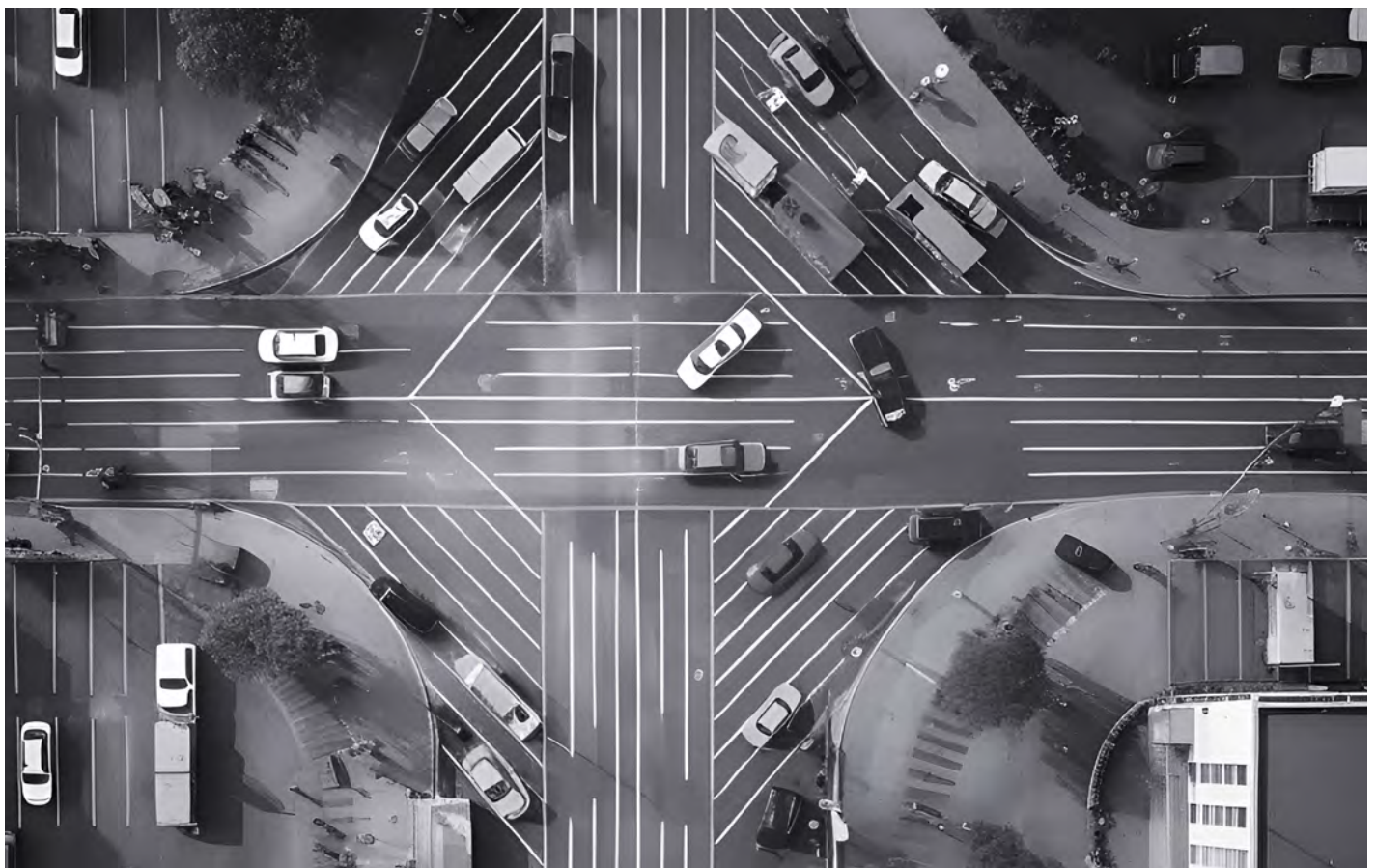
“Our emphasis on collaborating with startups and private sector experts underscores the vital role of integrating cutting-edge technologies and law enforcement solutions to address road safety challenges and enhance toll collection methods.”

**Shri Nitin Jairam Gadkari**  
Hon’ble Union Minister for Road Transport  
and Highways, Government of India’



During the 12th edition of the TrafficInfratech Expo, the Union Minister of Road Transport & Highways, Shri Nitin Jairam Gadkari, emphasized the critical need to improve road safety and accelerate the adoption of advanced technologies in the transportation sector. He highlighted India’s urgent road safety challenges, noting an alarming annual toll of 5 lakh accidents,

with significant economic losses, ~3% of the national GDP. More than half of the fatalities occur among young adults aged 18-36 years, a case that defines the top government priority of improving road safety with continuous efforts directed towards ensuring these are mitigated.



# Key sessions and highlights

## **Mobility India From Green to Greener**

This opening session, led by keynote speaker Michael Schuch, CEO of Swarco, emphasized the importance of sustainable mobility solutions. Prof. Ashish Verma also discussed the need for infrastructure adaptations to support eco-friendly urban mobility

## **Road safety vision zero session**

This session addressed India's alarming road fatality rate, with panelists advocating for the "5Es" framework—Engineering, Emergency Care, Enforcement, Encouragement, and Education—as vital strategies for creating a safer traffic environment

## **Technical sessions on road safety challenges**

Experts discussed the impact of poor infrastructure, inadequate road design, and the absence of Intelligent Traffic Systems (ITS) on accident rates. They underscored the importance of enhancing enforcement and encouraging better driver behavior to improve safety outcomes

## **Next-Generation technology presentations**

Demonstrations in this session showcased AI-powered traffic management systems, drone technology for road maintenance, and smartphone applications for infrastructure assessments. These innovations offer real-time insights and help reduce maintenance costs through predictive solutions

## **Innovative technologies in ITS**

The introduction of ITS smart poles equipped with Vehicle-to-Infrastructure (V2I) communication, real-time data exchange, and radar-based detection systems enhances traffic management, improves situational awareness, and facilitates proactive maintenance

## **Future vision for infrastructure**

Presenters outlined a vision for accident-free roads, integrating humancentred AI, Autonomous Driving Systems (ADS), and emergency response systems like eCalls for crashes. This approach aims to create safer, more efficient infrastructure globally

## **Global communication standards**

Expo showcased how consistent ITS communication standards are crucial for interoperability across countries. Advanced vehicular communication technologies and various traffic management systems, such as Universal Traffic Management Systems (UTMS) and Integrated Traffic Control Systems (ITCS), are improving real-time data flow

## **Innovations in Tolling Systems**

GNSS and Multi-Lane Free Flow (MLFF) systems facilitate seamless, distance-based tolling without toll booths. By using satellite-based tracking for dynamic pricing and automated data processing, these systems contribute to smoother traffic flow







# Exhibitor profiles and participants



The expo showcased a variety of exhibitors presenting innovative solutions for India's traffic infrastructure. Highlights included toll management systems, such as RFID and Automatic Vehicle Classification (AVC), and Advanced Traffic Management Systems (ATMS) for real-time traffic optimization.



### ITS / Telematics

- Highway traffic management
- Traffic information / control systems / survey & analysis
- Automatic number plate recognition (ANPR)
- VMS/digital signages/video walls
- Video traffic surveillance
- Radar detectors
- Vehicle tracking, tracing and monitoring systems
- Mapping and geographic information systems (GIS)
- AI / IOT



### Fare and Toll

- Toll collection system
- Vehicle weighing systems & weigh-in motion
- Traffic data collection systems
- Toll automation / RFID / sensors
- Automatic vehicle classification
- Signalling
- System integrator
- Surfaces cleaning, polishing, finishing



### Road Safety

- ADAS
- Alcohol breath analyser
- Speed detectors warning systems
- Traffic signs
- Navigation lights
- Traffic lights
- Road hazard warning lights
- Lane indicators
- Emergency vehicle
- Emergency management systems
- In vehicle safety solutions
- Weather monitoring systems
- Tunnel safety solutions



### Security & Surveillance

- City surveillance systems
- Traffic cameras & CCTV
- Video walls in control room
- Dash cams



The product categories from the concurrent expos were also showcased, highlighting a range of innovative solutions across various sectors:



### Road Safety

- Road Signs
- Crash Barriers / Guardrails
- Noise Barriers
- Road Marking Equipment & Paints
- Traffic Reflective Signages
- Speed Bumps
- Road Blockers
- Bollards
- Cones
- Solar Road Studs



### Payment Materials

- Treated Soil
- Soil additives, binders, stabilizers
- Stone Aggregators
- Bituminous & Asphalt Materials
- Cement, Cement Mortar and Cement Concrete
- Alternative flexible pavement materials
- Recycled materials



### Infrastructure

- Roadside / Wayside / Highway Amenities
- Street lighting
- Bus Shelters, Parking Shelters



### Support Services

- Project / alignment
- Geospatial consultants
- Soil Testing
- Auditing

The parking sector in India is rapidly evolving due to increasing traffic, multimodal integration, infrastructure growth, and the Smart City initiative. This creates an opportunity for your brand to

showcase innovative technologies and solutions that drive automation, digitalization, and efficient parking management, including multilevel designs, touchless systems, and advanced tools.

## Innovative parking infrastructure products showcased at the expo



### Parking Zone / Structure Design



### Multi-Level Parking



### Parking Management / Guidance Systems



### Parking Enforcement Systems



### Access Control / Sensors / Systems



### Automated Payment / Ticketing Systems



### Safety / Security Technologies



### Automatic Number Plate Recognition (ANPR)



### Parking Apps



### Automatic Vehicle Identification



### Supporting Hardware

## 3.1 Overview of the exhibitor landscape

Various exhibitors showcased innovative solutions for traffic and road management, congestion control, and enhanced safety. Their technologies addressed

critical challenges in modern urban mobility, offering advanced tools and systems to improve efficiency, reduce congestion, and ensure safer roads

### Companies offering tech infra and solutions



### Companies offering infra materials for roads and construction





# Emerging trends and technologies



The event highlighted major advancements in India's traffic infrastructure, focusing on sustainability and technological innovation. Key discussions focused on transitioning to greener solutions like Electric Vehicles (EVs) and solar-powered traffic systems to reduce carbon emissions. The integration of AI, IoT, and cloud technologies in traffic management was highlighted, featuring Intelligent Traffic Management Systems (ITMS) and Adaptive Traffic Control Systems (ATCS) for real-time congestion control and improved efficiency.

Companies like Arcadis have presented intelligence-driven sustainable design, engineering, and consultancy solutions for natural and built assets, while SeekRight showcased AI-powered video analytics and machine learning tools.

SKYTOLL and Vehant Technologies demonstrated GNSS-based toll management systems for advanced digital traffic management, and Nayan showcased intelligent traffic management solutions that monitor traffic violations with dual and single-camera systems, tracking driver behavior and road conditions.

### Sustainability and Green mobility

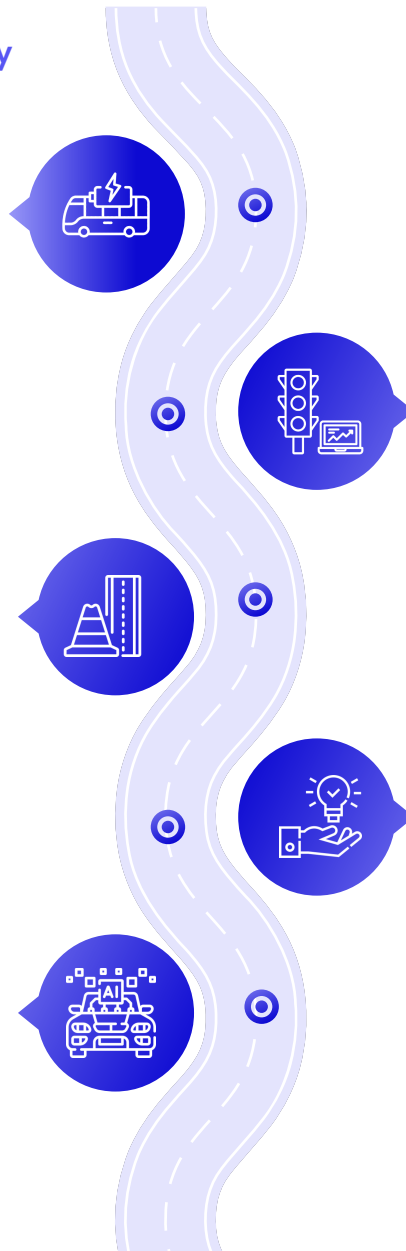
- Focus on India's shift to sustainable transportation, featuring green mobility, EVs, and eco-friendly road design
- Push for renewable energy solutions, like solar-powered traffic systems and EV-ready infrastructure, to reduce carbon emissions across traffic networks

### Road safety innovations

- AI-driven tools for driver behavior analysis, real-time violation detection, and automated challan systems to enhance compliance and road safety
- New emergency response systems, AI cameras, and road asset management tools to strengthen and future-proof India's safety infrastructure

### ATMS, ITMS & ATCS technologies

- Advanced traffic and intelligent management systems (ATMS, ITMS) use real-time analytics, AI, and machine learning to improve traffic flow and safety
- Adaptive traffic control systems (ATCS) optimize signal timings based on live conditions, reducing congestion and boosting urban efficiency



### Intelligent & digital traffic management

- Showcasing AI-driven adaptive traffic control systems using cloud technology for real-time congestion reduction
- Innovations like FASTag & GNSS-based tolling for automated toll collection, enhancing convenience, reducing congestion, and controlling emissions

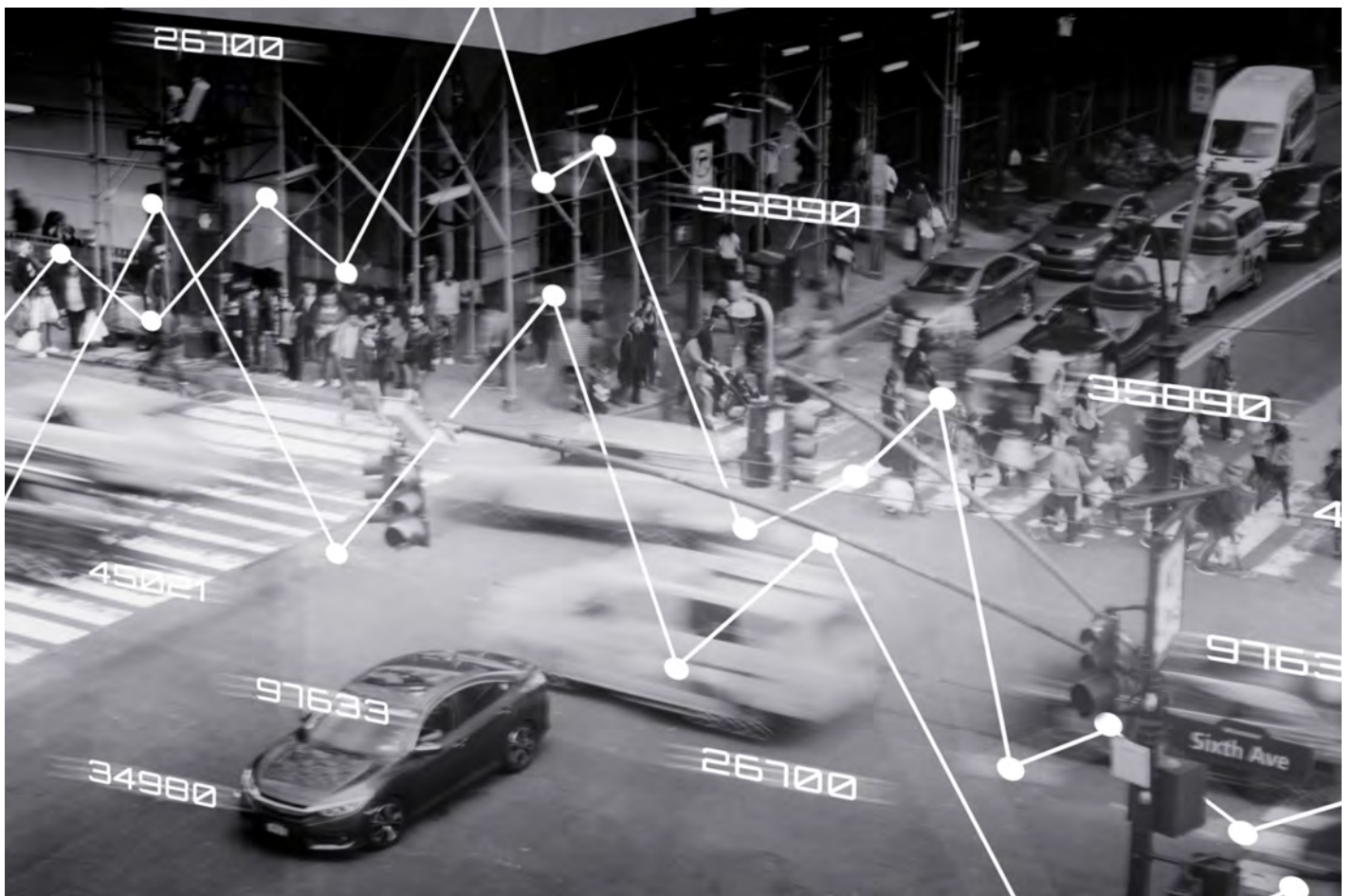
### Next-generation infrastructure solutions

- Satellite data and drone-assisted audits transforming road maintenance and infrastructure development
- Real-time digital signboards and intelligent safety barriers enhancing both urban and rural road networks

Companies at the expo, highlighted groundbreaking **AI-powered** innovations in traffic monitoring and safety solutions. Technologies focusing on using artificial intelligence to make roads safer by analysing traffic patterns, detecting risky behavior,

and predicting accidents. These solutions, capable of identifying speeding, signal violations, and other hazards in real-time, enable authorities to take proactive measures, thus preventing accidents and improving road safety.

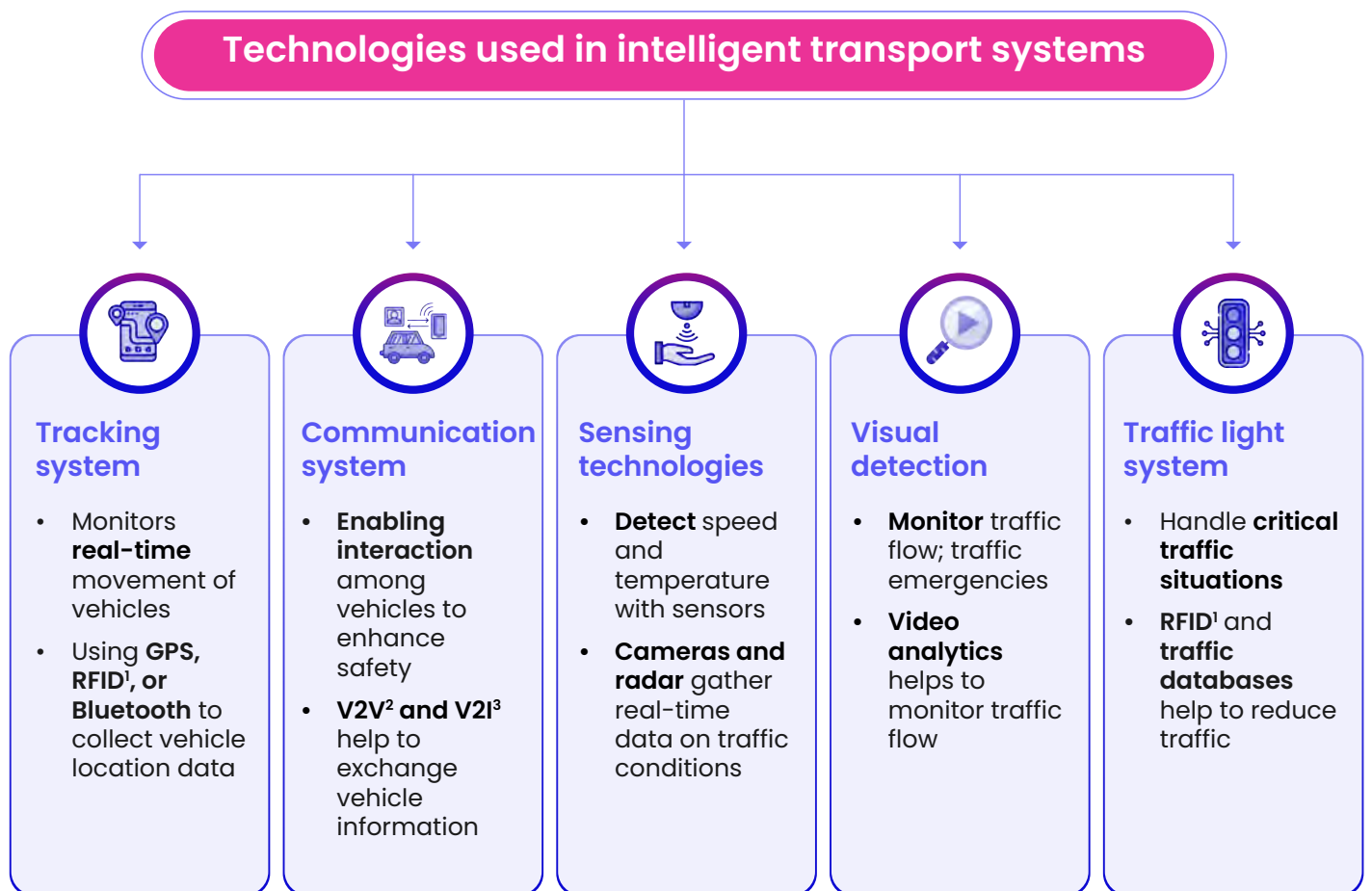
- **Inrix** demonstrated advanced traffic solutions encompassing real-time, historical, and predictive analytics. Their offerings included traffic cameras, connected car services, parking information, fuel pricing, local search, geocoding, and routing to leverage data-driven insights to enhance navigation, reduce congestion, and improve urban mobility.
- **FLYGHTR Patrol by Idea Forge** showcased an on-demand, fixed-location drone service designed to act as a first responder in enhancing public safety, emergency response, and real-time traffic management. This drone-based AI-enabled solution provides precise, immediate traffic data, supporting situational awareness and enabling quick, informed decisions to optimize traffic flow and ensure public safety.
- **Kotai Road Sense** presented their AI-driven traffic solutions that focus on traffic management, road safety, and mobility optimization. Using AI, IoT, and big data analytics, Kotai aims to improve traffic flow, enhance road safety, and create more efficient transportation systems
- **SeekRight** introduced a patented AI-based video analytics and machine learning solution for traffic and road safety. This technology analyzes live video feeds to monitor vehicle behavior, detect traffic violations, and provide actionable insights to enhance traffic management. By identifying risks such as speeding or dangerous driving patterns, this AI-driven solution helps make roads safer and more efficient.



## 4.1 Intelligent transport system: An overview

An intelligent transport system is a technology-driven framework designed to improve the management and efficiency of transportation networks. It helps reduce traffic jams, enhance road safety, and lower

pollution by optimizing traffic flow. It makes transportation more efficient, reducing travel times, and improving the overall quality of life for residents.



Central to ITS are tracking systems that monitor vehicle movement using GPS, RFID tags, and Bluetooth. These systems continuously gather location data, relaying it to a central hub to support fleet management. This allows for route optimization, improved fuel efficiency, and streamlined operations, enhancing both individual travel experiences and the overall efficiency of public and private transportation networks.

Communication systems utilizing technologies such as Vehicle-to-Vehicle (V2V) and

Vehicle-to-Infrastructure (V2I) communication, vehicles exchange real-time information about speed, location, and road conditions to reduce the risk of accidents.

Sensors such as cameras and radar gather data on traffic conditions and vehicle movements, and collected data is analyzed to provide insights into traffic patterns, optimize signal timings, and enhance overall traffic management. Visual detection monitors traffic flow and traffic emergencies.



## 4.2 Innovation in real-time traffic monitoring

New innovations in real-time traffic monitoring focus on utilizing AI, IoT, and advanced technologies to enhance road safety and efficiency. Smart traffic signals use AI and IoT to adjust light timings based on real-time data, reducing congestion and improving flow.

### Innovations in real-time traffic monitoring



#### Smart traffic signals

Optimize traffic light timings using real-time data by **AI and IoT integration** for responsive traffic management, improving flow and reducing congestion



#### Drone-based traffic monitoring

Drones are used to monitor traffic flow from the air, offering **real-time insights** for **better traffic management** with road conditions



#### AI-driven real-time traffic monitoring

Using **deep learning** to track vehicles and pedestrians, providing real-time data and insights to help design more **efficient intersections**



#### AI and video analytics

Using **CCTV** and **edge computing** to monitor real-time vehicle data and detect incidents, enabling quick alerts for **better road safety and flow**



#### Smart dashboards and mobile apps

Smart **dashboards** that provide fleet managers with **real-time insights** into vehicle status, driver behavior, fuel consumption, and route optimization



Drone-based traffic monitoring provides aerial insights into traffic flow and road conditions, offering real-time information to support better traffic management. AI-driven traffic monitoring applies deep learning to track vehicles and pedestrians, allowing for more efficient intersection design. AI and video analytics use CCTV and edge computing to

detect incidents quickly, enabling alerts for improved road safety and traffic flow.

Smart dashboards and mobile apps give fleet managers real-time insights into vehicle and driver behavior, helping optimize fuel usage and routes for efficiency.

## 4.3 Global Navigation Satellite System

Global Navigation Satellite System (GNSS) tolling uses satellite positioning to automatically collect tolls based on a vehicle's location. This technology accurately tracks where a vehicle travels, calculates the toll charges and collects payment without needing toll booths or gantries. By relying on satellites, GNSS tolling saves time, money, and resources compared to traditional toll systems.

GNSS tolling systems have been implemented in countries like Germany, Austria, and France. While in India, pilot studies have been conducted on the Bengaluru-Mysore section of NH-275 in Karnataka and the Panipat-Hisar section of NH-709 in Haryana to test a GNSS-based user-free toll collection system.



“The government is fully committed to enhancing road safety through innovative technologies such as AI and satellite toll systems, marking a significant step towards modernization. This approach ensures greater efficiency and transparency across India’s road infrastructure.”

**Shri Nitin Jairam Gadkari**  
Hon'ble Union Minister for Road Transport  
and Highways, Government of India'



## 4.4 Parking solution technologies

Smart parking solutions use advanced technologies like IoT, sensors, mobile apps, and data analytics to streamline parking management. They help drivers

find available spots quickly, reduce traffic congestion, and optimize space usage, creating a more efficient and user-friendly parking experience.

### Overview of parking solution

- Parking solutions improve efficiency of parking management by detecting empty spaces and controlling access, benefiting both users and managers
- Involves sensors, IoT, and apps to provide real-time availability, cashless payments, and enhanced user convenience

### Benefits of parking solutions

- Parking solutions improve efficiency of parking management by detecting empty spaces and controlling access, benefiting both users and managers
- Involves sensors, IoT, and apps to provide real-time availability, cashless payments, and enhanced user convenience

#### Reduced search time

Reducing time spent searching for parking

#### User convenience

Hassle-free parking experience

#### Enhanced security

Incorporate surveillance and monitoring vehicle

#### Lower traffic congestion

Guiding vehicles to available parking, reduce traffic

#### Space utilization

Multi-level and automated parking utilizing space

#### Environmental impact

Reduces carbon emissions by minimizing parking time

### Technologies used in parking solutions



#### Internet of things (IoT)

- IoT sensors provide real-time data on available spaces and increase smart parking efficiency



#### AI and ML

- Analyze parking patterns, predict peak usage of times, and enhancing decision-making



#### Cloud computing

- Enable remote monitoring of vehicles, and making parking solution scalable and easier



#### Big data analytics

- Process large data to uncover patterns in parking behavior and optimize future space planning



#### Wireless communication

- Ensure fast and reliable connectivity between parking sensors, management systems, and mobile apps

At the expo, Trafitek Solutions highlighted intelligent parking guidance systems, while Kent ITS India showcased integrated management systems with sensors and automated payments. Prama Hikvision demonstrated advanced surveillance with ANPR for enhanced security, and D-Link India featured smart parking solutions with access control and automated ticketing.

ValetEZ Services rounded off the display with smart parking management solutions, offering automated guidance and payment systems for efficient parking experiences.

- **Real-Time Parking Availability:** Allows users to book parking in advance or find available spots in real-time through a mobile app, enhancing the parking experience and eliminating the need to circle parking lots.
- **Contactless and Efficient Operations:** Leveraging technologies like NFC, QR codes, and ANPR (Automatic Number Plate Recognition), ValetEZ ensures a smooth, contactless entry and exit process.
- **Security and Reliability:** Company prioritizes safety with advanced security features such as surveillance cameras and emergency systems, ensuring continuous operation even without internet connectivity.
- **Smart City Integration:** ValetEZ contributes to smart city initiatives by integrating with city infrastructure to reduce traffic congestion, enhance urban mobility, and support sustainable goals.

Unlike other companies, SCITA Solutions showcases a range of smart parking management products designed to optimize parking operations, with a strong emphasis on improving efficiency, ease of use, and enhancing security.

- **Parking Guidance Systems:** Company uses sensors (ultrasonic, magnetic, and lidar) to detect available parking spots and provide real-time occupancy data displayed on digital panels, guiding drivers to open spaces.
- **Automated Number Plate Recognition (ANPR):** SCITA employs ANPR technology to streamline entry and exit processes while enhancing security through automated vehicle identification.
- **Mobile Applications:** SCITA's solutions integrate with mobile apps to help users locate available parking, manage reservations, and make cashless payments.



## 4.5

## Other technologies showcased in the TrafficInfratech Expo

- 01 Actionable Intelligence for Sustainable Traffic Management (ASTraM):** Actionable Intelligence for Sustainable Traffic Management (ASTraM) is a system designed to optimize and manage traffic flow more efficiently and sustainably. It collects and analyses real-time traffic data to provide useful insights, helping to reduce congestion, lower emissions, and enhance road safety. By making traffic management smarter, ASTraM promotes greener and smoother travel for everyone.
- ARCADIS is the company presented at the expo that provides the ASTraM model, they are the world's leading company delivering intelligence-driven sustainable design, engineering, and consultancy solutions for natural and build assets
- 02** SCITA, a Bangalore-based leader in indigenous traffic and urban management systems, showcased its innovative solutions for tolling, smart cities, and surveillance at the TrafficInfratech Expo. Their offerings included:
- Automatic Vehicle Counting and Classification (AVCC):** Uses 2D/3D scanning for real-time traffic analysis with over 99.9% counting and 98% classification accuracy, distinguishing vehicles like cars, trucks, and buses.
  - Multi-Lane Free Flow (MLFF) Tolling:** Allows high-speed tolling without stops, using sensors, cameras, and RFID for efficient toll collection.
  - Advanced Traffic Management Systems (ATMS):** Monitors and controls traffic flow in real time to reduce congestion and enhance road safety.
  - Integrated Traffic Management Systems (ITMS):** Utilizes sensors and cameras for efficient traffic light management, improving overall travel flow and safety.
- 03 RFID-Enabled Tolling Systems:** Radio Frequency Identification (RFID) technology to speed up toll collection processes, allowing for faster vehicle passage and reducing congestion at toll booths.
- 04 Cloud-Based Surveillance Technologies:** Advanced surveillance systems leverage cloud computing to enhance monitoring and data analysis. This enables real-time tracking of traffic conditions, improved safety, and more efficient management of infrastructure
- 05 Multilane Free Flow Tolling:** Introduced by Hikvision India, this system eliminates the need for vehicles to stop at toll booths. Instead, vehicles pass through multiple lanes without slowing down, significantly improving traffic flow and reducing delays
- 06 Motorcycle Enforcement System:** This system is designed specifically to monitor and enforce traffic rules for motorcycles, a key aspect of improving road safety in urban areas where motorcycles are a significant part of the traffic.





# Brief of the products showcased by companies at the TrafficInfratech Expo



This section highlights the cutting-edge products showcased at the Traffic InfraExpo, which focus on enhancing parking management, surveillance, road safety, and road marking systems. These products aim to improve urban mobility, streamline traffic

operations, and ensure safer, more efficient road infrastructure. While, many more companies also participated, presenting innovative products designed to optimize traffic management and parking efficiency.

## 01 Products of parking solutions



- **FASTag:** FASTag-based parking management that usually skips the queues and enjoys cashless payments, simply drive in FASTag will be scanned for quick entry and exit at parking lots.
- **ANPR / Slot detection:** Automated Number Plate Recognition (ANPR) takes the hassle out of parking, just enter and your car is automatically identified for a smooth arrival.
- **Smart Ticketing Kiosk:** Smart Ticketing Kiosk lets you self-generate the parking receipt while entering the parking lot and you can pay using UPI, bank cards or RFID cards at the exit
- **NFC Reader:** NFC-based smart parking and access management integrates a convenient NFC reader, enabling contactless parking access with smart cards. This caters to both pay & parking and long-term parking needs.
- **Ultrasonic Sensors:** These sensors detect the presence of vehicles in space, indicating whether a spot is occupied. Green lights indicate available spots, and red lights indicate occupied spaces



- **Vehicle detector:** It uses AI to classify vehicles, count them, determine direction, and assess traffic occupancy and density, transmitting data to the Interface controller.
- **SpeedCam:** Embedded with speed radar, global shutter camera, IR illuminator, and ANPR system for accurate speed measurement and license plate recognition across multiple lanes and directions. It IR illuminator ensures reliable performance and clear evidence, even in low light or at night.

## 02 Products of Surveillance and Road Safety Solutions



- **IP Dome camera:** IP Dome camera features a compact design with a fixed and motorized supporting resolution of up to 12MP. These network cameras support many smart analytics functionalities like it has a network address that connects to the recorder through network cables.
- **IP Bullet camera:** An IP Bullet Camera, like those provided by Norden, is a network-connected camera shaped like a cylinder (or "bullet") that streams high-quality video over the internet. It is often used for outdoor surveillance due to its long-range capabilities and weather-resistant design.
- **IP PTZ camera:** An IP PTZ (Pan-Tilt-Zoom) camera provided by Norden is a networked security camera that can be remotely controlled to move up, down, side-to-side, and zoom in or out. This allows for flexible and detailed monitoring of large areas in real-time over the internet.
- **Body Worn camera:** A body-worn camera is a small recording device worn on clothing or gear by security personnel or law enforcement to capture video and audio of their interactions in real-time. Norden offers these cameras to improve transparency, safety, and accountability in various security and law enforcement settings.



- **Network (IP) Cameras:** These IP cameras provide high-definition video with advanced features such as facial recognition, motion detection, and AI-based video analytics. They are widely used for indoor and outdoor surveillance in commercial, industrial, and residential settings.

- **Pan-Tilt-Zoom Cameras:** These cameras have the ability to pan, tilt, and zoom remotely, and ideal for monitoring large areas. They provide flexible surveillance and can focus on specific areas or track moving objects with high precision.

- **Thermal Cameras:** These cameras detect heat signatures and are used in applications like perimeter security, fire detection, and monitoring in complete darkness or challenging weather conditions. They offer reliable surveillance in critical and sensitive areas.

### 03 Products helping to improve road safety



- **Intelligent Transport Management System (ITMS):** Integrates real-time traffic data to optimize road use, reduce congestion, and improve safety.

- **Automated Speed Enforcement:** Uses cameras and sensors to automatically detect and record speeding, deterring violations and enhancing road safety.

- **Automatic Number Plate Recognition (ANPR):** Captures and reads license plates for real-time tracking and law enforcement.

- **Mobile Enforcement Systems:** Portable units for on-the-go traffic monitoring, enforcing speed limits and lane discipline.

- **RoadPod VT4:** Traffic data collection system that counts and classifies vehicles, providing insights for traffic management and planning.



- **Road Stud ABS Plastic:** Durable, impact-resistant road studs made from ABS plastic, ideal for withstanding harsh weather and heavy traffic, improving road safety.

### 04 Products of Road Marking



- **SB50D Manual Applicator:** The SB50D is a manual road marking tool by Pragati, specifically designed for applying thermoplastic road marking paint. It ensures the accurate and long-lasting application of road lines, contributing to effective traffic management and enhanced road safety.

- **Badal SB150-KD:** The Badal SB150-KD is a road marking machine from Pragati, designed to facilitate the application of road markings such as lane divisions, pedestrian crossings, and other traffic-related markings on various road surfaces.



- **Retro Reflective Hot Melt Thermoplastic:** Berger's retro reflective hot melt thermoplastic is a durable and highly visible road marking product known for its reflective properties. It enhances road marking visibility, particularly at night or in adverse weather conditions.

- **Water-based Paint for Kerbs, Roads, and Runways:** This specialized coating solution from Berger is designed to provide long-lasting, reflective, and environmentally friendly markings for roads, kerbs, and airport runways, contributing to improved road safety and infrastructure.

- **Quick Drying Water-based Paint for Traffic Safety:** Berger's quick-drying, water-based paint is tailored for traffic safety applications. It is used for creating essential road markings like lane dividers, pedestrian crossings, and parking bays, ensuring clarity and visibility.



- **Hot Applied Thermoplastics:** Kataline's hot applied thermoplastics are designed for durable, visible, and long-lasting road markings. These materials are commonly used for marking roads, highways, pedestrian crossings, and other traffic control zones due to their durability and high visibility.

- **Cold Applied Plastics (CAP):** Kataline's Cold Applied Plastics are an alternative to traditional hot-applied thermoplastics. They offer ease of application and superior durability, making them ideal for various surface marking applications.

- **Water-Based Reflective & Glow Paint:** Kataline provides water-based reflective and glow-in-the-dark paint for road markings. This specialized coating enhances visibility, particularly at night or in low-light conditions, improving road safety and driver awareness.





# Road safety challenges



Road safety in India faces several critical challenges, primarily stemming from infrastructure quality and the absence of advanced traffic management systems. Poorly maintained roads with potholes, cracks, and inconsistent construction standards contribute significantly to accidents, especially during monsoons when waterlogging creates slippery surfaces.

Many intersections, particularly in smaller cities, lack proper traffic signals, resulting in chaotic traffic flow and a higher risk of collisions. The limited adoption of Intelligent Transportation Systems (ITS), such as adaptive traffic control and automated incident detection, further hampers efficient traffic management, leaving traffic flow largely unregulated.



### Infrastructure quality

- Poorly maintained roads & inadequate signages increases risk of accidents
  - Issues like potholes, inadequate lane markings, & unsafe pedestrian crossings can significantly increase risk of collisions
- Waterlogging due to inadequate drainage during monsoons, making roads slippery and hazardous



### Traffic management system

- Poorly managed intersections and lack of traffic signals, particularly in smaller cities
  - leads to chaos & higher risk of accidents
- Absence of ITS like adaptive traffic control, incident deduction & traffic updates
- Lack of dedicated lanes for overloaded vehicles, & other vehicles



### Road user behaviour

- Widespread disregard for traffic rules, including speeding and driving under influence increases accident risks
- Lack of public **awareness** and education on safe driving practices contributes to reckless behavior on roads



### Emergency response infrastructure

- Inadequate emergency response systems delay assistance to accident victims, exacerbating severity of injuries.
- Insufficient training & resources for first responders hinder effective emergency management



### Technology Integration

- Limited use of technology such as **adaptive traffic** control and automated incident detection, hampers safety efforts
- Potential for real-time traffic updates and monitoring systems remains largely untapped
  - Reducing overall road safety effectiveness

Driver behavior also plays a key role in road safety issues, with common violations of traffic rules like speeding and drunk driving. A general lack of public awareness on safe driving practices exacerbates this, while cultural factors sometimes promote risky driving habits. These behavioral patterns make it challenging to maintain safe roads, as many drivers are either unaware of or choose to ignore safety protocols.

Furthermore, the emergency response infrastructure in India is under-resourced and often slow, delaying critical assistance to accident victims and worsening

the severity of injuries. This, coupled with a limited use of technology such as real-time monitoring and traffic prediction systems, restricts India's ability to enhance road safety measures.

Addressing these issues will require a comprehensive approach focused on upgrading infrastructure, implementing advanced traffic technologies, promoting public safety awareness, and enhancing emergency response capabilities to improve road conditions and reduce accident rates across the country.



Technologies  
expected to see  
higher demand  
in 2025





### Smart parking management system

Leveraging IoT-enabled sensors and real-time data analytics to help drivers locate available parking spaces, reducing time spent searching and thereby minimizing congestion



### Radar based warning system

Use radio waves for real-time object detection and tracking, offering collision alerts and enhancing safety in automotive, aviation, maritime, weather monitoring, and industrial automation



### AI driven traffic safety solution

Use artificial intelligence to analyze traffic patterns, detect risky behavior, and predict accidents to help in preventing accidents and improve road safety through real-time alerts and data-driven actions



### Global navigation satellite system

Uses satellite positioning to automatically track a vehicle's travel, calculate tolls, and collect payment without toll booths, offering a cost-effective and efficient alternative to traditional toll systems



### Sensor based systems

Utilizes IoT sensors to measure properties like temperature, pressure, humidity, motion, or light, processes data for analysis or action, and is widely applied in smart homes, healthcare, automotive, and industrial automation



# Key infrastructure projects for the upcoming financial year 2025 across india



## 01 **Bharatmala Pariyojana:**

The Bharatmala Pariyojana is a major infrastructure project launched by the Government of India in 2017, aimed at improving road transportation across the country. The program focuses on building highways, expressways, and logistics corridors to boost economic growth, enhance connectivity, and make the movement of goods and passengers more efficient. The total budget for the Bharatmala Pariyojana is around INR 5.35L Cr, and the project is expected to be completed between 2025 and 2030.

## 02 **Smart City Mission:**

India has taken the Massive Urban Re-Development program towards making 100 cities more sustainable and livable in the Smart City Mission. So far, under this mission, 8,064 projects worth INR 1.64L Cr have been initiated. Of this, 90% or 7,298 projects with an aggregate of INR 1.46L Cr are in progress while the rest 10%, that is 766 projects amounting to INR 18K Cr have already been completed. This is actually a very ambitious undertaking to change the nature of cities' infrastructures and hence their quality of life.

## 03 **Mumbai Trans Harbour Link Project:**

The project is a 21.8 km, six-lane expressway connecting Sewri in South Mumbai to Chirle near Nhava Sheva in Navi Mumbai. Completed in December 2023 at a cost of INR 18K Cr, it includes a 16.5 km sea link and a 5.5 km land

link, designed to handle 70K vehicles daily. The bridge will reduce travel time, improving access to Navi Mumbai International Airport, JNPT Port, and major highways.

## 04 **Ayodhya Ring Road:**

The Ayodhya Ring Road project, budgeted at INR 4K Cr, is a 68-km, four-lane access-controlled road designed to reduce congestion and improve connectivity for pilgrims and tourists, especially those arriving at nearby airports and railway stations. Expected to be completed by 2026 under the Hybrid Annuity Mode (HAM), it aims to boost the local economy by enhancing logistics and encouraging township development along the route, supporting Ayodhya's infrastructure growth for residents and visitors.

## 05 **Char Dham Highway Project:**

The Char Dham Project is a major infrastructure initiative aimed at enhancing connectivity to Uttarakhand's four sacred sites—Badrinath, Kedarnath, Gangotri, and Yamunotri—through an 889-km, two-lane highway network. Designed to improve safety and efficiency, it includes long bridges and tunnels to bypass landslide-prone areas and integrates road and rail routes. Launched in December 2016 with a budget of INR 12K crore, the project was 75% complete as of July 2023. While promising better accessibility, it has sparked environmental concerns due to potential ecological impacts on the sensitive Himalayan region.



# Way forward





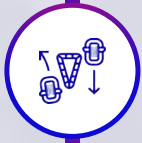
### Adopt emerging technologies

- Implement AI and IoT solutions for smarter traffic management and real-time monitoring
- Invest in advanced surveillance systems to enhance road safety and compliance



### Promote sustainable mobility

- Expand EV infrastructure and incentivize EV adoption
- Foster multimodal transport integration to improve public transit efficiency



### Enhance road safety

- Upgrade road infrastructure with a focus on safety and accessibility
- Launch comprehensive safety campaigns to educate the public and reduce accidents



### Support future transportation

- Encourage the development and deployment of autonomous and connected vehicles
- Strengthen PPPs to leverage private sector expertise and funding for public projects



### Strengthen policy framework

- Develop and implement policies that support smart transportation initiatives
- Ensure robust data privacy and cybersecurity measures in traffic management systems





# Insights and perspectives from speakers





**Mr. Raj Manek**

Executive Director and Board Member of Messe Frankfurt Asia Holdings Ltd



"The TrafficInfratech Expo 2024 comes at a time when these opportunities are ripe for innovation. I am glad to share that the expo will feature technologically advanced solutions for traffic, road infrastructure and parking management. This platform not only drives the industry growth but also opens door for collaborations that will shape the future of mobility in the country. We are proud to support the advancement of India's infrastructure and provide a stage where global and local expertise will converge for three-days fuelling the business opportunities."



"The Indian infrastructure sector is witnessing tremendous growth, with increased opportunities in traffic, road and parking solutions. The TrafficInfratech Expo 2024 is a critical platform for innovators, businesses and policymakers to come together and tap into the new prospects. We are excited to help showcase technologies that can transform India's infrastructure and mobility landscape. We believe this event will be a catalyst for unlocking new opportunities in the Indian market."



**Mr J P Nair**

Managing Director, VIS Group



India's transportation sector requires customized solutions that address local challenges. This presents significant opportunities for innovative security solutions. We introduced Multi-Lane Free Flow Tolling, the Motorcycle Enforcement System, and ADAS & DMS solutions, providing smart transportation and intelligent traffic management solutions to key stakeholders. TrafficInfratech Expo is an ideal platform to demonstrate our latest technologies and solutions to decision-makers in the transportation ecosystem."



**Ashish P. Dhakan**

MD & CEO of Prama Hikvision India Private Limited

# Leading global and Indian companies participated to showcase their products in traffic road infrastructure and parking solutions

	Traffic / road infra	Parking solutions
Global	   	 
India	       	    



# Co-organizers



An experienced and revolutionary hands-on trade show organizer and publication house, the VIS Group has been serving India with pride since 2000. For the last 24 years, the group has brought about a positive change through several pioneering projects that impact the life of the common man via unconventional methods and focus on the B2B industry via (B2B) expositions, conferences and publications on socially relevant subjects.

Over the years VIS group has encompassed specific business fraternities, irrespective of its size and limitations, and facilitated networking, communications and commercial opportunities for its valued clients.



## messe frankfurt

Messe Frankfurt India has been active in the domestic market for over the last two decades. A thorough understanding of market dynamics, high degree of professionalism and dedication to our clients is what has made Messe Frankfurt India successful. Besides organising impressive trade fairs within the country, the company is also responsible for promoting Indian brands in countries across the globe through sales and support of Messe Frankfurt's outbound trade fairs for a host of verticals. As a result, India has emerged as the 2nd largest exhibiting nation among 139 countries at Frankfurt Fairs – with more than 2,500 Indian manufacturers and scores of visitors, being present every year.

With offices in Mumbai and Delhi, a team of over 100 staff serve the B2B markets of the Indian sub-continent, Messe Frankfurt India has enjoyed remarkable growth over the last two decades, and has come to be known as the company that creates platforms for new markets in India.

# 1Lattice

Enabling Better Decisions



**4**  
Offices in India



**200+**  
Annual engagements



**150+**  
Team members



**50+**  
Inhouse research team



**1,000+**  
On-ground staff



**2M+**  
B2C Panel



**500K+**  
B2B Panel



**300K+**  
Experts & professionals



**20%**  
Cost savings



**100%**  
Controlled output & timeline

## What We Do

### Vision

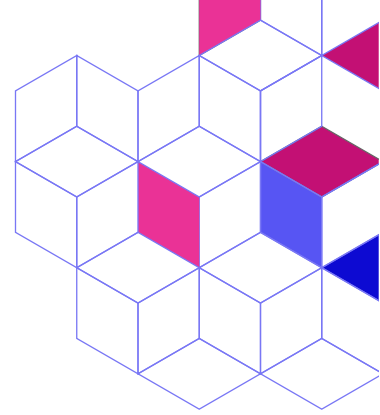
Making organizations effective through data-driven insights, innovative products solutions and proven expertise to **enable better decisions**

### Mission

To provide **technology** led solutions that unlock that power of trustable **data**, actionable **research**, and deep network of **experts**



# Author's Profile



## Praneet Singhal

Director, Technology & Internet, and IAlpha

E: [praneet.singhal@1lattice.com](mailto:praneet.singhal@1lattice.com)

---

## Devendra Sharma

Business Analyst, Insights and Consulting

E: [devendra.sharma@1lattice.com](mailto:devendra.sharma@1lattice.com)

---

---

**For media queries,  
please contact**

## Urbashree Bayan

Associate Manager – Corporate Communications

E: [communications@1lattice.com](mailto:communications@1lattice.com)



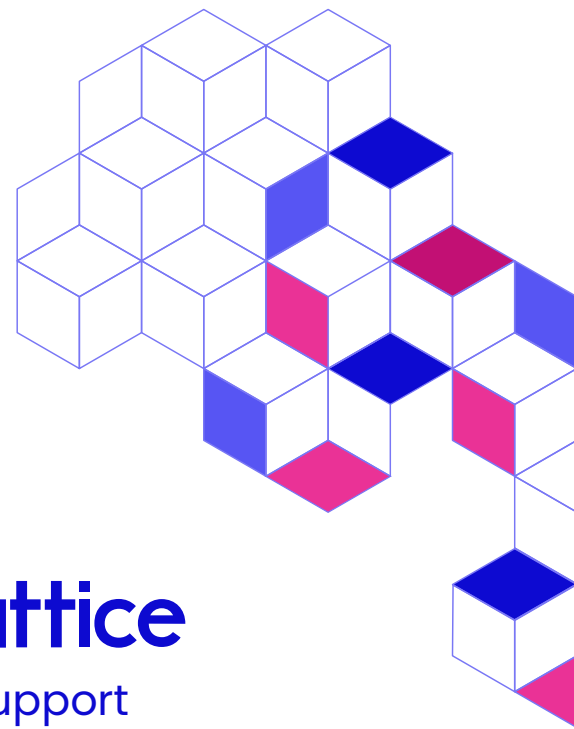
[www.1lattice.com](http://www.1lattice.com) |



Disclaimer: This material has been prepared by 1Lattice, which is the trade name of Lattice Technologies Private Limited ("1Lattice", "we" or "our") with the intent to showcase our capability and disseminate learnings to potential partners/clients. This material can be referred to by the readers on the internet but should be referenced to 1Lattice, if reused or adapted in any form, or medium and on any forum. The frameworks, approaches, tools, analysis and opinions are solely 1Lattice's intellectual property and are a combination of the collection of the best data we could find publicly, and the 1Lattice team's own experiences and observations. Any information provided herein is only for informational purposes and you are advised to perform an independent analysis of the same before making any decision based on such information. The information does not constitute any business advice or guidance and is to be construed as a general summary based upon the publicly available information and our interpretation of the same using our resources. For this material, we may have relied upon different sources of information which may be primary sources, publicly available information, and relevant information available with us.

We make no representation or warranty, expressed or implied, that such information is accurate or complete, and nothing contained here can be construed as definitive predictions or forecasts. Before reading further, the Recipient expressly agrees that this might not address any and all risks and challenges facing the Recipient, its business, and the markets within which it operates, nor all possible market conditions. Any use of the information provided herein by the viewer shall be at the sole risk of the viewer and 1Lattice or its business partners, affiliates, agents, officers or employees shall not be liable for any unintended or adverse effect or outcome from the use of such information by the reader.

1Lattice does not have any duty to update or supplement any information in this document. 1Lattice shall not be responsible for any business or commercial loss sustained by any person who relies on any information provided herein. Any and all logos of companies used in the information provided herein have been published for information purposes only and 1Lattice does not hold any liability in connection therewith.



**The team at 1Lattice**  
appreciates your time and support



**Enabling better decisions.**

Delhi NCR | Mumbai | Bengaluru | UAE | KSA | Singapore

