



Shaping the Future of Mobility

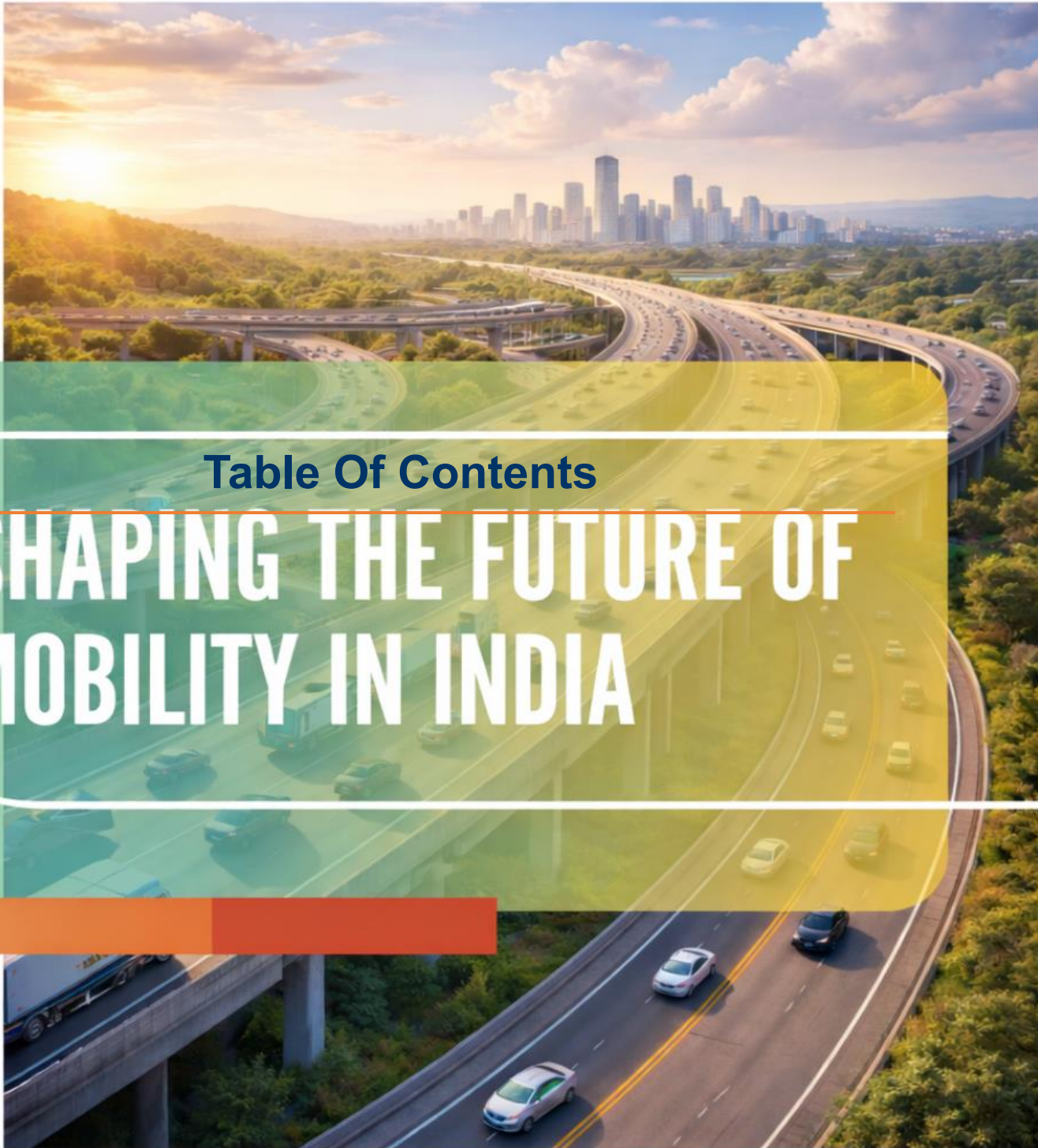


Table Of Contents

SHAPING THE FUTURE OF MOBILITY IN INDIA

Digest

OCTOBER-DECEMBER 2025



DATA | ENGINEERING | ROAD SAFETY - TECHNOLOGY

THE BIKE INTERCEPTOR

A NEW ERA FOR ENFORCEMENT



Bike Mounted
Design



Multiple Traffic
Violation Capture



Radar-based
Speed Enforcement



e-Challan
Integration



All-day
Battery Life

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Table Of Content

No.	Section	By
1	President's Message	Mr. Akhilesh Srivastava
2	International Forums	—
3	Policy Updates	—
4	Feature Articles	—
5	Expert Column	—
6	Guest Column	—
7	ITS India For Recent News	—
8	Latest ITS Project Watch	—
9	Member's Page	—
10	Advertisement	—
11	Events of the Months	—
12	Upcoming Events by ITS India Forum	—
13	Updates from Working Groups and Committees	—
14	Cartoon Corner	—
15	Summary by Director General	Dr. Shiv Kumar

President's Message

Dear Members, Partners, and Industry Leaders,

The last three months of 2025 were defining months in India's ongoing journey toward intelligent, efficient, and sustainable mobility. As the year concluded, it became clear that Intelligent Transport Systems (ITS) are no longer parallel to infrastructure development—they are becoming the foundation of how we operate, regulate, and optimise our transport ecosystem.



At the heart of this evolution, the ITS India Forum continues to lead with clarity and purpose. In October, our participation at Traffic Infratech Expo 2025 brought together key stakeholders to deliberate on interoperability, cybersecurity, digital tolling, and enforcement technologies. These discussions reinforced a shared understanding: scalable ITS deployment must be standards-driven, policy-aligned, and institutionally coordinated.

November marked a historic milestone with the successful launch of the first ITS India Congress 2025 at IIT Hyderabad. Recognised as a Pre-Summit Event of the India–AI Impact Summit 2026, the Congress established a national convergence platform on “AI in Mobility.” Government leaders, industry experts, academia, and startups came together to shape India's roadmap across AI-led enforcement, Multi-Lane Free Flow (MLFF) tolling, connected vehicle ecosystems, digital infrastructure, and sustainable transport systems. The strong participation and substantive outcomes reflect the growing maturity of India's ITS ecosystem.

On the policy front, momentum continued in electronic enforcement and intelligent tolling reforms. The advancement of AI-enabled enforcement systems and structured progress toward MLFF deployment signal a decisive shift from manual, barrier-based processes to seamless, data-driven operations. These reforms strengthen transparency, revenue assurance, and road safety while aligning India with global best practices.

Electrification and sustainable mobility initiatives also gained pace. Expansion of electric bus programmes, integration of intelligent fleet management systems, and the steady growth of EV charging infrastructure demonstrate India's commitment to combining clean mobility with digital intelligence. Sustainability and technology are no longer separate tracks—they are progressing together.

Our community continues to grow stronger. Member engagement, institutional collaborations, and knowledge-sharing platforms have expanded significantly during the quarter. This collective strength remains one of our greatest assets.

Our Working Groups, comprising leaders from government, academia, and industry, continue to make measurable progress across strategic domains. As we enter the new year, the Forum is in the process of expanding its committee framework to address emerging priorities. The upcoming Working Groups will focus collectively on inclusive mobility, green and active transport integration, AI-driven road safety and traffic

management, connected and V2I ecosystems, next-generation road user charging, emissions monitoring, advanced air mobility, intelligent asset management, electronic enforcement, MLFF oversight, traffic modelling, and ITS skilling. This structured approach will ensure that innovation is supported by policy clarity, technical standards, and implementation pathways.

India's increasing presence in global ITS dialogues during the quarter further reinforces our position as both a large-scale adopter and an emerging innovator in intelligent mobility.

As we move into 2026, the direction is clear. The focus now must be on institutionalising intelligent operations, accelerating deployment at scale, and ensuring that safety, sustainability, and interoperability remain central to India's mobility transformation.

Together, let us continue to foster collaboration, scale innovation, and shape a future where India leads the world in intelligent, inclusive, and resilient transportation systems.

Warm regards,

Akhilesh Srivastava

President, ITS India Forum

International Forums

Maritime ITS: An opportunity for developed and developing countries



ABOUT THE AUTHOR

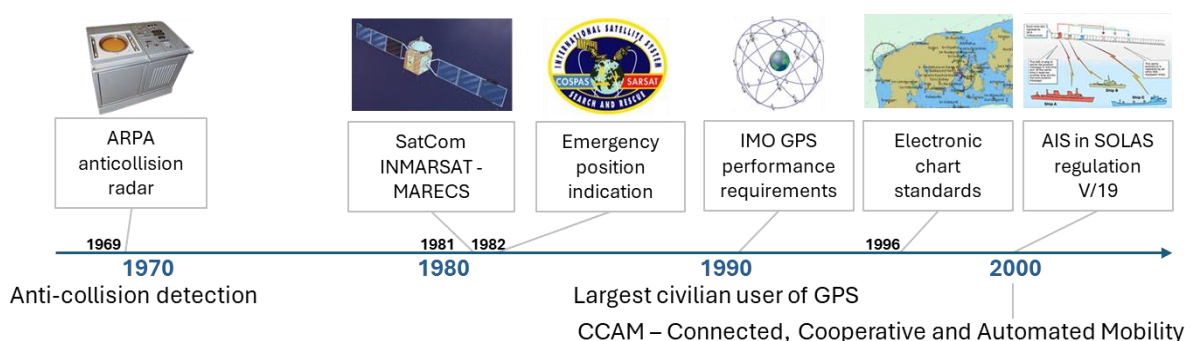
Ørnulf Jan Rødseth,
Research Director Maritime,
ITS Norway



What is Maritime ITS?

ITS is normally thought of as related to cars and roads. However, ISO 14813-5 defines ITS as "technology system that is designed to benefit a surface transport system". This has led some countries, e.g. UK, Finland and Norway, to add maritime transport to their ITS activities.

Maritime ITS makes sense from a technology perspective. The maritime sector has been using computer based anti-collision radars since 1969, was the largest civilian user of GPS around 1995 and introduced automatic identification system (AIS) in 2000 as basis for a CCAM system for maritime use.



Maritime cargo transport is also essential for the world as we know it. 80 to 90% of all goods transported in the world is on ships. Much of this is essential food, energy and construction materials. Ship cargo is normally dependent on integration with ground transport systems to cover the last-mile transport legs. In many cases this defaults to

truck and road, where ITS is already an important factor. There are many good reasons why the maritime sector should be part of the wider ITS efforts!

Gaps in maritime digital standards

Maritime transport is critical for the world as we know it: Ship transport is often referred to as the life blood of the world, as 80-90% of world trade goes by sea. Maritime transport underwent heavy digitalization in the period 1970 to 2000 but started to lag after other transport modes from around 2000. In the last years, the efforts to decarbonize have put more emphasis on further increasing efficiency of ship transport. Efficiency improvements are obviously far cheaper than alternative fuels and can be applied to existing ships. Also, availability of green fuels will be limited for many years to come and improved efficiency must be part of any decarbonization solution. Operational efficiency improvements such as just-in-time arrival and shorter port stays require improved digital communication, between ship and shore as well as between different ships. Operational improvements are also followed up with new safety enhancing systems, requiring additional nautical communication from and to the ship. Finally, worsened geopolitical conditions require additional administrative reporting from the ships and more emphasis on improved national monitoring of ship owners, operators and the ship's cargo.

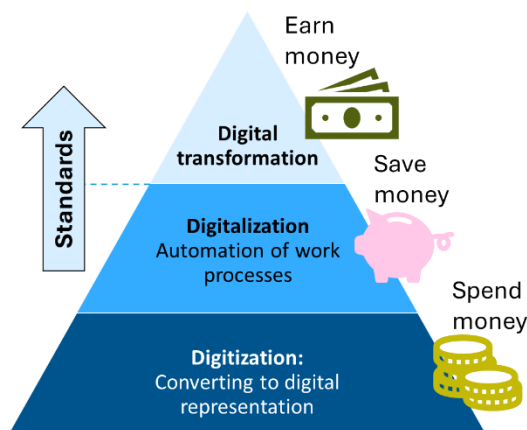


Unfortunately, development of standards in the operational, nautical and administrative domains are not well coordinated and are today mostly done in silos. This makes it difficult to close existing gaps in standardization as well as creating problems with interoperability between the domains.

This is one of the problems that the maritime ITS community must contribute to solving. As an independent group of organizations outside the main standards organizations we have a role to play as mediators between these silos.

Standards enable innovation and increase availability

International standards in the maritime domain are essential for digitalization in a business that spans the whole globe and where more than 100 000 ships call on 8 000 ports all over the world. Efficiency gains cannot be realized unless standards apply to how ships and ports interact and how cargo can be moved to and from the ship.



Standards are also necessary to realize the full innovation potential in the maritime business. Without standards, the step from just automating work processes to creating new ways of doing things through digital transformations will be too complicated. Standards make more data easily available and create the "digital ecosystem" that makes innovations possible.

This also means that new innovations and better versions of old systems become much more affordable in smaller ports and shipping offices without too much complexity in

configuration and training. This can also help developing nations to more rapidly make use of new innovations and developments. It will obviously also make it possible to participate in the innovations and create new businesses also locally.

Join the revolution

Integrating the maritime sector into the ITS activities has a great potential for improving efficiency of international shipping and trade, reduce problems with transshipments and last mile transport of cargo, and create opportunities for new businesses locally.

Contact us if you are interested in more information. We are building a network of interested maritime ITS organizations and welcomes any new interested parties. We also encourage organizations to become active in international standardization and dissemination of the maritime ITS ideas world-wide.

Global Collaboration for the Future of Intelligent Mobility



The year 2026 marks a critical inflection point for the global Intelligent Transportation Systems (ITS) community. Rapid advances in artificial intelligence, automation, connected and automated vehicles (CAVs), digital infrastructure, and data-driven mobility are reshaping how transportation systems are planned, operated, and maintained. At the same time, climate resilience, road safety, equity, and system sustainability have emerged as shared priorities across jurisdictions.

For ITS Canada, 2026 represents an opportunity to deepen international collaboration and align national innovation with global best practices. Strategic global partnerships within the intelligent transportation and mobility ecosystem—particularly those advancing digital-first approaches, robust asset management, and mobility digital twin capabilities—are critical to accelerating progress and enabling the scalable deployment of innovative solutions worldwide. By working together, ITS organizations can exchange knowledge, reduce duplication, and scale solutions with proven impact.

Transportation challenges do not respect borders. Congestion, safety risks, aging infrastructure, climate pressures, and the need for inclusive mobility are global concerns requiring global solutions. International partnerships among ITS organizations enable:

- Knowledge exchange on policy, regulation, and deployment models
- Faster adoption of proven technologies
- Stronger alignment on standards and interoperability
- More resilient and adaptable transportation systems

ITS India's leadership in deploying digital-first mobility strategies, coupled with its focus on technology-enabled asset management, provides important lessons for jurisdictions navigating rapid urbanization and network expansion. These insights are directly relevant to Canadian contexts, particularly as agencies seek scalable, data-driven solutions.

2026: A Platform for Global Engagement

Throughout 2026, ITS Canada will convene industry, government, and academic leaders through a series of international and national events designed to foster collaboration:

- Intertraffic Amsterdam – Global exchange on mobility technology and infrastructure

- Technical Innovation Forums (Hamilton and Halifax) – Focused discussions on applied innovation
- ITS Canada Annual Conference (Edmonton) – National and international leadership dialogue

These forums provide structured opportunities for international partners, including ITS India, to engage with Canadian stakeholders, share experiences, and explore collaborative initiatives.

One of the strongest areas of alignment between Canada and India lies in digital transformation. ITS India's work in mobility digital twins demonstrates how virtual models of transportation networks can improve planning, performance monitoring, and predictive maintenance. Digital twins support:

- Proactive asset management
- Smarter investment decisions
- Improved system resilience and lifecycle management
- Better integration of multimodal mobility solutions

In Canada, similar priorities are emerging as agencies seek to optimize infrastructure investments while responding to growing demands on transportation networks. This shared direction is embodied by Project TITAN, a flagship ITS Canada member initiative that advances integrated, data-driven transportation systems by enabling rapid simulations of changes to the urban environment. Using digital platforms, analytics, and virtual reality, Project TITAN allows cities to test scenarios such as new housing developments, lane reallocations, or transit investments and quickly understand their impacts on accessibility, congestion, air quality, noise, and overall mobility performance. By combining data-informed analysis with immersive visualization, the initiative enhances operational visibility, supports better decision-making, and fosters interoperability and collaboration between public and private sectors. Complementing global efforts such as ITS India's digital-first strategies, Project TITAN demonstrates how regions worldwide are converging on similar solutions—creating opportunities to learn from one another and accelerate the implementation of safer, smarter, and more sustainable mobility systems.

Conclusion: Moving Forward Together Looking ahead, the future of mobility will be shaped by sustained collaboration across institutions, sectors, and disciplines. Strengthening cooperation within the global intelligent transportation community will be essential to accelerating innovation, advancing knowledge exchange, and scaling proven solutions. By aligning strategic vision with practical implementation, stakeholders can collectively deliver transportation systems that are more efficient, resilient, and responsive to the needs of communities and economies worldwide.

2026 is a year to align vision with action—and to shape the future of intelligent mobility together.

Upcoming International Events

China International ITS Industry Expo (CITSE) 2026

China International ITS Industry Expo (CITSE) 2026, scheduled for 13–15 May 2026 in Xiamen, China, will convene global stakeholders from government, industry, and technology to advance the future of intelligent transportation systems. Organised by the China Intelligent Transportation Systems Association (ITS China) and Xiamen Conference & Exhibition Group, the Expo is designed as a high-level international platform showcasing innovation across smart urban mobility, intelligent highways, autonomous driving, rail, waterways, and aviation.

Through four thematic pavilions and the **China ITS Industry Congress 2026**, CITSE will facilitate policy dialogue, technology exchange, and market collaboration, reinforcing its role in promoting safe, efficient, and sustainable mobility while strengthening global cooperation within the ITS ecosystem. ([Source](#))

Intertraffic Amsterdam 2026

Intertraffic Amsterdam 2026, taking place from 10–13 March 2026 at the RAI Amsterdam Convention Centre, stands as the world's leading global event on smart, safe, and sustainable mobility. Bringing together over 900 exhibitors and 30,000+ professionals from more than 145 countries, the event features a comprehensive Summit Programme of interactive sessions, workshops, and discussions focused on the trends and strategies shaping the future of traffic, infrastructure, urban mobility, parking, and road safety.

The Summit themes explore how intelligent technologies, data-driven solutions, and integrated planning are enabling seamless travel, smarter cities, and resilient transport networks. Delegates can expect insights on topics ranging from smart traffic management and autonomous mobility to climate-resilient infrastructure and user-centric parking innovations, making Intertraffic a must-attend forum for professionals, policymakers, and innovators shaping tomorrow's mobility landscape. ([Source](#))

ITS Canada 2026 Conference & Trade Show (Edmonton, May 20–22, 2026)

The **ITS Canada 2026 Conference & Trade Show**, scheduled from **May 20 to 22, 2026** in **Edmonton**, will bring together transportation professionals, policymakers, and technology providers to discuss advancements in **Intelligent Transportation Systems (ITS)**. The event will focus on key areas such as **smart traffic management, connected and digital infrastructure, road safety, and data-driven mobility solutions**.

Organized by **ITS Canada**, the conference aims to promote collaboration and knowledge exchange to support the development of **safer, smarter, and more sustainable transportation systems**. ([Source](#))

JUMP: Powering India's Unified Transportation Future



ABOUT THE AUTHOR

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India's mobility and transportation sector is undergoing a transformative shift, propelled by the rapid adoption of electric vehicles (EVs), connected technologies, smart infrastructure, and the national push toward sustainability. With over **5.6 million EVs** already on the road and **25,000+ public charging stations**, a new-age ecosystem is forming, but in fragments. From OEMs and Tier 1/2 suppliers to charging operators, fleet owners, energy utilities, and smart city planners, stakeholders operate in silos, each with isolated data systems, infrastructure, and priorities.

What's missing is a unifying digital foundation, a common operating layer to integrate, orchestrate, and optimize India's complex transportation value chain.

Key Challenges

Despite the momentum, India's mobility transformation is hindered by deep-rooted structural and technological issues:

- **Fragmented Technology Stacks:** Stakeholders use incompatible platforms, preventing data flow and service integration.
- **EV Ecosystem Gaps:** Range anxiety, charger unavailability, and lack of grid visibility reduce EV adoption confidence.
- **Disconnected Automotive Supply Chains:** No unified view for diagnostics, component traceability, or vehicle lifecycle management.
- **Inefficient Fleet Operations:** Manual tracking leads to high downtime, poor asset utilization, and reduced safety.
- **Lack of Actionable Data:** Rich IoT data is underutilized due to poor interoperability and analytics infrastructure.

- **Compliance Complexity:** ESG and BRSR reporting are bottlenecked by non-digitized, unreliable data streams.

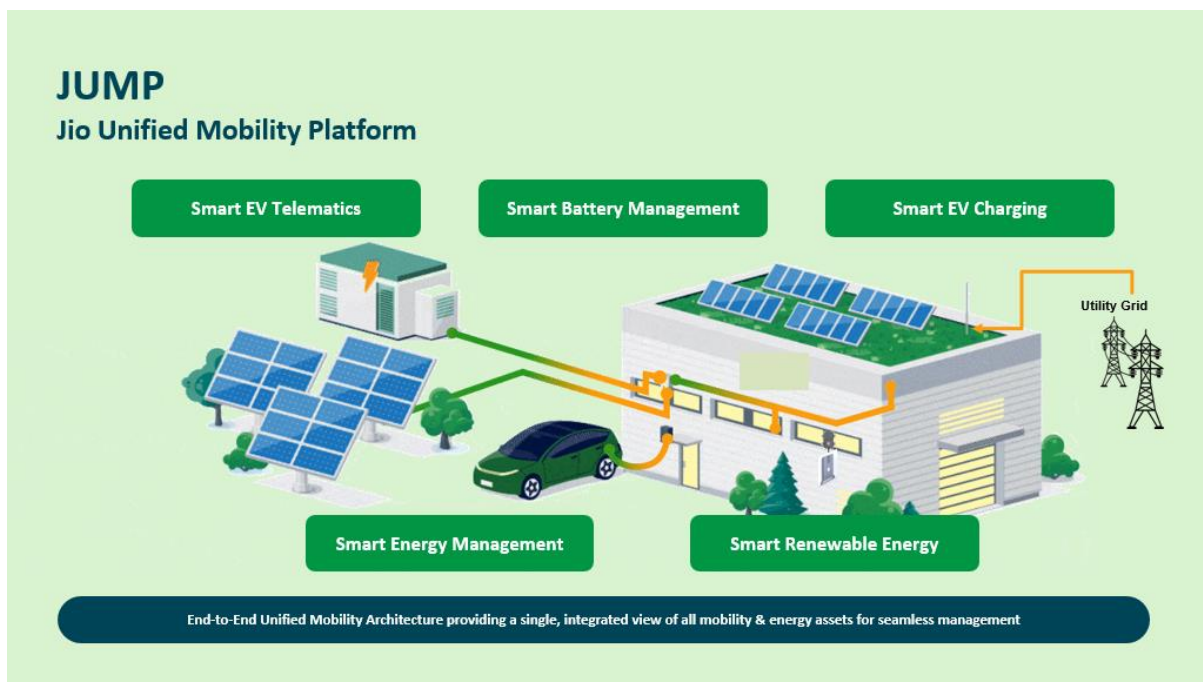
India's mobility future demands more than just devices & platforms, it needs orchestration.

A Unified Platform for a Fragmented Ecosystem

JUMP (JioThings Unified Mobility Platform) is an open, scalable, and cloud-native platform that unifies the fragmented layers of India's mobility and energy ecosystem. Built on Jio's 5G, IoT, and cloud stack, JUMP acts as a central nervous system that connects vehicles (both OEM-fitted and aftermarket), EV charging infrastructure, batteries, fleets, and energy systems through interoperable APIs, real-time telemetry, and AI/ML intelligence. The platform supports smart diagnostics, live location tracking, video telematics, energy optimization, battery lifecycle management, and automated ESG/BRSR reporting, across all types of assets and mobility segments.

JUMP isn't a one-size-fits-all product; it's a configurable foundation that adapts to OEMs, fleets, utilities, and regulators alike.

It's not just a data pipeline. It's the intelligence layer for India's mobility transformation.



How JUMP Solves Challenges in Mobility Space

JUMP brings coherence to India's scattered mobility landscape by acting as an integration fabric across stakeholders. It helps **OEMs and Tier 1 suppliers** with telematics integration, remote diagnostics, and OTA updates. It enables **fleet operators** to reduce downtime through predictive health analytics, AI-powered routing, and driver behaviour scoring. For **charging infrastructure players**, JUMP

offers charger management, grid balancing, and energy analytics, while **battery players** benefit from blockchain-backed lifecycle tracking, second-life monitoring, and swap station integration. Governments and city planners gain a unified dashboard for policy insights, urban mobility planning, and sustainability metrics, while **enterprises and ESG officers** get automated, sensor-backed reporting aligned to BRSR and carbon mandates.

JUMP simplifies the complexity, so each player can scale without friction.

Driving Tangible Value Across the Ecosystem

JUMP is already driving meaningful change across the mobility landscape, supporting a deployment footprint spanning over one million connected vehicles across OEM, fleet, and aftermarket segments. The platform has enhanced operational visibility for OEMs and fleet owners, reduced vehicle downtime through predictive maintenance, and improved road safety via AI-based video telematics. Charging and energy operators benefit from real-time analytics and smarter load balancing, while battery and component manufacturers gain end-to-end traceability. JUMP also supports regulatory readiness with automated ESG and BRSR reporting based on trusted, sensor-backed data. As a result, stakeholders across the value chain are experiencing increased efficiency, reduced emissions, better compliance, and faster go-to-market innovation.

JUMP is an end-to-end mobility stack delivering real-world outcomes at scale.

Futureproofing India's Mobility

As India marches toward **30% EV penetration by 2030**, the ability to unify mobility, energy, and digital infrastructure will be a defining lever of progress. Platforms like JUMP will be central to enabling faster innovation, reduced emissions, improved asset efficiency, and seamless customer experiences.

JUMP by JioThings is not just powering connected vehicles, it's driving India's connected mobility revolution.

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About Transportation, Traffic, and Tolling (TT&T) Business Unit at Jio-

Complementing JUMP, Jio's TT&T Business Unit extends this unified approach to highways and urban traffic systems. By combining tolling, traffic intelligence, connectivity infrastructure and digital platforms, it enables smarter, more efficient operation of India's transportation infrastructure. These capabilities enable TT&T to lay the foundation for a truly integrated national mobility ecosystem.

Policy Updates

GOVERNMENT ACTIONS SHAPING THE FUTURE OF INTELLIGENT MOBILITY IN INDIA

1. Andhra Pradesh Adopts ₹500 Crore State E-Mobility Policy

In October 2025, the Andhra Pradesh government announced the adoption of a comprehensive State E-Mobility Policy backed by an investment of ₹500 crore. The policy focuses on large-scale electrification of public transport, particularly APSRTC bus fleets, along with the development of charging infrastructure across highways and urban corridors.

Beyond vehicle deployment, the policy also emphasizes innovation, startup incubation, and skill development, positioning Andhra Pradesh as a leading state in clean and intelligent mobility. This move reflects how state governments are translating national EV goals into actionable, on-ground implementation frameworks. [\(Source\)](#)

2. CESL Announces Tender for 10,900 Electric Buses under National Electric Bus Program

In November 2025, Convergence Energy Services Ltd (CESL) announced plans to issue a tender for 10,900 electric buses under the National Electric Bus Program (NEBP). This is one of the largest electric bus procurement initiatives globally and aims to deploy e-buses across major Indian cities through a public-private partnership model.

The initiative strengthens intelligent urban mobility by promoting fleet electrification, centralized monitoring, digital ticketing, and data-driven operations, while significantly reducing emissions and operating costs for urban transport authorities. [\(Source\)](#)

3. Launch and Expansion of PM E-Bus Sewa at Urban Mobility India Conference

During the Urban Mobility India (UMI) Conference 2025, the Government of India advanced the rollout of the PM E-Bus Sewa initiative, including its national branding and implementation roadmap.

The program aims to support cities in adopting electric buses through standardized procurement models, operational guidelines, and financial support mechanisms. PM E-Bus Sewa represents a shift from pilot-based deployments to scaled, system-level electrification of urban public transport, strengthening India's intelligent mobility ecosystem. [\(Source\)](#)

4. India Crosses 27,000 EV Charging Stations, Accelerating the Shift to Clean Mobility

India's **electric vehicle (EV) charging infrastructure crossed 27,000 stations in 2025**, marking a significant ramp-up in the country's EV ecosystem as more chargers were installed at existing petrol pumps and other key locations to improve convenience for EV users. This expansion, supported by initiatives such as the **FAME-II scheme** and investments from oil companies like Indian Oil and Bharat Petroleum, aims to reduce *range anxiety* and accelerate EV adoption nationwide. The move reflects India's push toward cleaner mobility and reduced dependence on fossil fuels. ([Source](#))

5. Government Push for Digital and Connected Mobility Infrastructure

Towards the end of 2025, the Government of India reaffirmed its focus on creating a digital foundation for future mobility, including connected vehicles, smart highways, and vehicle-to-infrastructure(V2I/V2X) systems.

Policy discussions highlighted the need for interoperable digital standards, data integration across transport systems, and technology-enabled traffic and safety management. These steps lay the groundwork for intelligent transport systems (ITS), autonomous mobility readiness, and data-driven governance in India's transport sector. ([Source](#))

Latest ITS Project Watch

India Launches 20,000 km Smart Surveillance Network with Autonomous Mobility AI

India has launched an ambitious **20,000 km smart highway surveillance network**, integrating **Autonomous Mobility AI** to strengthen road safety, traffic management, and emergency response across national highways. This advanced system uses AI-powered cameras, intelligent sensors, IoT devices, and autonomous monitoring technologies to continuously track traffic movement, detect accidents, violations, congestion, and unusual activities in real time. By enabling instant alerts to control centres and emergency services, the initiative aims to significantly reduce response time and enhance overall highway safety.

The project marks a major leap towards **AI-driven, predictive transportation infrastructure**, shifting road monitoring from manual oversight to intelligent automation. Beyond safety, the network will support data-driven traffic planning, enforcement efficiency, and smoother mobility for commuters. As the system expands in phases, it reinforces India's vision of building future-ready highways and positions the country among global leaders in smart mobility and intelligent transport systems. ([Source](#))

AI-Based Toll Collection System to Replace FASTag: How the New Technology Will Transform Highway Travel in India

India is planning to introduce an AI-based toll collection system as a next-generation upgrade to the existing FASTag framework under its Intelligent Transportation Systems (ITS) initiatives. The system will be based on Multi-Lane Free Flow (MLFF) technology, allowing vehicles to pass through toll points without stopping.

The new tolling mechanism will use high-resolution cameras, Artificial Intelligence, and Automatic Number Plate Recognition (ANPR) to identify vehicles and automatically deduct toll charges. By removing physical toll booths, the system aims to reduce congestion, minimize travel delays, and improve fuel efficiency on national highways.

This initiative aligns with the Government of India's vision of smart highways and digital mobility infrastructure. Once implemented nationwide in a phased manner by 2026, the AI-based toll system is expected to enhance transparency, curb toll evasion, and support data-driven highway management. ([Source](#))

Event Of the Month – October 2025

Traffic Infratech Expo 2025

In **October 2025**, the **Traffic Infra Tech Expo 2025** was held from **7 – 9 October** at **Bharat Mandapam, New Delhi**, emerging as **Asia’s largest integrated platform for traffic management, road infrastructure, parking solutions and smart mobility technologies**.

The 13th edition of the expo saw **300 + brands** from India and abroad display cutting-edge innovations in **ITS/telematics, AI-enabled traffic systems, barrier-less tolling, surveillance solutions, parking automation and sustainable mobility technologies**. The event drew strong participation from government agencies, policymakers, infrastructure



developers, technology providers and industry leaders, highlighting India’s accelerated push toward intelligent and technology-driven transport systems.

In his address, Mr. Akhilesh Srivastava spoke on *“ITS for the Future”*, underscoring the importance of **secure data management** in smart traffic systems and the growing need for **cybersecurity and data privacy frameworks** as ITS deployments become increasingly data-intensive. He emphasised that **interoperability and standardisation** are critical to enabling scalable ITS solutions, allowing seamless integration of **traffic cameras, sensors, and enforcement systems** with **city-wide Integrated Command and Control Centres (ICCCs)**.

He further highlighted the role of **Public–Private Partnership (PPP) models** in accelerating ITS adoption across urban and intercity corridors. Mr. Srivastava discussed the need for **viable and bankable PPP structures**, supported by **innovative and blended financing mechanisms**, to unlock sustained private sector participation. Drawing on **case studies of scalable ITS deployments**, he illustrated how well-designed PPP frameworks can deliver operational efficiency, financial sustainability, and technology upgradation.

Concluding his address, he stressed the importance of an **enabling ecosystem**—comprising supportive policy frameworks, regulatory clarity, and strong institutional coordination—to ensure successful PPP-led ITS implementation. He noted that aligning technology, finance, and governance will be essential to building resilient, future-ready intelligent transportation systems for India.

Event Of the Month- November 2025

ITS India Congress

Organised by:



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Pre-Summit Event
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FIRST ITS INDIA CONGRESS

AI in Mobility

For Safer, Sustainable and Connected Roads



6-7
November 2025



IIT Hyderabad
Telangana, India

In Collaboration with



The **ITS India Congress**, launched by the **ITS India Forum**, has established itself as **India's annual flagship platform on Intelligent Transportation Systems (ITS)**, modelled on leading global forums such as the **ITS World Congress**, **ITS America**, **ITS Asia-Pacific**, and other national ITS platforms worldwide.

The **ITS India Congress 2025** was successfully held on **6–7 November 2025** at the **Indian Institute of Technology (IIT) Hyderabad**, at a time when India's transportation ecosystem was witnessing rapid growth across **national highways, metro rail networks, urban mobility systems, and digital infrastructure**. As the country with the **world's second-largest road network** and the **third-largest, fastest-growing vehicle market**, India continues to face critical challenges including **traffic congestion, logistics inefficiencies, road safety concerns, and environmental sustainability**, reinforcing the urgent need for **digital intelligence and ITS-led mobility solutions**.

The Congress effectively served as a **national convergence platform**, bringing together **government representatives, industry leaders, academia, startups, and innovators** to deliberate on and shape **India's ITS roadmap**. It enabled alignment with **global best practices**, encouraged **cross-sector collaboration**, and fostered innovation across the mobility ecosystem.

Key highlights of the Congress included **ministerial plenary sessions, policy roundtables, innovation showcases, technology exhibitions, academic and research sessions, hackathons**, and dedicated platforms for **international collaboration and knowledge exchange**. These engagements facilitated in-depth dialogue, shared learning, and the identification of actionable pathways for the deployment and scaling of ITS solutions in India.

Through focused discussions on **policy, technology, and implementation**, the Congress played a pivotal role in advancing **thought leadership, pilot initiatives, and policy frameworks**, while showcasing **India's mobility innovations on the global stage**. The event further strengthened India's position as an emerging global leader in **Intelligent Transportation Systems and future-ready mobility**.

A significant milestone for the Congress was its recognition as an **official Pre-Summit Event under the India–AI Impact Summit 2026**, affirming its strategic relevance within the nation's broader **AI-driven mobility transformation agenda**.

The ITS India Congress 2025 was **jointly hosted by the ITS India Forum, IIT Hyderabad, and the OMI Foundation**, reflecting a strong collaboration between **policy leadership, academic excellence, and responsible technology governance**.

ABOUT THE ORGANISERS

ITS India Forum

ITS India Forum is India's premier think tank advancing Intelligent Transport Systems (ITS) for safer, sustainable, and connected mobility. Bringing together government, industry, and academia, it shapes policies, standards, and innovation, providing global best practices and India-specific insights to build future-ready roadmaps. Collaborating with OEMs, technology firms, start-ups, and researchers, the Forum pilots AI-based traffic management, connected vehicles, tolling, logistics, and road safety solutions.



IIT Hyderabad

IIT Hyderabad (IITH), established in 2008, has rapidly become a leader in academics, research, technology, and startups. Ranked 6th in Innovation and 7th in Engineering under NIRF, it also holds a QS World Ranking of 664, with top 10% citations per faculty. With 330+ faculty and 5,790+ students (60% PG/PhD), IITH drives research through 4,990+ projects worth ₹1,590+ Cr and ₹335+ Cr in R&D funding in 2024–25. Achievements include 12,100+ publications, 225,000+ citations, 560+ patents, and 320+ startups generating ₹1,500+ Cr in revenue. Guided by the motto “Inventing & Innovating in Technology for Humanity”, IITH pioneers AI/ML, 5G/6G, mobility, energy, and smart technologies, establishing itself as a global innovation hub.



The Transportation Engineering Division of the Department of Civil Engineering at the Indian Institute of Technology Hyderabad was instituted in 2016. Since its inception, the Transportation Engineering Division at IITH has been committed to quality education and field-specific research and development. The vision of the specialization is to provide the best exposure to aspiring transportation professionals and technocrats to the various challenges associated with transportation systems and solutions, with the aid of emerging technologies.

OMI Foundation

OMI Foundation is a new-age think tank driving impact at the intersection of mobility innovation, governance, and public good. Committed to advancing India's leadership in sustainability and technology, it works across AI, future mobility, clean-tech, industrial transitions, and social inclusion. The Foundation blends research, pilots, and policy advocacy, ensuring ideas translate into scalable solutions. Recognised for advancing AI for public good, it develops frameworks, datasets, and applications for mobility, urban planning, and governance. Guided by its mission of aligning technology with inclusive growth, OMI Foundation envisions India's development as innovative, resilient, and equitable.



नितिन गडकरी
NITIN GADKARI



मंत्री
सडक परिवहन एवं राजमार्ग
भारत सरकार
Minister
Road Transport and Highways
Government of India

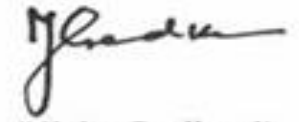
Message

I am glad to know that the Intelligent Transport Systems (ITS) India Forum, in partnership with IIT Hyderabad and OMI Foundation Trust, are convening the inaugural "ITS India Congress 2025 on Artificial Intelligence (AI) in Mobility" on 6-7 November, 2025, at the IIT Hyderabad, aimed at showcasing how AI could re-define road safety, urban efficiency, logistics competitiveness, and inclusive access.

2. The vision of the Ministry of Transport and Highways is not only to build world-class transport infrastructure, but also to make every kilometre of roads, safer, smarter, and more humane. From Bharat New Car Assessment Programme (Bharat NCAP), to data-driven interventions for black-spots identification, our efforts are rooted in evidence, empathy, and accountability.

3. I commend the organisers of the ITS Congress 2025 for advancing this important dialogue. Achieving safer roads requires the collective effort of policymakers, industry, academia, and citizens. Together, by leveraging technology with purpose and data driven decision making, we can create a future where every journey is safer, smarter, and more secure. I wish the conference a grand success.

New Delhi
27th October, 2025.


(Nitin Gadkari)



A. Revanth Reddy

Chief Minister of Telangana

07 November 2025

I extend my warm greetings and heartfelt congratulations to the Intelligent Transportation Systems (ITS) India Forum Congress. I congratulate the IIT Hyderabad for organizing a landmark event in Hyderabad, Telangana.

As India's leading state in economic growth, reforms, good governance, sustainable welfare schemes, per capita income, jobs creation - both government and private sector, education and skills, inviting investments, quality of infrastructure and life, contribution to national growth and exchequer, today Telangana leads the way in innovation, technology adoption and digital governance.

It is very apt therefore that the first-ever ITS India Congress is being hosted here, in our vibrant capital city of Hyderabad, the global hub of Global Capability Centres (GCCs), of software, knowledge, innovation, entrepreneurship, progress, global collaborations.

I learn that this Congress has proved, expectedly, to be a vibrant platform of ideas, partnerships, and inspiration, showcasing India's readiness to lead the world in ITS.

We need to make India a faster nation, a safer nation and I am sure the Congress will provide several context and ideas to achieving the goals of leading a national movement toward intelligent, safe, and sustainable transportation.

Telangana is proud to be the host of this first ITS India Congress. As one of India's youngest and most progressive States, we have always believed that infrastructure becomes transformative when it is intelligent.

It is an important part of our vision of Telangana Rising 2047. Telangana will become the ITS Innovation Hub of India, a place where research, technology, and governance converge to create practical solutions that benefit citizens.

We are to working closely with all stakeholders to scale these ideas from pilots to national models. Together, we can ensure that every road built, every journey made, and every life touched reflects the promise of Smarter, Safer, and Sustainable India.

Jai Hind! Jai Telangana!


(A.Revanth Reddy)

“MoRTH Issues National SOP on Electronic Enforcement: Roadmap for Data-Driven Road Safety in India”

“Road accidents are not acts of fate - they can and must be prevented. India’s road-safety transformation begins with enforcement that is electronic, transparent, and data-driven”. Setting this direction, Hon’ble Justice (Retd.) Abhay Manohar Sapre, Chairman - SCCoRS, opened the Plenary on “Roadmap for Electronic Enforcement in India” at #ITSIndiaCongress2025.



The session explored MoRTH’s newly released National SOP on Electronic Enforcement (Oct 2025), remarked by Shri Sanjay Bandopadhyaya, IAS (Retd.) and Shri B.N. Puri, as a milestone reform that seeks to reduce India’s road accidents and fatalities through AI-enabled enforcement and integration.

Experts including Dr Prabeer K Sikdar, Mr. Venkata Subbarao Chundurur, Mr. Rakesh Verma, Dr Velmurugan S, Prof. Lelitha Vanajakshi, Mr. Akhilesh Srivastava and Mr. Tushar Chhabra highlighted the need for robust KPIs, behavioural metrics, and indigenous AI systems tailored to Indian road conditions. Integration of platforms such as e-Challan, Vahan, and Sarathi was identified as crucial for creating an evidence-based deterrence ecosystem.

Panelists called for India-specific solutions that blend physics-based and data-driven models, supported by local IP ownership and cross-ministerial coordination, to build a digitally enforced, accountable, and safer road ecosystem.



The session reaffirmed that India’s road-safety revolution will depend on how effectively policy, technology, and enforcement converge, turning frameworks into outcomes, and vision into lives saved. The insights from this dialogue will feed into ongoing actions of the Supreme Court Committee on Road Safety, guiding the next phase of electronic enforcement reforms nationwide.

We thank Hon’ble Justice A.M. Sapre, Shri Sanjay Bandyopadhyay, IAS (Retd.), and all expert panelists for their leadership and commitment to advancing a safer, data-driven mobility future for India.

HIGHLIGHTS



CONFERENCE

High-level plenary
& technical sessions



EXHIBITION

Showcase of ITS solutions
products & services



SMART MOBILITY WITH AI

India's ITS Roadmaps &
Vision 2047 Report Series



INNOVATION CONFLUENCE

Hackathon & Poster Showcase



AWARD

ITS Excellence Awards

KEY FOCUS AREAS

National AI in Mobility
Mission & Infrastructure

Scalable, Inclusive, and
Ethical AI Adoption

Innovation & Startup
Ecosystem for AI in
Transport

Sustainable, Safe &
Climate Resilient Mobility

Capacity Building, R&D,
and Regulation

CyberSecure Mobility:
Building Trust in AI

Thematic Reports Overview

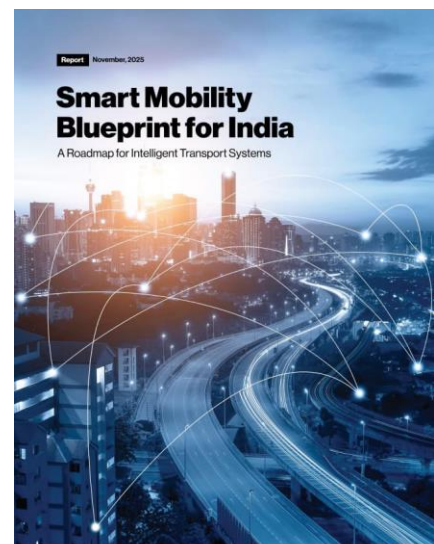
As part of the ITS India Congress 2025, nine thematic reports were launched under the overarching theme “AI in Mobility”. These reports capture key insights, innovations, and policy perspectives shaping India’s journey toward intelligent, data-driven, and sustainable transport systems.

Each report reflects collaborative research and stakeholder engagement across industry, government, and academia offering a roadmap for scaling AI-led mobility solutions in real-world contexts.

The findings and recommendations from these publications will directly inform the upcoming India AI Impact Summit 2026, serving as foundational inputs for the national dialogue under the aegis of the IndiaAI Mission, Ministry of Electronics and Information Technology (MeitY).

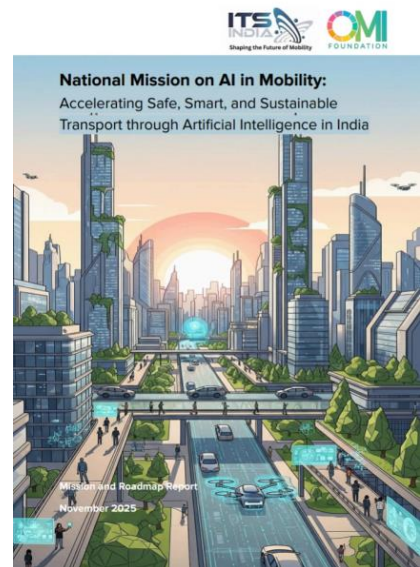
1. Smart Mobility Blueprint for India: A Roadmap for Intelligent Transport Systems

The Smart Mobility Blueprint for India - A Roadmap for Intelligent Transport Systems outlines a strategic vision to create a safer, smarter, and more sustainable transport ecosystem by 2047. It positions ITS as the digital backbone of India’s mobility transformation integrating data, infrastructure, and innovation to enhance safety, accessibility, and efficiency across urban and rural networks. Aligned with PM Gati Shakti, Digital India, and the National Logistics Policy, the roadmap proposes a phased national program anchored in three pillars: Policy and Governance, Data and Technology Integration, and Sustainable Financing and Capacity Building. It calls for a unified National ITS Policy and Mission to ensure interoperability, promote indigenous innovation, and drive measurable performance outcomes. By embedding intelligence into every kilometre of transport infrastructure, the roadmap envisions an inclusive, low-carbon, and future-ready mobility ecosystem realising the vision of Viksit Bharat@2047.



2. AI in Mobility - A Roadmap For India: Accelerating Safe, Smart and Sustainable Transport

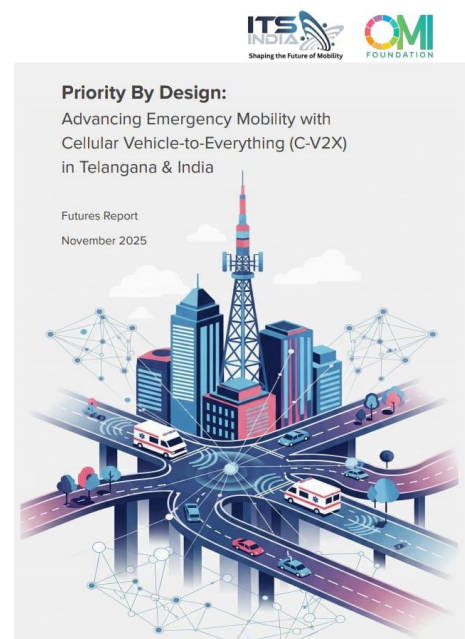
The AI in Mobility - A Roadmap For India : Accelerating Safe, Smart and Sustainable Transport charts a bold vision for how artificial intelligence can transform India's transportation landscape by 2047. Developed jointly by OMI Foundation and the ITS India Forum, the report outlines a comprehensive national framework to make mobility safe, sustainable, efficient, and inclusive. It envisions a future where AI powers intelligent traffic systems, predictive road safety, optimized logistics, smart public transport, and connected electric mobility across urban and rural India. Aligned with flagship initiatives such as IndiaAI Mission, PM Gati Shakti, and Digital India, the roadmap proposes a phased national program anchored in five pillars: Infrastructure, Data Ecosystems, Innovation, Skilling, and Governance. Proceedings report The report calls for government adoption of the Mission as a unified strategy to position India as a global leader in intelligent and ethical mobility systems, advancing the vision of Viksit Bharat 2047.



3. Priority by Design: Advancing Emergency Mobility with Cellular Vehicle-to-Everything (C-V2X) in Telangana and India

Envisioning a future where every second counts and every signal responds, this report explores how Cellular Vehicle-to-Everything (C-V2X) technology can redefine emergency mobility in India, starting with Hyderabad as the demonstration city. It highlights how traffic congestion and fragmented systems delay ambulances and jeopardise patient survival, proposing C-V2X as a transformative, AI-driven solution enabling real-time coordination between ambulances, traffic signals, and control centers. The report outlines Hyderabad's readiness - supported by extensive 5G coverage, adaptive traffic control, and TiHAN at IIT Hyderabad - and proposes a 9.5 km pilot corridor connecting major hospitals. It projects a $\geq 25\%$ reduction in response times, significant health and economic gains, and over ₹1,500 crore in annual societal returns.

Beyond technology, it calls for institutional collaboration, strong policy support, and national scalability, positioning India as a global leader in connected emergency mobility and underscoring that saving lives through digital infrastructure is a moral and governance imperative. It presents a roadmap to scale the solution across Telangana, and the rest of India.



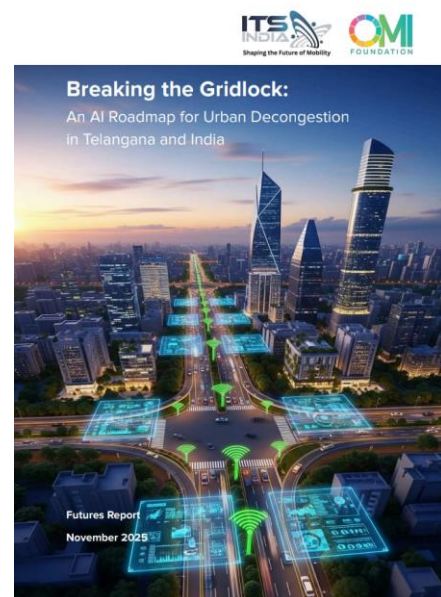
4. Predict, Prevent, Protect: An AI Roadmap for Safer Roads in Telangana and India

This report presents a comprehensive roadmap for harnessing Artificial Intelligence (AI) to tackle India's road safety crisis, which claims over 150,000 lives annually. Focusing on Telangana as a demonstration state, it outlines how AI can shift enforcement from reactive to preventive through three key pillars - AI enabled enforcement, predictive identification of blackspots and "grey spots," and real-time risk detection with driver scoring. Drawing from initiatives such as iRASTE and Hyderabad's ITMS, the report details a layered technical architecture integrating cameras, sensors, data platforms, and analytics to predict and prevent accidents. It also emphasises governance reforms, inter-agency coordination, and citizen engagement, proposing Telangana State Road Transport Corporation (TGSRTC) as the pilot case for deployment. With robust monitoring, transparent data systems, and national policy alignment, the roadmap envisions reducing fatalities by 50% by 2030 and positioning Telangana, and ultimately India, as a global leader in AI-driven, people-centered road safety.



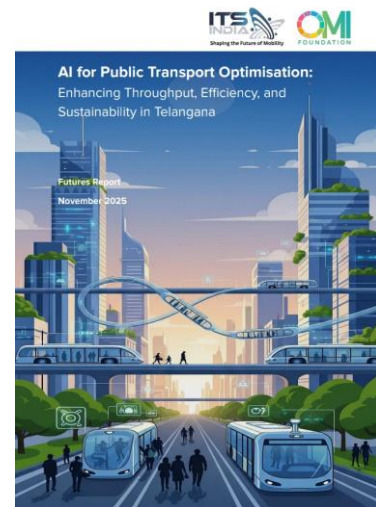
5. Breaking the Gridlock: An AI Roadmap for Urban Decongestion in Telangana and India

Urban congestion has become one of India's most visible barriers to growth and liveability. This report proposes Artificial Intelligence (AI) as a strategic enabler for data-driven traffic management and efficient urban mobility in Telangana and beyond. It outlines the limitations of traditional infrastructure heavy approaches and posits AI as a transformative, cost-effective alternative that optimises existing road networks through predictive analytics, adaptive traffic management, and real-time multimodal integration. The report highlights successful global and Indian case studies where AI has improved traffic flow, enforcement, public transport efficiency, and last-mile connectivity. It assesses Hyderabad's report current readiness for scaling AI-driven congestion solutions and proposes a phased roadmap encompassing technological upgrades, institutional capacity building, policy alignment, and public private partnerships. The vision culminates in Hyderabad becoming a national AI-mobility hub, with AI facilitating equitable, low-carbon, and smart urban mobility. The report also advocates for scaling the Hyderabad model nationally, embedding AI in policy, data governance, and a Mobility India Grid for a future-ready, congestion-free India.



6. AI for Public Transport Optimisation: Enhancing Throughput, Efficiency, and Sustainability in Telangana

As cities grow and mobility demands intensify, Artificial Intelligence (AI) offers a transformative opportunity to reimagine public transport systems for greater efficiency and sustainability. This report presents a roadmap for how the Telangana State Road Transport Corporation (TGSRTC) can harness AI to optimize throughput, streamline operations, and enhance passenger experience. Anchored in Telangana's progressive digital and AI ecosystem, it introduces an AI Throughput Framework that identifies five key domains: route and schedule optimisation, fleet and asset management, passenger experience intelligence, institutional decision-making, and environmental and energy management. Through predictive analytics, real-time dashboards, and intelligent maintenance, AI can significantly improve service reliability, resource utilisation, and passenger satisfaction. The report further highlights the institutional reforms, capacity-building, and financing mechanisms needed to embed AI as a long term, adaptive capability, positioning TGSRTC as a model for data-driven, sustainable public transport in India.



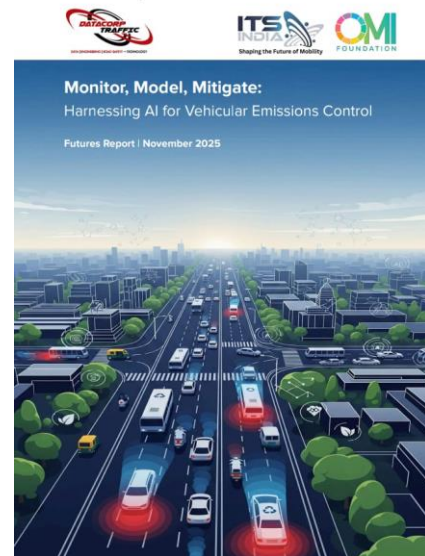
7. UrbanAI: Navigating Tomorrow

As India stands on the cusp of a technological revolution in urban transport, this report explores how Artificial Intelligence (AI) can transform the future of urban mobility by addressing persistent challenges such as traffic congestion, unreliable public transportation, EV charging inefficiencies, and dynamic road demand management. Drawing from global best practices and early Indian pilots, it presents a comprehensive, data-driven roadmap for embedding AI across transport planning, real-time operations, and governance. The report highlights applications such as AI-powered digital twins for infrastructure design, predictive traffic and public transport management, adaptive signal systems, and demand-responsive EV charging. It also outlines the ethical, regulatory, and institutional frameworks required for equitable and transparent AI adoption. Positioned within national initiatives like IndiaAI and Digital India, this report envisions AI as a cornerstone of India's intelligent, connected mobility future.



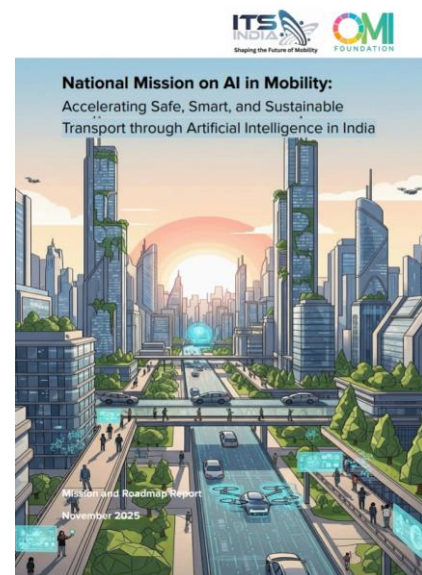
8. Monitor, Model, Mitigate: Harnessing AI for Vehicular Emissions Control

This report outlines a transformative roadmap to reduce Delhi's vehicular pollution through Artificial Intelligence. It proposes an integrated, non-intrusive AI-powered system that uses thermal and infrared imaging, Automatic Number Plate Recognition (ANPR), and edge computing to detect, predict, and mitigate vehicular emissions in real time. Piloted at the Kherki Daula Toll Plaza in August 2025, the model demonstrated high precision in identifying high-emission vehicles, classifying them into Normal, High, and Critical categories with strong correlation between predicted and measured hydrocarbon readings. The report calls for citywide scaling through expanded AI monitoring networks, integration with VAHAN and PUC databases, and stronger institutional readiness. It highlights that AI's true potential lies in proactive enforcement, coordinated policy action, and citizen engagement - together enabling Delhi to transition from reactive pollution control to predictive, intelligent clean-air governance.



9. Charging Ahead: Global Insights and India's Roadmap for Electric Road Systems (ERS)

This groundbreaking report reimagines India's transport electrification through dynamic Electric Road Systems (ERS), enabling charge-as-you-drive infrastructure. Drawing insights from ten global pilots, it shows ERS can cut logistics costs, reduce battery size by 40%, lower emissions by 87%, and decrease mineral dependence. With a phased Indian roadmap backed by NATRAX testing and PPP models, ERS positions India as a global leader in sustainable, affordable, and sovereign electric mobility.



Key Outcomes

- Reaffirmed **Intelligent Transport Systems (ITS)** as a foundational element of India's mobility ecosystem, critical for improving **road safety, traffic efficiency, enforcement effectiveness, and citizen-centric service delivery**.
- Established strong consensus that **technology-led and data-driven mobility solutions** are essential to address road accidents, congestion, and compliance challenges across urban and highway networks.
- Recognised the importance of **real-time data, analytics, and automation** in enabling proactive traffic management and evidence-based policymaking.
- Positioned **electronic enforcement** as the backbone of **transparent, objective, and accountable traffic governance**, significantly reducing manual intervention and discretionary practices.
- Highlighted the effectiveness of automated enforcement in ensuring **consistent compliance, deterrence of violations, and enhanced public trust**.
- Emphasised the need for **end-to-end digitisation** covering detection, e-challan issuance, adjudication, and performance analytics.
- Underlined the importance of **standardisation, interoperability, and SOP-driven implementation** for scalable deployment of ITS and electronic enforcement systems.
- Highlighted **capacity building and continuous training** of traffic police and transport officials as a critical enabler for effective system utilisation.
- Recognised **barrier-less tolling** as a transformative solution for achieving **congestion-free, seamless, and efficient highway operations**.
- Acknowledged the readiness of technologies such as **ANPR, GNSS, and integrated back-end platforms**, while stressing the need for **robust legal, enforcement, and grievance redressal frameworks**.
- Emphasised **phased implementation supported by pilot projects and public awareness** to ensure smooth transition and user acceptance.
- Positioned the **connected vehicle ecosystem (V2V, V2I, V2X)** as foundational to future mobility, with significant potential to enhance **road safety and traffic efficiency**.
- Stressed the need for **common communication standards, cybersecurity frameworks, and multi-stakeholder collaboration** involving OEMs, infrastructure providers, telecom operators, and regulators.
- Demonstrated India's growing readiness in **autonomous and AI-driven mobility** through indigenous R&D, testing, and validation capabilities.

- Highlighted the importance of **controlled pilots and enabling regulatory frameworks** to support innovation while ensuring safety.
- Established **ITS as a key enabler for achieving Sustainable Development Goals (SDGs)** by supporting emission reduction, fuel efficiency, accessibility, and safer transport systems.
- Emphasised the role of ITS in **data-driven urban transport planning** aligned with national sustainability priorities.
- Showcased **successful city-level AI deployments**, with Hyderabad emerging as a **scalable and replicable model** for integrated traffic and mobility management.
- Highlighted the effectiveness of **integrated command-and-control centres and predictive analytics** in improving urban traffic outcomes.
- Identified **emerging ITS technologies** such as AI, advanced analytics, and digital twins as drivers of next-generation mobility.
- Emphasised the need for **agile, innovation-friendly policies, pilot deployments, and collaboration** among government, industry, startups, and academia to scale solutions and deliver measurable outcomes.

ITS INDIA CONGRESS VALUED PARTNERS

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STARTUP



SUPPORTING ORGANISATIONS



Knowledge Partner



Policy Impact Partner

Crashfree India

Event Of the Month – November 2025

Marg Shakti Industry Conclave 2025



MargShakti 2025, hosted at IIT (BHU), Varanasi, successfully concluded as a landmark two-day conclave focused on shaping India's future transportation ecosystem. The event brought together policymakers, industry leaders, academia, researchers, and students for in-depth deliberations across key sectors including roads, railways, logistics, urban mobility, road safety, and electric mobility. With a

strong emphasis on industry-academia collaboration, data-driven mobility solutions, and resilient infrastructure, MargShakti 2025 emerged as a vibrant platform for knowledge exchange, innovation, and collaborative action.

Addressing the technical sessions, **Mr. Akhilesh Srivastava, President, ITS India**, articulated a clear vision on how integrated mobility and logistics planning can serve as a catalyst for economic growth and regional development. During **Technical Session #1 – Samridhi Ke Path**, he highlighted the critical link between tourism, expressway-led connectivity, logistics efficiency, and industrial expansion. He emphasized that well-planned transport corridors not only enhance tourism potential but also strengthen supply chains and enable balanced industrial development when supported by data-driven and technology-enabled systems.



Taking the discussion forward in **Technical Session #2 – Gati aur Soch for PM GatiShakti**, Mr. Srivastava underscored the importance of a unified, multimodal approach to freight and city logistics. He spoke on the need to align road, urban freight, and inland waterways planning under the PM GatiShakti framework, while accelerating the transition towards low-emission trucking. Stressing collaboration across institutions and sectors, he noted that integrated planning and intelligent transportation systems are essential to achieving faster, cleaner, and more resilient logistics networks for India's future.

Event of the Month - November 2025

Ador Summit 2025 – Innovative Mobility: Smarter Traffic & Safer Roads

Our recent summit, “**Innovative Mobility: Smarter Traffic & Safer Roads**,” hosted at our Pune campus, set the stage for an inspiring exchange of ideas shaping the future of India’s mobility landscape. The event brought together leading minds from industry, academia, and technology to explore practical innovations and transformative strategies for safer, smarter roads.

Centered around the theme of **Innovative Mobility** and the **4Es of Road Safety – Engineering, Enforcement, Education & Emergency Response**, the summit highlighted Ador’s commitment to strengthening India’s transportation ecosystem through intelligent, future-ready solutions.



We extend our sincere gratitude to the esteemed speakers and experts whose insights enriched the dialogue:

- Mr. **Akhilesh Shrivastav** - shared powerful insights on “Barrierless Tolling in India: The Next Leap in Highway Management”—highlighting digital tolling, MLFF, and integrated mobility platforms for congestion-free highways.
- Mr. Dr. Shankar Vishwanath – on the critical role of technology-driven enforcement in improving traffic management.
- Mr. Ramanathan Achudan – for insightful guidance on effective ATMS implementation and performance-led operations.
- Dr. Archak Mittal (IIT Mumbai) – for an eye-opening session on Connected Autonomous Vehicles and India’s mobility future.

We were also privileged to witness a thought-provoking panel discussion on “Future of Smart Roads in India – Safety, Sustainability & Resilience” featuring:

Mr. Balakrishnan Biju (GR Infra Projects Ltd), Mr. J. N. Dixit (Actis), Mr. Tejas Auti (Innovision Infracore Pvt. Ltd), Mr. Sachin K. Joshi (Vertis Infrastructure), and Mr. P. B. Dandawate (Dhruv Consultancy) — each sharing practical, actionable perspectives on building safer, smarter mobility corridors.





Dr. Sai Chand (IIT Delhi) – for an enriching technical session on traffic simulation and modelling for smarter mobility planning.

Events like these truly reinforce the power of collaboration between policymakers, DPR consultants, Independent Engineers, OEMs, and technology leaders.

Every discussion echoed one unified mission: Helping people get home safe.

Event of the Month - November 2025

LANDMARK PARTNERSHIP: CSIR-CRRI and ITS India Forum Sign Path-Breaking MoU to Transform India's Intelligent Transport Future

In a landmark step for India's mobility ecosystem, **CSIR-Central Road Research Institute (CSIR-CRRI)** and the **ITS India Forum** have signed a strategic **Memorandum of Understanding (MoU)** to jointly strengthen India's **Intelligent Transport Systems (ITS)** landscape.



The collaboration will drive **advanced research, innovation, testing, and capacity building** in key areas such as **AI-enabled mobility, traffic simulation, electronic enforcement, connected vehicles, and digital mobility infrastructure**. The focus is on translating research into **real-world pilots and deployable ITS solutions**.

By combining **CSIR-CRRI's scientific expertise and testing facilities** with **ITS India Forum's strong industry and startup network**, the partnership will bridge research and industry, enabling faster validation and scaling of indigenous technologies.

A strong emphasis will be placed on **road safety, intelligent traffic management, data-driven policymaking, and workforce upskilling** through joint training programmes and knowledge-sharing initiatives.

Aligned with the vision of **Atmanirbhar Bharat** and **Viksit Bharat 2047**, this MoU marks a decisive step toward positioning India as a **global leader in smart and sustainable mobility**.



Event Of the Month - December 2025

IFSEC INDIA 2025

IFSEC India is a flagship national event dedicated to security, safety, and surveillance, bringing together policymakers, government agencies, industry leaders, and technology innovators on a single platform. The event features an extensive exhibition of advanced security solutions along with high-level conferences and expert discussions on emerging threats, smart security systems, and future-ready infrastructure. It serves as an important forum for knowledge exchange, policy dialogue, and public-private collaboration, highlighting the role of advanced technologies such as AI, analytics, and integrated command systems in strengthening India's security ecosystem.

In his address during the inaugural session, Shri **Akhilesh Srivastava** highlighted the critical role of technology and innovation in strengthening India's security and surveillance ecosystem. He emphasized the importance of integrated, intelligence-driven systems and effective collaboration between government and industry to address emerging security challenges. His remarks set the tone for the event by underlining the need for future-ready, interoperable solutions that support public safety, smart infrastructure, and national resilience.

Event of the Month - December 2025

Geosmart India 2025 Accelerating Digital & Geospatial Urban Intelligence

The GeoSmart India Conference 2025, held from 2–4 December 2025 at Bharat Mandapam, New Delhi, emerged as a premier cross-sector forum uniting public-sector leaders, technology innovators, and policy thinkers to deliberate on geospatial and digital integration for India’s urban and highway transformation. The Urban Development & Smart Utility Summit, a flagship track of the event, featured ITS India Forum as Knowledge Partner, reflecting the accelerating intersection of spatial intelligence with intelligent transport systems.

With a strong representation from the ITS ecosystem, and under the leadership of Mr. Akhilesh Srivastava, President, ITS India Forum, discussions addressed critical challenges—congestion management, logistics visibility, emergency response, and real-time spatial intelligence—and highlighted how GIS, AI, IoT, and digital twins are converging with ATMS and next-generation tolling platforms to remove silos and enable performance-led mobility decisions.

In his address, Mr. Srivastava emphasised “location as the unifying layer for mobility governance,” reiterating the Forum’s commitment to integrate mapping, sensor analytics, and GIS-based workflows into road operations so that future corridors are defined not only by the infrastructure we build but by the intelligence with which we operate them. Industry showcases—including drone-based traffic surveys, AI-enabled incident detection, spatial asset inventories, and LiDAR/radar integration tools—demonstrated how interoperable geospatial and ITS platforms can prioritise interventions with clarity, extend asset lifecycles, improve junction performance, and support electric and safe-system corridors across cities.

The conference concluded with a renewed commitment between ITS India Forum and the geospatial community to collaborate on research, pilots, and capacity building, strengthening India’s transition from data collection to intelligent decisions and positioning the nation as a contributor to globally aligned, citizen-first and sustainable mobility systems.

Event of the Month – December 2025

8th Nhev Working Group Meeting: Advancing India's Connected Commercial Vehicle (Ccv) Protocol For Safer And Smarter Roads

The 8th NHEV Working Group Meeting on the Connected Commercial Vehicle (CCV) Protocol convened key stakeholders to advance India's roadmap for smart, connected mobility and safer road ecosystems. The high-level session brought together policymakers, technology leaders, industry experts, and mobility innovators to deliberate on interoperability, standardisation, and future-ready frameworks for connected vehicles and intelligent transport systems. Discussions focused on how the CCV Protocol can enable seamless communication between vehicles, energy infrastructure, and digital systems to support scalable, AI-driven mobility solutions that enhance safety, efficiency, and sustainability nationwide. The event highlighted the critical role of technology, cross-sector collaboration, and evidence-based policy in shaping India's



future of connected mobility and infrastructure.



In his address during the meeting, Mr. Akhilesh Srivastava, Co-Chair of the 8th Working Group Meeting, President of ITS India and Road Safety Ambassador at the International Road Federation (IRF), emphasised the transformative potential of the CCV Protocol and connected mobility networks in reducing road accidents and improving freight and passenger safety. He underscored the need for interoperable systems, AI-enabled real-time communication between

vehicles, and collaborative industry-government engagement to build a resilient and future-ready transport ecosystem. Senior experts reiterated that India's mobility future depends on robust digital frameworks that blend emerging technologies with pragmatic safety and infrastructure goals, reinforcing the nation's vision for intelligent, secure, and sustainable highways.

Upcoming Events by ITS India

Shaping The Road Ahead: Strategic Events By Its India Forum

Asian Institute of Transport Development (AITD) Training

Date: 20–21 January 2026 | Dehradun, Uttarakhand

The Asian Institute of Transport Development (AITD), New Delhi, is organizing a MoRTH-sponsored two-day training programme titled “Role of Intelligent Transport Systems (ITS) in Enhancing Road Safety and Productivity” on 20–21 January 2026 in Dehradun, Uttarakhand. The programme is designed for Traffic Police and Transport Department officials and aims to enhance their understanding of ITS applications in road safety enforcement, traffic management, and productivity improvement, with focused sessions on automated traffic violation detection, incident management systems, real-time traffic monitoring, and data-driven enforcement. The training will feature national and international case studies along with expert sessions by senior government officials and industry practitioners actively involved in ITS implementation in India, and is targeted at officers of the rank of DySP, ACP, Inspector, and Sub-Inspector engaged in road safety planning and implementation.

AI in Mobility: For a Better Society

Date: 31 January 2026 | IIT Bombay, Mumbai

AI in Mobility: For a Better Society will take place on 31st January 2026 at IIT Bombay as an official Pre-Summit Event of the AI Impact Summit 2026. The event will bring together policymakers, industry leaders, researchers, startups, and technology experts to explore how artificial intelligence is transforming mobility for societal impact. Key discussions will focus on AI-powered urban mobility, connected and autonomous vehicles, sustainable and green transportation, smart infrastructure, road safety, ethics and trust in AI, and innovation for mobility startups. The programme will feature keynote addresses, vision plenaries, panel discussions, industry and startup showcases, research spotlights, and lab visits, offering a collaborative platform to drive real-world deployment of AI-driven connected mobility solutions and build a future-ready transportation ecosystem for India.

C-ITS | Traffic Management | MLFF Meet

Date: 26–27 February 2026 | The Royal Connaught Boat Club (RCBC), Pune

The C-ITS Collaborative Intelligent Transportation System will be held on 26–27 February 2026 at The Royal Connaught Boat Club (RCBC), Pune, as an official Pre-Summit Event of the AI Impact Summit 2026. The summit will bring together leaders from government, industry, academia, startups, and investors to discuss the theme “Concept to Deployment: Building India’s Ecosystem for Intelligent Mobility.” The two-day event will feature high-level plenary and technical sessions, live demonstrations of connected and autonomous vehicle technologies, startup showcases, policy

roundtables, and collaboration opportunities aimed at accelerating research, innovation, entrepreneurship, and real-world deployment of intelligent mobility solutions in India.

Global Leadership Programme on Intelligent Transportation Systems (ITS): Emerging Opportunities and Innovations.

Date: 12–13 February 2026 | South Asian University, New Delhi

South Asian University (SAU), in collaboration with the ITS India Forum, is set to host a **Global Leadership Programme on Intelligent Transportation Systems (ITS): Emerging Opportunities and Innovations**. This exclusive two-day residential programme, scheduled for **12–13 February 2026 at South Asian University, New Delhi**, is designed for government officials, policymakers, regulators, and urban planners from India and other SAARC countries. The programme will focus on global ITS trends, smart mobility solutions, road safety, sustainable transport, cybersecurity, PPP models, and capacity building, while offering insights from leading national and international experts. Participants will gain strategic foresight, practical exposure to real-world ITS case studies, and a joint certification from SAU and ITS India Forum, strengthening leadership and decision-making capabilities in next-generation mobility systems.

Upcoming Events

RoadX India 2026

Date: 9–10 March 2026 | India Expo Centre & Mart, Greater Noida, New Delhi NCR

RoadX India 2026 is India's premier highways, road infrastructure, and smart mobility exhibition & conference, scheduled to take place on 9–10 March 2026 at the India Expo Centre & Mart in Greater Noida, Delhi NCR, India. The two-day event will bring together policymakers, highway engineers, infrastructure developers, contractors, technology innovators, and investors to explore cutting-edge solutions for sustainable road construction, smart mobility systems, intelligent traffic management, EV infrastructure, safety technologies, and future-ready highway ecosystems. Participants can engage with thought leaders through keynote sessions, panel discussions, technical presentations, live demonstrations, and networking opportunities designed to accelerate innovation, partnerships, and business growth across India's road and transportation sectors.

India AI Impact Expo 2026

Date: 16–20 February 2026 | Bharat Mandapam, New Delhi

The **India AI Impact Expo 2026**, scheduled from **16–20 February 2026 at Bharat Mandapam, New Delhi**, is being organised as a flagship component of the **India AI Impact Summit 2026**, announced by Hon'ble Prime Minister **Shri Narendra Modi**. Hosted by the **Ministry of Electronics and Information Technology (MeitY), Government of India**, the Expo represents a landmark initiative as part of the first global AI summit to be held in the Global South, highlighting India's leadership in responsible, inclusive, and people-centric AI.

Conceived as a dynamic, business-focused and experiential platform, the Expo brings together **governments, enterprises, startups, academia, and global innovators** to showcase real-world AI applications, breakthrough technologies, and scalable solutions. Guided by the principles of **People, Planet, and Progress**, the India AI Impact Expo 2026 aims to convert innovation into implementation by enabling collaborations, investments, and policy-driven adoption, while ensuring that the benefits of AI contribute meaningfully to sustainable growth and social impact.

Member's Page

WELCOMING OUR NEW MEMBERS

Onnyx Electronisys Pvt. Ltd.

Onnyx Electronisys is a distinguished leader in traffic signal systems and Intelligent Transport Systems (ITS), dedicated to transforming urban mobility and road safety across India. With **over 17 years of industry experience** and ISO 9001 certification, Onnyx has established a strong nationwide presence, managing and deploying advanced traffic solutions in major cities and urban centres across the country.



As a Premium Partner, Onnyx brings unparalleled expertise in **intelligent traffic management, adaptive signal control, AI-enabled congestion mitigation, and real-time monitoring technologies** that support safer, smarter, and more sustainable mobility systems. Their portfolio spans end-to-end traffic signal design, installation, and operations, as well as innovative ITS solutions tailored for evolving urban transport challenges.

Krishdha Ai

We are pleased to welcome **Krishdha AI** as a **Corporate Partner of the ITS India Forum**.

Krishdha AI is an innovation-driven technology company leveraging artificial intelligence to develop intelligent, real-time solutions for urban mobility and city operations. With a strong focus on practical deployment and citizen-centric outcomes, the company addresses critical challenges in traffic management, emergency response prioritisation, and urban data intelligence.



As a Corporate Partner, Krishdha AI contributes expertise in **AI-enabled traffic optimisation, real-time decision support systems, and integrated urban analytics platforms**. Its solutions are designed to assist city authorities and mobility stakeholders in improving operational efficiency, responsiveness, and safety across transport networks.

By combining advanced AI capabilities with a clear understanding of on-ground urban challenges, Krishdha AI supports the development of smarter, more adaptive, and data-driven mobility ecosystems. The company's approach aligns closely with the ITS India Forum's mission to promote intelligent transportation solutions through collaboration, innovation, and technology-led policy discourse.

We look forward to Krishdha AI's engagement and collaboration within the ITS India Forum community.

OUR MEMBERS

INTERNATIONAL COLLABORATIONS

- ITS United Kingdom
- ITS Germany
- TTS Italia
- 5GAA
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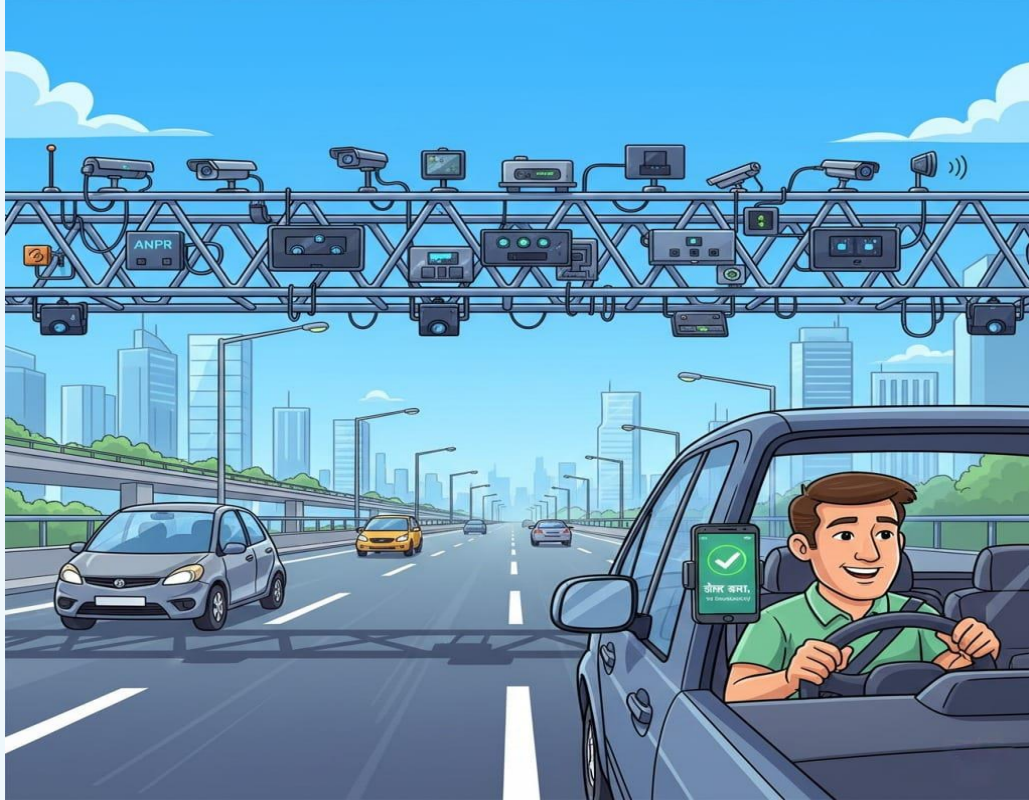
- Tecsidel India Private Limited
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Cartoon Corner



NO STOPS, JUST FLOW: THE MLFF REVOLUTION

This cartoon shows the modern reality of Multi-Lane Free Flow (MLFF) tolling, a revolutionary shift from traditional toll booths. Here, the driver enjoys a smooth, uninterrupted journey on a futuristic highway, completely free from the hassle of stopping or paying at a physical barrier. The focus is on the advanced gantry system above, packed with smart cameras and sensors (ANPR - Automatic Number Plate Recognition) that effortlessly identify vehicles and process tolls digitally as they pass at full speed. The cheerful driver, with a (Toll Deducted, Notification) message on his phone, perfectly encapsulates the convenience and efficiency that MLFF brings to urban mobility. It's a clear visual representation of how technology is making our travel faster, smarter, and stress-free, marking an end to traditional toll plazas.

Expert Column

Next Generation Intelligent Transportation Systems using Vehicle-to-Everything Technology

ABOUT THE AUTHOR:

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Noida



Abstract. *The aim of the Intelligent transportation system (ITS) is to improve vehicle safety and reduce accidents, injuries, and deaths. The Vehicular communication V2X (Vehicle-to-Everything) is a part of ITS which provides an intelligent way of transport to avoid accidents. The Cellular-V2X can provide better quality of service support, large coverage, and high data rate for moving vehicles. The 5G mobile network has become an integral part of V2X. The 5G-V2X utilizes the power of 5G to create a connected ecosystem for vehicles and everything around them. It will revolutionize the transformation by enabling safer roads, reducing congestion and adoption of autonomous vehicles.*

1. Introduction

There are many accidents occurring on roads due to negligence and lack of proper Intelligent transport system (ITS). In 2021 India reported over 4.2 lakhs road accidents, resulting 1.5 lakh deaths. Studies proved that 60% of accidents can be avoided if a warning message is sent to that vehicle at least half a second before accident. The primary objective of ITS and related National Highway Traffic Safety Administration (NHTSA) to improve vehicle safety and reduce accidents, injuries, and deaths. As the transportation moves towards environment of connected and autonomous vehicles, the role of communication and data transfer becomes essential. Automakers are looking to offload critical time-sensitive decisions-making from passengers to autonomous vehicles through a complex set of sensors and communication with everything around the vehicle. Connected vehicles can be used for infotainment and navigation to vehicle safety. There is large potential for connecting other road users such as heavy duty vehicles, pedestrians, cyclists, etc.

2. Vehicle-to-Everything

The V2X (Vehicle-to-Everything) is a broaden term which includes V2V(Vehicle-to-Vehicle) to communicate collision warning messages among vehicles, in addition to objects such as pedestrian crossing road V2P(Pedestrian) detecting bicycles, motor

cycles on a car lane, detecting traffic light conflicts in the cities V2I(Infrastructure), and Internet based networks V2N(Network) which distribute software and firmware updates to vehicles including HD maps and connect dynamic route management. The V2X technology is a two-way communication that enables transmission of data between a vehicle and surrounding entity Zthat might affect that vehicle. The V2X send, receive, and interpret signals correctly, interact well with infrastructure and other vehicles, and make sense of all these information to react appropriately in every case. The V2X can transform existing transportation system into ITS that will provide intelligent services such as autonomous driving, collision warning, traffic regulation and infotainment. The V2X will reduce environmental impact and more vehicle comforts for drivers and passengers. The V2V could eliminate 80% of the crashes that do not involve alcohol or drugs. The V2P detects pedestrian's smart phones and communicate to issue alerts about potential dangers nearby. The vehicle could warn drivers of pedestrian crossing a blind spots in urban settings. The V2I also connects vehicles to road side infrastructure, like road sign, road condition, weather, construction, and toll gantry. An ambulance can communicate with traffic lights to turn them green ensuring a quicker and safer route to hospital.

3. Cellular Vehicle-to-Everything Communication

The C-V2X(Cellular Vehicle-to-Everything) utilizes cellular mobile technology to provide the link between the vehicles and rest of the world including other vehicles and traffic control system. The C-V2X provide high performance for capacity, coverage, range, scalability, number of devices supported, and security. The C-V2X can achieve longer range which can directly translates into earlier alert and better visibility of unexpected dangerous situation. It also allows vehicles to travel at higher speeds while still being able to stop in time to avoid hazardous conditions. The C-V2X is designed to be globally compatible with 5G standards. It is able to take 5G network advantages namely enhanced mobile broadband (eMBB), ultra reliable low-latency communication (uRLLC), and massive scale machine type communication (mMTC). The 5G provides very high throughput, high reliability, low latency and accurate position determination. The 5G C-V2X is the gateway to the connecting vehicles and in long run to the self driving vehicles.

4. Self-Driving Cars

Self-driving cars also referred as Autonomous vehicles. It improves automotive safety and provides help to old age and handicapped citizen who may not be able to drive in difficult traffic conditions. The Uber and Ola also may like to reduce the cost of personnel in driving activities. Currently automation level is 1 and 2. The level 3 to 5 requires full robust roll-out of V2X technology. Auto Industries already ahead with manufacturers like M/S Tesla, Audi, Mercedes, BMW produce level 2 automobile where driver not have to physically operate the vehicle, and can have his hands-off the steering wheel and foot-off the accelerator/brake pedals at the same time. In level 3 human drivers eyes-off fail to properly take over when necessary, or drivers of other cars are at fault. The Google automotive spin-off Waymo has recently started to test level 4 (attention-off) vehicle on public roads in Arizona, USA. Testing is being carried out for level 4 and 5 but final product on road may take time. Companies like

Tesla and Audi are at forefront of self-driving car technology development pursuing at level 4 and 5.

4.1 Autonomous Motor Bikes

A new self-driving motor bikes developed by M/S AB Dynamics promises autonomous system to be tested under much challenging conditions. Motor bikes stability control utilizes advanced gyroscopes and accelerometers to detect parameters such as speed, lean angles, and braking force, and can quickly adjust electronic braking and throttle settings to help prevent crash. The system provides assistance by continuously monitoring a compressive set of key vehicle data including torque, lean angle, and acceleration to detect critical situations. This improves both riding stability and braking performance. According to Bosch Accident Research, motor bike-to-car communication could prevent nearly 1/3 of the motor cycle accidents. The motor bike will exchange information up to 10 times per sec. with other vehicles on the road within radius of several hundred meters. The information consists of vehicle type, speed, position, and directional travel. The streets of China, Asia, and India are filled with millions of motor bikes, manufacturers feel that autonomous technology built in to motor bikes can be a good solution to manage the movements of vehicles. The M/S Kawasaki, BMW, Honda, Yamaha, and Ford are making a lot of headway to bring the concept to fruition much sooner.

5. Conclusions

The V2X communication benefits the environment by reducing traffic jams that increases pollution. The V2I reduce unnecessary braking further reduce fuel consumption and emission. C-V2X will save millions of lives but it will take time to equip into vehicles on road. The mobile network operators (MNO) need to offer C-V2X services by extending their networks to accommodate the C-V2X applications. Embedded SIM (eSIM) can be soldered in to cellular device of vehicles. Although full automation is a goal but perhaps a better solution is simply let AI complement the driver rather than replace the driver. The powerful combination of human/AI should be able to provide the best safety improvement everyone needs. With 5G-V2X and AI the intelligent connected vehicles will stay at the forefront of the automotive industry.

Expert Column

A sustainable roadmap for curbing underage driving and protecting children on Kashmir's roads

The vulnerabilities of children and adolescents in road safety demand urgent and sustainable action

ABOUT THE AUTHOR

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In recent years, Jammu & Kashmir, particularly the Valley, has witnessed a disturbing and dangerous surge: underage drivers operating two-wheelers and cars on public roads. It is now common to see adolescents aged 14 -16 handling scooters, motorcycles, and even four-wheelers. This alarming trend, fueled by lax parental oversight, peer influence, and inadequate enforcement, has led to a spike in serious accidents involving minors.

The statistics are harrowing. Official data presented to the Parliament in late 2024 reveals that Jammu & Kashmir has recorded over 28,500 road accidents in just five years (2020-2024), resulting in more than 4,000 fatalities. In 2023 alone, the death toll peaked at 893. While 2024 saw a marginal dip to 831 fatalities, the crisis remains acute. A staggering 95% of these accidents were attributed to over-speeding—a hallmark behavior of inexperienced, thrill-seeking teenage drivers.

Such violations do not just endanger the young, inexperienced drivers themselves; they pose grave risks to pedestrians and other road users. This regional reality serves as an urgent wake-up call: prioritising road safety must become everyone's prime concern—from families and educators to authorities.

Understanding the Vulnerability: The Global and Psychological Context

This local crisis exists within a grim global reality. According to the World Health Organization (WHO), road traffic injuries are the leading cause of death for individuals aged up to 29. Globally, over 500 children lose their lives daily to road collisions. In India, the situation mirrors this tragedy; the 2022 report by the Ministry of Road Transport and Highways (MoRTH) indicated that 9,528 minors were killed in road crashes, accounting for nearly 6% of all traffic fatalities—a 28% rise from the previous year.

Children and adolescents (aged up to 18) represent a uniquely vulnerable demographic due to physical and cognitive limitations. Adolescents face amplified risks as they transition to independent mobility. Teen drivers have the highest fatal crash rate of any demographic.

The Neuroscience of Risk

The reason for this high risk is not just “bad behavior” but biology. Research highlights that the adolescent brain is still developing, particularly the prefrontal cortex, which governs decision-making and impulse control. Conversely, the limbic system, responsible for reward-seeking, is highly active. This creates a “perfect storm” where teens are biologically prone to “optimistic bias”—the belief that they are less likely to experience negative events than others. When combined with the “peer effect,” where the presence of friends in the car can increase risky driving behaviors by up to 100%, the danger becomes lethal.

As we approach the UN Sustainable Development Goal (SDG) called Second Decade of Action target to halve global road deaths by 2030, addressing these vulnerabilities through scientific understanding and rigid intervention is imperative.

The Way Forward: A Mechanism for Sustainable Safety in Kashmir

To forge a strong way forward and curb these violations, Kashmir requires a robust, result-oriented protection mechanism. We must shift to a “Safe System” approach—aligning with SDG 11 for inclusive, sustainable cities—which integrates safety with environmental goals. Sustainable safety saves lives while promoting eco-friendly mobility like walking and cycling.

Here is a blueprint for an integrated mechanism to protect our children and adolescents:

Uncompromising Enforcement and Legislation

Legislation forms the foundation, but its power lies in implementation. The administration must ensure zero tolerance for underage driving, utilizing the full force of the Motor Vehicles Act. Under Section 199A, if a juvenile commits a motor vehicle offense, the guardian or vehicle owner is held liable.

The penalties are severe: imprisonment of up to 3 years, a fine of INR 25,000, and the cancellation of the vehicle’s registration for 12 months. Furthermore, the juvenile becomes ineligible for a driving license until the age of 25. This provision must be publicized aggressively. Parents must understand that handing keys to a minor is not a “convenience” but a criminal act that can lead to their own imprisonment.

Speed Management

In high-risk areas, specifically near schools and pedestrian zones, strict speed limits of 30 km/h must be enforced to prevent collisions. This should be supported by automated speed enforcement cameras that remove human bias from ticketing.

Mandatory Compliance

Rigorous enforcement of laws mandating helmets for two-wheeler riders (including pillions) and seatbelts/child restraint systems (CRS) in cars is essential. In J&K, helmet non-compliance alone contributed to nearly 300 deaths in recent years.

Sustainable Infrastructure Adaptations

We must design roads that forgive human error and prioritize vulnerable users. Kashmir's specific geography, with its winding roads and winter challenges, demands tailored infrastructure.

"Complete Streets": Moving away from vehicle dominance, our urban planning must integrate segregated bike lanes, safe footpaths, identification of blackspots and traffic-calming features like advanced technological speed humps near educational institutions.

School Zones as "Safe Havens": Every school zone in Kashmir must be audited. Interventions should include mandatory "School Ahead" signage, rumble strips to physically force speed reduction, and color-coded pavement markings that alert drivers they are entering a child-priority zone.

Safe Routes to School: Implementing programs that incorporate land-use planning to ensure children can walk or cycle to school without fear. Ensuring Road Safety Audit in every subject district. This fosters lifelong habits of sustainable mobility, addressing the twin crises of congestion and pollution in Srinagar and major towns.

Education and Cultural Shift

Education empowers change, but it must go beyond sporadic workshops. It needs to be structural and psychological.

Parental Accountability & Education: We need a cultural shift where "love" is not demonstrated by buying a 15-year-old a motorbike. Community workshops are crucial to train parents on the legal (Section 199A) and physical risks. The administration should partner with religious leaders and community heads to preach the sanctity of life and the responsibility of guardianship.

Graduated Driver Licensing (GDL) Concept: While India does not formally have a GDL system, we can advocate for a "Parental GDL" approach. This involves parents agreeing to a phased introduction to driving once the child turns 18—starting with daytime supervision, then independent daytime driving, and finally night driving or driving with passengers.

Targeted Campaigns: The administration, with experts, must conduct year-round rotational awareness campaigns across districts. These should be data-driven, highlighting the specific "death traps" of peer pressure. Initiatives similar to "National Teen Driver Safety Week" should be localized for Kashmir, perhaps focusing on the dangers of "stunt biking" which has become prevalent on bypasses.

The Governance Mechanism: Collaboration and Data

A robust framework requires structured governance to move from policy to practice.

Task Forces & Blueprints: We need dedicated District Road Safety Committees (DRSC) to develop local blueprints for implementation and monitor progress dynamically. These committees must meet monthly, not annually.

Multi-Stakeholder Collaboration: Success requires collaboration between governments, NGOs (like UNICEF), educational institutions, and youth coalitions. Schools must be mandated to appoint a “Road Safety Nodal Officer” responsible for ensuring no underage student arrives in a personal motorized vehicle.

Data-Driven Interventions: Utilizing the UNICEF “Protecting Young Lives” report model, we must conduct assessments to identify high-risk schools and areas for targeted interventions. We cannot rely on underreported data. A unified accident database linking police, hospitals, and insurance firms in J&K is necessary to understand the true scale of non-fatal injuries which often leave youths with lifelong disabilities.

Conclusion

The vulnerabilities of children and adolescents in road safety demand urgent, sustainable action. By embedding safety into green transport systems, we protect lives today and build resilient futures. The data is clear: 95% of our accidents are due to human error, specifically speeding. This means they are preventable.

As a road safety expert, I advocate for immediate investments in this mechanism. The cost of prevention is a fraction of the cost of lost lives, medical care, and legal proceedings. Every measure taken today—every fine issued under Section 199A, every speed hump installed near a school, every parent educated—ensures tomorrow’s generations thrive safely on sustainable paths. We cannot afford to lose another child to the asphalt.

Expert Column

BUS MODERNIZATION PROGRAMME WITH ITS APPLICATIONS AS A PART OF SMART CITY INITIATIVE.

ABOUT THE AUTHOR:

Dr Pradip K. Sarkar

He is a transport planner and former professor at the School of Planning and Architecture, New Delhi. currently serves as a technical expert on national and international committees in the field of Intelligent Transport Systems (ITS).



1.0 Background:

India's national Smart Cities Mission is aimed at developing an urban renewal and retrofitting programme initially for 100 cities by the Government of India, based on the development of smart cities across cities in India leveraging ICT to a great extent. The smart city is finally emerging from the following concepts:

1. Smart people
2. Smart Economy
3. Smart Environment
4. Smart Government
5. Smart Living

Although Intelligent Transport Systems (ITS) have been around for a long time, the new generation of solutions offer features like traffic prediction, analytics and decision support, traveler information system coupled with Graphic Data Dictionary , advisory services, ticketing and fare collection. Innovative tools such as roadside sensors, radio frequency tags and global positioning systems also help monitor and manage transport more effectively.

It is noteworthy to mention that the Government of India has taken an initiative to promote Digital Governance using **Intelligent Transport System (ITS)** technology. In fact ITS will be the effective mechanism for the Government to overcome the challenges through skilled man power and developing appropriate ITS architecture and standards and specifications in place.

2.0 Implementation of Bus Modernization plan, a part of Smart City Programme.

As a part of bus modernization plan [1] which is funded by the World Bank with the cooperation the Ministry of Housing and Urban Affairs , the need for real time information dissemination to the bus users was one the major objectives of the project accomplished recently in Chandigarh to enhance its passenger ridership. In brief, the following are the objectives of ITS implementation on Chandigarh City Bus service[2], as mentioned below

- To provide a mechanism for providing information about bus arrival/departure to encourage better use of public transport and improve the efficiency of accessing the bus network.
- To enhance the reliability and safety of bus service.

The implementation of ITS based Bus Modernization attempts to ensure the possible mode choice in favour of bus travel in Chandigarh. This paper attempts to demonstrate the type of ITS technology based on its architecture.

3.0 Study area

Chandigarh is an union territory and the capital of the two neighboring states i.e. Punjab and Haryana with approximate population of a 10.5 lakhs according to the as 2011 census, and having occupied an area of 114 sq. km[3]. Smaller cities Mohali on the west, Zirakpur on the south, and Panchkula in the southeast, all belong to the state of Punjab and Haryana, respectively, surround at the boundary of this union territory. These towns have a very strong interaction in terms of travel to Chandigarh city, thus making it a larger urban area. The city's population density has grown from 56 to 92 person per hectare during the last 20 years. There is a moderate density of between 50 and 100 person per hectare in the central sectors that have become commercial zones.

Chandigarh has an average of 330 buses each day travelling on local routes around the city and its surrounding town, offers a fleet size of a total of 435 buses for Tri-City[4].

4.0 Bus Modernization Programme

In order to serve the bus operation system safely and efficiently, all the associated components such as Automatic Vehicle tracking System, Passenger Information System (PIS), Transit Management Centre, Scheduling system , and Automatic Fare Collection System are the backbone of the system architecture. A conceptual framework of Bus Modernization system shown in Figure 1.

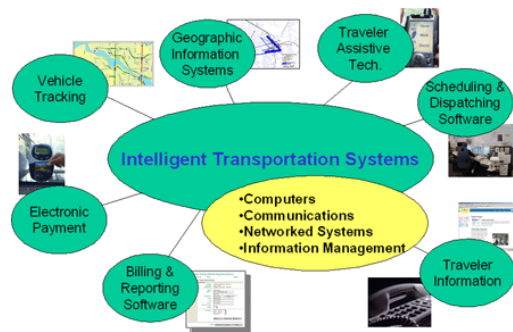


Figure 1: A Conceptual Framework of Bus Modernization Plan, Source:Ref No.2

Figure 2: The functioning of ITS based Bus Architecture is demonstrated in Fig 2.

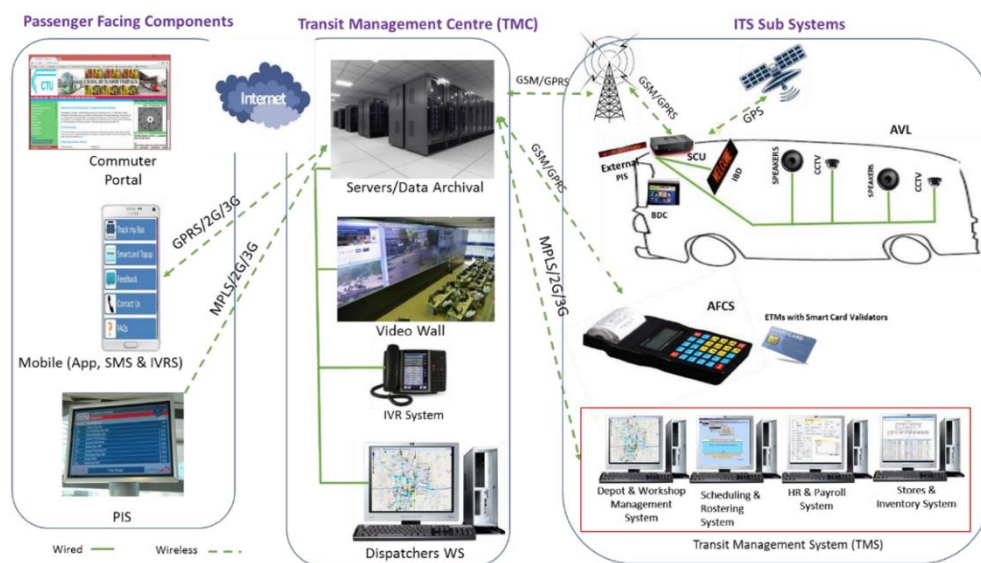


Figure 3: ITS based Bus Architecture, Source:Ref No 3

5.0 APPLICATIONS

One of the major concepts in the functioning of the bus operation system is the ITS based architecture that has been built with detailed planning & design along with its application to take into account of expansion program in the future as shown in Figure 2. Communication mechanism using hardware and software supported with necessary equipment are built in the system that is connected from TMS (Traffic Management System) to various components of the system including buses, PIS at Bus Stops, Depot, Workshop, Inspection Equipment, Sales Unit etc. To transmit and receive and sends the data on real-time situation from and to AVL, PIS, and AFCS systems, ETM (Electronic Ticket Machine) and SCU (Single Controller Unit) are connected with a SIM module. This communication method between TMC and buses also includes 4G LTE/5G mobile communications. In the event that one module malfunctions, these modules offer a backup communications mechanism to ensure its safety and operation. Various sub-system associated with building the ITS architecture along with their utilization is demonstrated Figure 3.

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Expert Column

Intelligent Transport System Technologies for Road Safety

ABOUT THE AUTHOR:

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India has not so far enjoyed the benefit of worldwide ITS developments, while providing most of the ITS services to the world by Indian engineers and technologists. In the past and recent past also, India has been always promoting labour-based techniques and technologies, so that employments can be generated. However, it has been a misunderstood context of labour loss due to this, just like the resistance that was created in 1980s against introduction of computers in the country. But this idea cannot be applied uniformly to all activities of the society and our development projects. The modern-day quality and efficiency demanded by the users of the services cannot be achieved in any form of transport system without large scale digitization and adoption of ITS technologies. The Transport Vision for future is for equitable, seamless, safe/secure, autonomous, zero pollution (minimum or no pollution), quicker/faster, and productive/efficient. To achieve this future in transport, infrastructure **must** be enabled with ITS, and the management of traffic should be through advanced technology only.

Many other countries have reached the pinnacle of very high level of ITS deployment in the transport sector, which has made most of their operations highly efficient. ITS does not mean only the cameras through which we can monitor the activities in an area and provide surveillance using computer. There are a whole range of intelligent system applications, which can assist in every aspect of road transport and other sectors of transport seamlessly. For example, advancements in intelligent system technology for connected vehicles, tolling, traffic management, enforcement and driving intelligence, all are supposed to be enhancing safety.

92% of the world's road crashes happen in low and middle income countries, yet there is very less adoption of technology for managing and enhancing road safety. There are host of in-vehicle technologies which can make a big difference in road safety. India's vehicle standards have become quite advanced in last quarter century and all these are parallel to EU standards in most aspects. But, in-vehicle smart technology adoption has been slow and limited only for high-end cars. Most of these advanced technologies are not yet mandatory for the fear of cost increase. There can be various kinds of Advanced Driver Assistance Systems (ADAS), like Autonomous Emergency

Braking (AEB) system. This has eliminated more than 50% of front and rear-end collision crashes in USA. AEB combined with Adaptive Cruise Control ([ACC](#)) or Forward Collision Warning ([FCW](#)) systems have higher effectiveness in reducing collisions. ACC assists the driver in keeping the vehicle at a safe distance from vehicles in front by automatically adjusting the vehicle speed.

Lane Departure Warning (LDW) with Lane Keeping Assistance (LKA) systems automatically steer the vehicle for safe driving, which is very important for our trucks. Of course, the road infrastructure with control features like markings and signs, etc have to be in the ideal conditions. Blind Spot Detection (BSD) works by assisting the driver to avoid collisions by detecting vehicles and or pedestrians in the blind spots, and this pedestrian and cyclist detection systems is extremely important for our roads. Autonomous cars or self-driving cars are a step further to ADAS, and those are having ADAS Level 3 systems in them, and Level 4 is now being tested in advanced countries. Level 5 will be the highest level for self-driving vehicle to replace the driver altogether by allowing vehicles to operate without human input. Of course, most important prerequisite for that is the improvement of road infrastructure and its upkeep in perfect condition all the time, which is a vital aspect for adopting autonomous vehicles and to create a connected vehicle environment for enhancing road safety. This can be done by creating smart roadside safety infrastructure using V2X using IoT sensors and V2V to create the connected vehicle environment for making a realistic difference in road safety in India. In addition, there are already developments in Drowsiness Warning System (DWS) and also Alcolock (Breath Analyser), which are required for our trucking industry.

Advanced Traffic Management System (ATMS) is also required to control the behavior of the road users. All the lower modes of traffic, at this time, do not follow any traffic rule in India. The enforcement agency also even do not try to enforce rules on them, as their number itself is so huge. Behavioural trait of the road users causing violations and resulting in accidents are to be eliminated by stricter enforcement by 24x7 surveillance and real time monitoring of the traffic. Just because of this stack enforcement, the fatalities of two-wheeler riders, pedestrians and other NMT modes in road crashes in India is more than 60-80% in highways and cities. Thus, it is envisaged that several important aspects of enforcement shall have to be implemented with ATMS, which is going to be round the clock (24x7) for 100% enforcement; and some of these violations to be strictly enforced against are like,

- | | |
|---|---|
| (a) Over speeding | (f) Disabled vehicle (any unduly stopped/ stationary vehicle) |
| (b) Unsafe overtaking | (g) Animals on the road |
| (c) Overloading (of vehicles) | (h) Illegal/wrong parking on road |
| (d) Contraflow movements | (i) Dynamic speed reporting (feedback sign) |
| (e) Pedestrian or vehicles not permitted on expressways | |

(j) Compliance to seat-belt & helmet wearing

(k) Use of mobile phone while driving/riding

Intelligent Transport System (ITS) or ATMS is a generic term expressed for all such technologies which are adopted for technology based traffic management, and allows measurement and management of traffic on real time basis. These devices in the form of cameras and sensors (and now with AI) are going to be deployed at various locations of road network in reference to the traffic movement pattern, and all measurements of traffic including the violations of traffic rules and specific incidents will be recorded round the clock without human interventions.

Concluding comment

In today's world, there is just one *MANTRA* for progress, i.e. '*Digitize or Die*', and ITS is just that only for safety in road transport sector. The mixed traffic and a larger proportion of road users with lower level of intellect with very poor culture of road safety and respect or understanding of road rules, real-time monitoring and surveillance of all violations and associated enforcement can only improve the safety culture in road use. For the first time, the rampant contraflow movements in the roads of our city or highway network have been recognised by some States as a criminal offence of dangerous act on road, for which FIR will be lodged. This also will be possible to be effectively enforced by such a real time digital enforcement system only for having proof of the crime. MoRTH has also issued the SOP for electronic enforcement for implementation of section 136A of M. V. Act (Amendment 2019), which is without targets, quality standards for technology, and clear responsibility for it.

India's DPI (Digital Public Infrastructure) is world famous, but we have completely failed in implementing ITS for transport sector, particularly for the safety in road sector. We had many Missions like Smart City and many others... to facilitate this, but all those were without any real result delivered. It is hoped that it will pick up and there will be significant change with ITS implementations in next 5 to 10 years from now. The future is available with unlimited possibilities and opportunities; and therefore, let the things be done differently from that what was being done so far, and only with proven appropriate digital technologies. Thus, from now onwards India must not build only roads, but the smart road transport network only with advanced ITS systems.

Feature Article

Mobile Enforcement: How “Anywhere, Anytime” Policing Is Revolutionizing Indian Road Safety



ABOUT THE AUTHOR

Senturan Karthikeyan

Director - Innovations

DataCorp Traffic Private Limited



In the evolving landscape of Indian traffic management, a significant shift is underway. For years, the gold standard of enforcement has been the static CCTV or ANPR camera, reliable but stationary. While effective at specific junctions, these systems suffer from a critical flaw: predictability. Violators know where they are, follow traffic rules in those zones, and then resume violations on roads without enforcement. As a result, the risk on roads without such deployments remains elevated.

The Science of “Subjective Apprehension”

Research in traffic psychology highlights a powerful concept: the subjective chance of apprehension. Drivers are most likely to follow rules not when they see a camera, but when they believe enforcement could be anywhere.

Mobile units significantly outperform fixed cameras in creating this psychological deterrent. Fixed cameras often create a narrow halo of compliance limited to the immediate vicinity. In contrast, unpredictable mobile enforcement encourages network-wide caution. When a Bike Interceptor could appear around any corner, the safest option for a driver is to follow the rules everywhere.

The Bike Interceptor by DataCorp Traffic represents the cutting edge of this mobile enforcement philosophy. Unlike traditional car interceptors, which struggle in narrow or congested Indian streets, this solution is a compact, bike-mounted system designed for agility and precision.

What sets the Bike Interceptor apart is its AI-driven ability to detect multiple violation types simultaneously, a critical capability for the complex traffic mix seen on Indian roads.

Key Violations Observed in Pilot Cities

- Helmet-less riding, a major safety concern in India
- Triple riding on motorcycles
- Driver on call (mobile phone usage)
- Seatbelt violations
- Wrong-way driving and no-parking zone violations

The theory of mobile enforcement is already proving effective on the ground. The Bike Interceptor has undergone successful pilots in cities including Ghaziabad, Lucknow, Salem, and Tambaram.

Traffic police teams involved in these pilots highlighted several operational advantages:

- **Mobility:** Enforcement is no longer confined to fixed locations
- **Flexibility:** Units can be redeployed dynamically based on daily traffic patterns
- **Automation:** No manual intervention is required for detection or evidence capture

A consistent observation from officers was that real enforcement happens when drivers know violations can be detected anywhere, not just at known junctions.

This aligns closely with the evolving goal of modern road safety, moving from punishment to prevention. The visible presence of these high-tech bikes, or even the awareness of their deployment, encourages safer driving behavior.

As Indian cities continue to grapple with congestion, limited road space, and growing two-wheeler traffic, mobile enforcement systems like bike interceptors are likely to become a core component of modern traffic policing.

They do not replace fixed infrastructure. Instead, they complement it by extending enforcement coverage, improving deterrence, and making road safety interventions more responsive and data-driven.

In the long run, success will not be measured by the number of challans issued, but by safer driving behaviour sustained across the road network.

Updates From Working Groups and Committees

With the beginning of the new year, ITS India Forum is pleased to announce the formation of a renewed set of committees. Last year, the Forum successfully constituted **relevant, industry-based, and need-driven committees** that enabled focused discussions, practical recommendations, and meaningful stakeholder engagement. Building on this strong foundation, the new committees are aligned with emerging mobility trends, policy priorities, and technological advancements. Together, they aim to deepen collaboration across government, industry, and academia, while driving actionable outcomes for a smarter, safer, and more sustainable mobility ecosystem.

New & Innovative Study Committees

1. Mobility for Women

Focuses on enhancing safety, accessibility, and inclusivity in mobility systems for women through technology, policy, and infrastructure interventions.

2. Blockchain for Mobility

Explores the application of blockchain in tolling, ticketing, data security, and transparent mobility transactions.

3. Sustainable Mobility – Active Mobility with Public Transport

Promotes integration of walking, cycling, and public transport to create low-carbon, people-centric urban mobility systems.

4. Green Mobility: Scaling Challenges & Solutions

Addresses adoption barriers for green mobility solutions and identifies scalable models for EVs, clean fuels, and green corridors.

5. Next-Gen Asset Management Using AI

Leverages AI and data analytics for predictive maintenance, lifecycle management, and optimization of transport infrastructure assets.

6. Next Generation Road User Charging

Examines future-ready road pricing models including distance-based charging, congestion pricing, and digital tolling systems.

7. AI Solutions for Vehicular Pollution Check

Focuses on AI-enabled monitoring and enforcement solutions to improve vehicle emission compliance and air quality outcomes.

8. Roadmap for V2I Adoption in India

Develops a strategic framework for Vehicle-to-Infrastructure deployment to enable connected, safer, and smarter road networks.

9. AI for Road Safety and Traffic Management

Promotes AI-driven solutions for accident prevention, traffic optimization, enforcement, and real-time incident management.

10. Advanced Air Mobility

Explores policy, technology, and infrastructure readiness for drones, eVTOLs, and future urban air mobility systems.

Monitoring & Suggestion Committees

11. Committee on MLFF Deployment

Supports planning and rollout of Multi-Lane Free Flow tolling, addressing technology, interoperability, and enforcement challenges.

12. Committee on Traffic Studies and Modeling

Strengthens data-driven traffic analysis, forecasting, and simulation to support evidence-based transport planning.

13. Committee on Building Courses for ITS Skilling

Focuses on developing structured training programs and curricula to build a skilled ITS and smart mobility workforce.

14. Committee on Electronic Enforcement

Supports implementation of technology-enabled enforcement systems to improve compliance, transparency, and road safety.

15. Committee on CCV Protocol

Works on standardization and adoption of Connected and Cooperative Vehicle (CCV) protocols across mobility ecosystems.

Feature Article

Driving the Connected and Secure Mobility Ecosystem



Empowering Safer, Smarter and Sustainable Transportation through Innovation and Intelligence

Danlaw is a global leader in Connected Vehicle Solutions, Telematics, ADAS, V2X, Clusters and Cybersecurity. With over four decades of engineering excellence, Danlaw is committed to shaping the future of intelligent mobility through cutting-edge innovation, collaboration, and digital transformation.

Across the globe, Danlaw's group of companies – Danlaw Inc. (USA), Danlaw Technologies India Ltd. (India), Darby (India), Cohda Wireless (Australia), Rapita Systems (UK, USA) and Akteena (USA, India) strengthen the Danlaw mission to deliver safe, reliable, and intelligent connected ecosystems across North America, Europe, and Asia.

At the forefront of evolving connected ecosystem, Danlaw works with automotive OEMs, Tier-1 suppliers, government agencies, universities and technology innovators to enable seamless connectivity, safety, and interoperability across vehicles and infrastructure. Our solutions span Telematics, Vehicle Control Modules, Smart Gateways, V2X Communication Modules and Secure Cloud Platforms that power next generation connected mobility systems.

As part of national connected vehicle programs, Danlaw has played a pivotal role in the V2X Green Corridor pilot Project, advancing real-world deployment and interoperability testing of Vehicle-to-Everything (V2X) communications. The initiative aims to establish intelligent corridors set up that enable real-time traffic safety alerts, emergency vehicle prioritization, and eco-friendly traffic flow management.

Through such projects, Danlaw contributes directly to India's vision of safer roads, efficient mobility, and sustainable transport infrastructure.

Danlaw's state-of-the-art manufacturing facility at Goa is equipped with advanced testing, calibration, and quality assurance systems to ensure high reliability, scalability, and compliance with global standards. This end-to-end capability — from design and engineering to manufacturing and validation — makes Danlaw a trusted partner for OEMs and smart mobility programs worldwide.

Feature Article



We extend our sincere gratitude to Vertis Infrastructure & NHAI Pune and all distinguished officials for attending the launch of Truck Mounted Attenuators (TMA) at Ador Powertron for Vertis Infrastructure.

During the launch, Dr. Zafar Khan emphasized the growing importance of road safety amid increasing traffic volumes and rapid highway development, underscoring the need for advanced solutions like TMAs to protect frontline workers and road users.

Mr. Ankit Yadav's remarks on NHAI's vision of zero fatalities strongly reinforced the collective commitment toward adopting global best practices and proactive safety measures.

The deployment of Truck Mounted Attenuators marks a significant milestone in enhancing work-zone safety by reducing the severity of rear-end collisions and enabling safer, more efficient highway operations.

We appreciate the continued guidance of NHAI and the strong commitment shown by Vertis Infrastructure toward adopting innovative safety solutions. Looking forward to continued collaboration in advancing highway safety initiatives nationwide.

Feature Article

National Highways for Electric Vehicles (NHEV): Advancing Intelligent Transportation Systems for a Sustainable Mobility Future



REFORM
PERFORM
TRANSFORM

ABOUT THE AUTHOR

Abhijeet Sinha

National Program Director
Ease of Doing Business & NHEV



As India accelerates toward its net-zero commitments and the vision of *Viksit Bharat @2047*, the transformation of national highway infrastructure has emerged as a strategic priority. National Highways for Electric Vehicles (NHEV) is a pioneering initiative focused on reimagining India's highway network as a digitally enabled, energy-efficient, and future-ready mobility ecosystem. At the intersection of electric mobility, Intelligent Transportation Systems (ITS), and infrastructure innovation, NHEV is shaping the next generation of smart, sustainable transport corridors through the decarbonisation of surface transport.

Overview of NHEV and Core Areas of Expertise

NHEV is conceptualised as a national-scale program to develop **dedicated electric highways** equipped with advanced charging infrastructure, digital intelligence, and integrated operations systems. The initiative addresses the full lifecycle of highway electrification, combining physical infrastructure with real-time digital management.

Core areas of expertise include:

- **Intelligent Transportation Systems (ITS) for Highways:** Deployment of integrated digital platforms for real-time traffic monitoring, incident detection, dynamic route management, and network optimisation, supported by V2I and V2X communication frameworks for safer and more efficient highway operations.
- **EV-Ready Highway Infrastructure:** Planning and execution of interoperable charging ecosystems for passenger and freight vehicles, incorporating V2G capabilities to enable grid balancing, energy optimisation, and bi-directional power flows across E-Highways.
- **Roadside Assistance & Highway Support Systems (NHEV):** Design and deployment of technology-enabled roadside assistance within 30 minutes, emergency response, and service orchestration platforms, ensuring zero-downtime mobility through predictive diagnostics, connected vehicle alerts, and coordinated on-ground support.

- **Policy & Program Design:** Supporting evidence-based policy frameworks and programmatic models for public–private partnerships, standardisation, and scalable national deployment of intelligent and electric mobility infrastructure.
- **Data-Driven Mobility Management:** Application of AI, IoT, GIS, cloud, and big data technologies to enable predictive, adaptive, and responsive transport operations, leveraging vehicle-generated data (V2X) for real-time decision-making and system-wide optimisation.

Impactful Initiatives Driving ITS Integration

NHEV's ITS-driven initiatives are designed to improve efficiency, safety, and sustainability across electric highway networks.

1. Smart Electric Highways

NHEV is advancing the development of smart corridors where EV charging stations, traffic systems, and grid infrastructure operate as a unified digital ecosystem. These corridors enable:

- Real-time traffic and vehicle flow monitoring
- Predictive congestion and incident detection
- Dynamic energy demand management for charging stations

Such highways form the backbone of next-generation electric logistics and long-distance EV travel.

2. Centralised Command, Control & Depot Hub Systems

A cornerstone of NHEV's ITS architecture is the establishment of **centralised and regional control rooms**, complemented by strategically located **depot hubs** along E-Highways. Together, they aggregate data from sensors, charging infrastructure, vehicles, and traffic systems to support:

- E-highway Management System (EHMS)
- Live, end-to-end network visibility across highway stretches
- Coordinated incident response, roadside assistance, and emergency services
- Operational management of depot hubs for fleet charging, maintenance, and turnaround
- Performance benchmarking, service level agreement (SLA) tracking, and regulatory compliance monitoring

This integrated command-and-control framework significantly enhances operational efficiency, asset utilisation, and user safety, while enabling zero-downtime electric freight and passenger mobility.

Formation of the Network Working Group under the 3G Mobility Network

Recognising the critical role of digital connectivity and interoperability in enabling intelligent electric highways, NHEV constituted the Network Working Group under the 3G Mobility Network as a dedicated multi-stakeholder platform.

The Network Working Group has been established to design and align a robust, secure, and scalable digital architecture supporting next-generation mobility on India's national highways. Its mandate spans the integration of ITS platforms, connected vehicle protocols, charging and energy systems, communication networks, and command-and-control infrastructure, ensuring interoperability and long-term system resilience.

Institutional Alignment and the 3G Mobility Network

Across the country, high-level deliberations are underway to establish a unified and future-ready transportation planning framework. In a significant step towards this objective, Prime Minister Narendra Modi recently chaired a meeting of key Ministers and senior Secretaries overseeing transport-related ministries to initiate the formation of an Apex Transport Planning Authority.

In parallel, India's 3rd Generation Green Mobility (3G Mobility) Network continues to gain decisive momentum on the ground. This progress was reflected in the successful 8th Working Group Meeting (8th WGM) of NHEV, held on 23 December 2025 in New Delhi. The high-level meeting marked a critical milestone in advancing the CCV Protocol towards real-world deployment and validation.

Deliberations progressed key elements of V2X-enabled connectivity, interoperable digital architectures, and data-driven mobility frameworks—all essential for enabling smart, scalable, and energy-efficient commercial vehicle operations across India's highway network. Together, these developments signal a strong convergence between top-down institutional reform and bottom-up technological execution.

Conclusion

Through its integrated approach to infrastructure, digital intelligence, policy design, and institutional coordination, NHEV is laying the foundation for India's transition to intelligent, electric, and sustainable highways. By aligning technology, governance, and industry participation, NHEV is not only enabling electric mobility—but redefining how highways function as living, data-driven national assets in India's journey towards Viksit Bharat @2047.

Feature Article

DualSafe: Advancing Two-Wheeler Road Safety Through Intelligent, Dual-Purpose Wearables



In India's mobility landscape, two-wheelers remain indispensable to daily commuting, last-mile delivery, and shared mobility. Yet, despite regulatory mandates, helmet non-compliance—especially among pillion riders—continues to contribute significantly to road injuries and fatalities. The challenge is no longer awareness alone, but practicality, convenience, and consistent adoption.

DualSafe, founded in 2020 by Arvind and Anupama Sethi, was established to address this exact gap. The company's mission is to transform conventional safety headgear into intelligent, user-centric safety wearables that encourage compliance by design rather than enforcement alone.

DualSafe operates at the intersection of road safety engineering, industrial design, and IoT-enabled wearables, with a sharp focus on solutions that are scalable, regulation-aligned, and suitable for real-world riding conditions.

Core Innovation: The Patented Two-in-One Dual Helmet

At the centre of DualSafe's portfolio is its patented two-in-one helmet system, designed to function as a single compact unit that separates into two independent helmets—one for the rider and one for the pillion.

The innovation addresses a persistent behavioural issue: carrying, storing, and maintaining multiple helmets is inconvenient on standard two-wheelers, often leading to pillion riders travelling without adequate protection.

The DualSafe helmet solves this through:

- A patented split architecture allowing two helmets to be stored and carried as one
- Independent cushioning and impact protection for both rider and pillion
- A protective outer shell safeguarding internal padding from weather, dust, and pollution
- Enhanced ventilation to reduce heat buildup and hygiene concerns
- Structural design inspired by MIPS-like multi-directional impact protection, without premium cost escalation.

The product is currently undergoing BIS certification and has been developed after more than four years of iterative R&D and testing.

Smart Safety: IoT Integration and ITS Relevance

Beyond physical protection, DualSafe is positioning the helmet as an active safety device within the Intelligent Transport Systems ecosystem.

Current MVP and roadmap capabilities include:

- Mobile connectivity for GPS navigation, calls, and alerts, while keeping one ear free for ambient traffic awareness
- Helmet-to-helmet communication to reduce rider distraction and improve coordination
- Chin-strap compliance indicators to confirm correct helmet usage
- Integrated camera architecture, enabling ride logging and future audit use cases
- Sensor-ready design for accident detection and data capture

These features align closely with ITS objectives around data-driven safety, behaviour monitoring, and real-time situational awareness, while remaining focused on usability for everyday riders.

Key Outcomes and Milestones (2024–2025)

Over the last 12 months, DualSafe has achieved several critical milestones:

- Global Patent Protection
- Patents granted in India, the United Kingdom, and the United States
- Successful clearance under the Patent Cooperation Treaty (PCT) with multiple approved claims, validating the novelty and scalability of the design globally
- Government and Institutional Validation
- Grant support under SISFS (Startup India Seed Fund Scheme) via GINSERV
- Pre-seed funding under CPS-SSS through IIT Mandi Catalyst and iHUB (DST-supported)
- Product demonstrations and encouragement received from senior stakeholders within the Ministry of Road Transport and Highways (MoRTH)
- Industry Recognition
- Featured among SiliconIndia's Top 10 Wearable Startups
- Coverage across APAC technology and mobility platforms
- Market Engagement
- Advanced discussions with two-wheeler OEMs, delivery fleets, rental operators, and aggregators (under NDA)
- Strong alignment with the upcoming MoRTH mandate requiring two BIS-certified helmets with every new two-wheeler from January 2026

Strategic Partnerships and Scale Path

DualSafe's commercialization strategy is designed for phased scale

1. B2B engagement with OEMs, fleet operators, and mobility platforms
2. B2B2C distribution through dealerships and aggregators

3. Direct-to-Consumer (D2C) channels once production volumes cross viability thresholds

To address global certification complexities (ECE, DOT, SNELL), DualSafe is pursuing a royalty-based licensing model, enabling international manufacturers to integrate its patented design while ensuring rapid market entry.

Beyond consumer mobility, the company is also evaluating applications in construction, mining, oil & gas, and law enforcement, where helmet compliance, monitoring, and communication are critical.

Future Outlook: Safety by Design, Not Enforcement Alone

India's ITS roadmap increasingly recognises that compliance improves when systems are designed around human behaviour. With over 260 million two-wheelers on the road and a renewed regulatory focus on pillion safety, solutions that combine protection, convenience, and intelligence are essential.

DualSafe's approach reframes the helmet from a static safety accessory into an intelligent safety gadget—one that riders are more likely to carry, wear, and use correctly.

As mobility systems become smarter, safety wearables must evolve alongside vehicles and infrastructure. DualSafe aims to contribute meaningfully to this evolution by embedding safety directly into the rider's daily journey.

DualSafe invites collaboration with OEMs, ITS solution providers, policymakers, and enforcement agencies to collectively improve two-wheeler safety outcomes. By combining regulation with thoughtful design and intelligent technology, India can move closer to a future where safety is not a burden—but a norm.

Feature Article



Revolutionizing Highway Tolling: The Multi-Lane Free Flow (MLFF) Era

Enabling Seamless, High-Speed Tolling with Precision Component Solutions

Despite the successful implementation of RFID-based electronic tolling (FASTag) across India, traditional toll plazas continue to face significant challenges. Physical gantries and designated lanes create bottlenecks, forcing vehicles to slow down or queue during peak hours. This leads to increased fuel consumption, higher carbon emissions, and delays in logistics and passenger travel. Multi-Lane Free Flow (MLFF) technology emerges as the definitive solution to these challenges.

What is MLFF?

Multi-Lane Free Flow (MLFF) is a barrier-free electronic toll collection system that allows vehicles to pass through tolling points at highway speeds without stopping. Unlike traditional systems relying on dedicated lanes, MLFF utilizes an open-road architecture where sensors, RFID readers, and cameras are mounted on overhead gantries. As vehicles pass beneath, the system automatically identifies them and deducts the appropriate toll from linked accounts.

Multi Lane Free Flow (MLFF)



Critical Performance Parameters for RFID-Based MLFF

KEY INSIGHT

Read Rate and **RF Sensitivity** are the two most critical parameters in RFID-based MLFF systems. These parameters directly determine the accuracy of vehicle detection and the speed capability.

High read rates ensure that every vehicle tag is captured reliably, even in multi-lane, high-density traffic scenarios. Superior RF sensitivity enables the detection of even weak or partially obscured tags, ensuring no vehicle goes undetected. These capabilities are essential for supporting high-speed tolling operations and maintaining smooth, uninterrupted traffic flow.

NATRAX Certified: Global Shutter Cameras are certified for vehicle speeds up to **230 km/h**, ensuring accurate detection even at expressway speeds.

Our Specialized Component Solutions for MLFF

Wizpro specializes in providing high-precision components that form the critical sensing and detection backbone of MLFF systems. **We do not supply complete MLFF solutions**; instead, we focus on delivering best-in-class individual components that system integrators can deploy for optimal performance:

Global Shutter Cameras (Stellarview ANPR): Our Made-in-India global shutter cameras deliver superior Automatic Number Plate Recognition (ANPR) performance. Unlike rolling shutter cameras, global shutter technology captures the entire frame simultaneously, eliminating motion blur and ensuring crisp, readable images of license plates even at high vehicle speeds. ANPR captures vehicle number plates for validation, monitoring, and audit purposes, while also detecting vehicle makes, colors, and non-standard plates for robust enforcement.



High-Performance RFID Readers and Antennas: We deploy advanced RFID readers such as the Zebra FX9600, featuring exceptional receive sensitivity to detect even weak tags. Our antenna configuration combines 11dBi circular antennas (providing 60-degree beam angles for extended tag visibility) with 13dBi linear antennas that act as activators to power up weak tags at a distance. This dual-antenna approach maximizes the detection zone and ensures near-perfect read rates.



Pulse IR Illuminators for Night Accuracy: Our Pulse IR (Infrared) illumination systems ensure consistent ANPR performance regardless of ambient lighting conditions. These illuminators provide powerful, focused infrared light that enables our cameras to capture clear license plate images during nighttime, in tunnels, or under adverse weather conditions without causing glare or driver distraction.

Benefits for Highway Operations

Enhanced Traffic Throughput: By removing physical barriers, highways maintain design speeds, significantly reducing congestion and travel time.

Environmental Sustainability: Eliminating stop-and-go cycles at toll plazas substantially reduces fuel consumption and vehicle emissions.

High-Speed Capability: With NATRAX certification up to 230 km/h, our components support the fastest expressway speeds in India.

Accurate Enforcement: Real-time detection of violations enhances overall highway safety and revenue assurance.

Evidence Images:

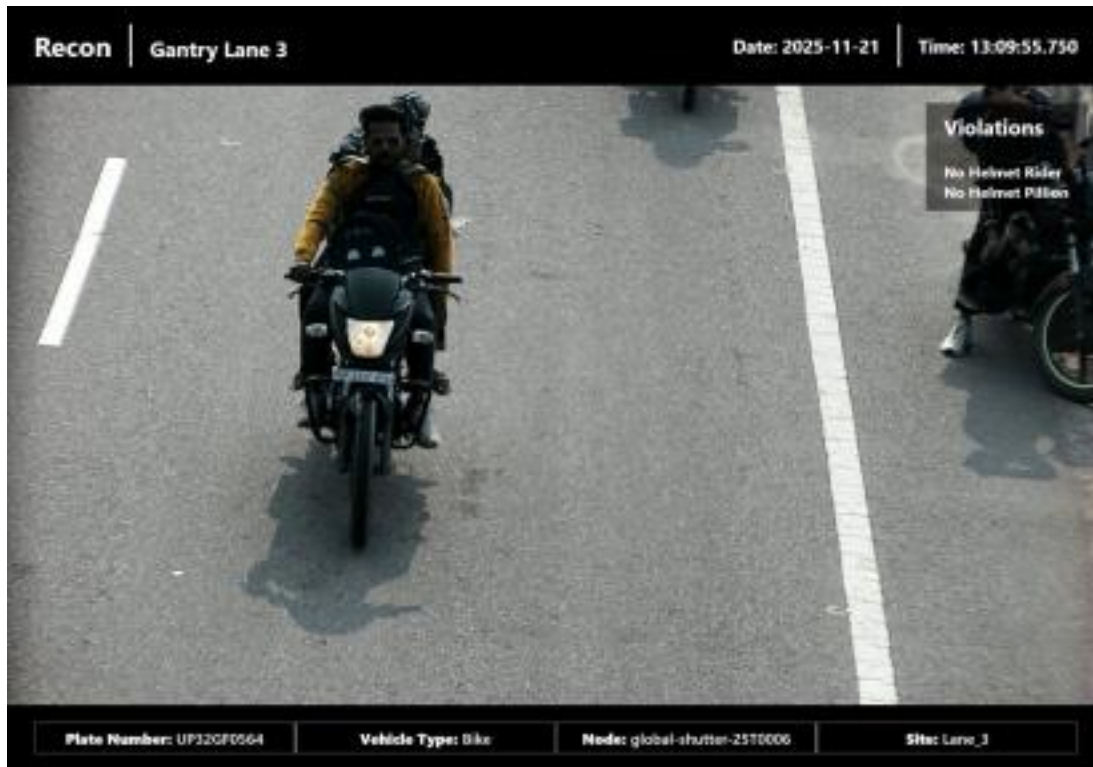


Figure 1: Evidence Image (Day)



Figure 2: Evidence Image (Night)

Wizpro, as a pioneer in RFID-based MLFF component solutions in India, continues to lead this transformation. Our precision-engineered cameras, RFID readers, antennas, and illumination systems ensure that India's highways are equipped with the most accurate and reliable detection technology for the next generation of smart mobility.

For more information on our MLFF component solutions, visit www.wizpro.in today.

Feature Article



ABOUT THE AUTHOR

Mr Kapil Bardeja

Co- Founder & CEO



Vehant Technologies is a deep-tech company building AI-powered solutions for a safer world. Incubated at IIT Delhi and guided by eminent IIT faculty, we combine rigorous research with real-world deployment to solve mission-critical safety and security challenges.

Designed, developed and manufactured entirely in India under the Make in India vision, our products deliver global-grade performance while addressing complex, high-impact use cases—where reliability matters and lives depend on outcomes.

Powered by a strong in-house team of scientists and engineers from leading institutions, Vehant continues to push the boundaries of indigenous innovation. Our solutions span Highway Safety, Smart & Safe Cities, Aviation, and Building & Premises Security, built on cutting-edge AI and engineered to meet the highest international standards of quality, accuracy, and reliability.

Today, Vehant Technologies serves 1,100+ customers across India and global markets, supporting 70+ Smart Cities, securing 20,000+ operational lanes, and delivering 120+ installations worldwide. Our innovation engine is powered by 150+ in-house R&D specialists, complemented by active collaborations with eight premier academic institutions to co-develop next-generation AI technologies.

Vehant has built a strong and proven presence across India's highway and expressway ecosystem through VIDES—a widely deployed Video Incident Detection & Enforcement System that consistently enables authorities with accurate incident detection, enforcement, and real-time traffic monitoring in complex road environments.

Building on deep expertise in AI-driven intelligent traffic enforcement systems, Vehant is actively contributing to India's evolving Multi-Lane Free-Flow (MLFF) ecosystem through its Make-in-India technology capabilities. Our solutions include high-accuracy ANPR, ATCC-based vehicle classification, precision radar-based speed detection, and enterprise-grade video management platforms.

Designed for seamless integration with FASTag and VAHAN frameworks, these systems enhance enforcement accuracy, operational efficiency, and long-term reliability—supporting MoRTH’s next-generation highway programs and India’s Vision 2047. Vehant is a trusted leader in delivering AI-enabled traffic intelligence that powers smarter, safer mobility at scale.

Our expertise spans across:

- Smart & Safe City Surveillance Technologies
- Intelligent Traffic Management & Enforcement
- AI-driven Video Analytics & Integrated Platforms
- Physical Security Screening & Threat Detection

Key Outcomes & Achievements (Last 6–12 Months)

Over the past year, Vehant Technologies has significantly expanded its footprint across India’s critical highways, expressways, and urban infrastructure through large-scale deployments of Intelligent Transportation Systems (ITS), Advanced Traffic Management Systems (ATMS), and AI-enabled enforcement solutions.

Our technologies are actively supporting marquee projects such as the Maharashtra Samruddhi Mahamarg covering 700 km, Ganga expressway package 4, Mumbai coastal road tunnel 3.2 km., RISL- Shajhapur NH48&448, Bar bidala - jodhpur NH 25, Sikar - bikaner NH 11 &52 enabling safer mobility, real-time operational visibility, and enhanced compliance across high-density and strategically important corridors.

Building on its landmark implementations, Vehant Technologies continues to deliver advanced solutions in partnership with leading system integrators across strategic highway projects, including the Amritsar–Jamnagar Expressway, Purvanchal Expressway, and the Bengaluru–Mysuru Corridor—one of the earliest large-scale deployments aligned with the NHA 2023 guidelines.

These programs reinforce Vehant’s proven capability in enabling automated traffic enforcement, real-time incident detection, continuous traffic monitoring, and integrated highway intelligence across complex, high-speed infrastructure networks.

This momentum reflects Vehant’s sustained expansion of intelligent traffic enforcement and monitoring capabilities across national highways, expressways, and urban corridors, alongside the continued strengthening of Safe City and ITS deployments in India and international markets. Together, these initiatives enable enhanced safety, operational efficiency, and data-driven traffic governance at scale.

These solutions are deeply embedded within India’s rapidly evolving transportation infrastructure, continuously strengthening reliability, safety, and intelligence across mobility networks.

Vehant's continued success is driven by relentless innovation, strong ecosystem partnerships, and a steadfast commitment to technology excellence.

Vehant Technologies delivers infrastructure intelligence that protects, performs, and scales—shaping safer cities and smarter mobility for the future. Our AI-driven solutions are trusted across mission-critical deployments, translating complex data into real-time decisions that enhance safety, efficiency, and resilience at scale.

Quote From Mr Kapil Bardeja: Co- Founder & CEO

"At Vehant, our approach to AI has always been grounded in reliability, scalability, and real-world impact. As India advances its intelligent transportation and MLFF initiatives, we are committed to supporting safer, smarter, and future-ready mobility through AI-driven enforcement and traffic intelligence solutions aligned with Vision 2047"

Feature Article



Engineering the Future of Urban Mobility: Trafitek Solutions Pvt Ltd and the Evolution of Intelligent Traffic Management in India

ABOUT THE AUTHOR

Dhaval Desai
Chairman & Managing Director
Trafitek Solutions Pvt Ltd



Introduction: Cities at a Mobility Crossroads

Indian cities today stand at a critical inflection point. Rapid urbanisation, rising vehicle ownership, and complex mixed-traffic conditions are placing unprecedented stress on existing road infrastructure. Traditional traffic control approaches—largely static, manpower-dependent, and reactive—are no longer adequate to manage growing mobility demands while ensuring safety, efficiency, and sustainability.



Trafitek leadership team

In this evolving landscape, **Trafitek Solutions Pvt Ltd** has emerged as a technology driven enterprise redefining how Indian cities plan, operate, and manage traffic systems. With deep domain expertise in traffic engineering, Intelligent Transportation Systems (ITS), and systems integration,

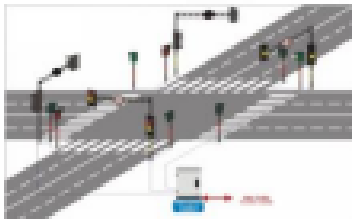
Trafitek is playing a pivotal role in shaping the next generation of data-driven urban mobility solutions.

Trafitek Solutions Pvt Ltd: Technology with Purpose



Trafitek Board Members

Founded with the vision of transforming urban mobility through engineering-led innovation, Trafitek Solutions Pvt Ltd operates at the intersection of **traffic engineering, electronics, software, and systems integration**. The company partners closely with government agencies, urban local bodies, and infrastructure stakeholders involved in Smart City, urban transport, and road safety initiatives. Rather than focusing on isolated components, Trafitek delivers **end-to-end traffic management ecosystems**—from field-level hardware and controllers to centralised software platforms, analytics, and operational support. This holistic approach enables cities to move beyond reactive traffic control toward **predictive, adaptive, and centrally coordinated operations**.



Trafitek Solutions Pvt Ltd delivers integrated, technology-led traffic management solutions for modern cities. Typical ATCS system Typical Intersection Hardware

Global Technology, Local Expertise: The Trafitek–SWARCO Partnership

A defining strength of Trafitek lies in its strategic partnership with **SWARCO**, a global leader in traffic management and mobility solutions headquartered in Austria. With operations in over 70 countries, SWARCO brings decades of proven experience in signal control, adaptive traffic systems, and sustainable mobility technologies.

Through this collaboration, Trafitek combines **globally proven ITS platforms** with **local engineering, manufacturing, and deployment expertise**. This ensures that international best practices are not merely imported but are **adapted to Indian traffic behaviour, climatic conditions, and operational realities**.

The partnership allows Indian cities to benefit from mature, future-ready technology while maintaining local ownership, serviceability, and long-term sustainability.

Make in India: From Assembly to Engineering Capability

Aligned with the Government of India's **Make in India** initiative, Trafitek has invested significantly in local manufacturing and system integration capabilities for critical traffic management equipment.



Local Manufacturing Highlights:

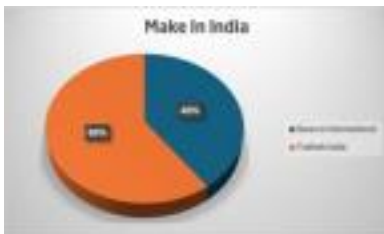
- **SWARCO ITC-3 Traffic Signal Controllers**
- **Traffic Signal Lights (EN 12368 compliant)**

Factory – Men at work

The **Trafitek FL6 Series Central Light Source (CLS) traffic signals**, manufactured in India, represent a significant milestone for domestic ITS manufacturing. While selected optical components such as LED boards and lenses are sourced globally in CKD form, Trafitek locally manufactures and assembles:

- Polycarbonate housings
- Doors, hoods, and gaskets
- Power supplies and electrical assemblies

Localisation strategy adopted by Trafitek under Make in India programme.



Notably, Trafitek's traffic signal lights are **among the very few India-manufactured products certified by an EN-notified body in Europe**, underscoring adherence to stringent international quality and performance standards.

ITC-3 Traffic Controller: A Future-Ready Control Platform

At the core of Trafitek's traffic management deployments lies the **SWARCO ITC-3 traffic controller**, a modular, high-performance platform designed to meet both present and future urban mobility needs.

Key Technical Capabilities:

- Adaptive and actuated traffic control algorithms
- Multi-plan operation (fixed-time, traffic-responsive, adaptive)

- Web-based configuration and remote access
- Priority handling for public transport and emergency vehicles
- Scalable architecture for junctions, corridors, and networks
- Fail-safe standalone operation with local intelligence



Manufactured and assembled in India by Trafitek, the ITC-3 controller integrates electronic boards sourced from SWARCO's Denmark facility

with locally manufactured cabinets, wiring, power systems, and electrical panels—ensuring both performance reliability and localisation.

ITC-3 Controller – Designed for Indian Conditions

- Operates reliably in high temperature and humidity
- Handles heterogeneous traffic patterns
- Maintains junction safety during communication failures ITC3- Make in India controller
- Supports long-term software upgrades without hardware replacement **From Hardware to Systems: Integrated Traffic Management**

Modern traffic management extends far beyond signal heads and controllers. Trafitek's strength lies in **system-level integration**, combining field devices with centralised platforms for monitoring, control, and analytics.

The company deploys **central traffic management software** that enables traffic authorities to:

- Monitor junction and corridor performance in real time
- Create, modify, and deploy signal plans remotely
- Analyse traffic patterns, delays, and green utilisation
- Detect faults automatically and reduce field intervention

This systems-driven approach shifts traffic operations from manpower-intensive control rooms to **data-driven decision environments**.

Nagpur IITMS Pilot: Technology Proven on Indian Roads

One of Trafitek's most significant milestones is the **Nagpur**

Intelligent & Integrated Traffic Management System (IITMS)

pilot, covering 171 intersections implemented in collaboration with SWARCO.



The pilot was designed to validate the performance of advanced adaptive signal control technology under **live Indian mixed traffic conditions**, serving as a foundation for full-scale city deployment.

Swarco & Trafitek leadership visiting



Pilot Scope:

a successful installation

IITMS pilot deployment at key intersections in Nagpur

- Deployment at **10 critical intersections**
- Installation of ITC-3 controllers with central software
- Real-time communication and adaptive operation
- Evaluation during peak and off-peak traffic conditions

Measurable Outcomes and Operational Benefits

The Nagpur IITMS pilot delivered tangible technical and operational results: • Stable real-time communication between field controllers and central system • Successful adaptive, actuated, and time-of-day plan execution • Corridor-level coordination (green wave implementation)

- Automated fault detection and remote diagnostics
- Reduced dependence on on-site manual intervention

Traffic authorities observed **improved peak-hour movement**, better operational visibility, and faster fault response—building confidence for city-wide scaling.

Smart Traffic Concepts Implemented in Nagpur

- Smart intersections with demand-responsive phasing
- Smart corridors with coordinated signal timing
- Dynamic plan switching based on traffic demand



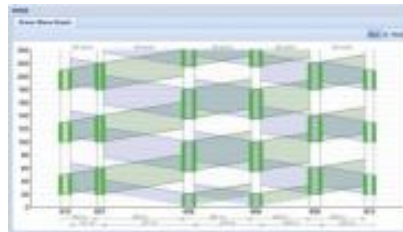
Graphic data-1

- Centralised monitoring with role-based access

Graphic data-2



Graphic data-3



Beyond Signals: Building Future-Ready Mobility Ecosystems

As Indian cities prepare for the next phase of urban mobility—characterised by connected vehicles, AI-driven analytics, and integrated multimodal transport—traffic infrastructure must be designed for long-term adaptability. Trafitek’s platforms are engineered with this evolution in mind.

The SWARCO ITC-3 controller and its central traffic management software are upgrade ready by design, allowing seamless integration with advanced traffic control and analytics (ATCC), CCTV-based monitoring and incident detection, public transport and emergency vehicle priority systems, and future V2X and connected vehicle interfaces.

This modular, standards-aligned approach ensures that current traffic management investments remain scalable, interoperable, and relevant as cities transition toward more intelligent and connected mobility ecosystems.

Conclusion: Engineering Confidence for India’s Smart Cities

Through a combination of **global technology, local manufacturing, and deep engineering expertise**, Trafitek Solutions Pvt Ltd is not merely supplying traffic equipment—it is enabling cities to **rethink how mobility systems are planned, operated, and scaled**.

The success of the Nagpur IITMS pilot demonstrates that advanced, adaptive traffic management is not only feasible in Indian conditions but is essential for building safer, smarter, and more sustainable cities.

As India's urban landscape continues to evolve, Trafitek stands positioned as a key engineering partner in shaping the future of intelligent mobility.

Summary By Director General

The October–December quarter of 2025 was marked by structured execution, institutional strengthening, and deeper technical collaboration across the ITS ecosystem.

The successful organisation of the first ITS India Congress 2025 at IIT Hyderabad was a major operational milestone. With strong participation from government agencies, academia, industry, and startups, the focus now shifts to converting the deliberations into structured action tracks, working papers, and coordinated implementation efforts.



A significant development during the quarter was the signing of the Memorandum of Understanding with CSIR–CRRI in November. This collaboration establishes a formal framework for joint research, special projects, consulting assignments, and capacity-building initiatives in Intelligent Transport Systems. The MoU is designed to bridge applied research with on-ground deployment, enabling evidence-based policy inputs, pilot validation, and technology assessments aligned with national priorities. Such institutional partnerships are critical to ensuring that innovation is supported by rigorous technical evaluation and scalable implementation models. Technical engagements also continued on electronic enforcement frameworks and Multi-Lane Free Flow (MLFF) preparedness. Discussions focused on interoperability standards, backend integration, audit mechanisms, and operational readiness. As intelligent tolling and AI-enabled enforcement systems advance, structured coordination across agencies remains essential.

Internally, preparations are underway to reorganise and expand the Forum’s committee framework for 2026. The objective is to create domain-focused groups with clearly defined deliverables, measurable timelines, and stronger technical participation. This will support progress across connected mobility systems, safety technologies, emissions monitoring, advanced air mobility, modelling frameworks, and structured ITS skilling initiatives.

Institutional processes, documentation standards, and stakeholder coordination mechanisms are also being strengthened to support increased deployment activity across regions. The year ahead will require disciplined execution and sustained collaboration. Our priority remains clear—facilitating scalable, interoperable, and outcome-driven ITS deployment across India.

Warm Regards,
Dr. Shiv Kumar
Director General
ITS India Forum

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